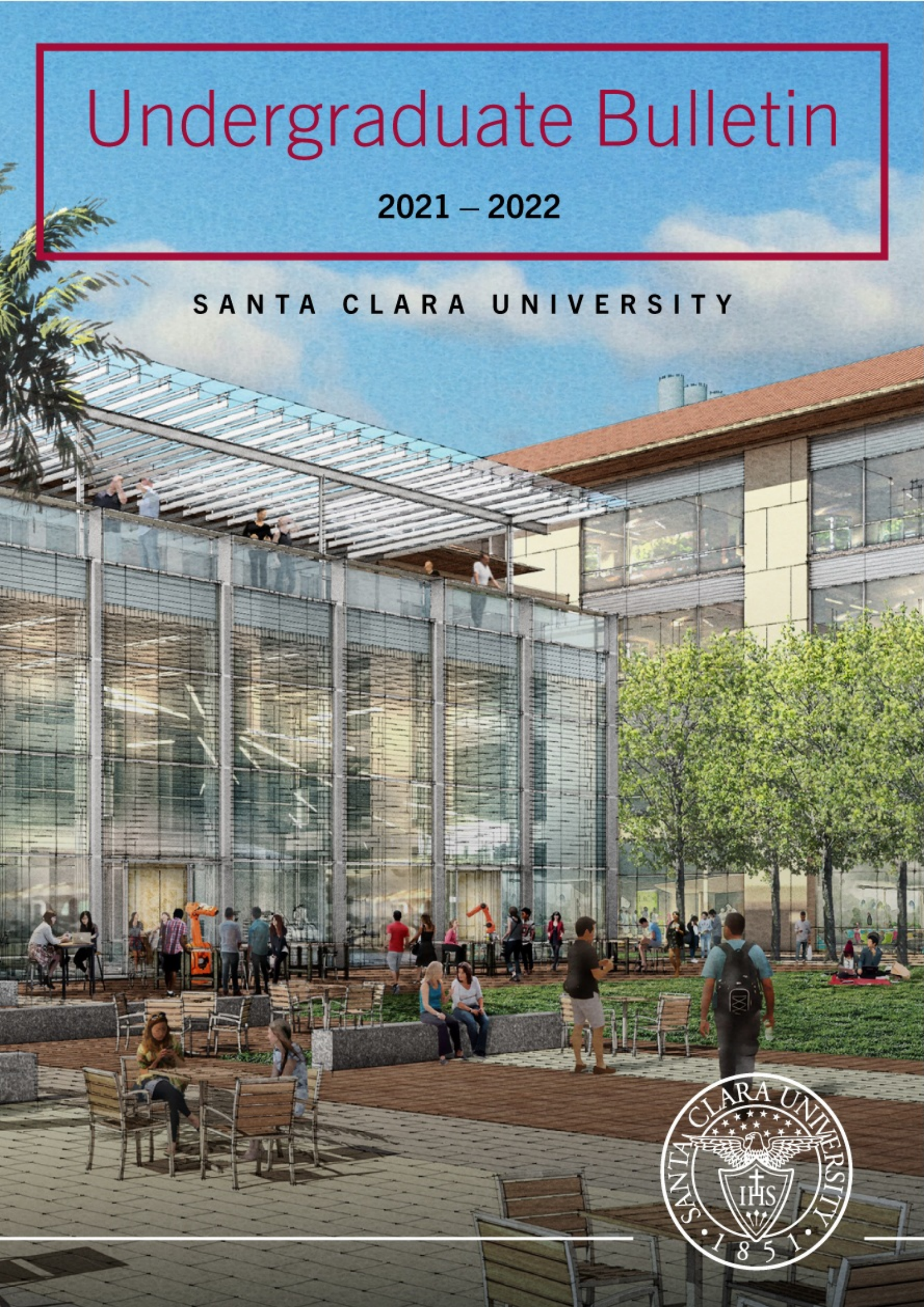
Undergraduate Bulletin

2021 – 2022

SANTA CLARA UNIVERSITY



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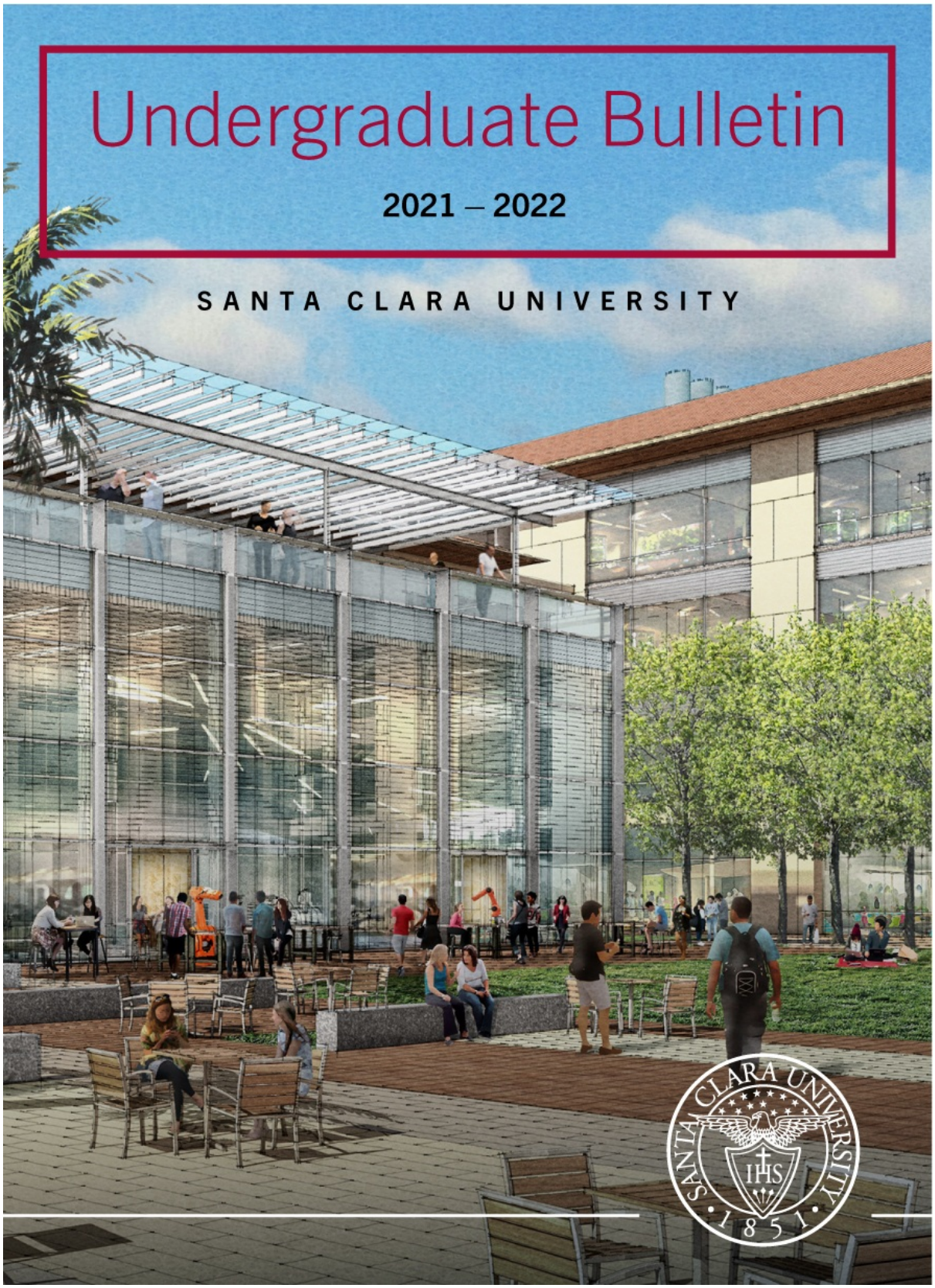

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Preface

The *Undergraduate Bulletin* contains the academic and administrative policies and regulations that govern enrollment of undergraduate students at Santa Clara University. Students are responsible for knowing all academic and administrative policies and regulations affecting their program of study and for abiding by all such policies and regulations during their period of enrollment at the University. Continued enrollment is subject to compliance with the academic and administrative policies and regulations as described herein and otherwise published by the University. Failure to understand the policies and regulations does not relieve a student of his or her responsibility for adhering to the policies and regulations.

Students are governed by the applicable degree requirements of the University and the Santa Clara Core Curriculum in the *Undergraduate Bulletin* in effect in their entry year as first-year students. Transfer students normally follow the *Undergraduate Bulletin* of their class cohort as determined by the number of transfer units accepted toward the Santa Clara degree upon admission. All students must fulfill the departmental or program major and minor degree requirements in effect when they declare their major or minor program of study.

Santa Clara University reserves the right to make changes to degree program requirements, academic and administrative policies and regulations, and course offerings published in the *Undergraduate Bulletin* at any time without prior notice. The University strives to assure the accuracy of the information in the *Undergraduate Bulletin* at the time of publication. However, the University reserves the right to make corrections as necessary to the Bulletin.

The *2021-22 Undergraduate Bulletin* was published in June 2021 by the Office of the Provost and covers policies and regulations in effect as of that date. The *Undergraduate Bulletin* and other information about Santa Clara University can be found on the **University's website**.

Santa Clara University

Located in the heart of California's Silicon Valley, Santa Clara University is a comprehensive Jesuit, Catholic university with more than 8,800 students. Founded in 1851 by the Society of Jesus, California's oldest operating higher education institution offers a rigorous undergraduate curriculum in arts and sciences, business, and engineering, plus nationally recognized graduate and professional programs in business, law, engineering, education, counseling psychology, pastoral ministries, and theology. The University boasts a diverse community of scholars offering a values-oriented curriculum characterized by small class sizes and a dedication to educating students for competence, conscience, and compassion. The traditions of Jesuit education---educating the whole person for a life of service---run deep in all of its curricular and co-curricular programs.

Santa Clara University is perennially ranked among the top comprehensive universities by U.S. News & World Report and has one of the highest graduation rates for undergraduate students among all comprehensive universities. The University has a national reputation for its undergraduate program that features a distinctive core curriculum, an integrated learning environment, and research opportunities for undergraduate students.

The University was established as Santa Clara College on the site of Mission Santa Clara de Asís, the eighth of the original 21 California missions. The college originally operated as a preparatory school and did not offer collegiate courses until 1853. Following the Civil War, enrollment increased, and by 1875 the size of the student body was 275. One-third of the students were enrolled in the collegiate division; the remainder attended the college's preparatory and high school departments.

Santa Clara experienced slow and steady growth during its first 60 years, becoming the University of Santa Clara in 1912, when the schools of engineering and law were added. In 1925, the high school was separated from the University and took the name of Bellarmine College Preparatory in 1928. The Leavey School of Business opened in 1926, and within a decade, became one of the first business schools in the country to receive national accreditation.

For 110 years, Santa Clara was an all-male school. In the fall of 1961, women were accepted as undergraduates, and Santa Clara became the first coeducational Catholic university in California. The decision resulted in an admission explosion---from 1,500 students to more than 5,000. The size of the faculty tripled, and the University began the largest building program in school history, erecting eight residence halls, a student union, and an athletic stadium. In 1985, the University adopted "Santa Clara University" as its official name.

University Vision, Mission, and Fundamental Values

Santa Clara University has adopted three directional statements to describe the kind of university it aspires to become (Strategic Vision), its core purpose and the constituencies it serves (University Mission), and the beliefs that guide its actions (Fundamental Values).

Strategic Vision

Santa Clara University will educate citizens and leaders of competence, conscience, and compassion, and cultivate knowledge and faith to build a more humane, just, and sustainable world.

University Mission

The University pursues its vision by creating an academic community that educates the whole person within the Jesuit, Catholic tradition, making student learning our central focus, continuously improving our curriculum and co-curriculum, strengthening our scholarship and creative work, and serving the communities of which we are a part in Silicon Valley and around the world.

Student learning takes place at the undergraduate and graduate level in an educational environment that integrates rigorous inquiry and scholarship, creative imagination, reflective engagement with society, and a commitment to fashioning a more humane and just world.

As an academic community, we expand the boundaries of knowledge and insight through teaching, research, artistic expression, and other forms of scholarship. It is primarily through discovering, communicating, and applying knowledge that we exercise our institutional responsibility as a voice of reason and conscience in society.

We offer challenging academic programs and demonstrate a commitment to the development of:

- Undergraduate students who seek an education with a strong humanistic orientation in a primarily residential setting
- Graduate students, many of them working professionals in Silicon Valley, who seek advanced degree programs that prepare them to make significant contributions to their fields

In addition to these core programs, we also provide a variety of continuing education and professional development opportunities for non-matriculated students.

Fundamental Values

The University is committed to these core values, which guide us in carrying out our mission and realizing our vision:

Academic Excellence. We seek an uncompromising standard of excellence in teaching, learning, creativity, and scholarship within and across disciplines.

Search for Truth, Goodness, and Beauty. We prize scholarship and creative work that advance human understanding, improve teaching and learning, and add to the betterment of society by illuminating the most significant problems of the day and exploring the enduring mysteries of life. In this search, our commitment to academic freedom is unwavering.

Engaged Learning. We strive to integrate academic reflection and direct experience in the classroom and the community, especially to understand and improve the lives of those with the least education, power, and wealth.

Commitment to Students. As teachers and scholars, mentors and facilitators, we endeavor to educate the whole person. We nurture and challenge students---intellectually, spiritually, aesthetically, morally, socially, and physically---preparing them for leadership and service to the common good in their professional, civic, and personal lives.

Service to Others. We promote throughout the University a culture of service---service not only to those who study and work at Santa Clara but also to society in general and to its most disadvantaged members as we work with and for others to build a more humane, just, faith-filled, and sustainable world.

Community and Diversity. We cherish our diverse and inclusive community of students, faculty, staff, administrators, and alumni, a community that is enriched by people of different backgrounds, respectful of the dignity of all its members, enlivened by open communication, and caring and just toward others.

Jesuit Distinctiveness. We treasure our Jesuit heritage and tradition, which incorporates all of these core values. This tradition gives expression to our Jesuit educational mission and Catholic identity while also welcoming and respecting other religious and philosophical traditions, promoting the dialogue between faith and culture, and valuing opportunities to deepen religious beliefs.

Academic Programs

Santa Clara University offers undergraduate degrees leading to the bachelor of arts (B.A.), bachelor of science (B.S.), and bachelor of science in commerce. The College of Arts and Sciences offers the B.A. degree and the B.S. degree in 33 subject areas and includes the graduate program in pastoral ministries, through which it offers the master of arts (M.A.) degree in catechetics, pastoral liturgy, spirituality, and liturgical music. The Leavey School of Business offers the B.S. degree in commerce with majors in subject areas. The School of Engineering offers a B.S. degree with majors in seven subject areas. A variety of interdisciplinary and discipline-based minors are also offered for undergraduates.

The School of Law offers programs leading to the degrees of juris doctor (J.D.) and master of laws (LL.M.). J.D. students may earn certificates of specialization in high technology law, international law, and public interest and social justice law. LL.M. students may earn master of laws in intellectual property or U.S. law. A broad curriculum also includes business and commercial law, taxation, criminal law and trial advocacy, environmental law, estate planning, labor law, health law, legal writing and research, as well as opportunities for externships, clinical work, and professional skill development.

The Leavey School of Business offers graduate programs leading to the master of business administration (MBA) degree with coursework in accounting, economics, finance, management, marketing, and operations management and information systems (OMIS). The MBA can be done part-time on campus and online. The business school also offers graduate programs leading to the master of science in information systems (MSIS), business analytics, online in marketing, or finance & analytics. We also offer a 4+1 degree aimed at seniors for our MS programs in information systems, business analytics, and finance & analytics. In conjunction with the law school, the business school also offers joint degree programs leading to a J.D./MBA and J.D./MSIS.

The School of Engineering offers graduate programs leading to the master of science (M.S.) degree in applied mathematics; bioengineering; civil, environmental, and sustainable engineering; computer science and engineering; electrical engineering; engineering management; mechanical engineering; software engineering; and sustainable energy; and the engineer's degree in computer science and engineering, electrical engineering, and mechanical engineering. The engineering school also offers the doctor of philosophy (Ph.D.) degree in computer science and engineering, electrical engineering, and mechanical engineering.

The two departments in the School of Education and Counseling Psychology offer credential and graduate programs. The Department of Education focuses on preparing teachers and administrators for public and Catholic schools. It offers programs in teacher preparation leading to credentials (e.g., California preliminary multiple-subject and single-subject teaching credentials, and California Clear credential) and the master of arts in teaching (MAT) degree. Its programs in educational administration prepare public K--12 administrators for credentials (e.g., the Preliminary California Administrative Services credential and the California Clear Administrative Services credential), and Catholic school leaders through the certificate program in Catholic School Leadership. The department also offers an M.A. program in interdisciplinary education (with emphasis in curriculum and instruction; science, technology, environmental education, and mathematics [STEEM]; and educational administration). The departments of education and counseling psychology jointly offer the certificate program in Alternative and Correctional Education. The Department of Counseling Psychology offers two degree programs: M.A. in counseling psychology and M.A. in counseling. The M.A. in counseling psychology can lead to state licensure for marriage and family therapists and/or licensed professional clinical counselors. The department includes emphasis programs in health, correctional, and Latinx counseling.

The Jesuit School of Theology (JST) is one of only two Jesuit theological centers in the United States operated by the Society of Jesus, as the order of Catholic priests is known. It is one of only two Jesuit theological centers in the country that offer three ecclesiastical degrees certified by the Vatican Congregation for Catholic Education, and it also

offers four advanced theological degrees certified by the Association of Theological Schools. In addition, JST offers a spiritual renewal program for clergy, religious, and lay people, and conducts an annual Instituto Hispano that offers a certificate program to advance Hispanic leadership in the pastoral life of the church.

Centers of Distinction

Santa Clara University has three Centers of Distinction that serve as major points of interaction between the University and local and global communities. Each center focuses on a theme that is central to Santa Clara's distinctive mission as a Jesuit university and offers an educational environment integrating rigorous inquiry and scholarship, creative imagination, reflective engagement with society, and a commitment to fashioning a more humane and just world. Each center engages faculty and students from different disciplines as well as experts and leaders from the community through speakers, conferences, workshops, and experiential learning opportunities.

Miller Center for Social Entrepreneurship

The mission of Miller Center for Social Entrepreneurship is to accelerate entrepreneurship to end global poverty for the next generation. We fuse the entrepreneurial spirit of Silicon Valley with the University's Jesuit heritage of service to the poor and protection of the planet, catalyzing innovative, sustainable solutions to poverty, and guided by the UN Sustainable Development Goals. Through an array of programs, including our signature Global Social Benefit Institute (GSBI^®^) accelerator program and award-winning Global Social Benefit Fellowship (GSBF), the Center engages an international network of social enterprises, investment capital, and technical resources to build the capacity of the global social entrepreneurship movement. As a Center of Distinction at Santa Clara University, we offer faculty and students real-world case studies, distinctive curricula, and unique opportunities for research, fellowships, and internships --- advancing the University's vision of creating a more just, humane, and sustainable world with a uniquely Silicon Valley flavor. More information can be found at the Miller Center for Social Entrepreneurship website.

Ignatian Center for Jesuit Education

The Ignatian Center for Jesuit Education promotes and enhances the distinctively Jesuit, Catholic tradition of education at Santa Clara University, with a view toward serving students, faculty, staff, and through them, the larger community, both local and global. The Ignatian Center achieves this mission chiefly through four signature programs:

- The Bannan Forum provides year-long thematic programs, including academic events and scholarly activities that further the Jesuit, Catholic character of the University.
- Arrupe Engagement, a community-based learning program, places over 1,200 students each year with community partners, frequently in connection with an academic course.
- Thriving Neighbors extends the community-based learning experience by engaging teaching, scholarship, and sustainable development that links Santa Clara University with the predominantly Latino Greater Washington community in San Jose, CA.
- The Immersion programs offer students, during academic breaks, the opportunity to experience local, domestic, and international communities with little access to wealth, power, and privilege.
- The Ignatian Worldview program offers experiences grounded in the Spiritual Exercises of St. Ignatius to members of the community to encounter the spiritual sources of the Jesuit tradition.

Through these four programs, the Ignatian Center aspires to be recognized throughout Silicon Valley and beyond as providing leadership for the integration of faith, justice, and the intellectual life.

Markkula Center for Applied Ethics

The Markkula Center for Applied Ethics brings the traditions of ethical thinking to bear on real-world problems. Our mission is to engage individuals and organizations in making choices that respect and care for others. Beyond a full range of events, grants, and fellowships for the Santa Clara University community, the Center serves professionals in business, education, health care, government, journalism, and the social sector---providing training, programs, and roundtables that explore the ethical challenges in the field. In addition, we focus on ethical issues in leadership, technology, the internet, and immigration. Through our website and international collaborations, we also bring ethical decision-making resources to the wider world.

Faculty

Santa Clara University's emphasis on a community of scholars and integrated education attracts faculty members who are as committed to students' intellectual and moral development, as they are to pursuing their own scholarship. The University's 694 full-time faculty are distinguished teachers and scholars. Examples of awards received by SCU faculty include: Fulbright, National Science Foundation, National Institutes of Health, and National Endowment for the Arts. Additionally, our faculty are acclaimed authors, scientists, and theorists in their fields.

Student Body

Santa Clara University has a student population of 8,669, with 5,694 undergraduate students and 2,975 graduate students. The undergraduate population has a male-to-female ratio of 50-to-50, and about 51 percent of undergraduate students identify themselves as persons of color. About 55 percent of undergraduates are from California, with the others coming from throughout the United States and 27 countries. Seventy-eight percent of undergraduate students receive financial aid--based scholarships, grants, or loans. More than half (58 percent) of the undergraduate population live in University housing, with 96 percent of first-year students and 73 percent of sophomores living on campus. Students experience an average class size of 21, with 69 percent of classes having fewer than 20 students, and only 0.4 percent of classes having 50 or more students. The student-to-faculty ratio is 10.28-to-1.

The University's commitment to learning is expressed in the fact that 94.1 percent of first-year students advance to sophomore year, and the percentage of Santa Clara students who graduate is among the highest in the country. The four-year graduation rate for entering first-year students is 87 percent, with a five-year graduation rate of 90 percent and a six-year graduation rate of 91 percent.

Alumni

Santa Clara University has over 100,000 alumni living around the world--in all 50 states and more than 100 countries. More than half of the alumni live in the San Francisco Bay Area, where many are leaders in business, law, engineering, academia, and public service. These graduates connect with one another and the current campus community by engaging with over 45 different groups organized around identity, industry, and location.

Campus

The University is located on a 106-acre campus in the city of Santa Clara near the southern end of the San Francisco Bay in one of the world's greatest cultural centers. More than 50 buildings on campus house 15 student residences, a main library, a law library, two student centers, the de Saisset Museum, extensive performing arts and athletic facilities, and a recreation and fitness center.

Santa Clara's campus has the advantage of being located in Silicon Valley, a region known for its extraordinary visionaries, who have designed and created some of the most significant scientific and technological advances of our age. Silicon Valley is more than a location---it is a mindset, and home to more than 3 million residents and 6,600 science- and technology-related companies (not including San Francisco, which is located just an hour away).

Santa Clara's campus is well known for its beauty and mission-style architecture. Opened in 2013, the brick-paved Abby Sobrato Mall leads visitors from the University's main entrance to the heart of campus---the Mission Santa Clara de Asís. The roses and palm and olive trees of the Mission Gardens surround the historic Mission Church, which was restored in 1928. The adjacent Adobe Lodge is the oldest building on campus. In 1981, it was restored to its 1822 decor.

Academic Facilities

Amidst all this beauty and history are modern, world-class academic facilities. Students study and thrive in places such as the Joanne E. Harrington Learning Commons, Sobrato Family Technology Center, and Orradre Library, where individuals and groups can study in an inviting, light-filled, and open environment. Notably, the library features an Automated Retrieval System, a high-density storage area where up to 900,000 books and other publications can be stored and retrieved using robotic-assisted technology.

Another example of Santa Clara's excellent academic facilities is Lucas Hall, home of the Leavey School of Business. This modern 85,000-square-foot building houses classrooms, meeting rooms, offices, study spaces, and a café. Classrooms are equipped with state-of-the-art videoconferencing equipment as well as a multiplatform system to record faculty lectures for later review by students. Vari Hall (formerly Arts & Sciences), adjacent to Lucas Hall, is home to the Markkula Center for Applied Ethics as well as academic departments, classrooms, and a 2,200-square-foot digital television studio, regarded as among the best studios found on any campus nationwide.

Located near Vari Hall is the Schott Admission and Enrollment Services Building, a welcome center for campus visitors and home to several University departments. Opened in 2012, the lobby of this LEED Gold equivalent structure includes technology-infused exhibits that illustrate Santa Clara's Jesuit mission. Among other green features on campus are two solar-powered homes built in 2007 and 2009 for the U.S. Department of Energy's Solar Decathlon. Both homes now serve as laboratories for solar and sustainability technologies.

University Library & Learning Commons

The Santa Clara University Library & Learning Commons is a central hub for students to study and collaborate. The Learning Commons has a mix of both individual and group seating, group study rooms, computer labs, outside patios, as well as a cafe on the first floor. Throughout the year, the University Library hosts events, art exhibits, and late-night hours. Library staff are available to support student research. You can contact library staff in person at the Library Help Desk, by making an appointment online, or through our 24/7 chat service, "Ask a Librarian." The Library's Archives & Special Collections provides access to rare books, manuscripts, historic photos, and artifacts.

Library resources, which can be accessed within the Learning Commons and remotely, include an online catalog (OSCAR), over 250 general and subject-specific databases, research guides for many subjects and classes, and interlibrary loan programs. The library's collection includes books, ebooks, magazines, newspapers and journals,

streaming videos, and more.

Lucas Hall and Vari Hall

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Sobrato Campus for Discovery and Innovation

Opening in the Fall of 2021, this new 270,000 square-foot building is the home to the School of Engineering and many of the science departments of the College of Arts and Sciences. The building has classrooms, Innovation Zone, teaching and research labs, engineering and science shops, faculty and staff offices, collaboration spaces, and cafe. The Miller Center for Social Entrepreneurship and the Frugal Innovation Hub will also find their new homes in this new state of the art building. The central landscaped courtyard and rooftop terraces, provide excellent places for gathering, which makes this new building a great addition to the heart of the campus.

Student Life

Santa Clara has unique Residential Learning Communities (RLC) spread through nine on-campus residence halls; some with suite arrangements conducive to more informal living; others with traditional double rooms and large common bathrooms. Juniors and seniors can apply for townhouse-style living in the 138-unit University Villas across from the main campus. The most recent RLC, Cura, is located in Finn Hall and opened in the fall of 2019. The Cura RLC is a mini-suite style, co-ed community of first and second-year students, focused on the theme of cura personalis or care for the whole person.

The Robert F. Benson Memorial Center serves as a hub for campus life. The Benson Memorial Center offers dining services and houses the campus bookstore, student and administrative offices, lounges, and meeting rooms. The University's main dining hall, The Marketplace, resembles an upscale food court with numerous stations and options. For a more informal experience, The Bronco is the Center's late-night venue, serving beverages and pub-style food.

Another hot-spot for student life, the Paul L. Locatelli, S.J., Student Activity Center, includes a 6,000 square-foot gathering hall with a high ceiling that can accommodate dances and concerts as well as pre- and post-game activities. Designed with environmental sensitivity, the building is energy efficient and has daytime lighting controls and motion sensors to maximize use of natural light. For fitness-minded students, the Pat Malley Fitness and Recreation Center features a 9,500-square-foot weight training and cardiovascular exercise room, three basketball courts, a swimming pool, an adjacent outdoor workout area, sand volleyball, and basketball court, and other facilities to support the recreational and fitness needs of the campus community.

The campus includes many locations for quiet reflection, such as the St. Clare Garden, which features plants and flowers arranged into five groups to portray the stages of the saint's life. For campus members who want a more hands-on relationship with nature, the Forge Garden, SCU's half-acre organic garden, serves as a campus space for course research, service learning, and sustainable food production.

Athletics and the Arts

The importance of athletics to the University is evident everywhere on campus. Among the newest additions to Santa Clara's athletics facilities are the Stephen Schott Stadium, home field for the men's baseball team, and the state-of-the-art Stevens Soccer Training Center, funded by a gift from Mary and Mark Stevens. The gift also allowed Santa Clara to upgrade the stands in Stevens Stadium (formerly Buck Shaw Stadium), home to the men's and women's soccer programs, and build a plaza to celebrate Bronco sports---its past, present, and future. The plaza celebrates the history of Santa Clara University football as well as the legacy and future of men's and women's soccer at SCU. Bellomy Field, eight acres of well-lit and grassy playing fields, provides space for club and intramural sports, such as rugby and field hockey. Adjacent to Bellomy Field is the well-appointed women's softball field, which opened in 2013. The Leavey Event Center houses the University's premier basketball facility. Over the years, the Leavey Event Center has hosted nine West Coast Conference Basketball Championships.

The University recognizes the arts as a central part of life at Santa Clara University. The Edward M. Dowd Art and Art History Building opened in 2016, houses an integrated art history and fine arts program that is a center for inspiration, innovation, and engagement in the arts and art history in Silicon Valley. An important arts destination in the Bay Area, the Department of Art and Art History\s gallery exhibits artwork from a diverse group of established and emerging artists, and provides a dynamic teaching and learning resource for faculty, staff, students and the community. The de Saisset Museum, the University's accredited museum of art and history, presents changing art exhibitions throughout the year and serves as the caretaker of the University's California History Collection, which includes artifacts from the Native American, Mission, and early Santa Clara College periods.

SCU•Presents represents the University's commitment to the performing arts on campus, which includes performances at venues such as the Louis B. Mayer Theatre, the Fess Parker Studio Theatre, and the Music Recital Hall. The Mayer Theatre is Santa Clara University's premier theatrical venue, housing 500 intimate seats in either a flexible proscenium or thrust-stage setting. The Fess Parker Studio Theatre has no fixed stage or seating. Its black box design, complete with movable catwalks, provides flexibility in an experimental setting. The 250-seat Music Recital Hall provides a contemporary setting where students, faculty, and guest artists offer a variety of performances.

Transformative Experiences and Learning Resources

Santa Clara University is committed to the education of the whole person in the Jesuit and Catholic tradition, with a vision of developing people to be leaders of competence, conscience, and compassion. The undergraduate program is designed for students who seek an education that integrates Jesuit values and learning that prepares them for 21st-century challenges in a primarily residential setting. Varied educational experiences encourage students to value differing ways of knowing and being in the world, different forms of knowledge within established disciplines, and new knowledge as well as that which preceded it.

Santa Clara's concept of the "whole person" inevitably embraces our social nature. When he inaugurated Santa Clara's sesquicentennial year in 2000, Fr. Peter-Hans Kolvenbach, then superior general of the Society of Jesus, noted that "Tomorrow's 'whole person' cannot be whole without an educated awareness of society and culture with which to contribute socially, generously, in the real world." Affirming that the Jesuit educational standard must always "educate the whole person of solidarity for the real world," he explained: "Students, in the course of their formation, must let the gritty reality of this world into their lives, so they can learn to feel it, think about it critically, respond to its suffering, and engage in it constructively. They should learn to perceive, think, judge, choose, and act for the rights of others, especially the disadvantaged and the oppressed." Since then, Santa Clara University has revised the Core Curriculum, implemented a new Integrated Strategic Plan, extended the impact of its Centers of Excellence, and enhanced the University's cocurricular programs, all with the goal of educating students who will apply what they are learning to constructive engagement with the gritty realities of the 21st century.

The Santa Clara undergraduate program offers courses and other learning experiences whose content and patterns combine the acquisition and creation of knowledge with the quest for meaning and purpose. Santa Clara's learning environments encourage students to make connections across the Core Curriculum, the academic major, elective courses, and cocurricular experiences. Students are encouraged to relate their classroom learning with out-of-classroom learning through community-based education, Residential Learning Communities, Campus Ministry, a wide variety of student organizations, athletics and recreation, and other experiences. In a more general way, the undergraduate program nurtures students' ability to knit the intellectual, social, moral, spiritual, creative, and behavioral aspects of life into a coherent and meaningful whole.

The Core Curriculum

A university expresses its most basic values in its Core Curriculum that is part of an undergraduate education required of all students. Santa Clara's Core Curriculum explicitly integrates three traditions of higher education. As a Catholic university, it is rooted in the tradition of pursuing an understanding of God through the free exercise of reason. As a Jesuit university, it promotes a humanistic education that leads toward ethical engagement with the world. As a comprehensive American university committed to liberal education, Santa Clara seeks to prepare its students for intelligent, responsible, and creative citizenship. Reflecting these traditions, the Core Curriculum provides every undergraduate with the common learning that all students need to become leaders of competence, conscience, and compassion.

The distinctiveness of a Santa Clara education emerges in the Core Curriculum, both in its sense of purpose rooted in the University's traditions and in its commitment to a breadth of learning for the 21st century that complements and supports all majors. The Core Curriculum opens students to the study and practice of the arts, humanities, mathematics, technology, natural sciences, and social sciences. It educates students for interdisciplinary understanding and ethically informed participation in civic life.

Opportunities for experiential learning foster the development of compassion and attention to the ways human suffering can be alleviated. Reflecting the University's founding mission, the Core Curriculum includes a disciplined and critical reflection on the religious dimensions of human existence. In addition, because the Core Curriculum continually highlights the critical and compelling questions facing individuals and communities, the Core Curriculum supports students both in making professional career choices and in discerning their larger vocation---their life's purpose in the world.

Learning Goals: What will students learn in the Core Curriculum?

Because a liberal education in the Jesuit tradition is oriented toward particular ends, the Core Curriculum affirms a set of central learning goals. These goals are divided among three broad categories: Knowledge, Habits of Mind and Heart, and Engagement with the World.

Knowledge

To be prepared for well-informed engagement in society, students must comprehend the forces that have shaped the world they have inherited and the ways the world is interpreted and understood. They must also understand how they might transform the world for the better. The Core Curriculum deepens students' knowledge of the ideas and ways of knowing that emerge from the arts, humanities, and natural and social sciences.

Global Cultures: The intertwined development of global ideas, institutions, religions, and cultures, including Western cultures

Arts and Humanities: The production, interpretation, and social influence of the fine and performing arts, history, languages, literatures, philosophy, and religion

Scientific Inquiry: The principles of scientific inquiry and how they are applied in the natural and social sciences

Science and Technology: The formative influences, dynamics, social impacts, and ethical consequences of scientific and technological development

Diversity: Diverse human experiences, identities, and cultures within local and global societies, especially as formed by relations of power and privilege

Civic Life: The roles, rights, and responsibilities of citizens and institutions in societies and in the world

Habits of Mind and Heart

To contribute to a rapidly changing, complex, and interdependent world, students must develop ways of thinking, feeling, and acting that allow them to educate themselves for the rest of their lives with passion and purpose. By attending to the cognitive and affective dimensions of human experience, the Core Curriculum enables students to think more deeply, imagine more freely, and communicate more clearly.

Critical Thinking: The ability to identify, reflect upon, evaluate, integrate, and apply different types of information and knowledge to form independent judgments

Mathematics and Quantitative Reasoning: Analytical and logical thinking and the habit of drawing conclusions based on quantitative information

Complexity: An approach to understanding the world that appreciates ambiguity and nuance as well as clarity and precision

Ethical Reasoning: Drawing on ethical traditions to assess the consequences of individual and institutional decisions

Religious Reflection: Questioning and clarifying beliefs through critical inquiry into faith and the religious dimensions of human existence

Communication: Interacting effectively with different audiences, especially through writing, speech, and a second language

Engagement with the World

To engage with the world in meaningful ways, students need opportunities to explore and refine self-knowledge in relation to others. The Core Curriculum enhances students' understanding of the integrity of their own lives and the dignity inherent in the lives of others, especially the impoverished, suffering, and marginalized.

Perspective: Seeking out the experience of different cultures and people, striving to view the world through their eyes

Collaboration: The capacity to collaborate intellectually and creatively with diverse people

Social Justice: Developing a disciplined sensibility toward the causes of human suffering and misery, and a sense of responsibility for addressing them

Civic Engagement: Addressing major contemporary social issues, including environmental sustainability and peaceful resolution of conflict, by participating actively as an informed citizen of society and the world

Each course in the Core Curriculum addresses at least three of the learning goals listed above. Students have multiple opportunities to encounter, practice, and master each learning goal. In addition, specific learning objectives for each area of the Core Curriculum have been developed by faculty Core Curriculum committees. These learning objectives are associated with particular learning goals and describe the knowledge, skills, and values students will be able to demonstrate after completing the courses in the Core Curriculum. The learning objectives are posted on the Core Curriculum website.

Structure of the Core Curriculum

The structure of the Core features three phases designed to foster developmental learning and curricular coherence. The first phase, *Foundations,* consists of courses normally taken in the first year, introducing students to the processes and expectations for university-level education:

- Critical Thinking & Writing 1 and 2
- Cultures & Ideas 1 and 2

- Second Language (level required varies by major)
- Mathematics
- Religion, Theology & Culture 1

This phase helps students begin to set their own goals for learning, preparing them to make thoughtful choices in the Core Curriculum, their majors, and cocurricular activities.

The second phase, *Explorations*, offers students the opportunity to choose among courses that will expand and deepen their understanding of a broad range of subject areas needed for effective participation in contemporary life as well as satisfy requirements in students' majors. *Explorations* requirements:

- Ethics
- Civic Engagement
- Diversity: U.S. Perspectives
- Arts
- Social Science
- Natural Science
- Science, Technology & Society
- Cultures & Ideas 3
- Religion, Theology & Culture 2
- Religion, Theology & Culture 3

Students in Arts and Sciences and Business satisfy their Core *Foundations* and *Explorations* requirements with one course per Core area. Engineering students may satisfy more than one Core requirement with a single course when the course has been approved for both Core areas. Students who double major across schools/colleges must complete the Core requirements for each of their programs.

The third phase, *Integrations,* consists of these requirements:

- Experiential Learning for Social Justice
- Advanced Writing
- Pathways

These Core components are often embedded in courses students take to fulfill other requirements. These courses offer students the opportunity to examine the connections between courses in different disciplines, between the classroom and the wider community, and between their coursework and the professions.

Student progress through the Core Curriculum is not strictly sequential, from *Foundations* through *Explorations* to *Integrations*. While some courses (e.g., Critical Thinking & Writing 1 and 2; Cultures & Ideas 1 and 2; and Religion, Theology & Culture 1, 2, and 3) must be taken in sequence, all students have the opportunity to discover other sequences that are best for their individual undergraduate experience while engaging in coursework designed to address the shared set of learning objectives for each component of the Core Curriculum. Furthermore, the *Integrations* components of the Core Curriculum help students experience requirements not only as individual courses but as related educational activities that help structure and integrate their entire experience of University study.

The Core Curriculum provides more detailed information about each component of the Core Curriculum, the learning goals and objectives associated with each component, the core policies, and the courses from which students may choose. Students are encouraged to check their degree audit in eCampus regularly to determine their progress in the

Core Curriculum and other academic requirements.

The Core Curriculum and the College of Arts and Sciences

Students in the College of Arts and Sciences should consult Chapter 3 for the requirements for their majors. The Undergraduate Core Curriculum is designed to provide both a foundation and supplement to major requirements.

The Core Curriculum and the Leavey School of Business

Leavey School of Business requirements determine how students in the business school satisfy some Undergraduate Core Curriculum requirements---some Core Curriculum requirements are fulfilled with courses that also apply to the Business Core Curriculum. Students in the Leavey School of Business should consult Chapter 4 for a complete list of requirements for their majors and the school. The Core Curriculum website provides additional information.

The Core Curriculum and the School of Engineering

Students in the School of Engineering are allowed more flexibility in their completion of Core requirements. Students in the School of Engineering should consult Chapter 5 for a complete list of requirements for their majors and the school. The Core Curriculum website provides additional information for how engineering students complete their Core requirements.

Transfer Credit and the Core Curriculum

All students must satisfy the following Core requirements at Santa Clara University: Civic Engagement; Science, Technology & Society; Religion, Theology & Culture courses; Advanced Writing; Experiential Learning for Social Justice; and Pathways. For all other Core requirements, it is possible for students to earn credit by taking Advanced Placement (AP) or International Baccalaureate (IB) courses, or by completing college-level courses prior to enrolling at Santa Clara.

Transfer credit earned from courses completed before enrollment at Santa Clara is governed by two sets of rules: one for students admitted as first-year students and another for transfer students.

Students admitted as first-year students must satisfy Critical Thinking & Writing 1 and 2, Cultures & Ideas 1 and 2, and Religion, Theology & Culture 1, 2, and 3 with courses completed at Santa Clara University.

In contrast, students admitted as transfers are encouraged to complete Critical Thinking & Writing 1 and 2, and Cultures & Ideas 1 and 2, before their first quarter at Santa Clara. Information about possible substitutions for Critical Thinking & Writing and Cultures & Ideas courses is available in the Office of the Registrar.

Transfer students who enter the University with fewer than 44 units and incomplete CTW or C&I sequences must take both courses in the Critical Thinking & Writing 1 & 2 sequence and/or in the Cultures & Ideas 1 & 2 sequence. Students matriculating with 44 or more units of transferable college credit, which does not include any AP or IB test credit, and have completed the first course in the sequence, will complete the sequence with an advanced course (either Cultures & Ideas 3 or Advanced Writing, depending on the sequence).

Transfer students who enter the University with fewer than 44 units must take all three Religion, Theology & Culture courses in sequential order. Students matriculating with 44 or more units of transferable college credit, which does not include any AP or IB test credit, must complete two courses from the Religion, Theology & Culture sequence in any order.

Transfer students must declare their Pathways by the end of their third quarter at SCU. Transfer students in the College of Arts and Sciences and Leavey School of Business who matriculate with fewer than 44 units must take four courses (minimum of 16 units) toward the Pathways requirement. Transfer students in the College of Arts and Sciences and Leavey School of Business who matriculate with more than 44 units must take three courses (minimum

of 12 units) toward the Pathways requirement. All transfer students in the School of Engineering must take three courses (minimum of 12 units) toward the Pathways requirement. All seniors write an integrative essay to complete their Pathway requirement. More detailed Pathway guidelines are available on the Pathways website.

Transfer credit earned from courses completed after initial enrollment at Santa Clara may not be used to fulfill Core Curriculum requirements.

Students who transfer to Santa Clara University should consult Chapters 7 and 8 of this bulletin, as well as the chapter(s) relevant to their school or college.

The Residential Experience

In support of the residential nature of Santa Clara, and the University's commitment to integrated education, all unmarried, full-time undergraduate students are required to live on campus during their first and second years, unless the student has been approved for an exception or space is not available to accommodate this requirement.

The undergraduate residence halls at Santa Clara University are home to nine Residential Learning Communities (RLCs) established to foster integrated education within a community of scholars. By creating a culture in which students connect their academic experiences with their social and residential ones, the learning communities enhance the education of the whole person and deepen the connection between learning and living as responsible members of a community.

All entering first-year students, whether or not they live on campus, become members of one of nine theme-based Residential Learning Communities. Nonresident first-year students are given access to the residence hall in which their learning community is located so that they can participate fully in its programs. In the theme-based learning communities, resident directors and faculty directors coordinate with spirituality facilitators and student staff to encourage high academic achievement, effective community living, and individual development.

Students take at least one Core *Foundations* course in common with others in their learning community, enriching coursework and promoting the formation of study groups. Students also interact directly with faculty and staff and participate in theme-based co-curricular and extracurricular activities both on and off campus. Residential Learning Communities are primarily two-year communities, but some offer the opportunity for students to remain throughout their undergraduate careers.

University residence halls accommodate more than half of the undergraduate population in coeducational communities with common lounge areas, study rooms, kitchen and laundry facilities, and other services. Most residence halls offer traditional double-occupancy rooms with common bath facilities; some halls offer suites and apartment-style accommodations with bathrooms en suite. All residence hall rooms and suites are equipped with cable television connections, Ethernet, and wireless network service.

Campus Ministry

Campus Ministry is comprised of people who are committed to spiritual and personal growth. Its mission is to foster the spiritual life of our students and Campus Ministry values *Gathering* across difference, *Discerning* what is needed, and *Transforming* our hearts & communities.

- In support of the University's mission to the "development of the whole person," Campus Ministry offers a variety of programs as well as pastoral presence to support that development, particularly the spiritual and personal aspects.
- Campus Ministry provides a welcoming environment where faith may be explored, discovered, and developed through worship, retreats, small groups, and conversation.
- In addition to eight full-time campus ministers, there are also spirituality facilitators who are associated with campus ministry and who live in the university's residence halls.

What does Campus Ministry have to offer?

- **Worship:** Three Sunday liturgies in the Mission Church, daily noon Mass in the Mission, weekday Misas en español, weekly confession, University celebrations, prayer services, ecumenical (Christian) and interfaith services throughout the year.
- **Intercultural Ministry:** Campus Ministry sponsors three faith-based, student-led organizations dedicated to the spiritual wellness of BIPOC students: Beloved Community for Black students, SLC en español for Latinx students, and the API SLC for Asian Pacific Islander students. We also have intercultural celebrations in observance of events such as Día de los Muertos, Simbang Gabi, Las Posadas, la Virgen de Guadalupe, and Lunar New Year, as well as intercultural liturgies for heritage months.
- **Retreats:** Santa Clara students are offered a number of retreat experiences over the course of the academic year. Offerings include Search retreats, an Ignatian retreat, and a retreat for first-year students. Retreats are offered to persons of all faiths.
- **Prayer and reflection groups:** The Spiritual Life Community program places students in small groups for weekly prayer and reflection. In addition, there are Interfaith Dinner Discussions, weekly Breaking Open the Word (reflection on the lectionary readings), RLC small groups, and outreach to student athletes.
- **Leadership opportunities:** Students explore the values of "servant leadership" by serving and leading in all program areas, as volunteers, or in one of a number of paid internships.
- **Faith formation:** Campus Ministry offers several opportunities for students to learn, reflect, and grow in regard to their faith through Scripture reflection, forums, and presentations. This includes preparation for the sacraments of baptism, first Eucharist, and confirmation in the Catholic Church.
- **Social justice awareness and action:** Campus Ministry provides students with a variety of opportunities to live out a faith that does justice. Some key focus areas include participation in the annual Ignatian Family Teach-in for Justice, and community service at a local school.
- **Faith-based clubs:** In partnership with the Center for Student Involvement, Campus Ministry aids in the mentoring and support of all faith-based registered student organizations.
- **Sacred spaces:** Throughout campus, there are spaces that can be conducive for prayer, meditation, and reflection, such as the Mission Church, the Multifaith Sanctuary in St. Joseph's Hall, or the Meditation Room in Benson.

Is Campus Ministry for everyone?

Yes! We welcome the participation of anyone interested in spiritual and personal growth, regardless of faith tradition. This is a time for learning about yourself and our world, and we hope we can accompany you in that exploration and deepening of faith and spirituality.

Global Engagement

Global Engagement's mission is: *To ignite curiosity and foster understanding about the world and SCU's place in it by connecting students, faculty and staff through teaching learning and research.* In keeping with that mission, Global Engagement provides leadership, strategy and resources that support global diversity and learning at the University. Global Engagement units include Study Abroad and International Students and Scholars. Programs and initiatives include: international partnerships, international programs, the Global Engagement Global Innovation Fellowship, the Global Community Engagement Fellowship, Global Internships, UK Fulbright Summer Programs, Virtual Global Internships, the International Studies Minor, and Faculty Fulbright grants. In addition, the Associate Provost for International Programs works with departments across the University to develop global partnerships and programs, as well as to support university-sponsored international travel.

Study Abroad and Global Programs

Santa Clara University provides students with opportunities to participate in a range of global study programs including: semester or quarter-length study abroad; Global Explorations short-term faculty-led programs; the Global Engagement Innovation Fellowship; the Global Engagement Community Engagement Fellowship; Global Internships; UK Summer Fulbright and Virtual Programs. Programs are available during four terms: summer, fall, winter, and spring.

Semester and quarter-length study abroad programs during the fall, winter, and spring may be highly competitive and not all qualified applicants may be approved. Studying abroad during the summer is not competitive. Students may study abroad during the summer following their first, sophomore, or junior year. Students studying abroad during the fall, winter, or spring may do so once during their junior or senior year. Length of study abroad programs vary including short-term over the summer, fall quarter, fall semester, winter quarter, spring quarter, and spring semester. Courses completed in approved study abroad programs count toward credit requirements for graduation and may fulfill major, minor, and Core requirements with approval from the department or the Core director. Students from diverse backgrounds and first-generation students are strongly encouraged to apply to global programs and study abroad. The study abroad team in Global Engagement provides advising on programs and scholarships. For more information on Santa Clara's Study Abroad and Global Programs, see Chapter 6 of this Bulletin.

Career Center

The Career Center at Santa Clara University takes a forward-thinking approach to understanding our students' emerging learning needs, using innovative educational and employer engagement models to facilitate and accelerate our students' personal and professional development. The heart of the Career Center's work involves a passion for helping students find their fit, discover the intersection of their talents, and discover what brings them joy and what the world needs. The Career Center offers programs to assist students in identifying their areas of natural talent, including ways to develop and apply their strengths utilizing Gallup's Clifton Strengths for Students assessment and platform. Additionally, the Career Center offers a variety of programs and services each year, including career fairs, employer information sessions, industry treks, classes and workshops on career strategies, career and strengths assessments, résumé writing, LinkedIn labs, mock interviews, and appointments with career development specialists. Handshake, the Career Center's premier job and internship platform, connects students with over 14,000 employers by listing job and internship opportunities, including over 10,000 internships posted in 2017. Students are encouraged to engage with the Career Center early and often in their exploration of Silicon Valley's vibrant employment marketplace---with opportunities ranging from fellowships, internships, research opportunities, and full-time jobs. The Career Center also disseminates a range of information, resources, and tools to support students in their career exploration and preparation through its website.

Campus Recreation

Campus Recreation is committed to the Jesuit ideal of developing the whole person through a broad range of recreational, educational, and competitive opportunities that seek to enrich the lives of students, faculty, and staff. Informal recreation opportunities include drop-in use of the weight and cardiovascular equipment and gymnasium in the Pat Malley Fitness and Recreation Center, lap swimming in the Sullivan Aquatic Center, playing tennis at the Degheri Tennis Center, and throwing a football on Bellomy Field. Noncredit lifetime recreation fitness classes are also provided for an additional fee to all members. There are three options to take classes: a daily drop-in, a nine-class punch card, or an unlimited pass. During the first week of the quarter, all classes are free; beginning the second week, a pass is needed to attend the nine weeks of classes. There are over 20 classes available per week. Classes include yoga, kickboxing, cycling, and many more. Organized intramural sports leagues provide competitive opportunities in flag football, tennis, volleyball, badminton, basketball, soccer, table tennis, and softball against fellow current Santa Clara students, faculty, and staff. The 17 competitive club sports, open only to students, represent Santa Clara against teams from other colleges and universities. Current club sports include boxing, cycling, equestrian, men's ice hockey, men's and women's lacrosse, men's and women's rugby, men's and women's Ultimate Frisbee, men's and women's club volleyball, sailing, Shotokan karate, swimming, triathlon, and women's field hockey.

Intercollegiate Athletics

Santa Clara University supports a broad intercollegiate athletics program and is a Division I member of the National Collegiate Athletic Association (NCAA) and a founding member of the West Coast Conference (WCC). With 20 intercollegiate sports, the Broncos field teams in baseball, basketball, beach volleyball, cross-country, golf, rowing, soccer, softball, tennis, track and field, volleyball, and water polo. Santa Clara has won 60 WCC titles across eight sports and has been to 95 NCAA tournaments with a total of 18 Final Four appearances.

Santa Clara men's and women's soccer teams are perennially among the nation's elite, both having won national championships. As head coach for women's soccer for 29 years, Jerry Smith led the Broncos to 25 NCAA tournaments, including 10 Final Fours and the program's national title in 2001. Men's soccer has been to 20 NCAA tournaments and took home its national title in 1989 when current head coach, Cameron Rast, was a star on the team.

Women's volleyball also competes among the nation's best, having been to 16 NCAA tournaments, including 13 under current head coach Jon Wallace, who led the Broncos to the 2005 Final Four.

Men's basketball has also achieved national success, having been to 11 NCAA Tournaments, including the 1952 Final Four, and six other postseason appearances. NBA champion Kurt Rambis and two-time NBA MVP Steve Nash are among those to don the Bronco uniform. Santa Clara went to three NCAA tournaments during Nash's four years on the Mission campus, including an upset of second-seeded Arizona in 1993. The women's basketball program has experienced a recent resurgence. The Broncos made it to the 2016 Women's National Invitation Tournament (WNIT), the team's first postseason appearance in 10 years. Previously they had made 12 postseason appearances, including capturing the 1991 WNIT title.

Both basketball teams are under new leadership with Herb Sendek coaching the men's program and Bill Carr coaching the women's program. Sendek, one of the three youngest college coaches with 400 or more career victories, has led three Division I schools to 18 postseason appearances and earned three conference coach of the year awards. Carr has more than 200 career wins as a college head coach and earned two conference coach of the year awards.

Not to be outdone, Bronco baseball has been to 11 NCAA tournaments, including a trip to the 1962 College World Series title game. The team featured eight future major league players, including three who went straight to the major leagues. Overall, there have been 158 Broncos selected in the MLB draft.

One of the most famous Santa Clara baseball players, Randy Winn, started as Nash's backup as point guard on the basketball team before concentrating on baseball. Winn played in 13 MLB seasons, including five for the San Francisco Giants.

The Broncos are fortunate to play in some of the best facilities on the West Coast:

- The Leavey Center, home to basketball and volleyball, was renovated in 2002. The center recently built new locker rooms and installed state-of-the-art flooring.
- Stevens Stadium-Buck Shaw Field, home to soccer, was refurbished in 2015. The adjoining Stevens Soccer Training Center is a stylish 7,000-square-foot facility that features all the necessary amenities for both teams.
- Stephen Schott Stadium, home to baseball, is a state-of-the-art facility that opened in 2005. The venue contains an indoor hitting facility, 5,000-square-foot clubhouse, player's lounge, and meeting rooms.
- Santa Clara Softball Stadium opened in 2016 and contains an indoor hitting facility.
- Other facilities include Sullivan Aquatic Center, home to water polo, and Degheri Tennis Center.

SCU•Presents

SCU•Presents, the Performing Arts Center at Santa Clara University, is dedicated to the enhancement of arts education, where artists are central to our creative culture; the advancement of Arts for Social Justice (ASJ) programs, which create a catalyst for change in our society; and the presentation of a rich program of diverse professional artists and art forms for campus and the Silicon Valley community.

SCU•Presents supports Santa Clara University students, faculty, and staff in the performing and visual arts by promoting the arts through a variety of programs, furnishing resources to academic departments, and serving the local community by encouraging and supporting the creative expression of Silicon Valley artists by providing performance space for local arts organizations.

SCU•Presents Arts for Social Justice

SCU•Presents Arts for Social Justice is a collaborative and interdisciplinary initiative whose mission is to raise awareness about critical issues addressing the human condition through the creation and participation in a wide variety of art forms, both on and off campus, which fosters dialogue and action in the community.

ASJ Partnership Grant Program

ASJ supports students, faculty, and staff through grants by supplying the means and opportunity to be a catalyst for change through arts programming and projects.

ASJ Educational Program

ASJ brings professional artists to the campus and aims to enrich the educational experience found at SCU by enlightening, encouraging, and engaging the SCU community in dialogue.

ASJ Community Outreach

ASJ aims to create interactive, multidisciplinary arts programming to address issues of social justice, such as racism, homelessness, immigration, the environment, and bullying in our schools and community.

Center for Student Involvement

The Center for Student Involvement is invested in accompanying undergraduate students to find their place by providing a space to cultivate personal values, opinions, and beliefs. We inspire the development of courage, character, and understanding of others through:

- Empowering Broncos to have pride and find fulfillment through discovery, individuality, and teamwork
- Using experiences and relationships to build genuine engagement, rooted in Jesuit ideals that encompass integrity, reflection, and compassion
- Providing guidance to individuals in the development of their skills, knowledge, and self-awareness in order to become responsible contributors to society

Chartered Student Organizations

The Activities Programming Board (APB) provides social events, programs, and leadership opportunities. Students may get involved with APB as a staff member or a volunteer to plan concerts, comedy shows, speaking events, movies, and recreational trips for the student body.

The Associated Student Government of Santa Clara University (ASG) is the undergraduate student government organization, which is divided into the executive, legislative, and judicial branches. Positions are available on the executive cabinet, student senate, student judicial board, and University committees.

Into the Wild provides students of all skill levels with opportunities to get off campus and explore California's wilderness. Every week, Into the Wild organizes trips that include hiking, backpacking, camping, rock climbing, kayaking, rafting, surfing, and more. Into the Wild also aims to promote environmentally sustainable practices.

KSCU is a student-run, non-commercial radio station at 103.3 FM. The program format features primarily independent music, including indie rock, punk, ska, jazz, blues, and reggae. Students may get involved with the radio station as a staff member or as a volunteer DJ, office assistant, fundraiser, or sound technician.

The Multicultural Center (MCC) provides programming and support for students of diverse ethnic backgrounds and for the campus community. The MCC is an umbrella organization for nine clubs, including the Asian Pacific-Islander Student Union (APSU), Japanese Student Association (JSA), Barkada, Chinese Student Association (CSA), Igwebuike, Intandesh, Ka Mana'o O Hawai'i, MEChA-El Frente, and the Vietnamese Student Association (VSA). Students may get involved with the MCC in a staff position and in volunteer opportunities as a board member, club leader, or center assistant.

The Redwood is the University's annual yearbook capturing the pictorial history of each academic year. Students may get involved with the yearbook through staff positions and volunteer roles in writing, design, photography, and management. Students at large are encouraged to participate by contributing photos and writings.

The Santa Clara is the University's undergraduate weekly newspaper, serving as an informative and entertaining student-run campus publication. Students may get involved in a staff position or as a volunteer writer, photographer, or member of the business and advertising staff.

The Santa Clara Community Action Program (SCCAP) is a community-based, volunteer service organization that promotes social awareness, leadership for social justice, and compassion, and provides students with opportunities to apply their education to social service. Program opportunities fit into four categories: education and mentoring, empowerment, health and disabilities, and homelessness. Students may get involved through staff leadership positions and volunteer opportunities.

The *Santa Clara Review (SCR)* is the University's biannual literary magazine and draws submissions from students, faculty, staff, and artists outside the University community. The *Review* is committed to the development of student literary talent in editorial knowledge and creative writing skills. Students may get involved with the magazine in several staff positions and with opportunities to volunteer in the areas of poetry, fiction, nonfiction, art, and management.

Office for Multicultural Learning

The mission of the Office for Multicultural Learning (OML) is to coordinate, collaborate, and promote cross-campus programming and related initiatives for purposes of enhancing Santa Clara University's goals for diversity and inclusive excellence and providing a welcoming campus climate.

The Office for Multicultural Learning serves as a campuswide resource for information about multicultural issues and diversity. It offers multicultural learning experiences that educate the campus to respect and honor differences, promote dialogue and interactions among individuals from different backgrounds, and support collaborative efforts between the University and the local community.

University Honors Program

Mission and Vision

Vision: The honors program is a community of independent thinkers committed to the pursuit of academic excellence and global engagement.

Mission: The University Honors Program promotes intellectual excellence, critical thinking, and global engagement through seminar-style courses, difficult dialogues, and mentored independent research. Student-directed Honors programming builds community ties and fosters student leadership in the campus community and beyond.

General Information

The University Honors Program is the umbrella Honors Program for the entire University, providing Santa Clara's most academically accomplished students with intellectual opportunities based in small, seminar-style classes, especially in courses fulfilling Undergraduate Core Curriculum requirements. The UHP course of study combines broadly based, liberal learning with depth of specialization in a major field. UHP courses are designed to fit within the curricula of the humanities, natural and social sciences, business, and engineering. Possible majors include every undergraduate field in the University. With an average of 17 students each, seminars emphasize analytical rigor, effective expression, and interaction among professors and students. In the classroom and elsewhere on campus, UHP students enjoy a level of collaboration exceptional even at Santa Clara.

Notable Features

The University Honors Program features priority registration, housing in four of the nine RLCs, special lectures every quarter, a comprehensive yearlong senior thesis or project, and special fellowships and scholarships available only to Honors students.

How and When to Apply

Level I

The Honors Program admits 68 first-year students each fall into what is called Level I. Entry at Level I is either by invitation to admitted first-year students who are Presidential Scholars, Provost Scholars, or Johnson Scholar semifinalists, or by application. Level I includes a curriculum of nine Honors-level courses plus a senior thesis. Students must submit applications for Level I by May 1 the year before entrance into the University. Level I application forms are available on the UHP website.

Level II

First-year students who have established a grade point average of 3.65 after completing 32 units of study at Santa Clara may apply for admission to Level II. Applicants will be evaluated for entry into Level II based on academic performance, recommendation letters from two SCU faculty members, a written essay, and an interview with the director. Five Honors-level courses, plus a thesis, are required for students admitted at this level. Students must submit applications for Level II by the end of week 4 in the spring quarter of their first year. Level II application forms are available on the UHP website.

Students who transfer from another institution are encouraged to contact UHP as soon as they arrive on campus to be considered for admission to the program, based on their prior academic record.

Qualifications for First-Year Admission

Entering Honors Program students typically present a combined SAT in the upper 1400s or higher (ACT scores around 32 or higher), with a correspondingly high grade point average in college-prep courses.These considerations represent typical qualifications and do not guarantee admission to the program. The director may weigh other factors in determining a candidate's suitability for the limited number of places available each year. Acceptance recognizes high achievement in classes, standardized tests, service to school and community, leadership, and a desire for lifelong learning. For more information about courses offered through the University Honors Program, see Chapter 6.

LEAD Scholars Program

The LEAD (Leadership, Excellence, and Academic Development) Scholars Program provides first-generation college students admitted to the program with a foundation for their college success. The program forms a community of undergraduate peers, staff, and faculty dedicated to rigorous academic achievement, student leadership, and community engagement. The LEAD Scholars Program supports and challenges students throughout their time at SCU. The majority of LEAD Scholars join as incoming students and participate in LEAD Week, which takes place the week immediately preceding the beginning of the fall term. First-year students take ENGL 1A and 2A together, as well as two LEAD seminars, which focus on optimizing the transition to college. Transfer students take an upper-division seminar, which focuses on opportunities and challenges for transfer students. Current students can apply to join LEAD after they are enrolled at SCU and also take an upper-division seminar to maximize their SCU experience. The LEAD Scholars Program also requires students to take a vocational exploration course in their sophomore or junior year to help them prepare for life beyond graduation.

LEAD scholars can participate in the LEAD Council, a student leadership group; as well as a range of social and academic events, such as alumni networking, community-building events, and outreach to families and K--12 students. For more information about courses offered by the LEAD Scholars Program, see Chapter 6.

Office of Student Fellowships

The Office of Student Fellowships at Santa Clara was established in 2005 to provide the central management and administrative responsibility for advising students about a wide variety of highly competitive external fellowships, scholarships, awards, and prizes requiring University nomination, endorsement, or review. The Office of Student Fellowships mentors and advises students about their academic, service, and volunteer work in pursuit of the more than 25 named fellowships for which Santa Clara students are eligible (e.g., Rhodes, Marshall, Fulbright, Goldwater, Truman, and Udall) as well as provides direct support for potential candidates in the application process.

The Office of Student Fellowships responds to two principles of Jesuit education. The first, *cura personalis* (care for the whole person), reflects a deep respect for the individual and that person's potential. The second, *magis* (strive for excellence), calls on students to do their very best and always to strive for personal excellence. The Office of Student Fellowships helps extraordinary students do extraordinary things.

Peer Educator Program

Created in 1997 as an experiment in enhancing student learning, the Peer Educator Program is designed to facilitate and enrich the learning supported by undergraduate instruction at Santa Clara University. Peer educators are students who help a faculty member with the administration of a class. More specifically, the Peer Educator Program aims to:

- enhance and enrich the learning experiences of peer educators through close collaboration with a faculty member.
- enhance and enrich learning in undergraduate courses, especially lower-division University and school core courses.
- contribute to the residential learning community initiative to increase awareness of the close relationships between experiential and classroom learning and cultivate a frame of mind conducive to lifelong learning.
- support faculty initiatives to develop and implement pedagogies that further other goals of the program and of the University.

Domestic Public Sector Studies Programs

The Public Sector Studies Program at Santa Clara University offers an introduction to the areas traditionally known as public policy, public administration, public affairs, and urban planning. It is designed to provide a closer look at the creation, implementation, and analysis of public policies, and the operation of government, public, and nonprofit organizations. The program also provides an excellent foundation for students who want to pursue graduate studies in public policy or public administration and an alternative perspective for students who wish to pursue public law.

Opportunities for Firsthand Study

Through the Public Sector Studies Program in the Department of Political Science, students have the opportunity to participate in public sector internships, the Washington Semester Program, and the Panetta Institute Congressional Internship program. These programs offer preparation and training for students interested in working at the city, county, state, or federal level of government, in a public agency or nonprofit organization, or considering graduate-level studies in related fields.

Internships

Perhaps the best way to understand is by doing---students participating in public sector internships not only observe what happens in the "real world," but they are able to take part as well, gaining invaluable experience and knowledge. Placements in public sector internships have included the San Jose mayor's and City Council members' offices, district offices of members of Congress and the California Legislature, government relations departments of high-tech corporations, public law offices including the Santa Clara county public defender and district attorney, political campaigns, and nonprofit organizations. Many students complete their internships with excellent employment prospects.

The Washington Semester Program

In the Washington Semester Program, students combine coursework taken at American University with hands-on experience via internships. In the past, SCU students have interned at the White House, the Justice Department, the FBI, interest groups, broadcast news stations, various nonprofit organizations, and offices of members of the U.S. House of Representatives. The Washington Semester Program offers students the opportunity to live, study, and work in our nation's capital for one semester along with students from other U.S. states and from countries abroad. Numerous programs of study are available, including American politics and U.S. foreign policy. Students participating in the Washington Semester Program earn up to 24 quarter credits for one semester of study. Grades and units received at American University will count toward the student's SCU grade point average and the course requirements for the department and the University, when appropriate.

The Panetta Institute Congressional Internship Program

The Leon and Sylvia Panetta Institute for Public Policy at California State University, Monterey Bay, founded by Santa Clara political science alumnus Leon Panetta, offers an opportunity for students to gain an inside look at the legislative branch of the U.S. federal government and Washington, D.C., politics. This congressional internship begins with a two-week course at California State University, Monterey Bay, where students work directly with seasoned veterans

examining the legislative process and its functions. The remaining two-and-a-half months of the internship are spent in Washington, D.C., working on Capitol Hill in the office of a member of the California congressional delegation. One exceptional Santa Clara University student is chosen each year for this fully subsidized internship.

Eligibility

To be eligible to participate in one of these public sector studies programs, students must have completed at least 88 quarter units of credit by the date that the program of study begins, must not be on academic or disciplinary probation, and must be in good financial standing with the University. Students must also meet grade point average and other eligibility requirements for the specific program.

For more information about the Public Sector Studies Program, contact the Political Science Department website.

Academic Advising and Learning Resources

The John B. Drahmann Academic Advising and Learning Resources Center coordinates academic support services for undergraduate students. University advisors in the Drahmann Center work closely with faculty and staff in the Residential Learning Communities, the academic deans' offices, the Cowell Center, the Career Center, the Office for Multicultural Learning, the Center for Student Involvement, and the Office of Student Life to ensure that academic advising and other academic support services are integrated for the benefit of students.

Santa Clara University follows a developmental advising model based on a close student-faculty advisor relationship intended to assist students with achieving their educational, career, and personal goals through the use of the full range of institutional resources. The Drahmann Center offers training for faculty advisors through new faculty advisor workshops and ongoing training to keep faculty advisors current on University policies and available resources. The Center also collaborates with other areas to enhance advising support for all students, such as providing technology support for the peer advising program in the School of Business.

The Drahmann Learning Resources Center offers drop-in group tutoring as well as individual tutoring appointments. Consultations and workshops on learning strategies, study skills, and time management provide students with additional support tailored to their specific needs. The Center also provides advising outreach for first-year and undeclared students and collaborates with the LEAD Scholars Program to ensure that first-generation college students are fully informed about the range of support services available to all students.

Pre-Health Sciences Advising

Santa Clara University has an excellent reputation for preparing students for careers in the health sciences. Most incoming students tend to be focused on either allopathic medicine or dentistry, but a much broader spectrum of careers can be equally or more attractive, including osteopathic medicine, physical therapy, optometry, pharmacy, physician assistant, nurse practitioner, public health professional, and others. A Santa Clara education provides ample opportunity to acquire the academic foundations in natural science required by medical schools, and its broad liberal arts Core Curriculum also serves to develop the communication, personal interaction, and analytical skills needed both during medical school and in one's subsequent medical practice.

Although Santa Clara does not have a premed major, the courses prescribed by the Council of Education of the American Medical Association can be incorporated into several academic majors. In addition, many students become more skilled and competitive by enrolling in two or three upper-division science courses, often but not exclusively in biochemistry, genetics, and human physiology, which are helpful in preparing for the Medical College Admission Test (MCAT). The combination of Core Curriculum requirements with the University's focus on community involvement and issues of diversity will prepare students well for the MCAT 2015, with its greater emphasis on social, economic, and psychological determinants of health. Students should visit the Pre-Health Advising website and maintain regular contact with the pre-health sciences advisor throughout their undergraduate years for assistance with adjusting to college academic rigor and social life; developing an appreciation of the wide array of available health care careers; achieving balance between academics, social life, work, health community volunteering, and internships; selecting relevant entrance examinations; and applying to graduate health-science programs.

Pre-Law Advising

Santa Clara University provides a wide range of opportunities for undergraduates to build a strong pre-law foundation. Early in their undergraduate program, pre-law students should consult not only with their major advisor but also with one of the designated pre-law advisors. Consultation with a pre-law advisor familiarizes the student with the rigors of law school, the practice of law, the burden of law school debt, and the means to best secure employment as an attorney. Advisors will help formulate a program to prepare students for the complexity of the application process, including preparation for the Law School Admission Test (LSAT). There is no specific major or curriculum required to

qualify for law school admission. Successful law school applicants come from a diversity of majors, such as anthropology, philosophy, communication, political science, physics, English, history, biology, and economics. However, to successfully prepare for the LSAT, students are advised to select courses that deepen reading comprehension and promote logical reasoning. Law school admissions officers generally recommend undergraduate preparation by selecting a major that demands discipline, analytical ability, research skills, close reading of texts, creativity, verbal skills, and precision in written and oral work. The departments of philosophy and political science offer a pre-law emphasis within the major (in philosophy, it is also available within the minor). Elective courses also provide valuable training and breadth of academic and analytical experience. Some elective courses strengthen specific abilities, while others provide perspective on legal issues and topics. Recommended electives are located on the website.

Pre-Teaching Advising

Santa Clara University is accredited by the California Commission on Teacher Credentialing to offer professional preparation for prospective elementary school, middle school, and senior high school teachers. The Department of Education in the School of Education and Counseling Psychology offers graduate programs for the multiple-subject credential for elementary grades and the single-subject credential for secondary grades, both with a cross-cultural language and academic development emphasis. The teaching credential program at SCU is combined with a Master of Arts in Teaching (MAT) degree. Students interested in teaching should consider completing an interdisciplinary minor in urban education offered through the College of Arts and Sciences.

The Future Teachers Project (FTP), formerly known as the Eastside Future Teachers Project, works with students from traditionally underrepresented groups throughout Silicon Valley and the greater Bay Area, who are interested in becoming teachers. Through innovative outreach and support programs, the goal is to develop leaders who will make an immediate impact on their communities. FTP scholars are generally recruited during high school and once at SCU, are considered for the FTP scholarship, which contributes to undergraduate studies and the credential/MAT program. The FTP is managed through the Child Studies Program.

For more information, see Chapter 3, Child Studies Program.

The Writing Center

The HUB Writing Center offers drop-in writing support to graduate and undergraduate students as well as workshops in public speaking, revising and editing, developing personal statements and cover letters, grammar basics, Pathway essay writing, and workshops for students for whom English is not their native language. The writing center also offers students the opportunity to become HUB writing partners and to participate in independent studies or research projects.

Information Services

Technology Support

Computing Services

Undergraduate students are supported with a variety of computing services. Students will receive an SCU Username that provides access to multiple digital services via MySCU. Students also have access to ubiquitous high-speed wired and wireless networks for campus resources as well as connection to the internet via the University's 10 GB connections. Students may use the network to access their Gmail and GSuite account, Camino learning management system, SmartPrint, Zoom web conferencing, Portfolium, Qualtrics, endpoint protection/antivirus software, and for wireless access.

SCU email is used by the University as one of the communication channels to send official notifications to undergraduate students, and is also used as a frequent communication tool between and among faculty and students. Students are therefore urged to use their SCU email address as their primary email. Students who opt to utilize other email services are advised to check their SCU email periodically to avoid missing important communications.

The University provides over 150 PC and Mac workstations in the Learning Commons with a variety of software packages to support both general computing needs and multimedia production.

Free guest wireless access is also available for students' visiting friends and family.

eCampus

Students have access to administrative information and services at all times through eCampus. eCampus services include the ability to enroll in classes, review financial accounts, maintain personal information like addresses and phone numbers, request housing, buy parking permits, and more. Student employees can also use eCampus to view their paycheck, fill out their timesheet, and more.

Information Security

The Information Security Office protects the University's information assets and ensures that students have access to all of the information resources they need. This office provides advice to students on how to best protect themselves, as well as ensuring that the University is protected with modern defense capabilities against malware, virus outbreaks, and other attacks.

AV/Media Support

Located on the first floor of the Harrington Learning Commons, Media Services offers a broad range of audio, digital video, web, graphics, and multimedia equipment, resources, and services. All students have access to equipment and services for class use, class-related projects, and cocurricular use. Media Services supports technology in classrooms, conference rooms, and campus events spaces; the Camino Learning Management System, Zoom web conferencing, and Portfolium ePortfolio applications; multimedia and digital video production; poster printing for academic needs; and SCU's cable TV system using Comcast to serve residence halls.

Technology Help Desk

Located on the first floor of the Harrington Learning Commons, staff are ready to help you with your computing and network needs. During the academic quarter, the Help Desk is typically open seven days a week. Specific hours and contact information, as well as summer and intersession hours, can be found on the SCU Technology website.

Technology Training

Technology Training delivers software training and support to SCU students. Services include classes, office hours, and Web tutorials that are tailored to help users learn software applications used in teaching, learning, and scholarship. More information about the services offered through Technology Training can be found on the Technology Training website.

University Library

The Santa Clara University Library is a central hub for students to study and collaborate. The library has a mix of both individual and group seating, group study rooms, computer labs, outside patios, as well as a cafe on the first floor. Throughout the year the library hosts events, art exhibits, and late-night hours. Library staff are available to support student research---you can contact library staff in person at the Library Help Desk, by making an appointment online, or through our 24/7 chat service, "Ask a Librarian."

Library resources, which can be accessed within the library and remotely, include an online catalog (OSCAR), over 250 general and subject-specific databases, research guides for many subjects and some specific classes, and LINK+ and an interlibrary loan program. The library's collection includes books, ebooks, magazines and journals, streaming videos, and more.

International Students and Scholars

International Students and Scholars (ISS) is part of the Global Engagement unit, which provides leadership, strategic planning, coordination, and resources for expanding intercultural and international initiatives across campus to enhance global diversity.

The ISS team provides international students with academic, intercultural and immigration advising on F-1 and J-1 visas, as well as career integration and advising for academic internships and post-graduation employment. ISS also supports international students in other visa categories who wish to change their status to F-1, as well as international students who are Global Nomads: U.S. passport holders living abroad.

As soon as international students confirm their attendance at SCU, ISS: a) provides initial documents to help students obtain their visa to attend SCU; b) helps students prepare for travel and arrival to the US; and c) advises students on academic planning, planning for internships, and post-graduation employment.

All international students participate in International Student Welcome (ISW), a robust orientation program for international students that supplements the new student orientation program. Global Engagement and ISS provide regular programming to support international student success. Examples of recent programming include immigration workshops, Employment Bootcamp, the U.S. Cultural Conversations series, the iExchange program, and the international graduation reception.

Undergraduate non-degree international students are admitted to programs at the University through Global Engagement and should refer to complete information here: https://www.scu.edu/globalengagement/international-students/non-degree-international-students/.

Office of Accessible Education

The Office of Accessible Education formerly "Disabilities Resources" has been designated by the University to ensure access for all undergraduate and graduate students with disabilities to all academic programs and campus resources. The goal is to support students with medical, physical, psychological, attention deficit, and learning disabilities, to participate fully in campus life, its programs, and activities. Emphasis is on growth and individual achievement through the provision of academic accommodations, support services, self-advocacy skill training, and disability-related educational programming for the campus community. Reasonable accommodations are provided to minimize the effects of a student's disability and to maximize the potential for success. A student may voluntarily register with the Office of Accessible Education by completing the online registration form and providing documentation of their disability, after which proper accommodations will be determined and implemented by the University.

The Cowell Center

The Cowell Center promotes a holistic approach to students' physical, emotional, psychological, and interpersonal well-being. The Center's counseling and medical staff are available when students believe that their well-being is being compromised in any way. Through Counseling and Psychological Services (CAPS), Student Health Services (SHS), Santa Clara University Emergency Medical Services (SCU EMS), and Student Health Insurance, the Cowell Center has a wealth of health and wellness resources to support students as they navigate the academic rigors at Santa Clara University.

Counseling and Psychological Services

Counseling and Psychological Services (CAPS) is staffed with psychologists who strive to promote, enhance, and support students' emotional and interpersonal well-being through a range of mental health services offered within a safe and confidential environment. Individual counseling, couples counseling, group counseling, and psychoeducational programs are available. In counseling, students work on a wide range of psychosocial and developmental issues such as depression, anxiety, interpersonal problems, disturbed sleep, eating behaviors, acculturation, academic motivation, homesickness, family concerns, intimacy, and sexuality. All students are eligible for up to 10 counseling sessions per academic year; the first six (6) sessions are free, with a nominal fee assessed for sessions seven (7) through ten (10).

When CAPS is closed, an after-hours emergency and suicide crisis hotline (408-279-3312) is available to students along with Santa Clara's unique crisis webpage featured on the Ulifeline website.

Student Health Services

Student Health Services (SHS) is staffed with a physician, physician assistant, nurse practitioners, registered nurses, and medical assistants. A psychiatrist, registered dietitian, and physical therapy assistant are available on a part-time basis. SHS provides high-quality services, such as primary medical care, physicals, diagnosis and treatment of illness and injuries, immunizations, gynecological examinations, a limited in-house pharmacy, and medical referrals to specialists when needed. Medical visits to the Cowell Center's Student Health Services range from $10 to $50 per visit for all students. Visit fees are in addition to all other nominal associated fees, such as the cost of medications, lab/blood tests, and supplies. Visits to Cowell Center's Counseling and Psychological Services range in cost from no charge to $100 per visit for all students. For further information, see the Cowell Center website. When SHS is closed, an advice nurse is available by phone for students both on campus (extension 4880) and off campus (408-554-4880). A volunteer student emergency medical group, SCU Emergency Medical Services (EMS), is also available to take care of medical emergencies on campus. The health center is closed from mid-June to mid-August.

SCU Emergency Medical Services

SCU Emergency Medical Services (EMS) is a student-run organization that is based out of the Cowell Center. These students are known as Emergency Medical Technicians (EMTs) and offer emergency medical services to SCU students from 5 p.m. to 8 a.m. every day during fall, winter, and spring quarters.

Student Health Insurance

All students are requested to complete a pre-entrance health history prior to arrival at the University, and are required to maintain health insurance coverage while enrolled at the University. Students will be charged for University health insurance unless they complete an online waiver verifying their own comparable insurance each academic year.

Kids on Campus

Kids on Campus, the University childcare and preschool program for children between 6 weeks and 6 years of age, is available for faculty, staff, students, and alumni. The staff at Kids on Campus provide a loving, creative, and safe learning environment designed to enhance the physical, mental, and social growth of each child through a "learning through play" philosophy.

College of Arts and Sciences

Dean: Daniel Press

Associate Deans: John Birmingham, Linda Garber, Katherine Saxton

Senior Assistant Deans: Kathleen Villarruel Schneider, Rafael D. Ulate

The goals of the College of Arts and Sciences are to foster a learning community committed to addressing the fundamental problems of society with a spirit of inquiry, mutual respect, and intellectual excitement and to prepare students to understand and appreciate a broad range of peoples and cultures so they may exercise moral leadership in a pluralistic world. In this way, the college is central to Santa Clara's Jesuit, liberal education.

With more than 1,500 courses in the humanities, arts, social sciences, and natural sciences, the college offers an inclusive and welcoming academic environment providing:

- A common educational experience for all undergraduate students through the University's Core Curriculum
- Majors in 33 subject areas
- Departmental and interdisciplinary minor programs
- Opportunities for advanced study in a student's particular area of interest

All undergraduate students at the University explore the sciences and liberal arts through the University's Core Curriculum that challenges them to develop open and critical thinking, to communicate effectively, to work with complex methods of inquiry, to understand diverse cultures and peoples, and to appreciate the demands of ethical decision making. Those who select majors or minors in the college have the opportunity to develop specialized knowledge and skills in areas of concentration that reflect their personal interests and talents. Students are encouraged to use elective courses to pursue particular interests beyond their chosen major. In addition to selecting individual courses, students have the opportunity to organize their electives around minors and emphases in many departmental and interdisciplinary programs throughout the college.

The College of Arts and Sciences offers a variety of student-faculty research opportunities and ongoing mentoring relationships in which students work closely with faculty members in the creation of knowledge or original artistic works. These opportunities include research assistantships throughout the college in the arts, humanities, and natural and social sciences.

Undergraduate Degrees

The College of Arts and Sciences confers the degree of bachelor of arts in art history, chemistry, classics, communication, English, French and Francophone studies, history, individual studies, Italian studies, music, philosophy, religious studies, Spanish studies, studio art, theatre arts, and women's and gender studies. The college also confers the bachelor of science in anthropology, biochemistry, biology, chemistry, child studies, computer science, economics, engineering physics, environmental science, environmental studies, ethnic studies, individual studies, mathematics, neuroscience, physics, political science, psychology, public health science, and sociology.

Requirements for the Bachelor of Arts and Bachelor of Science

To qualify, students must complete a minimum of 175 quarter units of credit, at least 60 of which must be upper-division, and satisfy the requirements of the undergraduate Core Curriculum and the major. There are no additional college requirements.

Minors in the College of Arts and Sciences

The College of Arts and Sciences offers minors in African American studies, anthropology, Asian American Studies, art history, biology, chemistry, classics, communication, computer science, creative writing, dance, economics, English, ethnic studies, environmental studies, French and Francophone studies, history, Italian studies, Japanese studies, Latina/o/x Studies, mathematics, music, philosophy, physics, political science, professional writing, public health, religious studies, sociology, Spanish studies, studio art, theatre, theatre design and technology, and women's and gender studies. Descriptions of the minors and associated requirements can be found in the appropriate department or program section of this chapter.

In addition, the college administers interdisciplinary minors in Arabic, Islamic, and Middle Eastern studies; Asian studies; biotechnology; Catholic studies; international studies, Latin American studies; medieval and renaissance studies; musical theatre; sustainability; and urban education. Descriptions of the interdisciplinary minors and the associated requirements are provided in the Interdisciplinary Minors and Other Programs of Study section at the end of this chapter.

Department of Anthropology

Professors Emeritus: Mary Hegland, George Westermark

Dean's Executive Professor: James J. McKenna

Professors: Michelle Bezanson, Lisa Kealhofer

Associate Professors: Mythri Jegathesan, Robin Nelson, Lee Panich (Department Chair)

Assistant Professors: Ryan B. Anderson, Matthew Kroot

Lecturers: Tanya Chiykowski-Rathke, Samantha Grace

Inclusive Excellence Postdoctoral Fellow: Veronica Miranda

The Department of Anthropology offers a degree program leading to a bachelor of science in anthropology. A solid undergraduate foundation in anthropology secures the analytical skills needed to undertake professional degrees in anthropology, business, law, public health, social services, or provides a foundation for embarking on a number of other professional careers. The department also offers a minor, several emphases, and an honors thesis option.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in anthropology must complete the following departmental requirements:

- ANTH 1
- ANTH 2
- ANTH 3
- ANTH 4, 5, 6, or 7
- ANTH/ENVS 50
- ANTH 110
- One of the following statistics courses: MATH 8, BIO 160/ENVS 110, PSYC 105, POLI 101
- One of the following Methods 1 courses: ANTH 111, 112, 113
- One of the following Methods 2 courses: ENVS 116/116a, PSYC 105, BIO 160/ENVS 110 (in addition to MATH 8), or an additional ANTH Methods I class
- ANTH 114
- ANTH 198
- Six upper-division courses selected from the following three categories (all three categories must be represented):
    - Archaeology (ANTH 140--149, 173, 186, 189)
    - Biological Anthropology (ANTH 130--139)
    - Cultural Anthropology (ANTH 150--179, 184, 185, 187, 188)
- Attending six Anthropology Seminars is required for majors

Emphasis Programs in Anthropology

Anthropology majors have the option of completing a special emphasis program to complement their majors. The emphasis is not a narrow specialization but reflects competence in the subfields of the discipline. Completion of a special emphasis program will be noted on student transcripts with the approval of the department chair.

The emphasis in applied anthropology prepares students to use anthropological knowledge to address critical human issues in careers outside academia. Through coursework and related internships, students will gain a better understanding of how anthropological knowledge and skills can be used in occupations related to health and medicine, international development, environment, government, business, education, immigration, and poverty. The emphasis in archaeology focuses on a deeper understanding of the human past and how it is studied. This is a possible course of study for majors with an interest in employment in cultural resource management or graduate study in archaeology. The biological emphasis provides in-depth training in the field of biological anthropology. Students will acquire intellectual breadth and depth with regard to the interdisciplinary nature of anthropology and the biological and cultural interactions that have influenced human evolution and modern human diversity.

Requirements for the Minor

Students must fulfill the following requirements for a minor in anthropology:

- ANTH 1 or 2
- ANTH 3
- One additional lower-division anthropology course
- ANTH 110
- Two approved upper-division anthropology courses
- Four anthropology seminars

Lower-Division Courses

1. Introduction to Biological Anthropology

Using an evolutionary framework, we examine how past and current human variation is measured, our place in nature, human genetics, human and nonhuman primate biology and behavior, the primate and hominin fossil record, and the origin and meaning of human biological and behavioral variation. Students gain experience in biological anthropology methods, data analysis and interpretation, and the theoretical frameworks that guide our understanding of what it means to be human. Laboratory 15 hours. (4 units)

2. Introduction to Archaeology

How do archaeologists understand the past? This course examines the methods, theories, and analytical techniques that archaeologists use to study the past and interpret ancient cultures. Selective survey of human cultures over time in different regions of the world. Laboratory 15 hours. (4 units)

3. Introduction Cultural Anthropology

This course provides an introduction to the subject matter, research methods, and applications of cultural anthropology. Its purpose is to help students understand how different human groups think and live, how they cope with life's demands and expectations, and how they make sense of the world. In order to gain additional experience

with diverse cultural groups, students are required to participate in off-campus Arrupe partnerships. (4 units)

4. Vanished Peoples and Lost Civilizations

"Popular archaeology" is addressed by examining past societies, human migrations and cultural contacts, and ancient human behavior and technologies. Ideas and assumptions found in movies and other popular media will be evaluated in light of current archaeological data and theory. (4 units)

5. Popular Culture and Bioanthropology

From *King Kong* to *Clan of the Cave Bear*, students examine popular culture interpretations of biological anthropology. After reviewing the history of biological anthropology, we analyze popular avenues (film, cartoons, newspapers, fiction) through which the public has been informed about human variation, the human fossil record, primate behavior, and human genetics. (4 units)

6. Screen Time: Culture, Film, and Media in the 21st Century

This course uses anthropological perspectives and methods to explore how popular media shapes, creates, and transforms our understanding of culture, identity, and social relationships in the 21st century. This course is not just about culture, difference, and identity, but also about how we learn about and intersect with cultural and identity formation processes through various forms of media. Throughout the course we will use feature-length films as starting points for thinking critically about culture, gender, class, race/racism, economics, ideology, family, kinship, and violence. We will also be critically discussing how film and media shape our perceptions and understandings of the complex, global, and highly socially mediated world in which we live. One of the core premises of this course, following Bird and Godwin (2006), is that we cannot simply assume that media "speaks for itself." Building upon the work of cultural and media anthropologists, and the late Neil Postman, the primary goal of this course is to push students to take a more active, and anthropologically informed, approach to the highly mediated world in which we live. (4 units)

7. Field Course in Archaeological Methods

On-site archaeological field research with practical experience in the basic techniques of excavation and data analysis. Students will gain experience in mapping, stratigraphic excavation, and field processing of finds. Laboratory component will include community outreach, cataloging, and relevant special analyses. (4 units)

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address measuring humanity, peace and violence, social change in the Middle East, migration and transnationalism, and other topics. Successful completion of C&I I (ANTH 11A) is a prerequisite for C&I II (ANTH 12A). (4 units each quarter)

50. World Geography

This course explores world geography through examination of contemporary global problems including poverty and inequality, political conflict, environmental crises, and natural disasters. Special emphasis on economic development challenges in developing countries and on interconnections among diverse places and events. Also listed as ENVS 50. (4 units)

Upper-Division Courses

110. Anthropological Theory

This course provides a historical survey of the development of different areas of anthropological theory. By exploring original and secondary writings, students are able to understand how theoretical frameworks differ from each other and how anthropology has evolved as a discipline. Required for majors and minors in anthropology. Students should take this class no later than the winter quarter of their junior year. (5 units)

111. Archaeological Methods

Introduction to the techniques of discovery and analysis that archaeologists have found useful in research. Special attention to sampling techniques in survey and excavation. Laboratory analysis will consider techniques for measuring parameters of past demography, diet, craft specialization, and exchange. (5 units)

112. Anthropological Methods

This course examines research procedures, ethics, and theoretical issues associated with anthropological practice. Skills and methods of (qualitative and quantitative) research design and analysis are explored in readings and exercises. Required for majors in anthropology. Prerequisites: ANTH 1, 2, 3, with grades of C- or better, or special permission of the department chair. Students should take this class no later than spring quarter of their junior year. (5 units)

114. Senior Capstone

An in-depth writing intensive senior seminar in anthropology. Topic will change annually. Required for majors in anthropology. Prerequisite: ANTH 112 with a grade of C- or better, or special permission of the department chair. Students should take this class during the winter quarter of their senior year. (5 units)

130. Primate Behavioral Ecology

This course focuses on the theoretical frameworks that guide primate behavioral studies, including in-depth empirical exploration of adaptation, comparative primate behavior, ecology, field studies, and classification. Critical evaluation of core concepts in primate behavioral ecology as well as data collection, presentation, and interpretation in primate field studies are reviewed. (5 units)

132. Paleoanthropology

How do we know what we think we know about human evolution? Students explore this question by reading primary literature, examining fossil and comparative data, and exploring current technology for interpreting hominin evolution. Class reviews evolutionary theory and the varying applications of paleoanthropological analysis to understanding past and present variation. (5 units)

133. Human Nutrition and Culture

Study of the biocultural interactions that shape dietary patterns and nutritional status of modern humans. Focus on the evolution of the human diet and nutritional requirements; the basic principles of human nutrition and nutritional assessment; and the social, technological, and political factors that influence the nutritional health of human societies today. (5 units)

134. Health, Disease, and Culture

This course emphasizes the study of health and disease from biocultural and ecological perspectives; the influence of culture on the ways people explain and treat illness, stress, and healing; and the complexities of health care delivery in pluralistic societies. (5 units)

135. Human Development and Sexuality

Examination of evolutionary and biocultural aspects of human growth, development, and sexuality throughout the life cycle. Special emphasis on how various cultural, economic, and political factors influence norms of sexual behavior in different societies. Also listed as PHSC 135. (5 units)

136. Forensic Anthropology

Using physical remains to learn what we can about the age, gender, and other characteristics of deceased people, including their nutrition, exposure to diseases, experience with serious accidents, and causes of death. (5 units)

137. Evolutionary Medicine

This course examines how evolution has impacted human health and addresses questions such as: How are biology and human health related? How can an evolutionary perspective help us treat diseases? Topics from pregnancy to cancer and diet are examined through the lens of what we know about both human evolution and evolutionary processes. (5 units)

138. Biology of Poverty

This course will use a biocultural perspective to study the relationship between poverty and human biology. Using scientific articles, ethnographic texts, pieces from journalistic outlets, and popular science writings, we will learn how cultural understandings of the causes and effects of poverty have shifted over time. We will also examine how individuals navigate the challenges of living in poverty, sometimes exerting their own agency despite having minimal access to resources. Over the course of the quarter, we will turn a critical eye towards discussions of the "poverty problem" or "culture of poverty". We will develop a more nuanced understanding of the conditions that create and reinforce these inequities, and how they give rise to biological feedback mechanisms that influence individual health outcomes. (5 units)

140. Food, Culture, and the Environment

Exploration of the history and impact that food choices have made on human societies and the environment. Several foods that are staples in the world today, such as sugar, pepper, and various grains, have significantly affected the environment, patterns of land use, economies (both local and global), cuisine, and the meaning of meals and food sharing. Class topics illustrate the regional and historical impacts of plant and animal domestication, the industrial revolution, and industrial agriculture on people and the environment. Case studies highlight the cultural significance of foods, food choices, and agricultural economies. Also listed as ENVS 136. (5 units)

142. Environmental Archaeology

How archaeologists use environmental data to understand past human societies. Discussion topics include issues of human evolution, complexity, symbolism, social interaction, and technology. Discussion of the data and arguments offered for the role of environments in creating and shaping cultures---how environments and people shape each other. (5 units)

143. Warriors, Wives, and Women: Gender in Archaeology

From passive wives to wild warriors, this course interrogates the role of women (and men) in the past. At the center of our discussions will be the variation in gender experiences across time and space. Through archaeological case studies from the United States and across the world, we will explore how religion, class, orientation, and ethnicity impact the lived experience of gender. The course focuses on the diversity of approaches to gender and gender roles in Native American cultures, including adaptation and resistance to colonial power structures. (5 units)

145. Historical Ecology

Historical ecology investigates the long-term relationships between cultures and their environments. In this class, these relationships are viewed through the lens of technologies. In addition to examining case studies from around the world, students will integrate various types of historical and scientific data including archival documents, maps, and land use information, to learn how to reconstruct the historical ecology of the Santa Clara Valley. Also listed as ENVS 137. (5 units)

146. Anthropological Perspectives on Colonial California

Examines the Spanish and Russian colonization of California, with particular emphasis on their interactions with Native American societies. Ethnohistorical, documentary, and archaeological evidence will be used to explore European and Native American experiences in colonial California and the impact of European colonialism on communities today. (5 units)

147. Archaeology: From Farm to City

The world and people have changed radically in the last 10,000 years with the domestication of plants and animals and the development of cities and states. We examine archaeological evidence in different regions of the world (after 12000 BCE) to understand how and why these transformations occurred. (5 units)

148. Historical Archaeology

Introduction to the discipline of historical archaeology focusing particularly on colonial and U.S. contexts. Explores the history of underrepresented groups, from women and children to slaves, and colonial or contact interactions. A wide range of data sources used by historical archaeologists to aid in interpreting the past are explored. (5 units)

149. Virtual Santa Clara, History & Culture

Examination of public archaeology and museum studies in the digital age. Research on the cultural history of the SCU campus and the creation of content for online exhibits---a "virtual museum"---focusing on Santa Clara's unique cultural heritage. (5 units)

150. Religion in Culture and Society

This course examines a wide range of religious beliefs, symbols, and practices that humans use to bring order and meaning into their existence. It explores theoretical interpretations of religion, the universality of myths and rituals, and the manner in which religious traditions are integrated into the fabric of daily lives and into international politics. (5 units)

152. Power and Society

Cross-cultural examination of political behavior in a range of human societies and the effects of social, cultural, and environmental factors on political organization. Religion and politics, the role of women in politics, ethnic competition, secret societies, political ritual and ceremony, and the effects of colonialism and economic change. Special emphasis on the relationship between local communities and national governments. (5 units)

153. Anthropology of Music

An intellectual history of ethnomusicology. Approaches and theories from anthropology, musicology, folklore, religious studies, linguistics, critical theory, and gender studies will be explored in order to interrogate music's relationship to culture, power, and practice. Also listed as MUSC 130. (5 units)

154. Environmental Anthropology

Survey of the theories and methods used to examine the complex and dynamic interactions between humans and their physical environment (past and present). An emphasis is placed on the relationships between human cultural systems and ecological contexts by focusing on how humans use and transform ecosystems and how such interactions shape social, political, and economic institutions. Topics include political ecology, environmental justice, ecotourism, and natural resource exploration. (5 units)

155. Anthropology of Conflict and Violence

Examines sources and responses to conflict in varied social and cultural contexts. Emphasis on application of negotiation, mediation, and arbitration in different fields. (5 units)

156. Anthropology of Muslim Peoples and Practices

Examination of the variety of religious experiences, activities, and interpretations, and the place of Islam in current social and political life such as community organization, local-level politics, governments and political resistance, women's roles and gender, and contact with the West. Discussion about underlying reasons for the resurgence of Islam and effects for Muslim peoples and societies. (5 units)

157. Family, Kin, and Culture

Examines the ways in which kinship and family life can be organized; causes and consequences of different family patterns; and how families differ across cultures, over time, and among different groups in the United States. Also listed as WGST 155. (5 units)

158. Applied Anthropology

Application of anthropological knowledge to contemporary human problems. Topics range from the introduction of new forms of economy through international development to anthropologists' work in refugee resettlement, environmental conservation, public health, social justice movements, and others. Also examined are the ethical dilemmas that emerge from applying anthropological techniques and data. (5 units)

159. Globalization and Cultural Change

This course examines the cultural and economic changes brought about by globalization. It prepares students for traveling abroad and provides a reflective space for those who have returned. By critiquing corporate global control, cultural hegemony, and the illusion of unlimited economic growth, this course provides an alternative view of environmental sustainability and global justice. (5 units)

160. The Global Coast: Adaptation, Risk, and Resilience on the Edge of the Sea

This course uses anthropological perspectives to explore humanity's histories and challenges on the world's coasts. Using a range of literature from the social and natural sciences, this course examines issues ranging from coastal urbanization, climate change risk and adaptation, coastal conservation, and pollution. Beginning with an overview of

humanity's relationship with and adaptation to the global coast, this class focuses on contemporary problems that coastal communities face around the world (e.g., sea level rise adaptation). Students will use both quantitative and qualitative frameworks to assess human-coastal relationships, with an eye toward addressing contemporary problems and global challenges. (5 units)

170. Women, Gender, and Sexuality

Cross-cultural examination of the roles, statuses, sexuality, and gender constructions of females and males through monographs, films, and guest speakers. Exploration of factors affecting the lives of women and men, such as domestic and public realms of activities, contested identities, political and economic factors, social change, religion, family, and socialization. Also listed as WGST 144. (5 units)

172. Anthropology of Aging

Examination of aging and the elderly in a range of human societies. Emphasis on social change, gender, and social and geographic mobility, as well as social, political, and cultural differences in understanding how the elderly adapt to, and cope with, the modern world. (5 units)

173. Roman Studies: Rocks, Coins, and Pots

This course provides an introduction to the study of the Roman world, with emphasis on the use of quantitative and qualitative research methods. Students will be introduced to the disciplines of archaeology, numismatics, epigraphy, and ceramic studies, and within these disciplines will examine and compare different methods of evaluating ancient evidence and data sets. Through utilizing different types of evidence and modes of analysis, this course introduces students to the society, culture, history, and economy of the Roman world from the Iron Age to Late Antiquity. Also listed as CLAS 172 and HIST 107. (5 units)

174. Religion and Ethnography

This course examines what makes ethnography an ideal method for studying religion and religious cultures. How might participant-observation round out knowledge from research into written text and religious/social history? How does ethnography assist researchers in understanding the relationship between religious rites and kinship? In addition to learning about the "classic" in religion and ethnography, students may explore subdisciplines, such as visual ethnography and theological anthropology. The course discusses how the study of religion and ethnography might contribute to careers in journalism, filmmaking, and others. In hands-on independent projects, students practice taking field notes, writing ethnographic reports, and sharing their work with classmates. Prerequisites: intermediate-level course (SCTR 20--99, TESP 20--99, or RSOC 20--99) or another course approved as fulfilling the intermediate-level Core requirement and completion of 88 quarter units. Also listed as RSOC 116. (5 units)

180. Study of Selected Cultures

Examination of the social life, culture, and institutions of geographic areas and culture zones not otherwise covered in ANTH 181--188 regional studies course series. (5 units)

184. Religion and Culture in Latin America

This course studies the relationship between culture and religion in Latin America, and how they have influenced each other over time. The class is designed in three stages. First, it examines the pre-Columbian world of religious beliefs and practices as embodied in the Maya, Aztec, and Inca cultures. Secondly, it explores how three centuries of Iberian colonialism and Catholic hegemony shaped the values, cultural traditions, and institutions of the region as reflected in the appearance of syncretistic forms of religion of European, African, and indigenous roots. Lastly, it studies the

changes that have occurred in the last two centuries as the continent has gradually evolved from Catholic control to religious pluralism. Special attention will be given to the impact of Vatican II on the church in Latin America, the rise and role of liberation theology, and the emergence of Evangelical and Pentecostal Protestantism. (5 units)

185. Peoples of Latin America

An overview of the environmental, cultural, economic, and political diversity of Latin America. Students study the region's physical geography, its pre-Columbian past, and the impact of the European invasion on its native peoples. In addition, this course examines pressing regional problems of widespread poverty, diminishing natural resources, and the relation between religion, culture, and politics. (5 units)

186. Mesoamerican Prehistory

A survey of the prehistoric cultures of Mesoamerica from earliest human occupation to European colonization. Examines the origins of agriculture, village life, and the rise and fall of state-level societies through the work of archaeologists and epigraphists. Consideration given to the ecological adaptations, social organization, and belief systems of the Aztecs, Toltecs, Maya, and the inhabitants of Teotihuacan. Comparison of Mesoamerican societies with ancient societies around the world. (5 units)

187. Middle East: Gender and Sexuality

Examination through monographs, novels, guest speakers, and films of the situations and activities of Middle Eastern women in a variety of geographical and class settings. Topics include gender, sexuality and the body, women in economic and political process, family and kinship, war, and revolution. Women and gender symbolism as related to politics, development, social change, and religious resurgence. Also listed as WGST 120. (5 units)

188. Middle East: Culture and Change

Examination of people's lives, social organization, and change in the Middle East through archaeological evidence, ethnographies, film, and novels. Emphasis on political culture, the fate of tribal peoples and peasants under modernizing nations, women in society and gender symbolism, contact with the West, Islam and religious resurgence, and revolution. (5 units)

189. First Americans: U.S. Archaeology

What do we know about the indigenous inhabitants of the North American continent before European and Euro-American conquest and occupation? This course will examine the politics and archaeological practicalities of answering this question. Students will be introduced to the deep history and great diversity of Native societies across North America, from debates about the timing, means, and meaning of the first Americans to the varied and complex forms of Native American political organizations before and during the founding of the United States of America. (5 units)

190. Advanced Seminar in Anthropology

Seminars for juniors and seniors on selected topics in anthropology. By permission of the instructor only. (5 units)

194. Peer Educator in Anthropology

Peer educators in anthropology work closely with a faculty member to help students understand course material, think more deeply about course material, benefit from collaborative learning, feel less anxious about testing situations, and/or help students enjoy learning. By permission of the instructor only. (1--2 units)

195. Field Course in Anthropological Methods

On-site anthropological field research in any of the subfields of anthropology. Practical experience in the basic techniques of observation and field analyses. By permission of the chair and instructor only. (5 units)

197. Field Course in Primate Behavioral Ecology

On-site anthropological primatological field research with practical experience in the basic techniques of observation and field data analysis. Special attention to community ecology, proposal writing, data collection, data analysis, and presentation. Students conduct independent data collection to produce a completed scientific paper for which they are the sole author. (5 units)

198. Anthropology Proseminar

Opportunity for students to work and conduct anthropological analyses in community agencies, museums, government agencies, and political or industrial organizations. May be repeated for credit with approval of the chair. Required for majors in anthropology. Students must receive approval from their advisor prior to registration. Internship placements must be completed prior to fall quarter of senior year. Field schools and other research experiences may substitute for internship placements with approval. Students must enroll in the internship class during the fall of their junior or senior year. (5 units)

199. Directed Reading/Directed Research

Intensive reading in areas not emphasized by the department. Independent research on specific topics not fully covered in departmental courses. May be repeated for credit with approval of the chair. Written departmental approval necessary prior to registration. (5 units)

Department of Art and Art History

Professors Emeriti: Brigid S. Barton, Samuel R. Hernandez

Professors: Kathy Aoki, Kelly Detweiler, Kathleen Maxwell, Kate Morris

Associate Professors: Blake de Maria (Harold and Edythe Toso Professor), Don Fritz, Takeshi Moro, Andrea Pappas (Department Chair), Ryan Reynolds

Assistant Professors: Heather Clydesdale, Qiuwen Li

Senior Lecturers: Renee Billingslea, Pancho Jiménez

Lecturers: Ryan Carrington, Jessica Eastburn

The Department of Art and Art History offers degree programs leading to the bachelor of arts in two undergraduate majors, art history and studio art, with courses in both disciplines fostering a thorough understanding of the history and practice of art. Department faculty encourage interdisciplinary connections with the Santa Clara community through course offerings that fulfill a wide range of college and undergraduate Core Curriculum requirements, as well as offering courses through the University Honors Program.

Art History

Art history majors at Santa Clara examine the broad range of human visual expression across space and time, developing understandings of the meanings and purposes of the visual arts, including their historical development, roles in society, and relationships to other fields in the humanities. Students benefit from a program distinguished by excellent teaching and mentoring, challenging coursework, and opportunities for study abroad, peer educating, and student internships at local and Bay Area institutions. The art history major features numerous opportunities for personal and professional growth that help students learn to think critically and communicate clearly about works of art. Advanced art history majors are encouraged to participate in our annual Art History Symposium and the Art History Research Paper Competition. The art history major develops the following skills: knowledge acquisition, critical thinking, analysis of visual objects and textual sources, advanced research and writing skills, and sophisticated oral presentations. The cultural understanding and intellectual skills developed through the program enable art history majors to pursue a variety of interests in a wide spectrum of fields and professions, including graduate work in art history.

Studio Art

Studio art majors develop comprehensive skills that help prepare them for graduate study or careers in either the fine or commercial arts. Faculty members emphasize the development of conceptual and technical competence, as well as critical analysis of the student's own work and that of others. By graduation, every studio art major develops a body of original artwork to be exhibited in a senior show for display in the department gallery space. In conjunction with the senior show, students are required to articulate an artist's statement reflecting their own engagement with the creative process, in conjunction with their senior show. Studio art majors enjoy opportunities to present their artwork in regional conferences as well as in student-organized exhibitions on and off campus. At the end of each academic year, students are encouraged to submit their work to the Annual Student Art Exhibit, which is judged by an outside professional in the field of art. The Department also oversees merit-based scholarships, which are awarded to outstanding studio art majors with junior standing.

Requirements for the Majors

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in art history (ARTH) or studio art (ARTS) must complete the following departmental requirements:

Major in Art History

Students must complete 15 courses (13 ARTH and 2 ARTS):

- Four courses from ARTH 11A, 12A, 21--81
- Two lower- or upper-division ARTS courses
- ARTH 100 (preferably at the end of sophomore year)
- Five upper-division ARTH courses
- Two additional lower- or upper-division ARTH courses
- ARTH 196 (senior year)

Note: Of the courses labeled ARTH, at least two must be taken from courses numbered 21--22 or 101--139 (pre-modern era). Of the five required upper-division ARTH, one must be from 101--139, one must be from 141, 142, 146, or 150--179 (global area), and one must be 106, 112, or 120 (advanced writing in the discipline). Only 4 units of ARTH 98/198 or 4 units of ARTH 194 may count toward the major. Studio art or art history courses taken during a term of study abroad may be applied to no more than half of the requirements for a major in art history. No more than three courses may be taken abroad to fulfill the five upper-division ARTH course requirements.

Major in Studio Art

Students must complete 17 courses (13 ARTS and 4 ARTH):

- Four foundation ARTS courses (recommended for first- or second-year students; transfer students should meet with the department chair for individualized advising):
  - ARTS 30
  - ARTS 74
  - One two-dimensional foundation course from ARTS 32 or 72
  - One three-dimensional foundation course from ARTS 33, 63, or 64
- Six additional ARTS courses (excluding ARTS 194 or ARTS 198), three of which must be upper division
- Four ARTH courses:
  - One lower-division ARTH course from: ARTH 11A or ARTH 12A (but not both), ARTH 21 or ARTH 22 or ARTH 23 (preferred), (recommended for first- or second-year students)
  - ARTH Global (upper or lower division)
  - ARTH 185
  - ARTH 106, 112 or 120 (satisfies advanced writing and fulfils pre-modern breadth requirement)
- ARTS 100 (recommended in junior year)
- ARTS 190 (must be taken fall of senior year)
- ARTS 196 (senior year, winter and spring quarters; two-quarter class with grades assigned at end of spring quarter)

Note: Studio art courses taken during a term of study abroad may be applied to no more than half of the requirements for a major in studio art. Only one ARTH course may be taken abroad to fulfill the requirements for a major in studio art. Students who wish to receive credit toward a major or minor for studio art courses taken at affiliated study abroad programs must be able to document their work for review by members of the department's faculty.

Requirements for the Minors

Minor in Art History

Students must complete 7 courses (6 ARTH and 1 ARTS):

- Two courses from ARTH 11A, 12A, 21--81
- One studio ARTS course
- Three upper-division ARTH courses (excluding ARTH 194 and 199)
- One additional lower- or upper-division ARTH course (excluding ARTH 194 and 199).

Note: Only 4 units of ARTH 98/198 may count toward the minor. Studio art or art history courses taken during a term of study abroad may be applied to no more than half of the requirements for a minor in art history. Only one upper-division course may be taken abroad to fulfill the three upper-division ARTH course requirement.

Minor in Studio Art

Students must complete 7 courses (6 ARTS and 1 ARTH):

- One two-dimensional course from ARTS 30--72 (or approved upper-division equivalent)
- One three-dimensional course from ARTS 33, 63, or 64 (or approved upper-division equivalent)
- Four additional ARTS courses (upper-division preferred, excluding ARTS 194)
- One lower- or upper-division ARTH course (excluding ARTH 11A or 12A and ARTH 194)

Note: Study abroad courses in art history are not accepted for the minor in studio art. Approved studio art study abroad courses may be applied to no more than half of the requirements for a minor in studio art.

Lower-Division Courses: Art History

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address China on the Silk Roads, Venice: Crossroads of the World, and other topics. Successful completion of ARTH 11A: C&I I is a prerequisite for ARTH 12A: C&I II. (4 units each quarter)

21. Introduction to the Arts of Ancient and Medieval Europe

A foundation course for the art history program focusing on visual analysis and the ancient and medieval world. Topics may include the relationship between Greek art and politics, Imperial Roman art, propaganda, Pompeian wall painting, early Christian art, the origins of Islam, and the function and culture of pilgrimage in the Middle Ages. Not open to students who have taken Art, Power, and Propaganda . Also listed as CLAS 52. (ARTH 11A or HNRS 11A). (4 units)

22. Art in the Age of Exploration: Introduction to Early Modern Europe

Few periods in the history of art inspire greater reverence than the Renaissance. But why? What enables objects such as Michelangelo's *David* or Leonardo's *Mona Lisa* to become pop culture icons in the 21st century? This survey course of European visual culture from approximately 1348 to 1648 seeks to answer this question through the study of canonical works; artists such as Raphael, Titian, and Dürer; and artistic centers including Venice, Florence, Rome, and Paris. Other topics for discussion may include the patronage and production of art; the visual construction of gender identity; the relationship between art, science, and religion brought about by humanist study; and the impact of global trade and exploration on the development of European visual culture. Not open to students who have taken Art, Power, and Propaganda (ARTH 12A or HNRS 12A). (4 units)

23. Art and Revolution: Europe and the United States, 18th--20th Centuries

Introduction to the visual culture of modern Europe and the United States from Louis XIV to the present. Explore the origins of modern art through political, technological, and artistic revolutions, from royal patronage to Pop, Neoclassicism to Neo-dada, as well as Impressionism, Surrealism, and Abstract Expressionism. Fulfills the Studio Art program modern or contemporary emphasis course requirement. Not open to students who have taken Art, Trade, and Cultural Exchange (ARTH 11A). (4 units)

24. From Damascus to Dubai: A Survey of the Visual Culture of the Middle East

From the majesty of the Dome of the Rock in Jerusalem to the awe-inspiring heights of the Abu Dubai skyline, few regions boast a history of ambitious art and architecture as long, and as impressive, as the Middle East. Yet, this region is likewise one of the most misunderstood. This survey course focuses on the rich and diverse visual culture of the region from the 7th century CE to the present day. Topics for discussion include early mosque architecture, scientific developments in medieval Baghdad, the rise of the Ottoman Empire, the garden city of Isfahan, European colonialism in North Africa, and contemporary art and architecture. Fulfills the Studio Art program global emphasis course requirement. (4 units)

25. Indigenous Visions: Introduction to the Arts of the Americas

Introduction to the indigenous arts and architecture of North, South, and Central America from prehistory to the present including the Olmec, Aztec, Inca, Native American Great Plains, and Southwest. Themes include indigenous concepts of time and space; the vision quest; warfare and blood sacrifice; art and the sacred. Lecture and discussion, plus a visit to a local museum. Fulfills the Studio Art program global emphasis course requirement. (4 units)

26. Art! Making China Modern

On the long march from dynastic regime to global power, artmade China modern on its own terms. In the 19th century writers, politicians, and revolutionaries looked to Japan and Europe to learn how art could renovate the nation. After WWI, leftists weaponized woodcuts and folk arts to combat the forces of Japan and the U.S.-backed Nationalists. At the dawn of the People's Republic, art reorganized society and fueled radical conformity. As China globalized, artists cashed in on burgeoning markets, grappled with legacies, sounded alarms about oppression, and questioned "The Chinese Dream." Fulfills the Studio Art program global emphasis course requirement. (4 units)

30. The Built Environment

The Built Environment examines the human factors responsible for shaping the spaces in which we live and work. The course focuses on architecture from around the globe, from the onset of the industrial age to the present day. This approach situates architectural design and decisions within the context of sustainability and social responsibility, with

the goal of gaining a greater understanding of the impact of architectural decisions for future generations. Students will visit local sites of architectural merit and will learn Neatline, a geospatial mapping software, to present their research findings. Fulfills the Studio Art Program modern or contemporary emphasis course requirement. (4 units)

66. Fabricating Nature in East Asia

Across East Asia, artists and designers have fabricated landscapes to marshal natural forces for human-centered purposes. In China, visualizing Confucian and Daoist principles through paintings and gardens ordered society and cultivated individuals. In Korea, artists interpreted imported religions and philosophies through indigenous beliefs, giving birth to True View painting and *seowon* rural campuses. Japan's native Shintō steered Buddhism in new directions, culminating in Zen and *roji* tea gardens. Today, these religions, philosophies, aesthetics, and practices remain vigorous, exerting themselves in art and landscape design worldwide, offering solutions to environmental challenges, and alternatives to the isolation of modern life. Fulfills the Studio Art program global emphasis course requirement. (4 units)

74. Basic Digital Imaging

Hands-on introduction to computer imaging for the beginning level student. Fundamental instruction in raster-and vector-based imaging software to manipulate photographs and create original imagery. Exploration of both fine art and commercial uses of digital media. Recommended as a foundation course to be taken prior to other computer art courses. (4 units)

81. Modern Indian Art

This course will take you through a survey of modern Indian art in the 20th century. We will see how Indian artists constantly engaged with and responded to modernity and the modernisms they encountered in the global art world, while working through late-colonial, post-independence and contemporary Indian contexts. Early modern artists of the Bengal School of art grappled with the question of how to be "modern" and "Indian" in their search for an "Indian-ness" devoid of Western elements, while post-independence artists of the Progressive Artists Group could freely work with both Western modernism and Indian idioms toward self-expression. We will see how this trajectory moves into contemporary art and also contextualize feminism by reading about the works of women artists from varied backgrounds. Fulfills the Studio Art program global emphasis course requirement. (4 units)

97. Special Topics

Occasional courses in selected art historical topics. May be repeated for credit. (4 units)

98. Internship/Practicum

Individual projects in conjunction with professional visual arts agencies. May be repeated for credit but no more than 4 units may count toward the major or minor. Prerequisite: Written proposal must be approved by on-site supervisor, art history faculty member, and department chair. (2--4 units)

Upper-Division Courses: Art History

100. Art History Proseminar

"What is the history of art history? What does it mean to think like an art historian?" To answer these questions, we will examine the origins of the discipline and its current methodologies. Close textual analysis with writing and discussion. Required of all art history majors, preferably at the end of sophomore year. Prerequisites: Two art history courses, one of which must be upper-division, or permission of instructor. (5 units)

104. Greek Art and Architecture

Examination of Greek art from the Archaic through the Hellenistic periods. Developments in architecture, sculpture, vase painting, and wall painting will be addressed in their cultural context. Cross-listed as CLAS 116. (5 units)

106. Art and Architecture of the Roman Republic and the Early Empire

Chronological survey of artistic development in Republican and Imperial Rome. Related issues include the influence of Greek and Etruscan art, the relationship between political ideology and public art programs, and the impact of improved materials on building design. (5 units)

110. Early Christian and Byzantine Art

Christian art and architecture from the catacombs in Rome through the early 14th century in Byzantium. Highlights include the Constantinian monuments of Rome, Justinianic Ravenna and Constantinople, iconoclasm, and the Macedonian "Renaissance." (5 units)

112. The Art of the Book

Covers select developments in the illustrated book between the 5th and 15th centuries CE. Topics for discussion may include the earliest preserved classical and religious codices, Anglo-Saxon manuscripts, Carolingian and Ottonian manuscript illumination, Romanesque and Gothic manuscript illumination, and Byzantine manuscript illumination. (5 units)

114. Early Medieval Art

Art and architecture in Western Europe from the early Middle Ages to circa AD 1000. Hiberno-Saxon, Carolingian, and Ottonian art discussed in their respective political, intellectual, and cultural contexts. (5 units)

120. Keeping up with the Medici: Fame and Family in Renaissance Florence

What makes someone a "household name"? Is it talent, beauty, connections, or simply shrewd marketing? While fame, fortune, and celebrity may seem like modern phenomena, the cult of personality was equally prominent in Renaissance Florence. As is the case today, money played a key role in the arts. This course focuses on the ways in which the Medici family, through their social, financial, and spiritual support, transformed the city of Florence from an Italian commune with limited natural resources into the center of the European culture. And in doing so, transformed the notion of the artist from that of mere craftsman to superstar. Additional topics of discussion include the influence of the capitalist economics on artistic production, domestic art perceptions of the nude figure in religious paintings, the relationship between art and science, and the writings of Machiavelli. Cross-listed as HIST 125. (5 units)

121. Venice and the Other in the Renaissance

Concentrates on the art and architecture of the Venetian Republic from approximately 1400--1650 CE, specifically the visual culture produced by and/or associated with ethnic and social groups excluded from the highest echelons of Venetian society. Areas of inquiry include Muslim merchants living in the city, construction of the Jewish ghetto, Ethiopian servant community, courtesan culture, convent life, the material culture of exorcism, witchcraft, and dwarfism. (5 units)

123. The Global Renaissance

The "Renaissance" has traditionally been viewed as a period of artistic and cultural development associated almost exclusively with the Italian peninsula in the 15th and 16th century. This same tradition privileges "high art"---that is, painting, sculpture, and architecture over other forms of visual culture. This course seeks to reassess these notions by considering Italian Renaissance art within the context of early modern globalism. This reexamination likewise mandates a consideration of a broader spectrum of objects, including gemstones, glassware, and textiles. Topics such as the relationship between Michelangelo, Leonardo, and the Ottoman architect Sinan, the collection of Aztec feather paintings by the Medici family, and the influence of Egyptian mosque architecture on Venetian palace design will be examined from an interdisciplinary perspective. Fulfills the Studio Art program global emphasis course requirement. (5 units)

135. European Art: 1780--1880

Analysis of the culture and art of Europe from the era of the French Revolution to the end of the 19th century. This course will address the relationship between politics and art, shifting class structures, and the increasing importance of the industrial revolution. Painting, sculpture, architecture, and other media will be covered. (5 units)

137. Modern Art in Europe: 1880--1940

The emergence of Modernism in Europe from the 1880s to World War II. The major movements of Expressionism, Cubism, and Surrealism will be studied in the larger context of political, social, and economic change. Painting, sculpture, architecture, and other media will be covered. Fulfills the Studio Art program modern or contemporary emphasis course requirement. (5 units)

140. Photography in the United States

We live in a world densely populated by photographs; how did that come about and what purposes has photography served in the U.S.? We will examine the social, political, and aesthetic aspects of American photography from its inception in the 1830s to the present. Close readings of objects yield insights into the creation and growth of popular and elite audiences for photography; journalistic, ethnographic, and documentary photography; fashion and commercial photography; photography as an artistic medium; the role of photography in discourses of race, gender, class and nationalism; and photography in relation to modernism, postmodernism, and consumer culture. Fulfills the Studio Art program modern or contemporary emphasis course requirement. Prerequisite: one ARTH course or permission of instructor. (5 units)

141. Tradition and Change in Native American Art: California and the Pacific Northwest

Visual culture of the native peoples of California and the Pacific Northwest, from prehistory to the present. Emphasis on the role of the artist in society and on artistic responses to political and cultural change. Topics include arts of status, shamanism, World Renewal, missions, tourism, and the rise of the art market. (5 units)

142. Native American Art: Special Topics

Sustained analysis of a specific time period or genre of Native American art. Emphasis on 20th-century/contemporary art. Topics may include tourism/market forces, land and cultural preservation, postcolonialism, and gender identity. Research paper will be required. Fulfills the Studio Art program modern or contemporary emphasis course requirement. (5 units)

143. Women's Work: American Women in the Visual Arts

From colonial times to the ongoing feminist revolution of the present, American women made, sold, collected, and supported visual art, and in so doing profoundly influenced the development of the nation's culture, art, and art institutions. Students will learn about the roles of American women in the visual arts and the active interplay between issues embedded in art and in "craft"; women's self-fashioning and the art market; images of women; and the impact of women's studies and feminism on the study of the visual arts. Close readings of images and objects spanning traditional and nontraditional media such as painting, sculpture, photography, embroidery, and quilting produce insights into the dynamic relationships between gender and art, culture, and commerce in American history. Fulfills the Studio Art program modern or contemporary emphasis course requirement. Also listed as WGST 156. Prerequisite: one ARTH course or permission of instructor. (5 units)

144. Race, Gender, and Nation in 18th- and 19th-Century American Art

What did visual and material arts from the Colonial period to the Gilded Age (1880s) look like and how did they function in colonial society and help to shape a new, fast-growing nation? Close readings of objects illuminate the relationships between art, gender, and race; self-fashioning and social identity in portraiture; the "West as America"; American national identity at home and abroad; landscape painting; photography; representations of democracy, politics, and citizenship; representations of the Revolutionary and Civil Wars; collectors and the creation of art institutions; and an audience and market for art in the United States. Fulfills the Studio Art program modern or contemporary emphasis course requirement. (5 units)

145. Perpetual Revolution: American Art in the 20th Century

The 20th century was a period of turmoil and growing international stature for the United States and its art. How did artists deal with these events, which saw several wars, including two World Wars; the Great Depression, the growth of labor unions, the Civil Rights Movement, feminist reforms, etc.; and the encounter with European modernist art? How were these events in turn shaped by art and visual culture? Close readings of objects illuminate the relationship of American modern art to European modernism; race and gender in American society, politics, and American national identity; patrons and dealers, including those of the Harlem Renaissance; the government as a patron for the visual arts; and the founding of major visual arts institutions and the solidifying of an art audience in the United States. Fulfills the Studio Art program modern or contemporary emphasis course requirement. (5 units)

146. American Art: Special Topics

Sustained analysis of a particular period, genre, or issue in American Art: e.g., landscape painting, Harlem Renaissance, art market and art dealers, social realism, material culture, etc. (5 units)

152. Arts of Ancient Mexico: From Olmec to Aztec

Survey of the arts of the Mesoamerican region, from 1500 BCE to the conquest of 1521 CE. Focus on Mesoamerican concepts of time and space, the ritual calendar, warfare, blood sacrifice, shamanism, and the ballgame. Fulfills the Studio Art program global emphasis course requirement. Formerly ARTH 151. (5 units)

164. Islamic Art in the Age of Empire

This course focuses on the so-called "Gunpowder Empires," that is, the visual culture of the Ottoman, Mughal, and Safavid empires from approximately 1450--1700 CE. Topics for discussion may include manuscript illumination; trade and technology in the luxury arts; the political aims of imperial architecture; the design of the courts in Istanbul, Isfahan, and Fatehpur Sikri; and the reaction to and engagement with European culture of the era. Fulfills the Studio Art program global emphasis course requirement. (5 units)

166. From Emaki to Manga

For over a millennium, Japanese artists have used pictorial narratives to circulate ideas and explore emotions. Buddhist Jataka tales inspired devotion, while emaki handscrolls explored romantic longing concealed beneath courtly protocols. Explicit and grotesque visions of hell admonished men and women for separate sins. As Japan modernized, prints and manga celebrated urbanism and imperialism, and bore witness to atrocities. Inherent in these ancient and contemporary narratives are changing concepts of gender as artists have negotiated and challenged the dynamics between male and female authors and subjects, as well as universal themes and indigenous aesthetics. Fulfills the Studio Art program global emphasis course requirement. (5 units)

181. Animated Spaces: The Hindu Temple and its Global Forms

This course will introduce prominent examples of Hindu temples built in the Indian subcontinent as well as few contemporary temples built outside India, specifically in the United States. You will study individual examples (from around 6th century CE until the present) in terms of their art, architecture, political patronage, and time period, and learn to think critically about the dominant frameworks that represent Hindu temples. This course will teach you to identify key components of a Hindu temple across regions and over time. However, a significant focus will be on the meanings sustained by temple images, structures, and spatial layouts; their changing uses in varied contexts, and by multiple communities of response. Fulfills the Studio Art program global emphasis course requirement. (5 units)

185. Post-Modern and Contemporary Art

An overview of significant issues and movements in art since the 1960s. Primary focus on art in the United States. Themes to be addressed: artist in nature, body in performance, new media, feminism, gender and sexuality, art in public places, censorship, art and public activism, emergence of a global arts community. Fulfills the Studio Art program modern or contemporary emphasis course requirement. (5 units)

194. Peer Educator in Art History

Peer educators in art history work closely with a faculty member to help individual students prepare for exams, conduct research, and master course content. Prerequisite: permission of instructor. (1--2 units)

195. Art History Thesis

Students with a GPA of 3.5 or better in their major may petition to write a thesis, typically in their senior year. The thesis will be based on a research paper written for a previous upper-division course with the same instructor. Prerequisites: senior status, demonstrated excellence in the major field, and permission of instructor. (5 units)

196. Senior Art History Capstone Seminar

Advanced research in art history. Research theme of the seminar will vary with instructor. Requirements include a lengthy research paper and public presentation of that research. Course should be taken in the senior year. Course restricted to Art History majors. Prerequisite: ARTH 100 and one course from ARTH 106, 112, or 120. (5 units)

197. Special Topics

Occasional courses in selected art historical topics. May be repeated for credit. (5 units)

198. Internship/Practicum

Individual projects in conjunction with professional visual arts agencies. May be repeated for credit but no more than 4 units may count toward the major or minor. Prerequisite: Written proposal must be approved by on-site supervisor, art history faculty member, and department chair. (2--5 units)

199. Directed Reading/Directed Research

Individual guided reading, research, and/or writing on selected art historical topics. May be repeated for credit but no more than 5 units may count toward the major or minor. Prerequisites: Course outline, reading list, and schedule of instructor/student meetings must be approved by art history faculty member and department chair 10 days prior to registration. (1--5 units)

Lower-Division Courses: Studio Art

30. Basic Drawing

Using traditional drawing techniques, this course covers the use of line and contour, light and shadow, three-dimensional perspective, and composition. Includes the concept of self-expression in traditional and contemporary drawing practices. Recommended as a foundation course to be taken prior to other studio art courses. (4 units)

32. Two-Dimensional Design

This hands-on course introduces the fundamental theories and applications of two-dimensional design, essential to a wide range of art forms. The focus is on experimentation with compositional dynamics and elements of design including line, shape, value, color, texture, direction; and principles of design such as balance, proportion, unity, rhythm, and emphasis. Conceptual strategies, techniques, and a variety of materials are explored through lectures, demonstrations, studio assignments, and critiques. Recommended as a foundation course to be taken prior to other studio art courses. (4 units)

33. Three-Dimensional Design

This is a foundation course in three-dimensional design. Through the study of three-dimensional design principles and elements, students will develop an understanding of, and an appreciation for, the use of design fundamentals. Through various hands-on projects, students will explore principles of three-dimensional design: harmony, contrast/variety, rhythm/repetition, emphasis, continuity, balance, and proportion. They will also explore elements of three-dimensional design: space, line, plane, mass/volume, value, texture, and color. Conceptual strategies, techniques, and a variety of materials are explored through lectures, demonstrations, studio assignments, and critiques. (4 units)

35. Introduction to Graphic Arts: Printmaking

Fundamentals of printmaking as an art form, with an emphasis on graphic processes including photo-based imagery, carved and drawn designs, and stencil. Using a range of technologies, from hand cranked presses to the computer, students will create a portfolio of original works of art. Previous experience in drawing or photography recommended. (4 units)

36. Ditto! The Technology of Print

From pre-Gutenberg to 3D printing, this course traces the impact of printing technologies in art and industry. Taught using a combination of lecture, discussion, field trips, and hands-on art practices, students will create portfolio projects using printing methods studied in class. (4 units)

37. Introduction to Painterly Printmaking

Fundamentals of printmaking as an art form with an emphasis on the painterly processes, including lithography, monotype, and silk collagraph "mezzotint." Using a range of painterly mark-making techniques, students will create a portfolio of original works of art. Previous experience in drawing or painting recommended. (4 units)

43. Basic Painting

Introduction to painting, primarily with water-based acrylic paints. Through guided projects, students will develop a language of lines, shapes, colors, and composition to express their ideas visually. (4 units)

45. Basic Outdoor Painting---Landscapes I

Be creative outdoors, in a classroom without walls. Expand your creativity by learning essential techniques and theories of painting the landscape *en plein air* (in open air), from detailed observation to intuitive abstraction. Course accommodates both beginning and intermediate levels. ARTS 30 recommended. (4 units)

46. Basic Watercolor

Introduction to visual expression in the classic medium of transparent watercolor. Assignments will emphasize basic elements of shape, color, light, shadow, composition, and developing command of the medium. Previous experience in drawing recommended. (4 units)

48. Basic Mixed Media

Mixed media is an exploration into image making beyond painting. Paint may be involved but the course will cover collage, assemblage, found objects, and combining different media to create unique results. Prior experience in painting, drawing, or sculpture is highly recommended. (4 units)

50. Film and Darkroom Photography

This course is for the beginning level photography students interested in learning the fundamentals of black-and-white photography as an art form. Students will learn basic film camera operation, film development, and darkroom printing techniques. Assignments will stimulate visual awareness and individual creativity. A 35 mm film camera with manual shutter speeds and aperture capabilities is suggested. (4 units)

57. Digital Photography

For beginning level photography students who want to develop creativity, composition, lighting, and other techniques with their digital cameras. Camera function and features will be discussed. Photographic projects will be edited and enhanced in Adobe Lightroom. Basic use of Adobe Photoshop will be introduced. Students must provide a digital camera with manual shutter speeds and aperture capabilities. (4 units)

63. Basic Ceramic Sculpture

Fundamentals of visual expression in clay, primarily through making ceramic sculpture. Especially suitable for the lower-division student. Guided exploration of various hand-building techniques and materials, including firing and glazing. (4 units)

64. Basic Sculpture

Fundamentals of making art in three-dimensional form, especially suitable for the beginning sculpture student. Creative exploration of selected materials and techniques. Reductive, manipulative, mold making, and additive methods will be used as needed. Media varies each quarter at instructor's discretion. (4 units)

66. Site-Specific Art

An investigation into creating site-specific landscape art. Learn site analysis, material selection, and fabrication, and understand the specific issues and problems entailed in creating site-specific art. Topics/location/media vary from year to year. Course may include collaboration with one or more community sites. (4 units)

70. Graphic Design: Typography

As the keystone to graphic design, typography is the method and practice of arranging type for successful communication and visual impact. Explore the uniqueness and expression of typography; individual characteristics of the letterform; visual hierarchy in page layouts through ideation, selection, and application to the visual problem solving. Analyze a variety of published materials, typefaces, and complete a series of introductory graphic design projects. Prerequisite: ARTS 74 or permission of instructor. (4 units)

72. Digital Art and Design Basics

Taught using a combination of lecture, discussion, and hands-on digital arts practices, this course explores two-dimensional design elements (including line, shape, color, value, texture, space, etc.) and principles (such as balance, proportion, unity, rhythm, and emphasis). Projects focus on design experimentation using a broad range of digital imaging tools. Class presentations provide an overview of the computer technologies that contribute to current art and design practices. (4 units)

74. Basic Digital Imaging

Hands-on introduction to computer imaging for the beginning level student. Fundamental instruction in raster- and vector-based imaging software to manipulate photographs and create original imagery. Incorporate cutting-edge technology into art and design using AR toolkit. Exploration of both fine art and commercial uses of digital media. Recommended as a foundation course to be taken prior to other computer art courses. Note: Student must have regular access to a computer capable of running Adobe Photoshop and Adobe illustrator, Adobe Aero/Spark AR. Access to the Adobe software will be provided by the College of Arts and Sciences. (4 units)

75. Brand Identity: Basic Graphic Design

Introduces the ideation tool and the process of design research. Defines the role of corporate identity in business practice and its use. Examines the fundamental theories and techniques necessary to accomplish graphic design objectives. Concepts involved in the problem-solving process draw heavily from ideas in fine arts, social sciences, and humanities. Prerequisite: ARTS 74 or permission of instructor. (4 units)

85. Interactive Immersive Art I

Interactive Immersive Art I introduces the skills and concepts necessary to create VR games and experiences. No previous knowledge is necessary. Students will learn the process of designing, modeling, and creating immersive environments in VR using the tools of the trade, making an interactive VR game or other experience from conception to final product. (4 units)

97. Special Topics

Occasional courses in selected Studio Art topics. May be repeated for credit. (4 units)

Upper-Division Courses: Studio Art

100. Studio Art Seminar

Exploration of and preparation for primarily academic postgraduate options in studio art. Includes portfolio and presentation development; artist statements and résumé writing; photographing artwork; and field trips to studios of artists, designers, and graduate schools. Required for studio art majors. Must be taken in junior year. Formerly ARTS 196A. (5 units)

131. Life Drawing

Theory and practice of figure drawing. Emphasis on understanding the anatomy of the human form as a resource for visual expression. May be repeated twice for credit. Prerequisite: ARTS 30 or permission of instructor. (5 units)

133. Intermediate Drawing

Continuation of ARTS 30. Emphasis is placed on refining drawing technique, incorporating more complex processes and materials, and developing a personal style. May be repeated twice for credit. Prerequisite: ARTS 30 or 131 or permission of instructor. (5 units)

135. Intermediate Printmaking

This class builds upon the printmaking skills developed in either ARTS 35 or ARTS 37. Emphasis is placed on developing a personal style and proficiency in various printmaking techniques, including relief, intaglio, and planographic methods. Conceptual content and meaning will be explored in depth, through practice and discussion. May be repeated twice for credit. Prerequisite: ARTS 35 or 37 or permission of instructor. (5 units)

138. Slow Tech: Critical Making with the Letterpress

Join the slow tech movement! Use your hands and eye in mindful ways to create hand-pulled editions on SCU's 100-year-old letterpress. Gears whirl and type clicks into place as students explore concepts of close reading, critical making, and graphic design through field trips, guest speakers and hands-on activities that challenge our dependence on all things digital. This course culminates in a portfolio of hand-made student work that engages in a critical global conversation about our perceived "need for (digital) speed." Cross-listed with ENGL 116. (5 units)

143. Intermediate Painting

This class builds upon the painting skills developed in Basic Painting (ARTS 43). Emphasis is placed on developing a personal style through long term projects. May be repeated twice for credit. Prerequisite: ARTS 43 or permission of instructor. (5 units)

144. Advanced Painting

Designed for the intermediate- to advanced-level painting student. Assignments help students develop conceptual and formal strategies to create a series of related works that revolve around each student's individual artistic interests. Painting form and technique, as well as conceptual content and meaning, will be explored in depth, through practice and discussion. May be repeated twice for credit. Prerequisite: ARTS 43 or 143 or permission of instructor. (5 units)

145. Outdoor Painting---Landscapes II

Be creative outdoors, in a classroom without walls. Expand your creativity by learning essential techniques and theories of painting the landscape *en plein air* (in open air), from detailed observation to intuitive abstraction. Course accommodates both beginning and intermediate levels. May be repeated twice for credit. (5 units)

146. Watercolor II

A continuation of the skills acquired in Basic Watercolor (ARTS 46) with the emphasis on development of a personal approach to the medium. May be repeated twice for credit. Prerequisite: ARTS 43 or 46 or permission of instructor. (5 units)

148. Mixed Media II

A continuation of skills learned in Basic Mixed Media (ARTS 48). Mixed media is an exploration into image making beyond painting. Paint may be involved but the course will cover collage, assemblage, found objects and combining different media to create unique results. Prior experience in painting, drawing or sculpture is highly recommended. May be repeated twice for credit. Prerequisite: ARTS 48 or permission of instructor. (5 units)

150. Intermediate Film Photography

The art and craft of black-and-white photography beyond the basic level. Covers the use of fiber-based papers and archival print processing in the darkroom. Students will also learn basic studio lighting techniques. Includes discussion of photography as it relates to contemporary fine art theory and practice. May be repeated twice for credit. Prerequisite: ARTS 50. (5 units)

151. Exploring Society through Photography

For the intermediate-level photography student interested in exploring social issues through the use of photography with an emphasis on portrait photography and ethics in photography. Students will also engage with individuals in our community by creating a photo-based project. May be repeated twice for credit. Note: This course requires participation in community-based learning (CBL) experiences off campus. Prerequisite: one course from ARTS 50, 57, 150, 157, or permission of instructor. (5 units)

155. Photography in the Community

This course is for the intermediate photography student interested in exploring the local community via a 16-hour community-based learning project. Students will collaborate with middle school students, teaching the basic fundamentals of photography and working with them to produce individual self-published books. The books share stories about the lives of the middle school students, using photographic imagery and writing. In addition, students will gain an understanding of basic ethics in photography. May be repeated twice for credit. Prerequisites: one course from ARTS 50, 57, 150, 151, 157, or permission of instructor. (5 units)

156. Photography and Alternative Processes

This course provides intermediate- to advanced-level photography students an opportunity to practice historical methods of making photographs, experiment with non-silver dry-plate photography processes (such as Cyanotypes, Vandyke, and Gum Bichromate), make their own cameras, and learn other nontraditional printing methods to make photo-based art. May be repeated twice for credit. Prerequisite: one course from ARTS 50, 57, 150, 157, or permission of instructor. (5 units)

157. Intermediate Digital Photography

This course will provide all the skills necessary to make fine art inkjet prints from digital files. Students will learn intermediate techniques in digital capture, processing of digital images using Adobe Photoshop, and output using pigmented inkjet printers. Students should have a digital SLR camera capable of shooting in RAW format. May be repeated twice for credit. Prerequisite: ARTS 57. (5 units)

158. Advanced Digital Photography

Designed for advanced-level exploration for photography students. Assignments enable students to develop conceptual and formal strategies to build a fine arts photography portfolio. Emphasis on enhancing forms and techniques attained in previous coursework. Students should have a digital camera capable of shooting in RAW format. Students must have regular access to a computer capable of running Adobe Photoshop and Adobe illustrator. Access to the Adobe software will be provided by the College of Arts and Sciences during remote learning. May be repeated twice for credit. Prerequisite: ARTS 57. (5 units)

159. Digital Storytelling Through the Visual Arts

This course will explore how the human experience can be communicated effectively through the use of media such as photography, video, and augmented reality. Stories will be created by collaborating with participants from a partnering Arrupe institution. Virtual Reality headsets will be utilized to enhance the viewer's experience. Prerequisite: one course from ARTS 50, 57, 150, 157, 197A, or permission of instructor. (5 units)

163. Intermediate Ceramics

Continuation and extension of ARTS 63. Intermediate-level exploration of ceramic sculpture through various hand building techniques including firing and glazing. May be repeated twice for credit. Prerequisite: ARTS 63 or permission of instructor. (5 units)

164. Intermediate Sculpture

Intermediate-level exploration of selected materials and techniques. Reductive, manipulative, mold making, and additive methods will be used as needed. Media varies each quarter at instructor's discretion. May be repeated twice for credit. Prerequisite: ARTS 33 or 64, or permission of instructor. (5 units)

165. Advanced Ceramics

Suitable for the intermediate and advanced student. In-depth exploration of various hand-building techniques for creating ceramic sculpture and related work. Includes discussion of aesthetic issues in contemporary ceramic art. Emphasis will be on the development of each student's artistic and technical interests and abilities toward the goal of creating a coherent body of work. May be repeated twice for credit. Prerequisite: ARTS 163, or permission of instructor. (5 units)

166. Advanced Sculpture

Advanced-level exploration of selected materials and techniques. Emphasis on developing individual expression in three-dimensional media, grounded in an appropriate conceptual framework. Media varies each quarter at instructor's discretion. May be repeated twice for credit. Prerequisite: ARTS 164, or permission of instructor. (5 units)

170. Graphic Design: Advanced Topics in Typography and Publication Design

Designed for the intermediate-to advanced-level graphic design student. Assignments help students develop conceptual and formal strategies to create a series of related works that center around each student's individual artistic interests. The course focuses on developing the skills and critical thinking necessary for producing digital typefaces and publication design. Prerequisite: ARTS 70 or permission of instructor. ARTS 32 recommended. (5 units)

171. Printmaking with a Digital Toolbox

Advanced projects in digital printmaking. Students generate their designs using imaging software, then create hand-pulled prints using traditional printmaking methods such as stencil, intaglio, lithography, and relief. Prerequisite: one course from ARTS 35, 37, 74, 135, 174, or permission of instructor. (5 units)

173. Introduction to 3D Animation & Modeling/Modeling & Control Rigid Body Dynamics

Introduce experimental 3D methods with a focus on conceptual and creative processes using Autodesk Maya software and 3D printing technology. Mathematical and physical principles of motion of rigid bodies, including movement, acceleration, inertia, and collision. Modeling of rigid body dynamics for three-dimensional graphic simulation; controlling the motion of rigid bodies in robotic applications. May be repeated twice for credit. Open to majors or permission of instructor. Also listed as COEN 165. (5 units)

174. Intermediate Digital Imaging

Continuation and extension of ARTS 74. Students create intermediate-level, original digital artwork through comprehensive assignments using raster- and vector-based software. Projects focus on conceptual and stylistic development, as well as refinement of digital imaging techniques. Prerequisite: ARTS 74 or permission of instructor. (5 units)

175. Information Design: Graphic Design

This course will explore the relationship between visual design and the field of information visualization. It presents strategies for designing effective visual communications, while seeking to articulate a vocabulary of data design. Course work will provide students with an understanding of structuring and presenting information with an emphasis on meaning, clear communication, and visual aesthetics. May be repeated twice for credit. Prerequisite: ARTS 75 or permission of instructor. (5 units)

176. Advanced Digital Imaging

Designed for the intermediate- to advanced-level digital imaging student. Assignments help students develop conceptual and formal strategies to create a series of related works that center around each student's individual artistic interests. Raster- and vector-based imaging techniques, as well as conceptual content and meaning, will be explored in depth through practice and discussion. Prerequisite: ARTS 174 or permission of instructor. (5 units)

177. Website Graphic Design

This course takes a designer's approach to learning front-end web design, by combining design and code. Students will learn how to create visually appealing, well-organized web pages using HTML and CSS. Familiarity with the basics of HTML and CSS is the required skill set for a graphic design student. This course will investigate visual Gestalt principles by exploring the application of typography, visual hierarchy, grids, etc., and how they affect the functionality of a website. Prerequisite: one course from ARTS 74, 75, 174, 175, or permission of instructor. (5 units)

178. Web and UX/UI Design: Advanced Graphic Design

In-depth exploration of graphic design through advanced projects. Examines advanced understanding of the industry standard languages of HTML and CSS as paired with a basic understanding of JavaScript and JavaScript libraries. A designer's approach to learning front-end web development. Guides students to a place where they can comfortably create dynamic user experiences. Students will complete projects that allow them to gain hands-on experience in all phases of interface design and evaluation. May be repeated twice for credit. Prerequisite: ARTS 177 or permission of instructor. (5 units)

179. Introduction to Two-Dimensional Animation

In-depth exploration of two-dimensional animation and digital storytelling. Student projects may include storyboards, flipbooks, and vector/raster-based animation. May be repeated twice for credit. Prerequisite: ARTS 74 or permission of instructor. (5 units)

180. Portfolio Design: Advanced Graphic Design Production

Students develop and refine a body of design work that constitutes a professional graphic design portfolio. The preparation of a professional portfolio is an essential part of transitioning from graphic design student to working designer. The course assignments will give students guidance in improving their current student portfolio pieces, developing new portfolio pieces, and presenting their work, and themselves, to prospective employers in a compelling way. May be repeated twice for credit. Prerequisite: one course from ARTS 170, 175, 178, or permission of instructor. (5 units)

185. Interactive Immersive Art II

Interactive Immersive Art II is for advanced student already familiar with VR development. Students will develop a concept and vision for a VR project for social justice, ethics, humanity, or sustainability. Work as a team to create a unique vision for projects using VR hardware, creating a stimulating hook or concept to engage participants. Present a finished "vertical slice" of the project---a polished version of what can be expanded into a larger project---conduct user studies on the project's effectiveness, and develop papers and posters that can be submitted to and presented in outside conferences and venues. Prerequisite: ARTS 85, or 197A. (5 units)

190. Senior Portfolio Production

This is a production course designed to advance students toward the senior capstone exhibition, while cultivating their ability to plan and execute a body of works that are conceptually and/or thematically interrelated. Students plan and produce a unique body of work, a portion of which will be selected to appear in the Senior Capstone Exhibition the following spring. Students meet regularly with faculty. In the process of producing finished work that synthesizes and showcases their conceptual and technical achievements as well as their unique creative vision, students participate in individual and group critiques. Must be taken in the fall of senior year. Prerequisite: studio art major, senior standing, and ARTS 100 (5 units).

194. Peer Educator in Studio Art

Peer educators in studio art work closely with a faculty member to help individual students in studio arts courses with the proper use of tools and materials, as well as mastering course content. Peer educators will encourage students in their creative work in both individual and collaborative activities. Prerequisite: permission of instructor. (1--2 units)

196. Capstone Senior Exhibit

Senior studio art majors will sign up for this course with an assigned studio faculty member. The faculty member will advise and direct the student through final stages of artwork production, presentation preparation, and the installation process for their senior exhibit. Students will work directly with the instructor to design and edit their exhibits. Grading considerations include production work, quality of the exhibited artwork, quality of the presentation (display, hanging, etc.), professional conduct, and the associated artist statement. Required for studio art majors. Must be taken during the consecutive winter and spring quarters of senior year. Prerequisite: ARTS 100 and 190. (4 units)

197. Special Projects

Occasional upper-division courses in selected studio arts topics. Open to majors or by permission of instructor. May be repeated for credit. Prerequisite will vary depending on the course topic. (1--5 units)

198. Internship/Practicum

Individual projects in conjunction with a professional visual arts organization or professional work environment with a visual arts emphasis. May be repeated twice for credit. Prerequisite: Written proposal must be approved by supervisory studio art faculty member and department chair. (1--5 units)

199. Directed Research/Creative Project

Individual, guided, advanced-level projects in studio art. May be repeated for credit, but no more than 5 units will count toward the major. Prerequisite: Course outline and schedule of instructor/student meetings must be approved by studio art faculty member and department chair 10 days prior to registration. (1--5 units)

Department of Biology

Professors Emeriti: William R. Eisinger, John S. Mooring, Dennis R. Parnell, S.J.

Professors: Elizabeth P. Dahlhoff, Janice S. Edgerly-Rooks (Michael and Elizabeth Valeriote Professor), Craig M. Stephens (Sanfilippo Family Professor), Justen Whittall

Associate Professors: James L. Grainger, David C. Hess (Department Chair), Ángel L. Islas, Leilani M. Miller, Brody Sandel, Katherine B. Saxton

Assistant Professors: Brian A. Bayless, Laura Cocas, Michelle McCully

Senior Lecturers: Christelle Sabatier

Lecturer: Michelle Badura, Dawn M. Hart

The Department of Biology offers a program leading to the bachelor of science degree. The major provides students a solid foundation in the core concepts of modern biological thought, and provides students with critical skills to put concepts into practice. The biology major serves as a strong foundation for graduate, medical, or professional studies, as well as for careers in teaching, research, and business. Most courses emphasize laboratory or field work, and students are also encouraged to work with faculty on research projects. Most faculty members involve students in their research programs. Qualified students can obtain course credit for research by enrolling in BIOL 195, and for major research projects by enrolling in BIOL 198. Minor degrees in biology and related disciplines (biotechnology, biomedical engineering, public health, and environmental studies) are available. The Biology Department also offers the fundamental introductory curriculum for all of life science majors, as well as courses that satisfy the Natural Science and Science, Technology & Society requirements of the Core Curriculum, the latter of which are available to all University students who are curious about the nature of life. Numerous study abroad opportunities in the life sciences, both for biology majors and nonmajors, are available through the Study Abroad office.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in biology must complete the following departmental requirements:

- BIOL 1A, 1B, and 1C
- CHEM 11, 12, 31, 32, and 33
- PHYS 11, 12, 13 or PHYS 31, 32, 33
- MATH 35 and 36 (recommended) or MATH 11 and 12
- BIOL 101
- Seven approved upper-division biology courses, including five with a laboratory component

Students are advised to take at least one upper-division course each from one of five biological "concepts" categories (Evolution, Information Flow, Structure-Function, Systems, and Transformations of Energy and Matter). Students are also advised to take at least one upper-division course that focuses on the use of modeling and simulation to solve biological problems.

Requirements for the Minor

Students must fulfill the following requirements for a minor in biology:

- BIOL 1A, 1B, 1C
    - CHEM 11, 12 and 31 (as these are prerequisites for the introductory Biology classes)
- Three upper-division biology courses, including two with a laboratory component

Minors in Related Areas

Biotechnology Minor: This minor is designed for students interested in gaining insight into the science underlying biotechnology, exploring its potential for the future, and obtaining practical experience in laboratory techniques used in biotechnology research and its applications. See the Interdisciplinary Minors and Other Programs of Study section at the end of this chapter for details.

Environmental Studies Minor: This minor provides an opportunity for students to focus on environmental issues through a variety of academic approaches in the humanities, social and natural sciences, engineering, and law. See the Department of Environmental Studies and Sciences section in this chapter for details.

Biomedical Engineering Minor: This minor is designed primarily for science majors in the College of Arts and Sciences. This minor could be a valuable asset for science majors interested in biomedical research and/or health-related careers, including those completing prerequisites for medical school and other health-related professional schools. See Chapter 5, School of Engineering, for details.

Public Health Minor: This minor is designed for students interested in population level analysis of health issues, and the causes and consequences of disease. See the Public Health Program section in this chapter for details.

Preparation in Biology for Admission to Teacher Training Credential Programs

The State of California requires that students seeking a credential to teach biology in California secondary schools must pass the California Subject Examination for Teachers (CSET), a subject area competency examination. Students who are contemplating secondary school teaching in biology should consult with the coordinator in the Department of Biology as early as possible. The secondary teaching credential requires the completion of an approved credential program that can be completed as a fifth year of study and student teaching, or internship.

Lower-Division Courses

1A. Transformations of Energy and Matter L&L

How do organisms obtain elements from their environment, change them to suit their growth needs, and acquire the energy necessary to sustain life? How do changing environments impact organisms and ecosystems? Students will explore the global cycle of critical elements and dissect the chemical reactions that incorporate these elements into biological molecules and new biological structures. They will discuss the implications of nutrient availability on growth of a variety of organisms and on interacting populations in an ecosystem. Core to this class is the exploration of the habits of mind that will form the basis of critical scientific thinking throughout the biology curriculum. Laboratory 15 hours. Prerequisite: concurrent enrollment in or completion of CHEM 12. (4 units)

1B. Information and Evolution L&L

This course builds an introductory understanding of how information is transmitted and utilized in biological systems. Students will investigate how the genetic transmission of information at the molecular, organismal, and population level generates biodiversity and drives evolution. In their studies, students will continue to practice the habits of mind

necessary to critically evaluate data and communicate with the greater scientific community. Laboratory 15 hours. Prerequisites: completion of BIOL 1A with a C- or better, and concurrent enrollment in or completion of CHEM 31 (or 13). (4 units)

1C. Systems L&L

All biological phenomena are complex networks whose members comprise molecules, cells, organs, organisms, and ecosystems. An alteration affecting one of the members could affect the entire network. In this course, students will model biological systems (e.g., organismal body plans, human diseases, endangered natural habitats) in order to predict how they will respond and adapt. Students will also apply the process of science to collect, analyze, and interpret data across biological scales and communicate with the greater scientific community. Laboratory 30 hours. Prerequisites: completion of BIOL 1B with a C- or better and completion of CHEM 31 (or 13). (5 units)

2. Human Biology L&L

This course will provide an overview of the biology of the human body. Students will explore the normal function of major organ systems at the physiological, cellular and molecular levels. We will discuss topics such as chronic and infectious diseases, immunity, nutrition, genetics, fitness, reproduction and inheritance. (5 units)

3. Fitness Physiology L&L

Although many people rarely engage in vigorous exercise, as a species we evolved to perform prolonged, strenuous activity. This course surveys how exercise promotes a state of wellness and explores both the immediate responses to exercise as well as how the body responds to long-term training programs. In addition to learning basic human physiology, at the end of the course students should be able to critique and design experiments, understand and interpret reports of health and exercise news in the popular press, critically evaluate fitness claims made by advertisers, and recognize quackery. Laboratory 15 hours. Does not satisfy requirements of the biology major. (4 units)

5. Endangered Ecosystems L&L

An overview of earth's ecosystems and the major factors contributing to the loss of biodiversity. Three major themes are explored: (1) general ecological principles, especially focused on the structure and function of ecosystems; (2) factors contributing to the endangerment of ecosystems; and (3) the conservation of ecosystems and biodiversity. This course discusses global environmental problems, and includes several lectures highlighting current environmental and conservation issues here in California and within the San Francisco Bay Area. Laboratory 15 hours. Saturday field trips are required. Does not satisfy requirements of the biology major. (4 units)

6. Oceans L&L

This course examines major ocean ecosystems and their inhabitants, with special attention paid to issues of governmental policy, sustainability, and human impacts on marine ecosystems. Laboratory and field activities will emphasize hands-on exploration of local marine habitats. Laboratory 15 hours. Saturday field trips are required. Does not satisfy requirements of the biology major. (4 units)

7. Exploring Animal Behavior L&L

A survey of modern scientific approaches that seek to understand why animals do what they do in nature, with a particular emphasis on evolutionary questions using case studies as models. Covers methods for posing and for testing hypotheses, data analysis and interpretation, and hands-on work with live animals in the laboratory and/or field settings. Laboratory: 15 hours. Does not satisfy requirements of the biology major. (4 units)

18. Exploring Biotechnology L&L

Have you ever wondered about the science behind CSI, "Frankenfoods," human cloning, or how biofuels might help combat global warming? This course will examine the science underlying biotechnology: how DNA, genes, and cells work, and how they can be used in new technologies that affect many areas of our lives, including medical diagnosis and treatment, forensics, agriculture, and energy. We will discuss current developments in biotechnology and also examine the controversies and ethical considerations that accompany them. Laboratory experiments will focus on hypothesis testing and experimental design, and include detecting antibiotic-resistant bacteria, modeling the spread of diseases, performing human genetic testing, and testing common foods for genetic modification. Laboratory 15 hours. Does not satisfy requirements of the biology major. (4 units)

Upper-Division Courses

101. Biology Research Seminar

A forum for the exploration of research in the life sciences. Invited scientists from a range of universities, institutes, and the private sector present their current research, and engage in discussion about this research with seminar participants. This course is intended to give students direct interactions with research academics in a range of fields to make them aware of career opportunities and to provide them with contacts in those fields. Graded P/NP only. Prerequisite: successful completion of BIOL 1C. (2 units)

104. Human Anatomy L&L

An exploration of the structure, organization, and functional relationships of human anatomical systems. Laboratory dissections use non-human vertebrates. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

105. Biology of Human Nutrition and Metabolism

This course focuses both on how the body processes food and on how the resulting nutrients affect human physiology. The course will also explore such topics as the biological basis of eating disorders, ideal body weight, nutritional supplements, and the influence of nutrition on athletic performance. Prerequisite: BIOL 1C. (5 units)

106. Health Consequences of a Western Lifestyle

This course explores the impact of living in a developed country on human health. Topics such as diabetes, obesity, heart disease, hypertension, and cancer will be discussed at the molecular, cellular, physiological, and population levels. Also listed as PHSC 124. Prerequisite: BIOL 1C. (5 units)

109. Genetics and Society

Upper-division course designed for non-science majors interested in exploring the interplay between the social, scientific, and technological dimensions of human genetics. In addition to studying the nature of DNA (the genetic material), students will study the social and technological dimensions of current topics in genetics, including the Human Genome Project, paternity testing, crime scene investigation, embryo testing to select specific genotypes, personalized medicine, evolution, etc. Does not satisfy requirements of the biology major. (5 units)

110. Genetics L&L

Basic principles governing inheritance and gene expression in viruses, prokaryotes, and eukaryotes. Emphasis on molecular aspects. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 31. (5 units)

113. Microbiology L&L

An introduction to the biology of microorganisms, with emphasis on the molecular and cellular biology of bacteria, the diversity of microbial life, and the roles of microorganisms in human health and disease. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

114. Immunology L&L

Principles, mechanisms, and techniques of humoral and cellular aspects of the immune response. Immediate and delayed hypersensitivity, tissue transplantation, tumor immunology, and immunodeficient states in humans. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

114AW. Immunology L&L

In this course, students integrate scientific information literacy, scientific writing, and immunological concepts to understand the molecular mechanisms of the immune response. The laboratory component of the course is designed to guide the development of narrative writing skills, critical editing, and revision skills to express complex ideas clearly and completely. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 31. (5 units)

115. Human Reproduction and Development L&L

Detailed study of the development and function of the male and female reproductive systems, gametogenesis, fertilization and implantation, and the anatomy of the heart, circulatory, nervous, and skeletal systems during embryogenesis. Where appropriate, the molecular mechanisms controlling the determination of these developing systems will be examined. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 31. (5 units)

116. Medical Microbiology L&L

This course focuses on the interactions of pathogenic microbes (bacteria, viruses, fungi, prions, etc.) with their hosts. The various strategies employed by the infectious agents to subvert the immune system and the various strategies used by the immune system to combat the microbial invasion will be examined, as will the co-evolution of hosts and their pathogens and the natural history of diseases. The laboratory component will expose students to clinical methodologies and scientific approaches to diagnose and differentiate pathogenic microorganisms. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

117. Epidemiology L&L

This course provides an introduction to epidemiology, including assessment of health and disease in populations, epidemiological data analysis, disease transmission, and public health interventions. The course also exposes students to the epidemiology of diseases and conditions of current public health and clinical importance in the United States and internationally. The laboratory (computer lab) will provide students with hands-on experience with epidemiologic methods, study design, and data analysis. Laboratory 30 hours. Also listed as PHSC 100. Prerequisite: BIOL 1C. (5 units)

119. Biology of Stress

This course explores the impact of stress on physiology, behavior, and health, using a multidisciplinary approach. Topics include defining and measuring stress, differences between acute and chronic stress exposure, effects of stress on physiological processes and on the brain, how stress affects gene expression and neurogenesis, and relationships between stress and disease. We will also discuss the social patterning of stress exposure and the effects of social policies and interventions. Prerequisite: BIOL 1C. (5 units)

120. Animal Physiology L&L

This course examines contrasting strategies used by different animals to deal with variations in temperature, food, oxygen, and water, and highlights the diversity of physiological adaptations in major animal groups, especially those living in "extreme" habitats. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

122. Neurobiology L&L

Study of the molecular basis of neurobiology: how the nervous system is structured, how neurons form connections and relay information between each other, and how specific components of the nervous system function together to perceive the environment around us. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 31. (5 units)

123. Neurodevelopment L&L

This course explores the development of the nervous system, including the cellular and molecular mechanisms that are crucial for the formation of the brain and spinal cord, and the establishment, maintenance, and remodeling of neuronal connections. We will also examine the experimental approaches used to study neural development. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

124. Human Physiology L&L

Examining the physical and chemical basis of human life, this course focuses on the neural and endocrine control of physiologic processes to maintain homeostasis. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

128. Plant Development L&L

This course explores the processes of RNA and protein regulation, epigenetics, and "omics" based scientific approaches, phenomena that will be discussed within the context of plant development. Similarities and salient differences among and/or between plants, animals, and microbes will be described as appropriate. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

134. California Plant Diversity L&L

Surveys the major angiosperm families in California, relies heavily on using taxonomic keys to identify California plants to species, and investigates evolutionary patterns characteristic of the California flora through a combination of lab and substantial field experiences. Laboratory and field work 30 hours. Prerequisite: BIOL 1C. (5 units)

144. Natural History of Baja L&L

Examines the natural history of Baja California Sur, with emphasis on the taxonomy of marine and terrestrial organisms, the ecology of desert and coastal ecosystems, and the biogeography of the peninsula. Meets twice a week in winter quarter and culminates in a 10-day spring break trip to the Sierra de la Laguna region and the Isla Espiritu Santo complex. Students will become familiar with desert, riparian, beach, mangrove, and rocky intertidal habitats, develop field observation and species identification skills, and explore local conservation challenges. Laboratory 30 hours. Prerequisites: BIOL 1C or ENVS 21 or permission of instructor. Enrollment by application only. Travel fees required. (5 units) Cross listed with ENVS 144.

145. Virology

Examines the biology of viruses including their structure, evolutionary origins, classification, genetics, laboratory propagation and diagnostic methods, viral pathogenesis, response of host cells to viral infection, and salient aspects of the epidemiology of viral diseases. This course will focus on viruses that infect eukaryotic cells, emphasizing

important viral groups that infect humans. Prerequisite: BIOL 1C. (5 units)

151. Restoration Ecology L&L

The science and practice of restoring degraded ecosystems, with an emphasis on plant ecology. Through fieldwork in restoration experiments and examination of literature case studies, students will grapple with basic questions: How do we decide what to restore? How do we restore it? And how do we know if we're finished? There will be an emphasis on reading and writing scientific papers, working with data, and critically judging the success of restoration projects in meeting goals of biodiversity and ecosystem function. Laboratory and field work 30 hours. Also listed as ENVS 151. Prerequisite: BIOL 1C or both ENVS 21 and ENVS 23. (5 units)

153. Conservation Science

Conservation is a scientific enterprise and a social movement that seeks to protect nature, including Earth's animals, plants, and ecosystems. Conservation science applies principles from ecology, population genetics, economics, political science, and other natural and social sciences to manage and protect the natural world. Conservation is all too often seen as being at odds with human well-being and economic development. This course explores the scientific foundations of conservation while highlighting strategies to better connect conservation with the needs of a growing human population. We will examine whether conservation can protect nature, not from people, but for people. Also listed as ENVS 153. Prerequisite: BIOL 1C. (5 units)

156. General Ecology L&L

Quantitative study of the interrelationships of organisms with their biotic and abiotic environments. Emphasis on population dynamics, interspecific relationships, community structure, and ecosystem processes. Laboratory and field work 30 hours, including one weekend field trip. Also listed as ENVS 156. Prerequisites: BIOL 1C and MATH 11. (5 units)

158. Biology of Insects L&L

An introduction to basic and applied aspects of insect biology with emphasis on evolution, morphology, physiology, and behavior of insects and related arthropods. Also includes a review of important agricultural, medical, forestry, and veterinary pests. Laboratory and field work 30 hours, including an overnight field trip and optional trips to nearby ecosystems. Prerequisite: BIOL 1C. (5 units)

160. Biostatistics L&L

A course in applied statistics for biologists and environmental scientists planning to conduct manipulative experiments. Students gain training in experimental design, quantitative analysis, and hypothesis testing. Theory and concepts are covered in lectures and readings. Laboratory sessions provide practical experience in computing statistical procedures by hand and with statistical software. Examples used in lectures and lab assignments are derived from medical research, physiology, genetics, ecology, and environmental risk assessment. Laboratory 30 hours. Also listed as ENVS 110. Prerequisite: BIOL 1C. (5 units)

165. Animal Behavior L&L

Examination of the behavior of animals in nature using an organizational scheme that recognizes proximate, or immediate, causes of behavior and evolutionary bases for behavior. Topics include physiological correlates of behavior, perception of natural stimuli (light, sound, chemicals), and behavioral ecology of foraging, mating systems, parent-offspring relationships, and social behavior. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

170. Advanced Analysis of Biological Data

This course covers the big data revolution that is transforming biology. We explore a variety of advanced data analysis tools suitable for large datasets. Students gain skills in understanding complex data and verbally and graphically communicating their insights. BIOL 160/ENVS 110 or a similar background in statistics is recommended. (5 Units)

171. Ethical Issues in Biotechnology and Genetics

An interdisciplinary consideration of contemporary biotechnology, and the ethical implications inherent in the development and use of such technology. Topics include human cloning, stem cell research, human genome project, genetic testing, gene therapy, genetically modified organisms, personalized medicine, clinical trials, and public policy. BIOL 171 satisfies a biotechnology minor requirement but NOT the ethics requirement. When taken concurrently with BIOL 189, it satisfies an upper-division biology major requirement. It also fulfills the Religion, Theology & Culture 3 requirement. Prerequisite: BIOL 1C. (5 units)

172. Molecular Modeling L&L

Molecular modeling is a powerful tool that allows scientists to explain and make predictions about molecular structures, dynamics, and interactions. In this course, students will use state-of-the-art software for protein structure prediction, molecular dynamics, and drug design. Students will design and complete their own modeling project and communicate the results through a journal-style report. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 31. (5 units)

173. Evolution L&L

Examination of advanced concepts of modern evolutionary biology. Topics include the evolutionary forces of microevolution, the evolution of sex, adaptation, speciation, human evolution, molecular evolution, and macroevolutionary phenomena deciphered from phylogenetic trees. Laboratory (30 hours) includes bench experiments, field study, and computational activities. Prerequisite: BIOL 1C. (5 units)

174. Cell Biology L&L

Study of the function of cellular organelles and the signaling pathways that control cell reproduction. Topics include a detailed discussion of the structure of cell membranes, nuclear and chromosome structure, DNA replication, the microtubule and microfilament cytoskeleton, mitosis, mechanisms of cell motility, cell cycle regulation, and apoptosis. Laboratory experiments focus on cell cycle regulation and cell differentiation. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 33. (5 units)

175. Molecular Biology L&L

An introduction to the maintenance and flow of genetic information at the level of protein-nucleic acid interactions. Lectures focus on basic molecular biology concepts and recombinant DNA technology. Laboratory 30 hours. Prerequisites: BIOL 1C and CHEM 33. (5 units)

176. Biotechnology Laboratory---Recombinant DNA Technology or Systems Biology L&L

Research topics vary from year to year. Laboratory meets twice each week. Lectures discuss the scientific basis for the lab methods, and their application in biomedical research and the biotechnology industry. Laboratory 60 hours. Prerequisites: BIOL 1C, CHEM 33, and at least one upper-division cell and molecular biology laboratory class. BIOL 175 recommended. (5 units)

177. Biotechnology Laboratory---Gene Expression and Protein Purification L&L

Explores principles and techniques for expression and purification of recombinant proteins. Laboratory meets twice each week and will use techniques such as column chromatography, mammalian tissue culture, and various gene expression systems. Lectures discuss the theory behind the methods used in lab, as well as their application in basic and applied research. Laboratory 60 hours. Prerequisites: BIOL 1C, CHEM 33, and at least one upper-division cell and molecular biology laboratory class. BIOL 175 recommended. (5 units)

178. Bioinformatics L&L

Bioinformatics tools are important for storing, searching, and analyzing macromolecular sequences and structures. This course in applied bioinformatics provides an in-depth survey of modern bioinformatics tools. Students will become proficient at searching GenBank, downloading and analyzing sequences, and working with metadata. Software tools for functional and evolutionary analysis of nucleic acids and proteins will also be examined. Laboratory 30 hours. Prerequisite: BIOL 1C. (5 units)

179. Cancer Biology

Introduction to the molecular and cellular basis of cancer. Introduction to the pathology of cancer. How basic processes such as cell growth, cell cycle control, and cell death are affected by molecular changes in oncogenes and tumor-suppressor genes. Prerequisites: BIOL 1C and CHEM 33. (5 units)

180. Marine Ecology L&L

Quantitative study of the ecology of marine organisms, with an emphasis on population dynamics, interspecific relationships, community structure, and ecosystem processes. Also examines principles of oceanography, biology, and ocean ecology, focusing on organisms and ecosystems of coastal California. Laboratory and field work 30 hours. Prerequisite: BIOL 1C. (5 units)

188. STEM Education & Social Justice

Students will examine the issues and challenges surrounding Science, Technology, Engineering, and Math education in U.S. high schools. Topics may include funding, learning obstacles, diversity, accessibility, national standards, AP/IB, and creation/evolution controversies. Students explore topics while interacting with local schools, some of which are identified as low performing. We provide support and guidance to help improve science education, serve as higher education role models, and stimulate interest in STEM, while gaining insight into public science education issues. Students will learn, reflect, analyze, and integrate course material through personal interactions, structured written critical reflections, in-class discussions, outreach events, and a final research project, while receiving instruction from a diverse range of local experts on science education. Does not satisfy requirements of the biology major. (3 units)

189. Topics in Cell and Molecular Biology

Seminar dealing with contemporary research in cellular and molecular biology and biotechnology. Students are required to lead discussions and participate in critical analyses of recently published research articles. May be taken up to two times for credit. Does not count as an upper-division course toward a major or minor in biology, but allows BIOL 171 to count as an upper-division biology course for the biology major or minor when BIOL 189 and 171 are taken during the same quarter. Prerequisites: BIOL 1C and concurrent enrollment in BIOL 110, 113, 171, 174, or 175. (2 units)

191. Project Lab

Project lab is an intensive, research-oriented course where students conduct projects directly related to ongoing studies in the professor's laboratory. The class will use modern, cutting-edge research approaches and will emphasize critical thinking, experimental design, and scientific communication. Research topics vary from year to year. Laboratory 60 hours. Prerequisites: BIOL 1C and at least one upper-division laboratory course. (5 units)

195. Undergraduate Research

Experimental research project supervised by Biology Department faculty. Five hours of research per week is expected per unit. Maximum of 3 units per quarter. Can be repeated for credit, with a maximum of 5 units per academic year. Must be taken P/NP. Prerequisite: consent of instructor. (1--5 units)

198. Internship and Undergraduate Research

Students wishing to take either 198A or 198B should have a GPA of 3.0 or better in biology and must present an outline of their projected research to the chair no later than the fifth week of the term preceding the start of the project. Prerequisite: departmental and University permission. (5 units)

198A. Internship

Research in off-campus programs under the direct guidance of cooperating research scientists and faculty advisors. Students must coordinate with an on-campus advisor and produce a final research project if they wish to fulfill an upper-division requirement for the biology major. Laboratory credit may be awarded based on nature of the internship. (1--5 units)

198B. Research

Supervised laboratory research culminating in a written report suitable for publication or in a presentation at a regional or national scientific meeting. Sustained for one year with credit given for one term. Fulfills one upper-division laboratory requirement toward the major. (5 units)

199. Directed Reading and Research

Detailed investigation of a specific topic in biology under the close direction of a faculty member. Students wishing to take this course should have a GPA of 3.0 or better in biology and must present an outline of their projected research to the department chair no later than the fifth week of the term preceding the start of the project, which will continue for one term only. Prerequisite: departmental and University permission. (1--5 units)

Department of Chemistry and Biochemistry

Professors: Emeriti: John C. Gilbert, Lawrence C. Nathan, Robert J. Pfeiffer

Professors: Michael R. Carrasco, Amelia A. Fuller (Department Chair and John Nobili, S.J., Professor), Eric Tillman (Fletcher Jones Professor), Korin E. Wheeler, W. Atom Yee

Associate Professors: Paul E. Abbyad, Linda S. Brunauer, Brian J. McNelis, Amy M. Shachter, Grace Stokes, Steven W. Suljak

*Assistant Professors:*Ian Carter-O'Connell, Benjamin Stokes *Senior Lecturer:* Steven L. Fedder

The Department of Chemistry and Biochemistry offers three baccalaureate degrees: the bachelor of science in chemistry, the bachelor of science in biochemistry, and the bachelor of arts in chemistry. The curriculum is accredited by the American Chemical Society (ACS), the professional organization for chemistry. The program prepares students for further work in chemistry or biochemistry, either in graduate school or as professional chemists. In addition, a chemistry or biochemistry degree is excellent preparation for careers in medicine, dentistry, law, engineering, business, and teaching. A minor in chemistry is also available. All bachelor of science degrees provide graduates with the background necessary to begin a career in chemistry or biochemistry at industrial and governmental laboratories, for admission to institutions offering graduate degrees in chemistry and biochemistry, and for admission to medical and dental schools as well as other professional programs in the health professions. The chemistry major provides equal training in all the disciplines in chemistry, and the biochemistry major combines training in chemistry with additional coursework in cell and molecular biology. The bachelor of science ACS-certified degrees meet all recommended standards for chemists and biochemists as mandated by the ACS. The bachelor of arts degree allows students the most freedom in choosing electives, and therefore is an excellent program for pre-medical or pre-teaching students. Students with a strong interest in the liberal arts or who wish to pursue subjects outside the standard science curriculum will benefit from this degree. The bachelor of arts degree can be effectively combined with a pre-law or business curriculum to provide excellent preparation for law or business careers in the technology sector.

Undergraduate research is a critical component of our degrees and most of our majors conduct research in collaboration with faculty mentors. Research in the department has been funded by the National Institutes of Health, the National Science Foundation, the Howard Hughes Medical Institute, the American Chemical Society Petroleum Research Fund, the Dreyfus Foundation, the Beckman Foundation, and Research Corporation for Science Advancement. Majors in chemistry, biochemistry, biology, and public health science participate in faculty research projects through CHEM 182, 183, and 184. In addition, advanced students have opportunities for part-time employment assisting faculty in laboratory and related teaching activities. The chemistry and biochemistry curricula are designed to be flexible in the sequence of upper-division coursework so as to allow students to participate in study abroad programs. Students interested in study abroad should meet with a faculty advisor to plan the junior and senior year courses as early as possible in their academic careers.

Requirements for the Majors

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science or bachelor of arts degrees, students majoring in chemistry and biochemistry must complete the following departmental requirements for each degree option:

Bachelor of Science in Chemistry

- CHEM 11 and 12, or 14*
- CHEM 31, 32, 33, 50

- CHEM 102, 111, 141, 151, 152, 154
- CHEM 15 (1 unit, Introduction to Research)
- Three upper-division chemistry electives, not including CHEM 182
- Four quarters of CHEM 115 (0.5 unit each, Seminar)
- MATH 11, 12, 13 or MATH 35, 36, 13
- PHYS 11, 12, 13 or PHYS 31, 32, 33

Bachelor of Science in Chemistry, ACS Certified

- CHEM 11 and 12, or 14*
- CHEM 31, 32, 33, 50
- CHEM 102, 111, 141, 150, 151, 152, 154
- CHEM 15 (1 unit, Introduction to Research)
- CHEM 183, 184
- Two upper-division chemistry electives, not including CHEM 182
- Four quarters of CHEM 115 (0.5 unit each, Seminar)
- MATH 11, 12, 13 or MATH 35, 36, 13
- PHYS 31, 32, 33

Bachelor of Science in Biochemistry

- CHEM 11 and 12, or 14*
- CHEM 31, 32, 33, 50
- CHEM 101, 111, 141, 142, 143, 150, 151 or 152
- CHEM 15 (1 unit, Introduction to Research)
- Two additional upper-division chemistry electives, not including CHEM 182; BIOL 110, 113, 172, 174, or 178 may be taken to satisfy one of these two electives
- Four quarters of CHEM 115 (0.5 unit each, Seminar)
- MATH 11, 12, 13 or MATH 35, 36, 13
- PHYS 11, 12, 13 or PHYS 31, 32, 33
- BIOL 1A, 1B, 1C, 175

Bachelor of Science in Biochemistry, ACS Certified

- CHEM 11 and 12, or 14*
- CHEM 31, 32, 33, 50
- CHEM 101, 111, 141, 142, 143, 150, 151 or 152, 154
- CHEM 15 (1 unit, Introduction to Research)
- CHEM 183, 184

- Two additional upper-division chemistry electives; BIOL 110, 113, 172, 174, or 178 may be taken to satisfy one of these two electives
- Four quarters of CHEM 115 (0.5 unit each, Seminar)
- MATH 11, 12, 13 or MATH 35, 36, 13
- PHYS 31, 32, 33
- BIOL 1A, 1B, 1C, 175

Bachelor of Arts in Chemistry

- CHEM 11 and 12, or 14*
- CHEM 31, 32, 33, 50
- CHEM 101 or 102, 111, 141, and 150 or 151 or 152
- CHEM 15 (1 unit, Introduction to Research)
- Two additional upper-division chemistry electives, not including CHEM 182
- Upper-division lab requirement: 30 hours, which can be satisfied by CHEM 102, 143, 154, or 1 unit of CHEM 182
- Four quarters of CHEM 115 (0.5 unit each, Seminar)
- MATH 11, 12, 13 or MATH 35, 36, 13
- PHYS 11, 12, 13 or PHYS 31, 32, 33

*Depending on AP credit, students may take CHEM 14 as a replacement for CHEM 11 and 12.

Electives for all degrees can be fulfilled by taking any upper-division chemistry course of 3 units or more, including CHEM 183 and 184.

Requirements for the Minor

Students must fulfill the following requirements for a minor in chemistry:

- CHEM 11, 12, 31, 32, and 33
- 20 units of chemistry courses numbered 50 or higher, not including CHEM 115 and 182.

Preparation in Chemistry for Admission to Teacher Training Credential Programs

The state of California requires that students seeking a credential to teach chemistry in California secondary schools must pass the California Subject Examination for Teachers (CSET), a subject area competency examination. The secondary teaching credential requires the completion of an approved credential program that can be completed as a fifth year of study and student teaching, or through an undergraduate summer program and internship. Students who are contemplating secondary school teaching in chemistry should consult with the coordinator in the Department of Chemistry and Biochemistry as early as possible.

Lower-Division Courses

Note: No course offered by the Department of Chemistry and Biochemistry is subject to challenge (i.e., to fulfillment by a special examination).

1. Chemistry and the Environment

A survey of the role of chemistry in major environmental issues such as global warming, acid rain, ozone depletion, photochemical smog, persistent organic pollutants, fossil fuel, nuclear and renewable energy, recycling and environmental fate of pollutants. Laboratory 3 hours every other week. Students with prior credit for CHEM 11 can enroll only on a pass/no pass (P/NP) basis. (4 units)

5. Chemistry: An Experimental Science

A survey of modern chemical applications, including applications to health, the environment, and consumer issues, and an introduction to the scientific method of inquiry. Laboratory 3 hours every other week. Cannot be taken by students with prior credit for CHEM 11 or 19. (4 units)

11. General Chemistry I: Bonding and Energy

Topics include chemical properties and structure, quantitative problem-solving, chemical bonding, ions, stoichiometry, and an introduction to thermodynamics. Recitation is offered by placement based on a readiness exam. Laboratory 3 hours per week. (5 units)

11T. General Chemistry Equivalency Credit

General Chemistry equivalency credit primarily given to students who apply Chemistry AP scores of 3, 4, or 5 to their coursework. This credit allows students to take Chem 14 instead of Chemistry 11 and 12. It is highly recommended that students with AP score of 3 take Chem 11 and Chem 12. (5 units)

12. General Chemistry II: Molecules in Motion

Topics include gases, intermolecular forces, kinetics, chemical equilibria, electrochemistry, and acid-base chemistry. Recitation offered to students based on their performance in CHEM 11; 1 hour per week. Laboratory 3 hours per week. Prerequisite: CHEM 11. Students who received a passing grade of a D+ or below in CHEM 11 are required to enroll in the CHEM 12 Recitation section and encouraged to meet with their instructor. Students who received a C- in CHEM 11 are encouraged to enroll in the CHEM 12 Recitation section and meet with their instructor during the first week of class. (5 units)

12H. General Chemistry II Honors

Accelerated treatment of CHEM 12 material and other topics not normally covered in general chemistry. Laboratory 3 hours per week. Prerequisites: Permission of instructor and a strong performance in CHEM 11. (5 units)

14. Advanced Chemical Principles

Subjects include accelerated treatment of topics covered in CHEM 11 and CHEM 12. This course is open to students with AP scores in chemistry of 3, 4, or 5 who will be taking chemistry courses beyond CHEM 14. Laboratory 3 hours per week. (5 units)

15. Introduction to Research

This course introduces students to opportunities for undergraduate research in the department, with a laboratory component focused on the instructor's research program. Departmental faculty present their current research. Also provided is an overview of research ethics and of typical tools used in pursuing scientific research projects. Students interested in the chemistry or biochemistry major/minor should ordinarily take this course before the end of their sophomore year. (2 units)

19. Chemistry for Teachers

This laboratory-based course is designed to teach the fundamental concepts of chemistry and is geared toward students who are interested in becoming elementary or middle school teachers. The course focuses on the following concepts: nature of matter, atomic structure, chemical bonding, and chemical reactions. While learning these core concepts, students will experience what it means to do science by developing their experimentation skills as they participate in a classroom scientific community. Laboratory 3 hours per week every other week. Cannot be taken by students with prior credit for CHEM 5 or 11. (4 units)

31. Organic Chemistry I

Topics include organic structure and conformations, stereochemistry, structure-reactivity relationships, and the chemistry of alkyl halides and alkenes. Special emphasis is placed on understanding reaction mechanisms. Laboratory 3 hours per week. Prerequisite: CHEM 12 or 14. Students receiving a grade lower than C- in CHEM 12 or 14 are strongly urged to meet with their instructor before continuing with CHEM 31. (5 units)

32. Organic Chemistry II

Topics include spectroscopy and the chemistry of alkynes, ethers, alcohols, and carbonyl compounds. Laboratory 3 hours per week. Prerequisite: CHEM 31. Students receiving a grade lower than a C- in CHEM 31 are strongly urged to meet with their instructor before continuing with CHEM 32. (5 units)

32M. Organic Chemistry II Majors' Laboratory

Students will carry out experimental organic chemistry research projects to prepare and characterize diverse organic molecules. New experimental techniques will be introduced, including NMR spectroscopy, mass spectrometry, multi-step synthesis, and combinatorial chemistry. This course will be taken in place of the laboratory component of CHEM 32. Pre-lab meeting 1 ho0ur per week and laboratory 3 hours per week. Prerequisites: Chem 31L and permission of instructor (1 unit)

33. Organic Chemistry III

Topics include carbonyl condensation reactions, aromatic substitutions, amines, carbohydrates, and peptide and protein synthesis. Other advanced topics may include pericyclic reactions and natural product synthesis. Laboratory 3 hours per week. Prerequisite: CHEM 32. Additionally, students receiving a grade lower than a C- in CHEM 32 are strongly urged to meet with their instructor before continuing with CHEM 33. (5 units)

33M. Organic Chemistry III Majors' Laboratory

Students will continue their work on organic chemistry research projects begun in CHEM 32L. In this quarter, they will focus on troubleshooting experiments, analysis of results, and presentation of scientific data. This course will be taken in place of the laboratory component of CHEM 33. Pre-lab meeting 1 hour per week and laboratory 3 hours per week. Prerequisites: Chem 32M and permission of instructor. (1 unit)

50. Quantitative Analysis

Topics include quantitatively rigorous treatment of thermodynamics and kinetics, gases, and electrochemistry. Laboratory focuses on quantitative analysis of titrations, spectroscopy, and equilibria. Laboratory 3 hours per week. Prerequisite: CHEM 33 and MATH 12. (5 units)

94. Teaching Assistant Training

This course focuses on building teaching and learning techniques for the general chemistry laboratory including chemical concepts, use of instrumentation, and building skills to guide students in the laboratory to meet their learning goals for each experiment. Prerequisites: CHEM 12 or 14 and instructor permission. (1 unit)

99. Independent Laboratory

Laboratory course, primarily for transfer students to make-up lower division laboratory as needed for equivalency with CHEM 11, 12, 50, 31, 32, and/or 33. Prerequisite: Approval of department chair. (1 unit)

Upper-Division Courses

Note: No course offered by the Department of Chemistry and Biochemistry is subject to challenge (i.e., to fulfillment by a special examination).

101. Bioinorganic Chemistry

Structure, properties, and reactivity of metal complexes and the function of metal ions in biological processes. Pre- or corequisite: CHEM 141. (5 units)

102. Inorganic Chemistry

Introduction to inorganic chemistry with emphasis on the nonmetals. Laboratory 3 hours per week. Prerequisite: CHEM 111, 150, 151, or 152. (5 units)

103. Environmental Chemistry

Sources, reactions, and transport of contaminants in soil, water, and air. Kinetic and thermodynamic models for smog formation, ozone layer depletion, acid rain, and the transport and degradation of contaminants in natural waters and soil, plus a brief look at global climate modeling. This course satisfies the Science, Technology and Society requirement. Prerequisite: Must be enrolled in, or have taken, CHEM 150, 151, or 152. (5 units)

111. Instrumental Analysis

Principles and use of instrumentation. Focus on electronics, spectroscopic methods, mass spectrometry, and chemical separations. Laboratory 4 hours per week. Pre- or corequisite: CHEM 32; CHEM 50 recommended. (5 units)

112. Bioanalytical Chemistry

A focused investigation of the application of modern methods of analytical chemistry to understanding biological systems at the molecular level. Topics depend on recent developments in bioanalytical research but may include sub-cellular analyses, proteomics, electrochemical methods, and nanoparticle-based approaches to analysis. This course stresses extensive reading of recent literature in bioanalytical chemistry, critical evaluation of published scientific papers, and development of skills in scientific writing. This course satisfies the Advanced Writing requirement. Prerequisite: CTW 1 and 2, CHEM 111, or consent of instructor. (5 units)

115. Chemistry and Biochemistry Seminar

Active areas of research in university, industrial, and government laboratories, presented by guest speakers. May be repeated for credit. Graded P/NP only. Pre- or corequisite: CHEM 33. (0.5 units)

130. Organic Syntheses

Modern synthetic methods applied to the preparation of structurally complex target compounds, such as bioactive natural products and pharmaceuticals. Extensive discussion of synthetic planning, known as retrosynthetic analysis, emphasizing the standard bond-forming methods learned in CHEM 31--33. Prerequisite: CHEM 33. (5 units)

131. Bioorganic Chemistry

Chemical synthesis of carbohydrates, nucleic acids, peptides, proteins, and reaction mechanisms of biological cofactors. Offered in alternate years. Prerequisite: CHEM 33. (5 units)

132. Polymer Chemistry

Synthesis and characterization of polymers and complex macromolecules. Special emphasis on polymerization mechanisms, kinetic, and thermodynamic aspects of these reactions, and also applications of polymers in society. Much of the course content will come from current literature. This course satisfies the Advanced Writing requirement. Prerequisite: CTW 1 and 2, CHEM 33; or CHEM 32 with consent of instructor. (5 units)

133. Medicinal Chemistry

Medicinal chemistry will engage students in the study of the scientific processes and experiments involved in drug discovery. By examining case studies, students will appreciate how drug discovery has shaped historical events, how and why drug regulation processes have evolved, and how societal forces influence which therapeutic areas are targeted for drug discovery. Students will become familiar with experiments that clarify drug interactions with biomolecules and biological systems and drug efficacy. In-depth study of specific drugs will analyze societal influences that contributed to their discovery, their scientific development, and their impact (or potential impact) on society. This course satisfies the Science, Technology and Societies requirement. Prerequisite: Chem 33. (5 units)

134. Drug Synthesis and Its Impact

Drug Synthesis and its Impact on Society will develop student's skills in designing viable syntheses of drug targets and understanding of how drug synthesis plays a critical role in healthcare and society. Through examining case studies, students will study the development of new drug targets, learn how lead compounds progress towards marketable drugs and how drug synthesis has directly impacted society in constructive and destructive ways. Societal impact topics will be developed and discussed in the context of how drugs benefit human health and how these chemical compounds are both used and misused. Prereq: Chem 33 (5 units)

141. Biochemistry I

An introduction to structure/function relationships of biologically important molecules, enzymology, membrane biochemistry, and selected aspects of the intermediary metabolism of carbohydrates. Pre- or corequisite: CHEM 33. (5 units)

142. Biochemistry II

Includes a study of various aspects of the intermediary metabolism of carbohydrates, lipids, and amino acids, as well as nucleic acid structure and function, protein synthesis, and subcellular sorting, and more advanced molecular physiology, including membrane biochemistry, signal transduction, and hormone action. Prerequisite: CHEM 141. (5 units)

143. Biochemical Techniques

A laboratory course emphasizing fundamental theory and practice in biochemical laboratory techniques, including preparation and handling of reagents; isolation, purification, and characterization of biomolecules; enzyme kinetics; spectrophotometric assays; and electrophoretic techniques. Laboratory 8 hours per week. Prerequisites: CHEM 141 and consent of instructor. (3 units)

150. Biophysical Chemistry

Introduction to the physical behavior of biomolecules. Topics include transport properties, reaction kinetics, sedimentation, electrophoresis, binding dynamics, and molecular motion. Prerequisites: MATH 13 and CHEM 50, or consent of instructor. (5 units)

151. Quantum Chemistry

Fundamentals of quantum mechanics, including wave functions and probability; rotational, vibrational, and electronic transitions; atomic and molecular electronic structure; and magnetic resonance. Prerequisites: MATH 13 and CHEM 50. (5 units)

152. Chemical Thermodynamics

Fundamental laws of thermodynamics, and applications to ideal and real gas equations of state, ideal and real solutions, phase equilibria, and electrochemistry. Prerequisites: MATH 13 and CHEM 50. (5 units)

154. Physical Chemistry Laboratory

Experimental applications of thermodynamics, kinetics, spectroscopy, and other aspects of physical chemistry. Laboratory 8 hours per week. Prerequisite: Must be enrolled in or have completed CHEM 151 or 152. (3 units)

181. Senior Laboratory Research

A laboratory course that will engage students in experimental research projects aligned with the instructor's scholarly interests. Students will master fundamental laboratory skills, follow safe experimental protocols, analyze experimental results, and adapt to the evolving questions and challenges of a research project. Students will also practice scientific communication strategies to present research findings. Laboratory 4 hours per week. Prerequisite: CHEM 50 and permission of instructor. (1 unit)

182. Undergraduate Research

Experimental research project supervised by chemistry and biochemistry faculty members. Each unit requires a minimum of 30 hours of laboratory work. May be repeated for credit. Prerequisite: Consent of instructor. (1--3 units)

183. Senior Research Experience

Individual research under the supervision of chemistry and biochemistry faculty members, culminating in a comprehensive progress report. Laboratory at least 9 hours per week. Prerequisites: Senior standing in chemistry and consent of instructor. (3 units)

184. Capstone Research Experience

Continuation of individual research under the supervision of a chemistry and biochemistry faculty member, culminating in a thesis and oral presentation. Laboratory at least 9 hours per week. Prerequisites: CHEM 182 or 183, and consent of instructor. (3 units)

190. Special Topics in Chemistry

Special topics courses covering advanced topics in any of the five areas of study in chemistry may be offered on an intermittent basis. These courses may be offered as once-a-week seminars or follow more traditional course schedules. The course units will vary based on the number of course meetings per quarter and the course workload. Possible topics are organic mechanisms, medicinal chemistry, transition metals in organic synthesis, materials, nanotechnology, photochemistry, electrochemistry, molecular physiology, and membrane biochemistry. This course may be repeated for credit if the topics vary. (2--5 units)

199. Independent Study

Directed study under the supervision of a faculty member in an area or topic in chemistry or biochemistry not covered in regular courses. Registration by permission of the professor directing the study only. (1--5 units)

Child Studies Program

Professor Emerita: Eleanor W. Willemsen

Professor: Barbara M. Burns

Associate Professor: Brett J. Solomon (Director)

Assistant Professor: Omar Davila, Jr.

Senior Lecturer: Elizabeth Day

The Child Studies (CHST) major is designed for undergraduates interested in careers working with children and families in school or community settings. The curriculum encompasses a social-justice, anti-racist, and cultural competence perspective, all constructs that are critical for 21st century child advocates. As a complement to the curriculum, CHST majors work extensively with children and families in local schools and community-based programs. Our faculty is committed to addressing the myriad issues affecting marginalized populations: education policy, the pre-school to prison pipeline, socio-emotional processes, political dynamics, community organizing, institutional change, and so much more. CHST majors earn a Bachelor of Science degree and are prepared to matriculate to graduate studies in fields, such as teacher education, social work, counseling, psychology, law and more. CHST advisors can provide information about teaching credential programs and many other vocations requiring further graduate or professional school education. Our CHST alumni pursue careers in social work, teaching, counseling, family law, speech and language pathology, occupational therapy, or nonprofit agencies that provide community services to children and families.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in child studies must complete the following program requirements:

- CHST 3, 4, 5, 6, 11, 12, 75, 100, 101, 102, 104, 106 (ELSJ), 180, 181, 182
- PSYC 2, 185 (ELSJ)
- One elective selected from: CHST 66, 109, 111, 114, 115, 123a, 138, 190, 199; ENVS 131; PSYC 134, 172

Lower-Division Courses

3. Child Studies

Designed to cultivate critical awareness, thinking, and action with respect to children and families in schools and broader communities. The course fosters an understanding of social justice issues related to children and youth in schools and communities, historical movements and organizational structures within education, and the emerging professions of child studies. (4 units)

4. Cultural Competence and Humility with Children and Families

Cultural competence and humility taken together allow us to better communicate, listen, teach, learn, support, and lead in multiple contexts. Becoming culturally competent requires the critical development of awareness, attitudes, knowledge, and skills that create supportive and transformative interactions when working with children and families within diverse environments. This course is designed to cultivate knowledge of self and others while also promoting a

formative anti-oppression framework. Through readings, films, discussion, and trainings, we will devote ourselves to the rigorous examination of personal, interpersonal, and systemic/structural racism, classism, sexism, heterosexism, ageism, ableism, and religious discrimination toward the pursuit of social justice with children and families. (4 units)

5. Compassionate Leadership and Mindfulness

Explores current research on how mindfulness (cultivating self-awareness) within our personal and professional lives leads to essential workplace leadership competencies such as: leading courageous conversations, managing conflict and emotions, and developing resilience in challenging situations. Students analyze how mindfulness programs can impact the role businesses and public organizations (e.g., schools, prisons) play in civic life. (4 units)

6. Information Literacy in Child Studies

An introduction to a wide variety of databases and internet sources useful in preparing papers, presentations, workshops, grant proposals, and informing oneself and others about a topic. Students will gain skills in scientific and data literacy as they understand traditional production flow of scholarly communication, the role of peer review, the expanding role of the Web,and recognize the difference betweens scholarly research and popular sources of information. Students will also effectively organize and credit information sources. Students will gain experience with reference management software, excel, and understand foundational elements of writing in the social sciences. (4 units)

11. Quantitative Research Methods and Statistics in Child Studies

An introduction to research methods and exploratory data analysis, descriptive statistics, probability, sampling, estimation, and statistical inference. Work problems are focused on how statistics are used in evaluating and understanding questions about children in school and community settings. Statistical software is included in course. Prerequisite: CHST 6. (4 units)

12. Qualitative Research Methods and Statistics in Child Studies

An introduction to qualitative research methods and analysis with a focus on the case study method, in-depth interviews, naturalistic observations, and focus groups. Focus is on research questions related to evaluating and understanding issues related to children and families. Emphasis is on observation, interviewing, and reflection skills. Prerequisite: CHST 6. (4 units)

66. Movement Education

An exploration of movement as a primary site of learning and meaning-making for children and youth. Students learn how to facilitate learning in the conceptual/cognitive, affective/socio-emotional, and psychomotor/kinesthetic domains, and reflect critically on the teaching process. Course culminates in student-led collaboratively designed lessons taught to children from neighboring K--8 schools. (4 units)

75. Technology and Education

Explores the relationship between technology, society, and education. Students investigate the appropriate role of technology in educational reform, evaluate the personal impact of social media on children and adolescents, and propose solutions to the pressing educational needs of our society. Interactive and engaging discussions and team projects highlight the dynamic quality of these issues. (4 units)

Upper-Division Courses

100. Advanced Writing for Research in Social Sciences

Explores quantitative and qualitative social science research on children, youth, and families, with a focus on the relationship between a research problem, the exploration of that problem, and the inferences that can be drawn from empirical inquiry. Students engage in close readings of scholarly articles while planning and participating in lessons to support collective learning. Emphasis on the development of skills in social science writing for academic audiences. Prerequisites: CTW 1, 2, and CHST 6, 11, 12 for majors; permission from instructor for non-majors. (5 units)

101. Early Childhood, Family and Community

An overview of theory and research of infancy and early childhood (ages 0--5). Requires participation in community-based learning experiences off campus. Specific topics vary and the course may be repeated for credit. Prerequisite: CHST 100 or permission of instructor. (5 units)

102. Middle Childhood, Family and Community

An interdisciplinary examination of children in middle childhood (ages 5--12). Requires participation in community-based learning experiences off campus. Specific course topics vary and the course may be repeated for credit. Prerequisite: CHST 100 or permission of instructor. (5 units)

104. Advocacy for Children

An interdisciplinary examination of child and family advocacy and the prevention of child abuse and neglect within a risk and resilience framework. Requires participation in community-based learning experiences off campus. (5 units)

106. Urban Education and Multiculturalism

The American ideal of equal educational opportunity is at odds with the persistent reality of the "achievement gap" between those students in affluent suburban schools and their counterparts in urban schools. This course focuses on education in large urban contexts, with a particular emphasis on students from low-income environments. Ethnicity and class are two critical lenses that examine the reasons for: (a) historical contexts underlying education in urban contexts; (b) lack of cultural competence, school failure, underachievement, and the preschool to prison pipeline; and (c) the politics and policy of education reform. This course requires participation in community-based learning experiences off campus. Fulfills ELSJ requirement. (5 units)

109. Children, Art, and Society

This course allows students to investigate the role of art and creativity in human development and understand the personal and societal impact of accessible, high quality, embodied arts experiences. The way the arts creates a path for more justice in the world, democratizes the classroom for English language learners, gracefully assists with classroom management, and fosters higher order thinking is explored, as is the notion of public schools offering all arts to all students. Student learning in this course culminates with transdisciplinary perspectives, acknowledging the powerful complexity and potential of the arts to serve as a bridge between diverse fields and perspectives creating new epistemologies. Final research papers have students investigating arts education efforts and organizations dedicated to the most pressing issues of our time (democracy, peace, diplomacy, the environment, migration, economic and social disparities, etc.), and offering imaginative analysis of ways to better serve the human family, particularly children and youth, via generative, creative, artful solutions. (5 units)

111. Immersion for Mindful Leadership

A formational immersion experience where students foster deeper social and emotional intelligence, vocational discernment, and strategies that support resilience and essential leadership competencies in preparation for demanding vocations in social, human, and business service sectors. Specific immersion sites vary. (5 units)

114. Parenting

Investigates parent-child relations from infancy through early adulthood with an emphasis on the social, cultural, and environmental forces that have an impact upon family dynamics. Reviews current research on parenting styles and practices, discipline, parent-child interactions, attachment, and the family context with an emphasis on professional implications for promoting local and global child health and well-being. (5 units)

115. Special Topics: International Internship/Study

Topics may vary. (1--5 units)

123A. Media and Youth

Cross-listed with COMM 123A. For course description, see COMM 123A. (5 units)

138. Exceptional Child

Introduction to childhood mental, intellectual, and developmental disabilities, behavior disorders, communication (speech and language) disorders, hearing impairments, physical and health impairments, severe disabilities, and the gifted and talented. The impact of these differences in comparison with typical development is addressed. This course requires participation in community-based learning experiences off campus. (5 units)

180. Internship in Child Studies

Field experience in a school, human services, or community organization required for all Child Studies majors. Class meetings and 80 hours at organization site. P/NP only. Prerequisite: Child Studies Major or permission of instructor. (5 units)

181. Senior Capstone I

This course provides students with the opportunity to develop a research project and learn through direct engagement with children in school, family, or community settings. Students will be guided as they review the literature, devise a research question, and design and pilot research procedures. Prerequisites: senior status; CHST 100 and 180. This course is taught in the fall quarter and requires participation in community-based learning experiences off campus. (5 units)

182. Senior Capstone II

Students will complete their research project developed in CHST 181 including data collection and analysis, writing a research paper in APA style, and presenting a research poster. Prerequisites: senior status; CHST 100 and 181. This course is taught in the winter quarter and requires participation in community-based learning experiences off campus. (5 units)

190. Resilient Families

A community-engaged guided research experience focused on promoting well-being and resilience in children and families. Fifty hours of research for 1 credit. May be repeated for credit. Permission of instructor required. P/NP only. (1--2 units)

196. Future Teachers Project Seminar

A seminar addressing education and the teaching profession for students participating in the Future Teachers Project. May be repeated for credit. (1 unit)

199. Directed Reading/Directed Research

Independent study or supervised research project with a faculty sponsor from CHST. Requires a written proposal and approval by both the faculty sponsor and the CHST program director. Proposal for enrollment is due before finals week of the previous quarter. P/NP only. (1--5 units)

Department of Classics

Associate Professor Emerita: Helen E. Moritz

Professors: William S. Greenwalt, John R. Heath

Associate Professors: Scott LaBarge (courtesy appointment with Department of Philosophy), Carolynn E. Roncaglia, Daniel W. Turkeltaub (Department Chair)

Assistant Professor:

Lecturers: Elizabeth Crofton-Sleigh, Angela Holzmeister

Classics is the study of all aspects of the life and culture of ancient Greece and Rome in their Mediterranean context and their enduring relevance to our lives. The Department of Classics offers all levels of ancient Greek and Latin as well as courses that explore the origins of Western literature, history, art, mythology, philosophy, religion, ethics, government, science, architecture, engineering, city planning, and so forth.. Most courses in the department require no knowledge of an ancient language and are open to any interested student. Latin or Greek may be taken to satisfy the second language requirement. Because of the multidisciplinary nature of the field, classics provides an ideal liberal arts curriculum that is an excellent background for careers in many areas.

Students majoring or minoring in classics may pursue one of three different tracks: classical languages and literatures, classical studies, or ancient studies. Students who want to major and minor in classics must do so in different tracks.

Requirements for the Major in Classics

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in classics must complete the departmental requirements for the track desired:

Bachelor of Arts in Classics

Classical Languages and Literatures Track

- Nine upper-division courses in Greek or Latin
- First-year proficiency in both classical languages
- CLAS 197A and CLAS 197B

Classical Studies Track

- Six classes in either Latin or Greek, which may include the elementary sequence (but not both sequences)
- Six classics courses, at least four of which must be upper-division
- CLAS 197A and CLAS 197B

Ancient Studies Track

- CLAS 60 or CLAS 61
- Eleven non-language classics courses, at least seven of which must be upper-division
- CLAS 197A and CLAS 197B

Requirements for the Minor in Classics

Classical Languages and Literatures Track

- Completion of five upper-division courses in either Latin or Greek (Latin 3 or Greek 3 can be counted as an upper-division course for these purposes)

Classical Studies Track

- Latin 3 or Greek 3, or one upper-division Greek or Latin course
- Four classics courses, at least two of which must be upper-division

Ancient Studies Track

- CLAS 60 or CLAS 61
- Four non-language classics courses, at least two of which must be upper-division

Approved Courses toward Major and Minor in Classics

Approved classics courses include all classes (including cross-listed courses) with a CLAS prefix, as well as courses in other departments such as ARTH 104, 106, 110; ARTH 152 may also count for the Ancient Studies Track; PHIL 14, 141; POLI 111. Other courses in the ancient world may count as well---consult with the department chair of classics before enrolling. With the approval of the chair, a classical language class may be substituted for a non-language course.

Lower-Division Courses: Latin Language

1. Elementary Latin I

Introduction to vocabulary, forms, and grammar of classical Latin. Development of reading skills with supporting exercises in writing. (4 units)

2. Elementary Latin II

Continuation of Latin I. (4 units)

3. Elementary Latin III

Completion of elementary Latin. (4 units)

Upper-Division Courses: Latin Language

101. Intermediate Latin

A course for students who have finished basic Latin grammar. Students will review Latin forms and syntax while reading prose and poetry of increasing complexity. Students will be prepared to enroll in Latin reading courses covering individual authors and genres. Offered in fall quarter only. (5 units)

121. Caesar

Reading course in Latin. Representative selections from the *Commentarii on the Gallic War* and/or *Bellum Civile*. Consideration of the adaptation of history to political ends. (5 units)

122. Catullus

Reading course in Latin. Lyric poems, short epigrams, and longer mythological poems by the poet Catullus, of the late Roman Republic. (5 units)

123. Roman Comedy

Reading course in Latin. One or more plays by Plautus or Terence. Social function and nature of Roman comedy. (5 units)

124. Ovid: Metamorphoses

Reading course in Latin. Selections from Ovid's epic compendium of mythology. (5 units)

125. Cicero: Philosophical Works

Reading course in Latin. Consideration of Cicero's eclectic philosophy through a careful reading of one or more of his philosophical dialogues. (5 units)

126. Cicero: Oratory and Rhetoric

Reading course in Latin. One or more exemplars of Cicero's rhetorical style or rhetorical theory. Consideration of rhetorical forms, figures, and topoi. (5 units)

127. Vergil: Aeneid

Reading course in Latin. The epic poem on the effort of founding Rome and the cost of its greatness. Consideration of the traditional and innovative features of Vergil's epic style and purpose. Attention to epic meter. (5 units)

128. Seneca: Tragedies

Reading course in Latin. Careful reading and discussion of a play by Seneca, with particular consideration of Seneca's cultural context and importance in literary history, including his influence on later dramatists such as Shakespeare. (5 units)

129. Roman Novel

Reading course in Latin. Students will study a Roman Novel, with selections read in Latin and supplementary materials in English. Possible texts include Petronius's *Satyricon*, a trenchant satire of Roman society composed under Nero; and Apuleius's *Golden Ass*, the grim yet ribald tale of a man who accidentally turns himself into a donkey. (5 units)

130. Roman Elegy

Reading course in Latin. Representative selections from the works of Tibullus, Propertius, and Ovid. Origins and development of the elegiac genre. (5 units)

131. Vergil: Eclogues and Georgics

Reading course in Latin. Vergil's earlier works: pastoral poems set in an idealized landscape and the didactic poem on the agriculture and countryside of his native Italy. (5 units)

132. Horace

Reading course in Latin. Selections from the odes and epodes. Attention to cultural context and the adaptation of Greek lyric forms and rhythms to the Latin language. (5 units)

133. Livy

Reading course in Latin. Selections from the *Ab Urbe Condita*---the history of Rome from its semi-mythical founding through monarchy, early Republic, and Punic Wars. (5 units)

134. Roman Letters

Reading course in Latin. Selections from letters by various authors: Cicero, Seneca, Pliny. Discussion of the epistle as a literary genre, with focus on the social and historical background of the author. (5 units)

135. Late Antique and Medieval Latin

Reading course in Latin. Major works of prose and poetry from the fourth century to the Renaissance. St. Augustine's *Confessions*; Boethius's *Consolation of Philosophy*; the histories of Gregory of Tours, Bede, and Einhard; Latin fables; popular songs such as the *Carmina Burana*; and the humanistic writings of Dante, Boccaccio, and Petrarch. (5 units)

136. Roman Historians

Reading course in Latin. Selections from Roman historians such as Tactitus or Sallust. Focus on the construction of history as both a literary genre and academic discipline, as well as how Romans constructed their own history. (5 units)

137. Latin Biography

Reading course in Latin. Selections from Suetonius and/or Cornelius Nepos. Focus on the genre of biography and the cultural contexts of the authors and subjects. (5 units)

138. Martial

Reading course in Latin. Selections from Martial's epigrams. Focus on the genre of epigram, Martial's poetic style, and the relationship between Martial's poetry and his cultural context. (5 units)

139. Special Topics in Latin Poetry

Reading course in Latin. Occasional courses in selected authors or genres for advanced students. Possible topics: Lucretius, Lucan, or satire. (5 units)

140. Special Topics in Latin Prose

Reading course in Latin. Occasional courses in selected authors or genres for advanced students. Possible topics: Quintillian, Varro, Aulus Gellius. (5 units)

Lower-Division Courses: Greek Language

21. Elementary Greek I

Introduction to vocabulary, forms, and grammar of Attic Greek. Development of reading skills with supporting exercises in writing. (4 units)

22. Elementary Greek II

Continuation of Greek I. (4 units)

23. Elementary Greek III

Completion of Greek grammar. Introduction to reading Greek literature. (4 units)

Upper-Division Courses: Greek Language

151. Lucian

Reading course in Greek. Selections from the author's satirical treatments of mythology, history, philosophy, and rhetoric and/or from the fantasy called *A True Story*. Lucian's place in the Second Sophistic. (5 units)

152. Homer: Odyssey

Reading course in Greek. Selected passages demonstrating the exploration of the heroic ethos in an epic of peacetime. Consideration of epic meter and conventions. (5 units)

153. Euripides

Reading course in Greek. A complete tragic drama. Attention to characterization, dramatic structure, poetry, and Euripides' place in the history of tragedy. (5 units)

154. Herodotus

Reading course in Greek. Selections from the *Persian Wars*. Focus on Herodotus' prose style, narrative form, world view, and achievements as the "Father of History." Peculiarities of the Ionic dialect. (5 units)

155. Plato

Reading course in Greek. Careful reading from one or more dialogues such as *Apology, Crito, Phaedo,* and *Republic*. Detailed study of dialogue mode of discourse; overview of Plato's philosophy. (5 units)

156. Greek New Testament

Reading course in Greek. Readings selected from the Koine Greek text of the New Testament with a concentration on the gospels or the epistles. Close reading of the text with a view to theological implications of the vocabulary. Introduction to primary research tools. (5 units)

157. Hesiod

Reading course in Greek. Selected readings from Hesiod's two poems, *Works and Days* and *Theogony*. (5 units)

158. Xenophon

Reading course in Greek. Selected readings from Xenophon's *Memorabilia*, *Anabasis*, *Cyropaedia* or one of his other works. Focus on Xenophon's style and cultural and historical context. (5 units)

159. Greek Novel

Reading course in Greek. Selected chapters from one or more of the ancient Greek novels, paying particular attention to language and style. In addition to our reading, we will also explore the genre of the novel and the literary, historical, and social contexts surrounding the development of this literary phenomenon. (5 units)

160. Plutarch

Reading course in Greek. Selected readings from Plutarch's biographies or *Moralia*. (5 units)

161. Homer: Iliad

Reading course in Greek. Selected passages illustrating the course and consequences of the wrath of Achilles and the nature of the hero. Consideration of epic meter and conventions. (5 units)

162. Sophocles

Reading course in Greek. A complete tragic drama. Attention to characterization, dramatic structure, and poetry, and to the author's particular contributions to the development of the tragic form. Metrical reading of the text. (5 units)

163. Aeschylus

Reading course in Greek. A complete tragic drama. Attention to characterization, dramatic structure, and poetry, and to the author's particular contributions to the development of the tragic form. Metrical reading of the text. (5 units)

164. Greek Oratory

Reading course in Greek. Selections from a representative Greek orator such as Demosthenes or Lysias. Consideration of classical rhetorical forms, topoi, and cultural and historical context. (5 units)

165. Aristophanes

Reading course in Greek. A complete comic drama. Attention to dramatic structure, characterization, poetry, political and social commentary, comedic style, and to Aristophanes' place in the history of comedy. (5 units)

169. Special Topics in Greek Poetry

Occasional courses in selected authors or genres for advanced students. Possible topics: Lyric, Homeric Hymns, or Pindar. (5 units)

170. Special Topics in Greek Prose

Occasional courses in selected authors or genres for advanced students. Possible topics: Thucydides, Aristotle, or Marcus Aurelius. (5 units)

Lower-Division Courses: Classical Culture

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections, or the construction of Western culture in its global context. Courses will address significant texts, ideas, issues, and events in their historical context from a humanistic

perspective. Classics topics include Friendship: Ancient and Modern, , Gods and Mortals, Heroes and Heroism, Sports and Spectacle, and Ancient Spaces. Successful completion of C&I I (CLAS 11A) is a prerequisite for C&I II (CLAS 12A). (4 units each quarter)

19. Greek Civilization

An introductory overview that synthesizes central aspects of ancient Greek civilization to provide a general understanding of ancient Greek culture and its contributions to later societies. Topics include mythology, religion, history, theater, politics, art, philosophy, and gender. This course can be taken either as a lower-division course or as an upper-division course (CLAS 119). (4 units)

20. The Legacy of Rome

What have the Romans ever done for us? This course provides an overview of ancient Roman culture and the fundamental role the Romans played in shaping western civilization. We will pay particular attention to the legacy of Roman civilization that continues to influence contemporary culture, whether for good or ill. Topics include the republicanism, concepts of time, literature, architecture, religion, and the purpose of education itself. And the aqueducts. And the wine. (The course has no prerequisites.) This course can be taken either as a lower-division course or as an upper-division course (CLAS 120). (4 units)

41. Word Workshop: Scientific Etymology

This class will help you build your vocabulary and acquire the tools to figure out words that you do not already know by teaching you the basics of English word formation and some common Greek and Latin morphemes. (2 units)

42. Greek and Roman Heroes in Hollywood

Movies have fascinated their audiences with Greek myths for decades but are notorious for playing fast and loose with the ancient stories. This course examines some cinematic versions of classical figures such as Perseus or Heracles and the classical sources they adapt for modern audiences. (topic varies). (2 units)

51. History of Philosophy: Classical and Medieval

Beginnings of Western philosophy. Representative philosophers of the Greek and Medieval traditions, with attention to their historical milieu and their relevance to contemporary thought. Also listed as PHIL 14. (4 units)

52. Introduction to the Arts of Ancient and Medieval Europe

Visual analysis of the ancient and medieval world. Topics may include the relationship between Greek art and politics, Imperial Roman art, propaganda, Pompeian wall painting, early Christian art, the origins of Islam, and the function and culture of pilgrimage in the Middle Ages. Also listed as ARTH 21. (4 units)

60. Introduction to Ancient Studies

An exploration of the nature of political and religious authority: that is, the relationship between the individual, the state, and the divine---in three different ancient civilizations. The primary "texts" for this investigation are the representative monuments of each culture: the pyramids of Egypt (particularly the Old Kingdom), the Temple of Solomon in Jerusalem in the united monarchy, and the Parthenon. (4 units)

61. Ancient Empires

The course examines the construction and manipulation of identities in three ancient empires---Achaemenid Persian, Seleucid, and Roman---as well as cultures on their peripheries. Both literary and material sources are used to study how the inhabitants and rulers of these large, cosmopolitan empires defined themselves. (4 units)

63. Ancient Eros: Sex and Religion in Ancient Greece

This course explores the various manifestations and significance of sex ("Bittersweet Eros"), both the deity and the divinely-inspired passion, in ancient Greece. While this course focuses on examining the socio-religious significance of Aphrodite and her son, Eros (the Roman Cupid), it is also designed to provoke an open conversation about responses to sex found in relevant contemporary religious expression. Assignments are derived from Greek and Roman literature, philosophy, historiography, and art, as well as from contemporary magazines, scholarly journals and books, religious documents, and movies. Participation in class discussion is mandatory for this seminar-style course. (4 units)

65. Classical Mythology

Principal gods and heroes of Greek and Roman antiquity: their stories, significance, and pictorial representations. Implications of myth in society and possible origins of myth. Important background for European and English literature. (4 units)

66. Ancient Mediterranean Religious Traditions

An introduction to the beliefs and practices of religious traditions in the ancient Mediterranean world. Students will examine polytheistic, henotheistic, and monotheistic religions and their interactions with each other, particularly in cosmopolitan societies. Attention will be paid to ancient Egypt, Israel, Greece, Carthage, Rome, and the Celtic world.

67. Ancient Greek Religion

Consideration of the differing attitudes and expectations of polytheisms and monotheisms, and of religious expression in the context of classical Greek cult and ritual. Readings are drawn from a wide variety of literary, historical, philosophical, and epigraphical texts. Also listed as HIST 16. (4 units)

68. Ancient Roman Religion

Examination of religious practices, institutions, and beliefs of the ancient Romans. Special consideration of interconnections in Roman religiosity between the acts/beliefs of individuals and the concerns of the state. Concludes with philosophic mysticism, magic, mystery religions, and Christianity. Also listed as HIST 17. (4 units)

75. Classics in Cinema

A survey of the classical world through selected dramatic films illustrating sequentially the cultural and political history of ancient Greece and Rome. Close viewings of popular films, with comparative reference to sources and practice in the techniques of film criticism. (4 units)

83. Hercules!

While many people today may first encounter Hercules through the popular Disney movie, TV shows, or comic books, the original character of Hercules in the ancient world is much more complex than many of these current depictions convey. Not only powerful and brave, but also an adulterer and murderer, Hercules (or Heracles, as he is known to the ancient Greeks) struggles both literally and metaphorically on his path to immortality. Our class will examine various ancient and modern depictions of Hercules in order to understand the full picture of a truly complicated figure. This course can be taken either as a lower-division course or as an upper-division course (CLAS 183). (5 Units)

86. Cultural Heritage and Collecting Antiquities

This course will study the history of museums, art collecting, and art theft in the ancient world. It will explore the concept of cultural heritage to discuss what is shown in collections, and to critique what museums are choosing to show to the viewing public, and what this means for civic life. This class is an exploration of art collecting in the ancient world, the heritage of ancient art, and its presentation and preservation for the edification of the viewing public in our modern world. This course can be taken either as an upper-division course (CLAS 186) or lower-division course (4 units).

Upper-Division Courses: Classical Culture

108. Ancient Greece

A survey of Hellenic history from the Bronze Age to Alexander the Great. Emphasis on the rise and fall of the polis as an independent social, cultural, and political community. Also listed as HIST 108. (5 units)

109. The Hellenistic Age

A cultural, social, and political review of Alexander the Great's conquests and their Hellenistic ramifications through the reign of Egypt's Cleopatra VII. Also listed as HIST 109. (5 units)

110. Roman Republic

A political, military, social, and cultural review of the rise and fall of the most successful state the West has ever known. Also listed as HIST 110. (5 units)

111. Roman Empire

A political, social, and cultural survey of the Roman Empire beginning with Augustus and tracing changes in Rome from the development of the Roman Empire as a world state to the development of Christianity as a world religion. Also listed as HIST 111. (5 units)

113. Democracy Under Siege: Ancient Athens and Modern America

This course will trace the fate of the Athenian democracy from the archaic period through the Hellenistic Age (circa 594to 307 BCE). It will cover the foreign and domestic policies of Athens through this period, and cover both the problems and the opposition to democracy by non-democratic polities, as well as by those opponents of democracy who lived in Athens itself. Although the United States is a republic and not a democracy in the Athenian mode (which in fact, was the intent of our republic's founders), the U.S. in the 21st century is facing comparable opposition both domestically and in the realm of foreign affairs to those which confronted the ancient Athenians. Parallels between the world of the 4th century BCE and the 21st century will not only be noted, they will be emphasized through readings and class discussions. Also listed as HIST 132. (5 units)

115. Numismatics

This course will study how the minting of coins changed the Western world politically, sociologically, and economically. It will use the minting of ancient coins to investigate ancient economies and the political structures from which they emerged. Technical aspects of the minting of coins will be addressed, as will the artistic achievements of ancient engravers. (5 units)

116. Greek Art

The course examines Greek art, architecture, and material culture from the Bronze Age through the Roman period. Special attention is paid to the development of art and architecture within political, historical, and cultural contexts. Also listed as ARTH 104. (5 units)

118. The Rise of Macedonia Through the Youth of Alexander the Great

Europe's first royal dynasty---that of the Macedonian Argead House---produced two kings in the fourth century BCE, Philip II and Alexander III (the "Great"), who changed the course of Western history forever. Thoroughly steeped in the culture of the polis, Macedonia and its kings nevertheless represented the antithesis of the city states' political achievements. This course will focus on the development of the Macedonian kingdom from its earliest days through the reign of its greatest king, Philip (circa 650--336 BCE). It will preface the meteoric career of Macedon's most famous monarch, Alexander, and the Hellenistic age that followed. Also listed as HIST 106. (5 units)

119. Greek Civilization

An introductory overview that synthesizes central aspects of ancient Greek civilization to provide a general understanding of ancient Greek culture and its contributions to later societies. Topics include mythology, religion, history, theater, politics, art, philosophy, and gender. This course can be taken either as an upper-division course or lower-division course (CLAS 19). (5 units)

120. The Legacy of Rome

What have the Romans ever done for us? This course provides an overview of ancient Roman culture and the fundamental role the Romans played in shaping western civilization. We will pay particular attention to the legacy of Roman civilization that continues to influence contemporary culture, whether for good or ill. Topics include the republicanism, concepts of time, literature, architecture, religion, and the purpose of education itself. And the aqueducts. And the wine. (The course has no prerequisites.) This course can be taken either as an upper-division course or lower-division course (CLAS 20). (5 units)

141. Love and Relationships in Classical Antiquity

An examination of the many forms of loving and erotic relationships as they pertained to the Greek and Roman quest for the best human life. Readings in Euripides, Sappho, Ovid, Plato, Aristotle, and many others from genres of poetry, essays, letters, tragedy, and philosophy. Also listed as PHIL 141D and WGST 133. (5 units)

146. Age of Socrates

A study of Socrates as both a historical and literary figure, with special attention to his political and cultural context, and to our three chief sources on him and his philosophical activities: Aristophanes, Plato, and Xenophon. Also listed as PHIL 141. (5 units)

149. Ancient and Modern Ethics

This course will engage theories and issues related to normative ethics (generally speaking, the study of ethics concerned with right or wrong conduct, good or bad actions, and virtuous or vicious character). In this class, we will discuss a variety of both ancient and modern texts dealing with ethical theories/approaches and their practical applications, in order to productively debate the merits of these approaches and the plausibility of their applications to contemporary ethical issues, such as animal rights, eugenics, abortion, and torture.(5 units)

171. Ancient Science and Technology: Atoms, Aqueducts, and Alchemy

This course examines the development of science and technology in the ancient Mediterranean, with a focus on Greek city-states, Hellenistic kingdoms in the age of Alexander the Great and Cleopatra, and the Roman Empire. The creation and evolution of ancient scientific disciplines are studied, as is the use of technology in construction, warfare, agriculture, religion, manufacturing, and medicine. Both ancient theory and practice are examined within their cultural, social, political, and economic context. (5 units)

172. The World of Gladiators

This course provides an introduction to the study of the Roman world, with emphasis on the use of quantitative and qualitative research methods. Students will be introduced to the disciplines of archaeology, numismatics, epigraphy, and ceramic studies, and within these disciplines will examine and compare different methods of evaluating ancient evidence. Topics discussed will include ancient dining customs, gladiators, social mobility, bandits, banking, and Roman Egypt. Also listed as HIST 107 and ANTH 173. (5 units)

175. Topics in Classical Literature

Occasional courses or seminars in specialized topics. Consult current course descriptions for details. (5 units)

176. Topics in Ancient History

Occasional courses or seminars in specialized topics. Consult current course descriptions for details. (5 units)

177. Topics in Ancient Philosophy

Occasional courses or seminars in specialized topics. Consult current course descriptions for details. (5 units)

178. Topics in Classical Culture

Occasional courses or seminars in specialized topics. Consult current course descriptions for details. Also listed as HIST 129. (5 units)

180. Ancient and Modern Laughter

Students will investigate the nature and psychosocial functions of laughter, with a particular eye to the Greek and Roman roots of Western comedy. Readings will focus on comedic plays by Aristophanes, Plautus, and Terence, supplemented with readings of ancient and modern humor theorists and psychologists. For each playwright, we will also analyze one popular recent movie and other modern analogs of humor and plot structures. Students will demonstrate their understanding of the material by collaborating over the course of the term to write, costume, and perform original plays in imitation of the ancient playwrights. Also listed as THTR 181a. (5 units)

181. Classical Tragedy

Representative works of the principal Greek tragic playwrights: Aeschylus, Sophocles, and Euripides. Features of the tragic genre, its origins, and the conventions of its performance. Also listed as THTR 181. (5 units)

183. Hercules!

While many people today may first encounter Hercules through the popular Disney movie, TV shows, or comic books, the original character of Hercules in the ancient world is much more complex than many of these current depictions convey. Not only powerful and brave, but also an adulterer and murderer, Hercules (or Heracles, as he is known to

the ancient Greeks) struggles both literally and metaphorically on his path to immortality. Our class will examine various ancient and modern depictions of Hercules in order to understand the full picture of a truly complicated figure. This course can be taken either as a lower-division course (CLAS 83) or as an upper-division course. (5 Units)

184. Classical Mythology in the Western Tradition

An exploration of some of the ways authors from the classical period through the 20th century have manipulated Greek myths for their own poetic and political purposes. Focus is on the legends surrounding the fall of Troy, with particular attention paid to the shifting character of perhaps the two most protean figures in Greek mythology: Odysseus and Helen. Texts include selections from Homer's *Iliad*, Vergil's *Aeneid*, and Dante's *Inferno*, and un-excerpted works by Homer, Sophocles, Euripides, Gorgias and Isocrates, Ovid, Seneca, Dictys and Dares, Shakespeare, Tennyson, Giraudoux, modern Greek poets, and the Coen brothers. (5 units)

185. Gender in Antiquity

Investigation into the representation and the reality of gender in social, economic, political, and religious contexts in the classical world. Also listed as WGST 157. (5 units)

186. Cultural Heritage and Collecting Antiquities

This course will study the history of museums, art collecting, and art theft in the ancient world. It will explore the concept of cultural heritage, to discuss what is shown in collections and to critique what museums are choosing to show to the viewing public and what this means for civic life. This class is an exploration of art collecting in the ancient world, the heritage of ancient art, and its presentation and preservation for the edification of the viewing public in our modern world. This course can be taken either as an upper-division course or lower-division course (CLAS 86) (5 units).

187. The Democratic Muse: Public Art in Athens and the United States

This course will compare and contrast the function of publicly funded art in the two most celebrated Western democracies, classical Athens and the United States. After exploring the "meaning" of the Parthenon, students will discuss the civic role and thematic significance of important (and usually controversial) examples of Greek and American public art and examine what they have to say about imperialism, war, religion, gender, and economic policy. In what way can the arts promote a civil society? How is art "good" for democracy, and vice versa? Should a democracy fund the arts, and if so, how? (5 units)

188. Greek Justice: Ancient Roots of the American Court System

This course explores the ancient Greek roots of modern American justice. We study how the classical Athenian court system worked, as well as how the Greeks used poetry, tragedy, comedy, mythology, and philosophy to develop and discuss the concepts of justice that underpinned their court systems. We focus particularly on the nature of justice, the rationale for jury trials, and the role law plays in a democratic state, comparing and contrasting classical Greek and modern American ideas. At the end of the course students run trials using classical Athenian court structure and judicial philosophy to try controversial cases currently working their way through the U.S. federal court system. (5 units)

197A. Capstone I

Biweekly seminar on various topics, combined with initial research for senior thesis. The identification of a coherent topic of thesis, development of a detailed outline, and preparation of an annotated bibliography, are conducted under the active direction of a member of the classics faculty. Prerequisites: For senior classics majors only; permission of instructor and department chair required. (3 units)

197B. Capstone II

Continuation of seminar in addition to supervised completion of the final draft, public oral presentation, and defense of the senior thesis. Prerequisites: CLAS 197A. For senior classics majors only; permission of instructor and department chair required. (3 units)

198. Internships/Practica

Independent work outside, and in coordination with, the department. By permission only.

199. Directed Reading/Research

Individually designed programs of reading or research, in Latin, Greek, or classics (e.g., literature in translation or culture). Prerequisites: Available to advanced students. Permission of instructor and department chair required. (5 units)

Department of Communication

Professors Emeriti: Don C. Dodson, Emile G. McAnany

Professors: Laura L. Ellingson (Patrick A. Donahoe, S.J., University Professor), Charles H. Raphael, Paul A. Soukup, S.J. (Pedro Arrupe, S.J., Professor), SunWolf, Michael T. Whalen (Knight Ridder/San Jose Mercury News Professor and Department Chair)

Associate Professors: Christine M. Bachen, Justin Boren, Hsin-I Cheng, Rohit Chopra, Sreela Sarkar

Assistant Professors: David Jeong, Marquette Jones, Nicole Opper, Chan Thai

Senior Lecturers: Katharine Heintz, Barbara Kelley, Gordon Young

Lecturers: Lisa Davis, Andrew W. Ishak, Emily Reese

The Department of Communication offers a program of studies leading to a bachelor of arts in communication. The major prepares students for a wide variety of graduate studies and for careers in the communication industry. A minor in digital filmmaking or journalism is also available. Students explore the theories, research methods, responsibilities, institutional structures, and effects of mass communication, interpersonal communication, strategic communication, and computer-mediated communication. The major also integrates theory with practice. We help students to apply their knowledge of the communication process to create their own speeches, films, television programs, journalism, Web content, and communication and marketing campaigns. Many of our students go directly to work in these fields after graduation.

Because the communication field requires students to have a broad liberal arts education, students integrate courses in the Department of Communication with courses in other departments. Often, students complete a minor or take a number of courses in related disciplines. To encourage students to explore global studies, the department accepts up to two approved study abroad courses toward completion of the communication course requirements, usually as upper-division electives. All junior and senior students are encouraged to complete an internship at an off-campus media organization or other communication-related institution. Internships may be counted for course credit as a department elective. In their senior years, all communication majors synthesize their learning in the department by completing a scholarly thesis (on any aspect of communication) or an applied capstone project (in journalism, digital filmmaking, or strategic communication/public relations). Theses and capstone projects, which typically embody students' most advanced work, are suitable for submission as part of applications for graduate school and jobs.

Students interested in communication, including nonmajors, enjoy a wealth of co-curricular opportunities. All students are encouraged to participate in one of the student-run campus media, including the student newspaper, radio station, and yearbook. Practicum courses allow students to gain academic credit for working in student media. Santa Clara Debate, one of the oldest forensic programs in continuous operation on the West Coast, provides a challenging and rigorous co-curricular activity designed to develop public speaking skills, critical thinking, and public policy analysis. Policy debate participants are eligible to apply for merit scholarships.

All courses taken to fulfill requirements for the major or minor must be four or five units and must be taken for a letter grade, not on a pass/no pass basis. Practicum courses, numbered 190 through 195, do not count toward fulfillment of the communication major or minor.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in communication must complete the following departmental requirements:

- COMM 1

- COMM 2
- COMM 12
- COMM 20
- COMM 30
- COMM 40
- Two upper-division communication theory courses (signified by the letter "A" in the course number)
- One upper-division communication applied course (signified by the letter "B" in the course number)
- Two additional approved elective upper-division communication courses
- COMM 110
- COMM 111 or 111G
- COMM 196 or 197

Requirements for the Minor

Students must choose either the journalism or digital filmmaking track. Communication majors may not enroll in one of these minors. Students may only complete one communication minor.

Students must fulfill the following requirements for a minor in communication:

Journalism (two lower-division; five upper-division)

Two lower-division requirements:

- COMM 40 and COMM 2 or COMM 30

Five (5) courses from the following lists, but no more than two (2) from List II.

List I:

- COMM 132B
- COMM 141B
- COMM 142B
- COMM 143B (may be repeated up to three times as topics vary)
- COMM 145B
- COMM 146B
- COMM 170A
- COMM 162B

List II:

- COMM 147A
- COMM 171A
- COMM 121A
- COMM 185A

One upper-division course from another department (such as political science, ethnic studies, or public health) may be accepted, with permission of the journalism minor director.

Digital Filmmaking (two lower-division; five upper-division)

Two lower-division requirements:

- COMM 2 and COMM 30

Five (5) courses from the following lists, but no more than two (2) from List II.

List I---Production Courses:

- COMM 130B
- COMM 131B
- COMM 132B
- COMM 133B
- COMM 134B
- COMM 135B

List II---History/Theory Courses:

- COMM 136A
- COMM 137A
- COMM 138A
- COMM 139A
- COMM 171A
- COMM 187A
- COMM 188A

Lower-Division Courses

1. Interpersonal Studies

Studies an overview of the communication process, issues, and theories explaining behaviors in human relationships, with an emphasis on linking our perceptions, thoughts, and feelings to those of our communication partners. Topics typically include the power of language, nonverbal communication, deception, persuasive communication, gender differences in communication, small group communication, and intercultural communication. (4 units)

2. Media in a Global World

An examination of the relationship between media and society in a global world, focusing on media industries, production, and audiences. Considers different types of media, theoretical perspectives on media and society, and ethical and regulatory issues pertaining to media practice in various national and international media markets and settings. (4 units)

12. Technology and Communication

Examination of the relationship between communication technology and society, in the past, present, and future. Hands-on work with the computer and Internet as tools for research and communication. (4 units)

20. Public Speaking

This course is designed to provide students with basic theories and skills that are essential to effective public speaking. Topics include audience analysis, organization, persuasion, credibility, and delivery. Students can apply these skills in a variety of public speaking situations, whether in future communication in college courses or in nonacademic settings. Each student will also learn to analyze, criticize, and evaluate the speaking of others. (4 units)

30. Introduction to Digital Filmmaking

Designed to help students learn the art and practice of digital filmmaking. Through a combination of lectures, labs, shooting, and editing exercises, students are introduced to the concepts and processes involved in producing a short documentary and a short fictional film. In addition to attendance in class, all students are required to attend production labs. Concurrent enrollment in lab required. (5 units)

40. Introduction to Journalism

Introduction to the theories and techniques of journalism, with emphasis on the role of journalism in a democracy, news values and ethics, reporting and writing techniques. Discussions and readings on the future of journalism. Includes weekly lab, which may be either in class, or online at a flexible time at the instructor's discretion. (5 units)

Upper-Division Courses

Note: Theory courses are designated with the letter "A" and application courses with the letter "B."

100A. The Science of Happiness

When we get what we want, why doesn't that always make us happy? Our relationships are embedded in the pursuit or loss of happiness. This course is an interdisciplinary review of research and theories that explain our experiences of happiness. Topics include the transient nature of happiness, our brain's biological happiness system, the effects of tragic or fortunate events, blind spots, counterfactual thinking/future-thinking/presentism, and the communication roles of complaints versus gratitude. We will look at how happiness is affected by winning or by losing, as well as why predicting our future happiness (when we choose mates, careers, and material acquisitions) is often flawed. Students will gain an understanding of what might (or might not) bring them and those they care about sustained happiness as a result of the decisions they make throughout their lives. Prerequisite: COMM 1. (5 units)

101A. Vocation and Gender: Seeking Meaning in Work and Life

An interdisciplinary examination of vocation, understood as both a meaningful career and life outside of work. Incorporates theoretical and empirical methods of the disciplines of communication and women's studies to provide a rich set of tools with which to make discerning decisions on personal vocation. This course provides a framework for considering personal life choices within the context of cultural norms and for analysis of how individuals and groups engage in interpersonal, organizational, and mediated communication surrounding work/life issues. Cross-listed with WGST 160. (5 units)

102A. Persuasion

What is the difference between attempting to change someone's attitude, belief, or behavior? This course examines theories and research about persuasion, social influence, and compliance gaining, including the dynamics of successfully resisting persuasion attempts. We will focus on interpersonal persuasion in social settings (our roles as friends, daughters/sons, parents, romantic partners, co-workers, teammates, and leaders). The course will cover credibility, social proof, influence in groups, persuasive language, compliance gaining techniques, and how subtle persuasion tactics influence our buying, eating, and health choices. Prerequisite: Any one of the following: COMM 1, PSYC 1, PSYC 2, or SOCI 1. (5 units)

103A. Communication and Conflict

A review of theories, perspectives, and research on communication and conflict in various contexts (families, friendships, romances, business relationships). Specific topics will include getting what you want, saving face, realigning power imbalances, miscommunication, styles and tactics, negotiation, third-party interventions, and transforming conflicts. Development of communication skills for managing conflict productively in interpersonal, organizational, and intercultural contexts. Prerequisite: Any one of the following: COMM 1, PSYC 1, PSYC 2, or SOCI 1. (5 units)

104A. Group Communication

Theories and research about the communication dynamics in a variety of relational groups. Topics include childhood groups, gaining entry to groups, being excluded from groups, group hate, social loafing, leadership styles, facilitating groups, task versus social goals, communication roles of members, effects of gender and diversity, moral values of members, and the resolution of group conflicts. Specific groups will include social peer groups, cliques, gangs, small work groups, super-task groups, problem-solving groups, teams, and decision-making groups (including juries). In addition to theory, practical skills for handling group challenges and member conflict will be offered. Prerequisite: Any one of the following: COMM 1, PSYC 1, PSYC 2, or SOCI 1. (5 units)

105A. Multicultural Folktales and Storytelling

Across time and around the world, people have told stories to teach, entertain, persuade, and carry a culture's history. This course studies oral literature, including fairy tales, trickster tales, urban legends, ghostlore, hero/heroine journeys, and wisdom stories. Explores the values, gender roles, norms, beliefs, sense of justice, spirituality, and diverse worldviews embedded in every tale. Students will study, critically think about, and perform world folktales---developing a personal creative voice, while learning to appreciate folktales as rich multicultural bridges for understanding other people. Every student will learn tale-telling skills that can be applied to enrich the lives of others, in careers and community. Prerequisite: COMM 1. (5 units)

106A. Gender, Health, and Sexuality

Covers the fundamentals of health communication theory and research with a focus on how health is socially constructed at the intersections of biology, medical technology, and communication. Explores how gender identity, sexual orientation, and sexual identity produce and are produced by cultural gender norms as they manifest in embodiment, sexual expression, and experiences of health and illness. Cross-listed with WGST 140. Prerequisite: Any one of the following: COMM 1, PSYC 1, PSYC 2, or SOCI 1. (5 units)

107A. Intercultural Communication

This course introduces key research on communication between cultural groups in the United States. We will examine intercultural relationship formations affected by historical and contemporary power structures, communicative styles, and intersected identity of race, ethnicity, gender, and class. Prerequisite: Any one of the following: COMM 1, COMM

2, PSYC 1, PSYC 2, or SOCI 1. Note: This course requires participation in community-based learning (CBL) experiences off campus. (5 units)

108A. Communication and Gender

Explores gendered patterns of socialization, interaction, and language. Goes beyond essentializing female and male modes of communicating to consider ways in which masculinity, femininity, ethnicity, class, age, sexuality, and disability intersect in interpersonal, family, organizational, and public communication, as well as in feminist and men's movements. Cross-listed with WGST 161. Prerequisite: COMM 1, ANTH 3, or consent of instructor. (5 units)

109A. Friendships and Romances

This course will examine theories, concepts, and research that explain the relational dynamics in our friendships and romances. Using a communication focus and examining published studies and theories, topics will include the power of friendship and how it shapes our lives, cliques, hurtful friendships, cross-gender platonic friends, dating, romantic relationships, intimacy, loneliness, the bio-neurology of love, rejection, and relational endings (losing, leaving, and letting go). Prerequisite: Any one of the following: COMM 1, PSYCH 1, PSYCH 2, or SOCI 1. (5 units)

110. Quantitative Research Methods

Provides students with an overview of communication as a social science and of methods for analyzing communication content, media audiences, and interpersonal communication practices. Topics include the fundamentals of research design, ethics, measurement, sampling, data analysis, and statistics. Students analyze research studies and learn the fundamentals of writing a literature review and generating scientific predictions based on existing research. Through hands-on assignments, students gain experience in concept measurement, research design, and data analysis. Prerequisites: COMM 1 and COMM 2. (5 units)

111. Qualitative Research Methods

Provides students with an understanding of qualitative methods used in communication research on messages, contexts, and impacts. Explores qualitative methods such as audience ethnography, participant observation, focus groups, textual analysis, in-depth interviewing, and institutional analysis. Students will engage in exercises on design and application of qualitative methods and analyze the data gathered. Prerequisites: COMM 1 and COMM 2. (5 units)

111G. Feminist Methods

This course explores feminist research methods in communication and other social sciences as they intersect with women's and gender studies. Through lectures and workshops, students will explore how theories and politics shape the kinds of research questions we ask, the types of materials we use, and how we define our relationships with our research participants. Students will explore topics related to femininity, masculinity, and/or sexuality using ethnographic, interviewing, and textual analysis methods informed by feminist theory and the politics of social justice. Cross-listed with WGST 102. Prerequisites: COMM 1 and COMM 2. (5 units)

113A. Special Topics in Comm: Media Psychology

The class is designed to introduce you to theories in media psychology, while also exposing you to many virtual demonstrations/applications of the theories in media psychology. Media psychology is broadly referring to the psychological experience of engaging in immersive media technologies. It encompasses topics like why we play video games, why are cartoons so appealing, especially to children when there are no human actors involved, why social media is so addictive, why we develop \"relationships\" with our TV characters and celebrities, why we are drawn to certain products and brands, and perhaps most relevant to our current times, how we maintain relationships and friendships virtually. We will discuss the role of artificial intelligence in the intersection of psychology and technology.

The class will also have a little nod to philosophy, as many of our emerging tech is contingent on what we perceive as \"reality\". We will discuss ethics of AI and new emerging technologies such as deepfakes, facial recognition, and deep learning. We will sometimes be meeting in game environments in lieu of Zoom, and I'll be showing you demos in VR. I would like you all to experience VR as well, but that's certainly not possible in online classes. We will also be having a movie day, because there are many movies that apply to the topic of the class (Avatar, The Matrix, Get Out, Being John Malkovich, etc). There will be no exams, but participation will play a big factor. (5 units)

113B. Community Organizing

Introduces students to the history, theory, and practice of community organizing. Topics include major approaches to organizing; organizing in campaigns and social movements; understanding organizing in different political contexts; major organizing tools, tactics, and strategies; communication and issue framing; research for organizing; and cultural competence and humility in addressing power, identity, and justice. Case studies may include organizing for public health; gender, racial and ethnic justice; economic and environmental justice; youth and education; communication policy; and urban policy. Participation in and reflection on a current organizing campaign is a required component of the course. (5 units)

115A. Special Topics: Non-Verbal Communication

An overview of the types and functions of nonverbal communication in human relationships spanning from interpersonal, organizational, political, and other contexts. Topics typically include types of nonverbal communication, social influence, impression management, cultural displays, digitally mediated communication, and more. Students will learn to become more competent at sending and interpreting nonverbal messages, and better understand the influence of context, medium, and culture on nonverbal meaning. Prerequisite: Comm 1. (5 Units)

117A. Communication Ethics

As a journalist, how do you decide when you can, or can not, use an anonymous source? As a public relations professional, what do you do when a client asks you to do something you know is wrong? As a filmmaker, is it OK to bend the truth in the story you are telling? When using social media, do you act differently if you think no one knows your real identity? These and more questions are what we will address in the communication ethics course. The course is designed to give you applied, hands-on skills to make ethical decisions about situations you do face, and will face, in life and your career. Prerequisite: Comm 2. (5 Units)

118A. Special Topics in Communication, Gender, Health

Special topics in communication, gender, and health. May be repeated for credit as topics vary. (5 units)

119A. Body Politics

This course uses feminist theory to explore cultural and individual experiences of embodiment and biotechnology. Students will examine biopolitical discourse and its relationship both to individual lived bodies and to biotechnologies that make possible particular bodily configurations. Topics include scientific and cultural studies of birth control devices, assisted reproductive technologies (e.g., in vitro fertilization), weight loss surgery, adaptive technologies for people with disabilities, and hormonal and surgical treatments for transgender people. Prerequisites: COMM 1, and students must be a WGST minor OR a WGST major OR declared Gender, Sex, & the Body Pathway, OR declared Gender, Empire and Globalization Pathway, OR have permission of the instructor. Cross-listed with WGST 105A. (5 units)

120A. Environmental Communication

This course introduces students to tools for analyzing and engaging in public discourse about the environment. Students draw on communication theory and research to understand rhetorical strategies used in contemporary environmental debates. Students also gain practical experience in using communication research to inform the design of a real world environmental campaign. (5 units)

121A. Diversity and Media

The theory and practice of the relationships between cultural diversity, power, intersecting identities, and media production, representation, and use. Examination of how different groups historically have been marginalized in public representation and how these images have been, and are being, challenged. Course requirements include research into individual experiences of public images. Focus on the United States, especially California. Cross-listed as ETHN 162. Prerequisite: COMM 2 or consent of the instructor. (5 units)

122A. Media Advocacy

Advocacy represents the series of actions taken and issues highlighted to change the "what is" into a "what should be," considering that this "what should be" is a more decent and a more just society. Media advocacy is the process of working with and using the media to influence public policies and social behavior through shaping debate about a topic. In this course, we will explore various media tools which can be used for media advocacy. Students will engage in a quarter-long media advocacy project in which they will be using the tools we learn about to shape the debate about an assigned topic.

Prerequisite: COMM 2 or consent of the instructor. (5 units)

123A. Media and Youth

This course considers the youth media culture that has become a pivotal part of the experience of childhood and adolescence. Students examine the content of popular media aimed at young people and the media industries that produce this content. Also explored are patterns of media usage throughout childhood and adolescence, the ways that media are integrated into family life, and how educational and entertainment media content shapes children's knowledge, attitudes, behaviors, and identities. Topics include educational media effects, media violence, gender and racial/ethnic stereotyping, advertising effects, and media literacy efforts. Prerequisite: COMM 2 or consent of the instructor. (5 units)

124B. Information Campaigns

Examines the principles of design, implementation, and evaluation of information campaigns created to produce social change in such areas as health, the environment, or civic education. Emphasizes problem analysis, audience analysis, message design, and evaluation. Students examine actual campaigns (e.g., anti-smoking efforts, teen pregnancy, and drug campaigns) and design their own campaigns focusing on a relevant social problem. Prerequisite: COMM 2 or consent of the instructor. (5 units)

125A. Media Audience Studies

The audience plays a critical role in our understanding of mass communication. How do media scholars and practitioners conceptualize and study media audiences? How do individuals and groups use media, interpret media messages, and integrate media experiences into their lives? The course will address these questions, looking at a variety of media and media content (e.g., news and entertainment content of books, film, TV, internet) and do so with different characteristics of audiences in mind. We shall see, for example, how audience responses are shaped by factors such as ethnicity, gender, age, or by the context in which the medium and its message is experienced. Prerequisite: COMM 2 or consent of the instructor. (5 units)

126A. Violence and Communication

This course looks at the relationship between violence and communication from three angles: (1) violence as communication, (2) violence as a failure of communication, and (3) problems with representing violence. The course involves a range of philosophical and disciplinary perspectives on violence and communication, including media and communication, social theory, and visual culture. The course has a strong global and international focus. The contexts covered include the Holocaust, the partition of India, and 9/11. Prerequisite: COMM 2. (5 units)

127A. Media and Social Movements

This course explores social movements and media as sites of democratic participation. We will identify historical and political-economic conditions that shape social movements. Our emphasis is on how social movement organizations and activist alliances negotiate their relationships with global and local institutions, including multilateral organizations, transnational corporations, and states. The course also examines the mobilization of social claims for global justice, and the extent to which media and information technologies have been instrumental in the articulation of such claims. Prerequisite: COMM 2. (5 units)

128B. Dialogue and Deliberation

How can we address differences and resolve conflicts fairly and effectively? This course introduces students to the role of dialogue and deliberation in creating healthier and more democratic organizations, workplaces, and societies. Students learn a range of research-based approaches to handling difference and conflict, and develop communicative skills used by effective individuals, professionals, and citizens in real-world situations. Projects include taking part in formal dialogues and deliberations on current issues, both as participants and moderators, and designing ways for institutions to involve stakeholders and the public in conflict resolution and policy development. (5 units)

129B. Advanced Public Speaking

This course, which builds on the foundations that students developed in COMM 20, provides students with a deeper engagement with theories, concepts, and skills essential to excellent public speaking. Students will study key classical and contemporary rhetorical theories in order to become stronger public speakers across a variety of audiences and occasions. Students will also critically analyze and evaluate historical and contemporary speeches. Prerequisite: COMM 20. (5 units)

130B. Screenwriting

This course is designed to introduce you to the wonderful and creative world of global screenwriting and how it has impacted traditional Hollywood storytelling. Students are asked to answer multiple questions: Does a uniform visual style exist? Does just one dramatic paradigm exist? Are all films about protagonists and antagonists? Students complete a script treatment, narrative outline, two drafts of a short screenplay, and analyses of published screenplays. Prerequisites: CTW 1 and 2. (5 units)

131B. Short Fiction Production

This course is designed to immerse students in the craft and aesthetics of fiction filmmaking. Students work in groups to develop, produce, and edit their own short films based on selected scripts they either write or acquire from student screenwriters. The course also functions as a forum where students explore the film styles of classical and contemporary filmmakers through readings and screenings so that they are grounded in film language and inspired to develop their own film styles. Students are required to attend a production lab and outside film screenings. Prerequisite: COMM 30. (5 units)

132B. Short Documentary Production

In this course, students are introduced to the basic theories and techniques of the documentary mode of filmmaking and are trained to develop, produce, and edit (in groups) their own short documentaries. Students also explore (through readings, screenings, and discussions) the techniques and styles adopted by documentary filmmakers from all over the world and are encouraged to use them as sources of inspiration as they develop their own documentary styles. Clearances, copyright, budgeting, and other fundamental production issues are also introduced. Students are required to attend a production lab and outside film screenings. Prerequisite: COMM 30. (5 Units)

133B. Experimental Cinema & New Media

As a medium, film/video is constantly evolving both in form and in content. This course considers the shift from traditional cinema to new frontiers of interactive, performative, and new media. A fusion between visual art, new technologies, and the moving image will redefine the relationship of the spectator to the film. Environments will be created through the combined use of image, sound, and physical elements, which will immerse the viewer on emotional, intellectual, and physical levels. This course will expand your consciousness as you step into the world by blurring boundaries between mediums and working individually and collaboratively. Preference given to communication majors and minors. Prerequisite: COMM 30. (5 units)

134B. Cinematography

The principles and aesthetics of cinematography are examined in great detail. Students learn the fundamental principles of lighting, camera and lens techniques for studio and location settings. Students will be trained in economy lighting, which relies on minimal equipment, the "Hollywood look," as well as key lighting theories. Prerequisite: COMM 30. (5 units)

135B. Editing

The principles and aesthetics of editing are examined in great detail. Students practice the key techniques and styles of editing, including montage, parallel cutting, and ellipsis, while also studying guiding theories of editing. All students are required to attend a production lab and outside screenings. Preference given to communication majors and minors. May be repeated for credit as topics vary. Prerequisite: COMM 30. (5 units)

136A. Genre, Auteur, and Narrative Strategies: The American Horror Film

Do you love to be scared watching movies? Do you love psychological thrillers, slasher films, and/or monster stories? The American Horror film has fascinated audiences for decades, but what do they reveal about us as a society? This quarter we will investigate America's obsession with films like Psycho, The Exorcist, The Texas Chainsaw Massacre, Halloween, Scream, Near Dark, Get Out and The Shape of Water. This class is not for the faint of heart! Prerequisite: Comm 2. (5 Units)

137A. American Film History/Theory

Explores the development of the American film industry from the perspective of its modes of production, filmic styles, cinema movements, and audiences. This evolution is examined within the context of political, economic, and cultural changes of the past century. May be repeated for credit as topics vary. All students are required to attend outside film/video screenings. Prerequisite: COMM 2 or consent of the instructor.. (5 units)

138A. Television History/Theory

This course explores the evolution of the television industry in the U.S. and around the world. The development of television is examined in the context of political, economic, and cultural changes of the past century. The course investigates the changing modes of television production as well as the impact of other media technologies on

television content, style, and audiences. May be repeated for credit as topics vary. All students are required to attend outside film/video screenings. Prerequisite: COMM 2 or consent of the instructor. (5 units)

139A. Documentary History/Theory

This course traces the evolution of documentary filmmaking from its inception by the Lumiere Brothers in the late 1800s to today's nonfiction filmmakers who use this mode of representation in a variety of innovative ways, including advocacy, poetry, historical documentation, exploration, reflexivity, and experimentation. The key moments in the history of the nonfiction film, its main theories, along with the various styles of documentary filmmaking, are explored in depth. Prerequisite: COMM 2 or consent of the instructor. (5 units)

141B. Advanced Journalism

Advanced news reporting and writing. Emphasis on strategies for public affairs reporting, beat coverage, media ethics, source development, and immersion journalism. Includes hard news, feature and enterprise reporting projects. Participation in community-based learning placements through Arrupe Partnerships is required. Prerequisite: COMM 40 (or by permission for non-communication majors). Note: This course requires participation in community-based learning (CBL) experiences off campus. (5 units)

142B. Multimedia Journalism

Focuses on journalism's efforts to deliver news that can reach, include, and engage the public across multiple digital platforms. In this fast-paced course, students study online news practices and ideas under development, evaluating digital tools, sites, and models. Students will plan, report, write, and produce in various digital media formats that may include text, audio slideshows, podcasts, long-form audio stories, and their own portfolio website. Emphasis on improving journalism skills. Prerequisite: COMM 40. (5 units)

143B. Special Topics in Journalism

Sports, features, lifestyle, science, editorial writing, etc. Course focus shifts as instructor and topics change each quarter. May be repeated for credit as topics vary. Prerequisite: COMM 40. (5 units)

144B. Audio Storytelling

In this course, students build on the skills they learned in Introduction to Journalism (COMM 40) to report, write, record, and edit non-fiction audio stories similar to those produced by organizations such as National Public Radio and podcasts such as This American Life and In the Dark. The basics of audio recording and editing are covered, as well as a discussion of the unique role audio storytelling plays in the larger world of journalism. (Prerequisite Comm 40)(5 units)

145B. Reporting on Justice

Focus on legal journalism and legal affairs reporting. Students will learn to report and write about current legal topics and courtroom decisions, and how they affect the lives of ordinary citizens. In addition, students will learn how the civil and criminal justice systems work and how to access public records. Because this course shifts topics each quarter, students may repeat the course for credit. Prerequisites: COMM 40 or consent of instructor. (5 units)

146B. Magazine Journalism

Includes story development, market analysis, long-form journalism, investigative reporting techniques, query efforts and sophisticated writing approaches for magazines. Fulfills Core Advanced Writing requirement. Prerequisite: COMM 40 or permission of instructor for non-Communication majors. (5 units)

147A. News and Democracy

Examination of American journalism and its relationship to democracy. Strengthens news literacy skills, including identifying influences on journalism, evaluating the quality of news, and constructing a personal news diet. Introduction to the dynamics of political communication through the media. Analysis of theories of journalism's role in the democratic process and reform proposals to improve news, politics, and civic engagement. Prior completion of Comm 40 is recommended but not required. (5 units)

149A. Political News

Focused primarily on the analysis of ongoing campaign coverage, the course will also examine historical and comparative aspects of politics in the media. Regular consumption of media coverage of politics required. Prerequisites: CTW 1 and 2. (5 units)

150B. Public Relations Theories and Principles

This course explores the theories and concepts of public relations and business communication today, including program planning, development, execution, and measurement of media relations, traditional PR tactics, and new online digital channels and tools. Communication theory, business planning, effective presentation, writing, critical thinking, integrated marketing communications, fundamentals of business, and business ethics are emphasized. Prerequisites: COMM 2 and COMM 40. (5 units)

151A. Organizational Communication

This course provides students with an introduction to the principles of communication in organizations. Specifically, the class will explore the role of communication in achieving organizational and individual goals, theory and practice of communication in organizations, and techniques to enhance understanding among individuals in organizations. A variety of organizations will be explored including corporations, small businesses, nonprofits, and social/fraternal organizations. Practical application of contemporary theories will provide students with the skills needed for successful communication in their current and future organizations. Topics will include the role of organizational culture, conflict management, work/life balance, human resource management, stress, globalization, and the role of social justice in the contemporary organization. Prerequisite: COMM 1. (5 units)

152B. Public Relations Strategies and Practices

This advanced course in public relations deepens students' understanding of strategies, processes, procedures, and practices that build two-way relationships with a broad range of constituencies. The course prepares students to practice public relations in many contexts, including political discourse; motivating groups to support social justice; explaining the value of products or services; and providing tightly targeted audiences with highly specialized technical or business information. A heavy emphasis is placed on learning to define, develop, and implement public relations objectives, strategies, and tactics. Prerequisites: COMM 2 and COMM 40. (5 units)

153A. Communication Training and Development

Blending theory and practice, this course is designed for students interested in learning about communication training as a tool for organizational development. This course will expose students to the preparation, implementation, and evaluation of communication workshops, seminars, and training programs for a wide variety of organizations. In additional to instructional design, the course will focus on methods of teaching communication skills to adult learners and instruction and practice in conducting experiential activities. Further topics will include assessment of learning outcomes; evaluation and critique of training programs; proper use of presentation aids; challenges with training; using e-learning and online training delivery platforms; and the training profession. Prerequisite: COMM 20. (5 units)

154A. Foundations of Strategic Campaigns

Illnesses afflicting the population in the United States continue to shift towards lifestyle-related diseases, such as diabetes, obesity, and heart disease. Public health campaigns can help to curtail this shift by promoting awareness and impacting behavioral changes. This course provides an overview of public health campaigns: what they are, how they are used, and how to design one based on sound evidence and theory. To achieve the objectives of this course, students will be exposed to lectures and read articles and chapters on public health, health behavior change theories, and case studies about public health campaigns that address a variety of health behaviors. Using the knowledge gained from these course materials, students will work in groups to design and implement a small-scale public health campaign targeting SCU students that addresses a health issue of their choice. The campaign will be developed through the course of the quarter and groups will be asked to submit smaller assignments along the way to build towards their final product. Cross-listed with PHSC 154. Prerequisites: COMM 2; COMM 110 preferred. (5 units)

155A. Media Literacy

Information is everywhere. We now live in an information-saturated environment. How do we cope with information overload? In this course, we will explore how taking a social scientific media literacy approach to understanding mediated communication can illuminate how we should best manage and cope with information overload. Several questions will guide the course: What is media literacy? How do historical and economic context affect the way we process information we are exposed to? How can individuals become more media literate to cope and manage information overload? These questions are particularly urgent for us to think about in relation to contemporary digital communication, as they are increasing the amount of information we are exposed to. We explore these questions through various activities in the course, reviewing what media literacy is, what components are needed to become media literate, and how to use a media literacy approach to dissect different types of industry through practical application. Prerequisites: COMM 2, COMM 12. (5 units)

159B. Negotiation, Conflict Management, and Mediation in Organizations

The purpose of this course is to increase your understanding of conflict and to help you build skills in managing conflict in various forms---interpersonal, group, and organizational. We will start first with a review of conflict theories and approaches to conflict resolution. Using that as our framework, we will explore the process of negotiation and learn negotiation skills. Finally, we will explore alternative dispute resolution techniques, including mediation. Students will practice communication conflict management and mediation skills in small in-class groups. The class will also focus on applied topics including negotiating a job offer, managing conflict between work groups, conflict and negotiation from a cultural and gender perspective, resolving conflict between supervisors and subordinates, whistleblowing and dissent, and using mediation skills to improve your own conflict resolution techniques. This class is especially useful for those students wishing to pursue a career in human resources or other managerial positions in organizations. Students with prior job experience or coursework in business (internships, a business minor, organizational psychology, COMM 151A, etc.) might find this course to be a nice extension to what they have already learned. Prerequisites: COMM 1 or the completion of one class from the University's Social Science Core. (5 units)

161B. Communication Media and Technology in Education

In North America, we tend to associate communication media with entertainment or business. This course explores alternative uses of communication, particularly as applied to education. Examines theory and practice in distance education (radio schools, satellite service), instructional television fixed service (ITFS) in local schools, and interactive video computer-assisted education. Examination of current implementations of the technologies. Class project will consist of designing and implementing (as far as possible) some educational use of communication (for example, an instructional show or a Web application). Prerequisite: COMM 12 or consent of the instructor. (5 units)

162B. Visual Cultural Communication

Students use photography to explore questions about how to represent diverse cultures and identities. Students advance their digital photography skills while reflecting on the ethics of representing others and themselves, informed by readings on cultural theory and visual communication theory. In their final projects, students create and share images from local communities in online exhibits. Prior knowledge of digital photography and creation of online content are helpful, but not required. (5 units)

169A. Special Topics in Communication Technology

This course focuses on the intersection of communication theory/research and issues of technology. May be repeated for credit as topics vary. Prerequisite: Consent of instructor. (5 units)

170A. Communication Law

An introduction to communication law and regulation. Emphasis on first amendment rights to freedom of speech and information gathering, as well as the law of defamation, privacy, copyright, obscenity, harms to the public, and telecommunications regulation. Students gain experience in applying the law by preparing and delivering legal arguments in a moot court exercise. (5 units)

171A. The Business of Media

A critical examination of how media industries work. The class will explore issues such as historic and new financial models, power structures, relationships between media producers and distributors, emerging media markets, audience economics, and the role of government regulation and policy. The course will focus on some of the following industries: Hollywood film and television, journalism, and online media. COMM 2 or consent of the instructor. (5 units)

172A. Communication and Sport

Communication is a critical component of watching and playing sports, and at the same time, sports is a lens through which we view different aspects of our cultures and interactions. This course examines sports as a component of our culture, investigating issues of race, gender, and power; the connection between spectator sports and media; and communication's role in sports participation, including topics such as leadership, motivation, cohesion, and teamwork. Students will gain a better understanding of selected communication principles and discover new ways to talk about sports. (5 units)

175A. Theology and Communication

Do the practices of communication have any consequences for theology? Christian theology has taken communicative expression seriously throughout the centuries. From a media ecology perspective, this course examines how theology has used communication, how it has evaluated communication, how communication contributes to theology, and how new communication technologies have a contemporary impact on theological and religious practices. Examines a variety of communication expressions (art, music, poetry, television programs, films, websites) as religious expressions; students will create their own theological expression using some contemporary medium. (5 units)

176A. Biology of Human Communication

This course examines the ways in which human communication affects, and is affected by, processes that occur in our bodies. This course starts by exploring the basic anatomy of the human body as it relates to communication, including the brain, nervous system, facial musculature, endocrine system, cardiovascular system, and the immune system. From there, this course explores how those body systems are implicated in a range of communicative phenomena, including emotion, conflict, stress, burnout, interpersonal relationships, social structure, organizational

culture, relationship satisfaction, and sexual behavior. Finally, this course explores the impact of innovative healthcare treatments that utilize communication interventions, including providing social support, human affection, and organizational development. (5 units)

179A: Special Topic, Global Music: Profits, Poetry, and Politics

Global music as a broad category encompasses music produced in different parts of the world that circulates globally and music that is a product of influences from multiple cultures. This upper-division seminar course will engage with the past and present of global music, thus defined, from three angles. First, it will examine the economics of the global music industry, specifically how the principle of maximizing profitability influences the image of musical artists, music content, and cultural taste. Second, the course will analyze the aesthetic appeal of music from different traditions, in terms of the impact of lyrics, melodies, and other elements of songs and compositions. And, third, it will consider how global music reflects and, in turn, shapes politics and power relations, whether in everyday life or in movements for social change and political protests. The course will look at how musical genres from particular areas of the world have traveled and taken on new forms in other parts of the globe, for example, how African rhythms have shaped jazz and rock or how American protest songs of the 60s have been deployed as powerful statements against authoritarianism continents away. We will pay special attention to the impact of internet-related developments on global music, such as the disruption to the industry caused by streaming technologies and platforms like Spotify, new forums now available to musicians, such as YouTube, and direct access to global audiences without traditional channels of distribution. The global musical traditions covered include jazz, Afro-Cuban and Latin music, rock, hip-hop, fusion, Indian film songs, Flamenco, Rai, disco, EDM, and global percussion traditions. No technical knowledge or background in music theory is required for the course. Requirements: Comm 2, or permission of the instructor. (5 Units)

177A. Leadership and Communication

This advanced course in communication is designed to examine in detail the phenomenon of leadership in groups and organizations. Various theories and approaches to leadership will be surveyed with an emphasis on applying leadership principles. Course topics include leadership approaches and theories, ethics, power, influence, diversity, and gender among others. Prerequisite: COMM 1. (5 units)

178A. Multicultural Family and Communication

As society continues to diversify, family dynamics and representations have become increasingly more complex. In 1967, the U.S. Supreme Court established the right of people to marry individuals of a different race, and in 2013 extended the right to marry to same sex couples. The interactions between social realities and policies continue to be dynamic. As the complexity of family relationships has increased, this class will review research on family communicative challenges and strategies, as well as examine media representations on multicultural families. Interracial relations, transcultural adoptions, intercultural parenting, transgender identity negotiation, and immigrant and mix-status families are just a few examples that will be investigated. Prerequisite: COMM 1. (5 units)

180A. Global Audiences

Explores how the globalization of TV and Internet news, and entertainment and film have had an impact on audiences in different cultures. Examines the available research and theory on audience exposure and impact from a cultural, value, and social perspective, and how cultural and political movements and/or government policy grow in reaction to the invasion of a culture's symbolic space by global media messages. Prerequisite: COMM 2. (5 units)

181A. Global Media Industries

Examination of how media industries have been transformed into global businesses and how technologies of distribution by cable, satellites, and the Internet have brought almost all people into a global symbolic space; theories of political economy and audience reception are applied. Exploration of how groups and governments have responded to the phenomenon and what they do to protect their cultural and political sovereignty. Prerequisite: COMM 2. (5 units)

182A. Global News Issues

Explores the changes that have taken place in news coverage on a global basis in the last decade, especially television and internet news; how government policies of control of information have changed in reaction to new technologies of information distribution; and how internal politics may be affected by international media attention. Prerequisite: COMM 2. (5 units)

183A. Communication, Development, and Social Change

How does communication content and technology solve problems of global poverty and social change? This course addresses the theories, policies, and practices that help explain the success or failure of new communication technologies in helping the disenfranchised achieve a better life for themselves. Hands-on work with real cases will give students a chance to think through the complicated process of social change. Prerequisite: COMM 2. (5 units)

184A. Global Media and Postcolonial Identity

Paying careful attention to the meaning of the term "postcolonial" in different historical and geographical contexts, this course undertakes a critical analysis of media representations of national and cultural identity in postcolonial societies in Africa, Latin America, and Asia. Evaluates the ways in which media constructions of national identity intersect with understandings of gender, race, religion, and ethnicity. A key focus area of the course is the experience of diasporic postcolonial communities as represented in media. Prerequisite: COMM 2. (5 units)

185A. Identity, Privacy, and Politics in the Digital Age

This course examines the dynamics of communication in new media networks and forums, covering the overlapping categories of social networks, social media, blogs, microblogs, portals, and collective knowledge initiatives such as Wikipedia. We will analyze communication practices in new media with a focus on the following four areas: (1) convergence and links between forms of media and technology, such as mobile phones, computers, and books; (2) changing conceptions of self and community; (3) emerging of paradigms of creative collaboration and artistic and intellectual production; and (4) posed challenges about privacy, copyright, and intellectual ownership. We will examine these areas from a global perspective, keeping in mind both the global nature of new media networks and communities, and the particular trajectories of new media communicative practices in different global contexts. In this regard, we will also address the social, ethical, and political consequences of the "digital divide" between those who are networked and connected in this world and those who lack access to it. Prerequisite: COMM 2. (5 units)

186B. Global Interpersonal Communication

This course explores ways to reflect on, connect, and communicate study abroad experiences. Special focus on developing intercultural communications competence in interpersonal, socioeconomic, historical, and geopolitical contexts. Students will produce web-based educational material derived from academic research and study abroad experience. Prerequisite: Prior experience studying outside the U.S. during college, including immersion trips or study abroad programs. Prerequisite: COMM 1. (5 units)

187A. Cinema in the Age of Globalization

This course explores how national cinemas and individual filmmakers have responded to American global film hegemony. Counter cinema is seen not only as a mode of artistic self-expression, but also as a cultural practice whose role is crucial in shaping national cultures. Of particular interest is the development of film traditions such as neorealism, the French New Wave, Third Cinema, exilic/diasporic cinema, and other film movements that have emerged as an alternative to Hollywood's commercial cinema. Prerequisite: COMM 2 or consent of the instructor. (5 units)

188A. Special Topics in Film: Food and Ethnicity in Popular Culture

This discussion-based course explores the production and reproduction of messages about race and nationality in popular media about preparing, eating, and sharing food. As we read critical race and communication studies texts and engage popular media, we will examine the ways that food narratives and images generate messages that reinforce or reimagine structures of inequality in the United States. Through written assignments and group discussion, we will learn to identify exclusionary media practices and build skills toward producing anti-racist, inclusive media. Prerequisite: none. (5 units)

189A. Communication, Identity, and Citizenship in Asia

Citizenship is about membership. It includes processes of inclusions and exclusions. With abundant transnational business, treaties, and marriages, the selecting process is complicated by various local and global relations formed in the past to present. We will explore this process in the Asian region from historical, sociopolitical, cultural, and economic perspectives. We will wrestle with questions such as: Is citizenship an individual or collective matter? Is citizenship a universal concept? Is it useful? What does it mean to be a citizen in various Asian nations? You will work on a project on how citizenship is communicated in a nation state of your interest. Prerequisite: COMM 2 (5 units)

190. Journalism Practicum

For writers and editors of *The Santa Clara*. Students review the student newspaper, offer practical advice, and gain experience in journalism. *The Santa Clara* staff members assist in teaching students skills in news, sports, feature writing and reporting, and techniques of design and production. Class members meet once a week and are expected to spend at least three hours a week in newspaper work. (1--2 units)

191. Independent Filmmaking Practicum

This course helps emerging filmmakers, artists, and designers in all disciplines; entrepreneurs; students focusing on marketing, public relations, and journalism; and film lovers to advance their skills in the art and business of filmmaking and media. Students produce real-world short projects: fiction, commercial, and documentary. The practicum is designed to give students hands-on experience in producing, directing, cinematography, production design, editing, sound, music, acting, and screenwriting. Students will also help organize the Genesis student film festival. Prerequisite: COMM 30 or consent of the instructor. (1--2 units)

192. Online Journalism Practicum

Designed to get students involved with journalism via digital media. Students report, write, edit, broadcast, and promote news, arts, and entertainment content. Work may air on KSCU, in *The Santa Clara* student newspaper, websites, or the practicum blog. Students will also learn the basics of digital recording and receive a basic introduction to studio production and new media. (1--2 units)

193. Yearbook Practicum

For editors and principal staff members of the University's yearbook, *The Redwood*. Principles of photojournalism, magazine graphic design, and book production. *The Redwood* staff members assist in teaching skills in reporting, writing, production, and design. Class members meet once a week and are expected to spend at least three hours a week in yearbook work. (1--2 units)

194. Forensics Practicum

Supervised activity in forensics. Includes competition in debate and various speaking events: persuasive, expository, extemporaneous, impromptu speaking, and oral interpretation. Field trips required. (2 units)

194P. Peer Educator

This course is offered for students who assist in teaching courses in the department for academic credit rather than pay. (1--2 units)

196. Senior Capstone

This course leads students through a major communication capstone focusing on producing a specific applied project in either digital filmmaking, journalism, or strategic communication. Most sections also require students to write an in-depth reflection paper connecting their academic experience with their applied work. Prerequisites: All lower-division courses required for communication majors, COMM 110 and Comm 111, and required upper-division courses as determined by the instructor. (5 units)

197. Senior Thesis

This course leads students through a major communication research project, including defining research questions, conducting a literature review, gathering and analyzing data, and public presentation of findings. Most sections are focused on a common theme or topic defined by the instructor. Prerequisites: All lower-division courses required for communication majors and required upper-division courses as determined by the instructor. (5 units)

198. Internship

A forum where students can learn how they can best apply classroom instruction to their career objectives through academically supported work experience. Internships at Santa Clara University are closely monitored for appropriateness and practical application. Internships should encourage career skills and professional growth; they should not be just another job. Internships are an important and integral part of the communication craft and serve to introduce the student to the range of opportunities afforded a degree in the discipline. Students are expected to represent the University in a professional manner and to act responsibly with the client and the assignments. (1--5 units)

199. Directed Research/Creative Project

Students arrange to work with a faculty member for directed reading or a research project in communication theory, research, ethics, etc. Creative projects may also be arranged in television, print, or another applied area. The Department also uses this number for communication electives taken in study abroad programs. Prerequisites: Written proposal, course meeting schedule, and readings must be approved by instructor and chair prior to registration. (1--5 units)

Department of Economics

Professors Emeriti: Mario L. Belotti, Thomas R. Russell, Thaddeus J. Whalen Jr.

Professors: Alexander J. Field (Michel and Mary Orradre Professor), Kris J. Mitchener (Robert and Susan Finocchio Professor), Helen A. Popper, William A. Sundstrom

Associate Professors: Christian Helmers, John Ifcher, Linda Kamas, Michael Kevane, Serguei Maliar, Thuy Lan Nguyen, Dongsoo Shin (Department Chair)

Assistant Professors: Adrien Bouguen, Vito Cormun, Audrey Guo, Wenxin (Victoria) Xie

Senior Lecturer: Adina Ardelean

Lecturers: James Airola, Shireen AlAzzawi, Patricia Cameron-Loyd, Rita Madarassy, Damian Park

As one of the social sciences, economics studies how the choices we make as individuals---as consumers and producers, as savers and investors, as managers and employees, as citizens and voters---combine to determine how society uses its scarce resources to produce and distribute goods and services. This practical discipline provides insights into important issues such as, the determinants of wealth and poverty---unemployment, inflation, international trade, and economic growth; as well as success and failure in the marketplace. The rigorous, systematic analysis that the study of economics brings to bear on these and other real-world issues provides excellent preparation for careers in both the private and the public sectors, as well as for graduate study in economics, business, public policy, and law. Economics graduates pursue varied careers in business, law, banking and finance, government service, education, and private consulting. Students considering graduate study in economics leading to a master's or doctoral degree are strongly encouraged to meet with their advisor as early as possible to plan an appropriate course of study.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and College of Arts and Sciences requirements for the bachelor of science degree, students majoring in economics must complete the following departmental requirements:

- ECON 1 or 1E, 2, and 3
- MATH 11 and 12, or MATH 30 and 31, or MATH 35 and 36
- OMIS 40 or MATH 122 or MATH 8, or AMTH 108
- ECON 41 and 42
- ECON 113, 114, 115, and 181 or 182
- Five upper-division economics electives, at least two of which must be completed after ECON 113 and 115

Requirements for the Minor

Students with a minor in economics through the College of Arts and Sciences must complete the following requirements:

- ECON 1, 2, 3, 113, and 115
- Two additional upper-division economics courses
- MATH 11 or 30 or 35

Concentration in Data Analysis for Economics

The concentration in Data Analysis for Economics provides a structured course of study for economics majors to develop their skills in econometrics and data analysis and apply them to issues in economics and related areas. In addition to completing all requirements for the major in economics, students must pass the following courses with a grade of "C" or higher*:

- A. ECON 43
- B. One of the following: ECON 173 or 174
- C. Three of the following: ECON 134, 135, 142, 150, 151, 154, 166, 186, 187, 188; 173 or 174 (if not used to satisfy B above)

*All upper-division courses in the concentration can count as upper-division electives toward the economics major. One of the courses in list C may be substituted with: (a) an approved course in another social science or business discipline with a significant data analysis component; or (b) an independent study course with a substantial data analysis component (4 or 5 units). Substitutions must be approved by the Concentration advisor. Currently pre-approved substitutions: CSCI 183, ENVS 117, OMIS 114, or OMIS 150. Non-economics courses will not count as one of the upper-division electives toward the economics major.

Mathematical Economics Concentration

Economics majors desiring a concentration in mathematical economics must complete the following requirements in addition to the regular requirements for the major:

- All of the following courses: MATH 11, 12, 13, 14, 22, 53 (MATH 122 and 123 are strongly recommended)
- Three out of the following courses: ECON 170, 171, 172, 173, 174, 187, or 188(these courses also count as electives required for the major)

Note: Students completing the mathematical economics concentration take MATH 11 and 12 instead of MATH 30 and 31.

Lower-Division Courses

1. Principles of Microeconomics

Introduction to microeconomics and its applications to business decisions and public policy. Topics include supply, demand, and the coordinating role of prices in a market economy; the behavior of business firms, including output and pricing decisions; competition and monopoly; and government policies and regulations affecting markets. (4 units)

1E. Principles of Microeconomics

Special section of ECON 1 emphasizing environmental applications of economics. Introduction to microeconomics and its applications to business decisions and public policy. Topics include supply, demand, and the coordinating role of prices in a market economy; the behavior of business firms, including output and pricing decisions; competition and monopoly; government policies and regulations affecting markets. (4 units)

2. Principles of Macroeconomics

Determinants of national income and product in the long run and short run; inflation, unemployment, and business cycles; monetary and fiscal policies; and economic growth. Prerequisite: ECON 1. (4 units)

3. International Economics, Development, and Growth

Analysis of international trade theory and policy, balance-of-payments adjustments and exchange-rate regimes, and economic development. Prerequisites: ECON 1 and 2. (4 units)

3H. International Economics, Development, and Growth

Honors section. Analysis of international trade theory and policy, balance-of-payments adjustments and exchange-rate regimes, and economic development. Prerequisites: ECON 1 and 2. Must be in the University Honors Program or Leavey Scholars Program, or have permission of instructor. (4 units)

41. Data Analysis and Econometrics

Introduction to statistical methods for analyzing economic data. Emphasis on applications of multiple regression and establishing causality in observational data. Prerequisites: A grade of C- or better in ECON 1 and 2; and MATH 11 or 30 or 35; and MATH 8, or MATH 122, or OMIS 40, or AMTH 108, or equivalent. Economics majors only, or by permission of instructor. Must enroll simultaneously in ECON 42. (4 units)

42. Data Analysis Applications

Hands-on course in obtaining and analyzing data using statistical software. Prerequisites: A grade of C- or better in ECON 1 and 2; and MATH 11 or 30 or 35;and MATH 8, or MATH 122, or OMIS 40, or AMTH 108, or equivalent. Economics majors only, or by permission of instructor. Must enroll simultaneously in ECON 41. (2 units)

43. Data Wrangling and Visualization

Data acquisition, manipulation, and visualization using statistical software, with hands-on applications to economics. Prerequisites: Grade of C- or better in ECON 41 and 42; or OMIS 30, 40, and 41. (2 units)

Upper-Division Courses

Prerequisites: Unless otherwise noted, a grade of C- or better in ECON 1, 2, and 3 is required for all upper-division economics courses.

101. Resources, Food, and the Environment

Exploration of the relationship among food production, resource use, and the environment. Topics include food innovation, biotechnology, the green revolution, resource depletion, environmental degradation, and food safety. Also listed as MGMT 173. Prerequisite: None. (5 units)

111. Economics of the Environment

Economic analysis of environmental issues and government policies for environmental protection. Applications to important environmental issues, such as global climate change, water and air pollution, hazardous wastes, biodiversity, and endangered species. Prerequisite: A grade of C- or better in ECON 1. (5 units)

113. Intermediate Microeconomics I

Theory of rational individual choice and its applications to decision making, consumer demand, and social welfare; and economics of uncertainty and information. Additional prerequisite: A grade of C- or better in MATH 11 or 30 or 35. (5 units)

114. Intermediate Microeconomics II

Theory of the firm; determination of price and quantity by profit-maximizing firms under different market structures; strategic behavior; general equilibrium; market failure and government policies. Additional prerequisites: A grade of C- or better in the following courses: ECON 113 and MATH 11 or 30 or 35. (5 units)

115. Intermediate Macroeconomics

Macroeconomic analysis, emphasizing modern economic models for explaining output, employment, and inflation in the short and long run. Macroeconomic policymaking, including fiscal and monetary policy. Additional prerequisite: A grade of C- or better in MATH 11 or 30 or 35. (5 units)

120. Economics of the Public Sector

Microeconomic analysis of the role of government in the market economy. Supply of public goods and services, government's role in controlling externalities and regulating private industry, and the economics of the political process. (5 units)

122. Money and Banking

Theoretical, institutional, and historical approach to the study of money and banking, with particular emphasis on the relationship between the monetary and banking system and the rest of the economy. Additional prerequisite: Econ 115, (can be taken concurrently). (5 units)

126. Economics and Law

Economic analysis of law and legal institutions focusing on the common law areas of property, contracts, and torts. (5 units)

129. Economic Development

Causes and consequences of economic growth and poverty in less developed countries; analysis of the role of government policies in economic development. (5 units)

134. African Economic Development

Examination of the economic development of sub-Saharan African countries, with particular emphasis on the relationships between economic growth and their social, political, and economic structures. Additional prerequisites: A grade of C- or better in ECON 41 and 42, or by permission of instructor. (5 units)

135. Gender Issues in the Developing World

Explores the gendered nature of poverty in the developing world, with special focus on sub-Saharan Africa, using applied statistical analysis, and economic theory. Also listed as WGST 121. Additional prerequisites: A grade of C- or better in ECON 41 and 42 or permission of instructor. (5 units)

136. 20th-Century Economic History

The development of the U.S. economy during the 20th century. Topics include the causes and consequences of economic growth, the Great Depression, the rise of government regulation, the changing role of women in the workforce, and the increasing internationalization of markets during the postwar period. Additional prerequisite: A grade of C- or better in ECON 115. (5 units)

137. World Economic History

Development of Western and non-Western economies since the late 19th century. Topics include globalization and economic integration, convergence and divergence in economic growth across countries, international monetary systems, and the impact of alternative policies and institutional regimes on economic performance. Additional prerequisite: A grade of C- or better in ECON 115 or permission of instructor. (5 units)

138. History of Economic Thought

Origins and evolution of economic ideas in their historical and philosophical context. Emphasis on the theories of Adam Smith, David Ricardo, and Karl Marx, as well as the emergence of modern microeconomics and macroeconomics in the 19th and 20th centuries. (5 units)

139. American Economic History

Macroeconomic history of the United States since 1869. Productivity, economic growth, inflation, and recession in the United States from the end of the Civil War to the present. Particular emphasis on the Great Depression and the Great Recession. Additional prerequisite: A grade of C- or better in ECON 115. (5 units)

142. Economics of Sports

Tools of economic analysis applied to sports in pursuit of broader lessons and insights. Topics will include labor market discrimination, cartel theory, cognitive biases, strategy, labor unions, public policy, and profit maximization. The overriding objective is to use the observability of sports to help us understand economic decision-making in non-sports environments. Additional prerequisites: A grade of C- or better in ECON 41, 42, 113, and 114. (5 units)

150. Labor Economics

This course covers topics related to the labor market including theory of labor supply and demand, determination of wages and employment in the labor market, human capital theory, income inequality, unemployment, and labor market discrimination. The course will cover basic institutional background and statistics on each issue, and develop economic models important to the evaluation of each topic. Applications to policy issues including minimum wage, negative income tax, unionization, and unemployment insurance. Emphasis on data analysis and empirical methods applied to the labor market. Additional prerequisites: A grade of C- or better in ECON 41, 42, and 113. (5 units)

151. Economics of Education

This course deals with the important economic issues linked to education and will present an overview of the main theoretical and empirical knowledge available. Topics covered include: the impact of class size, the role of teachers, the return to education, the role of school choice and of tuition fees in higher education, and the role of early investment in long term labor outcomes. The course will discuss empirical methodologies used to analyze education systems worldwide. Examples will be taken from both developing and developed countries.

Goals of the course: Introducing students to the available literature on education and the methodology used to analyze education systems worldwide. At the end of the course, students will be acquainted with rigorous quantitative methods used to analyze education, and will have been in contact with the most prominent results available in the economics of education. Additional Prerequisite A C- or better in Econ 41 and 42 (5 units)

154. Economics of Health Care

Health care spending currently accounts for 18% of GDP in the U.S., and is one of the fastest growing areas of public expenditure. The purpose of this course is to familiarize you with the US healthcare system, and introduce you to economic models related to the study of health care provision and payment. The topics covered in this course include demand for health care, health insurance markets, pharmaceutical companies and innovation, and U.S. institutions such as Medicare, Medicaid, and the Affordable Care Act. Additional prerequisites: a grade of C- or better in ECON 41, 42, and 113. (5 units)

156. Real Estate Economics

Economic analysis of real estate markets, including supply of and demand for land and improvements, legal aspects of real estate ownership and transactions, government regulation and taxation of real estate, and real estate markets in urban and regional economies. Additional Prerequisite A C- or better in Econ 41 and 42, or OMIS 41. (5 Units)

160. The Economics of Poverty and Inequality

Examines theories and evidence regarding poverty and economic inequality in the United States. Evaluates alternative public policies aimed at combating poverty. (5 units)

165. Economics and Justice

Study of theories of economic justice with applications to economic issues and policy. Alternative theories to be considered include utilitarian, libertarian, welfare-economic, egalitarian, feminist, and religious moral perspectives. Topics include poverty and income distribution; economic inequality and mobility by class, gender, and race; the role of the government in promoting justice; effects of globalization; and justice under different economic systems. Additional prerequisite: A grade of C- or better in ECON 113. (5 units)

166. Race, Ethnicity, and Gender in the U.S. Economy

Analysis of current and historical differences in economic status by race, ethnicity, and gender; theory and evidence of discrimination; role of government policies. Additional prerequisite: A grade of C- or better in ECON 41 and 42. (5 units)

170. Mathematical Economics: Static Optimization

The standard classical models of microeconomic and macroeconomic theory are generalized and reformulated as mathematical systems. The primary goal of the course is to extract empirically testable propositions that would permit testing model veracity. Linear algebra and the tools of calculus including power series, the implicit function theorem, envelope theorems, and duality are used as the basis of analysis. Additional prerequisites: A grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

171. Mathematical Economics: Dynamic Optimization

The course will discuss the mathematical tools needed to analyze dynamic situations in economics. Applications to optimal decision-making over time with respect to natural resource allocations, manufacturing and storage paths, consumption/investment decisions, and stability of economic systems are discussed. Topics include optimal control, dynamic programming and calculus of variations. Additional prerequisites: A grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

172. Game Theory

This course introduces game theoretical concepts and tools. Theoretical topics include Nash equilibrium, Subgame perfection, Bayesian-Nash equilibrium, Harsanyi transformation, commitment, and Perfect Bayesian Equilibrium. Applications to topics such as oligopoly, strategic investment, and agency theory are discussed. Additional prerequisites: A grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

173. Applied Econometrics

Statistical analysis of cross-section and panel data, with economic applications. Topics include identification of causal effects using panel methods, instrumental variables, and quasi-experimental techniques; models with binary outcomes; sample selection. Handson analysis of data using statistical software. Additional prerequisites: A grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 41 and 42, and ECON 113. (5 units)

174. Applied Time Series Analysis

Methods to forecast and interpret hypotheses about time-varying economic variables. Topics include stationary and non-stationary series; characterizing time series in tractable ways; separating regular (trend and seasonal) and irregular parts of a time series; and examining identification and estimation strategies. Synthesize, present, and evaluate time series analysis to assess credibility. Additional prerequisites: A grade of C- or better in ECON 41 and 42, and ECON 115. (5 units)

181. International Trade

Analysis of the theories of international trade and strategic interactions; assessment of the empirical patterns of trade; analysis of the political economy of protection; and applications to policies guiding international competition. Additional prerequisite: A grade of C- or better in ECON 113. (5 units)

182. International Finance and Open Economy Macroeconomics

Analysis of the monetary aspects of international economics, including the balance of payments, exchange rates and foreign exchange markets, speculative attacks and currency crises, and the implications of international trade and capital flows for macroeconomic activity and policy. Additional prerequisite: A grade of C- or better in ECON 115. (5 units)

185. Economics of Innovation and Intellectual Property

The economic determinants and consequences of innovation. Topics include research and development, joint ventures, patents and other intellectual property, university-industry and government-industry collaboration, and the relationship between antitrust and other regulatory policies and technological advances. Additional prerequisite: A grade of C- or better in ECON 113 and 114. (5 units)

186. Economics of Digitization

Digitization has dramatically reduced the costs of data storage and transmission. The transformative force of the internet has, in many areas, fundamentally changed the ways consumers and companies interact. This course explores the impact of different digital technologies on the behavior of markets and market outcomes. It combines tools and insights from a number of fields, including industrial organization, labor economics, the economics of innovation, and applied econometrics. Topics covered include big data, copyright and online piracy, apps markets, online retailers, social media, online gaming, and virtual currencies. Additional prerequisite: A grade of C- or better in ECON 41, 42, 113 and 114. (5 units)

187. Dynamic Macroeconomics

Dynamic macroeconomic models are artificial economies that are designed for doing applied time-series analysis and policy simulation. This course provides an introduction to such models. Topics include a review of analytical and numerical tools for dynamic optimization; quantitative analysis of business cycle using the neoclassical growth theory; monetary policy analysis and projection using new Keynesian models; and other selected topics of economic dynamics. Problem sets include both theoretical and computer exercises. Additional prerequisites: A grade of C- or better in ECON 41, 42, 113, and 115. (5 units)

188. Advanced Macroeconomics: Theory and Empirics

Designed to provide students with a deeper understanding of macroeconomics and useful rigorous analytical and statistical skills. Topics covered include economic growth, and monetary and fiscal policies in business cycles. Analyze these topics in theoretical models, and validate the theories using actual data with R. Additional prerequisite: A grade of C- or better in ECON 41, 42, and 115. (5 units)

190. Economics Seminar

Seminar on contemporary economic theories and problems. Admission by invitation only. (5 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Independent studies are normally permitted only under special circumstances. Prerequisite: Written proposal must be approved by instructor and chair at least one week prior to registration. (1--5 units)

Department of English

Professors Emeriti: James P. Degnan, Charles T. Phipps, S.J., Fred D. White

Senior Lecturers Emeriti: Sherry Booth, Jill M. Goodman Gould, Jeffrey L. Zorn

Professors: Phyllis R. Brown (Associate Chair), Michelle Burnham, Juliana Chang , Eileen Razzari Elrod, Ronald T. Hansen (Gerard Manley Hopkins, S.J., Professor), John C. Hawley, Juan Velasco

Associate Professors: Marilyn J. Edelstein, Andrew J. Garavel, S.J., Amy J. Lueck, Cruz Medina, Julia Voss (Chair)

Assistant Professors: Mathew Gomes, Kai Harris, Andrew Keener, Kirstyn Leuner, Danielle Fuentes Morgan, Heather Noel Turner

Senior Lecturers: Simone J. Billings, Stephen Carroll, Theresa Conefrey, Kirk Glaser, Jean-Pierre Lacrampe, Claudia Mon Pere McIsaac, Robert Michalski, Tim Myers, Aparajita Nanda, Cory L. Wade

Lecturers: Melissa Donegan, Jacquelyn Hendricks, Maria Judnick, David Keaton, Denise Krane, Michael Lasley, Margarita Levantovskaya, Loring Pfeiffer, Maura Tarnoff, Robin Tremblay-McGaw

The Department of English affords students a rich undergraduate education in the liberal arts centered on literature, cultural studies, and the art of writing. Critical or creative writing projects are integral to every course in the English major. Students and faculty in the English Department discuss and write about British, American, and global literatures, new media, and film. A range of theoretical approaches are used, sometimes with a focus on visual rhetoric and cultural studies. The department also offers the Creative Writing Program, which provides students with a coherent course of study in the writing of poetry, fiction, and creative nonfiction. The English major prepares students to read and write critically, to bring intellectual flexibility to academic and professional problems, and to enter the workforce as individuals with trained skills in analysis and self-expression.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in English must complete the following departmental requirements:

- Three foundation courses: ENGL 14, 15, and 16
- Two historically grounded literary or cultural studies courses; at least one of these courses must be from a period before 1800
- A three-course concentration in literary/cultural studies (American, British, or individually defined); at least two of these courses must be upper-division
- A three-course concentration in writing (professional writing and new media, or creative writing); at least two of these courses must be upper-division
- One upper-division course in theory, or gender/sexuality, or ethnic/global studies (this course may also be used to meet another requirement)
- One senior seminar
- Please note that the English Department does not allow students to challenge courses.

Requirements for the Minor

Minor in English

Students must fulfill the following requirements for a minor in English:

- Two foundation courses: ENGL 14 or 15, and 16
- Five English electives, four of which must be upper-division courses

Minor in Creative Writing

Students must fulfill the following requirements for a minor in creative writing:

- Two introductory courses: ENGL 71 and 72
- Two sections of the practicum course: ENGL 91
- Three electives from the following list: ENGL 73, 74, 170, 171, 172, 173, 175, 176, 177, 179, 179W
- One additional advanced course: ENGL 171 or 172 (students cannot "double dip")

Minor in Professional Writing

English majors: No more than two courses from the major may be used to fulfill these requirements.

- Two Required Courses: English 16 and at least 4 units of English 198A and/or 189 (one or more internships) for the internship requirement, consult with the director of internships, Heather Turner
- At least five electives, three of which must be upper-division courses: English 19, 20, 25, 26, 100, 101, 103, 104, 105, 107,108,109, 110, 111, 112, 113, 114, 115,116,168PW, 181

Preparation in English for Admission to Teacher Training Credential Programs

The State of California requires that students seeking a credential to teach English in California secondary schools must have substantial experience supervising high school-age individuals, pass a subject-area examination in English. The teaching credential itself requires the completion of an approved credential program, Students who are contemplating secondary school teaching in English should consult with the English advisor for prospective teachers (Amy Lueck) in the Department of English as early as possible.

Lower-Division Courses

Note: Authors and topics listed in the following course descriptions are typical rather than definitive. They are not necessarily included in a specific course every time it is offered, and others not listed here may be included.

1A. and 2A. Critical Thinking & Writing I and II

A two-course themed sequence featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situation. The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Themes address a variety of contemporary topics. Successful completion of CTW I (ENGL 1A) is a prerequisite for CTW II (ENGL 2A). (4 units each quarter)

1H. and 2H. Critical Thinking & Writing I and II---Honors

A two-course themed sequence for students in the Honors program featuring the study and practice of writing and rhetoric, with emphasis on critical reading and writing, diverse composing processes and modes, and attention to the rhetorical situation. The second course features more advanced reading, writing, and analysis, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex writing in a variety of modes. (4 units each quarter)

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address cross-cultural contact; nature and imagination; and other topics. Successful completion of C&I I (ENGL 11A) is a prerequisite for C&I II (ENGL 12A). (4 units each quarter)

14. Introduction to Literary History and Interpretation

Surveys canonical and marginalized works in cultural and historical context, examining how texts shape and reference each other and the consequences of technological change. (4 units)

15. Introduction to Cultural Studies and Literary Theory

Explores the relationships among literature, culture, and society, experimenting with techniques of reading, interpretation, and intervention, using methods drawn from different theoretical perspectives. (4 units)

16. Introduction to Writing Studies

Introduces students to the field of writing studies using methods drawn from different theoretical perspectives. Topics may include civic discourse and rhetorics of social justice; composition and multiliteracies; and visual rhetoric and principles of design. Prerequisites: ENGL 1A and 2A. (4 units)

19. Business Writing

Introduces students to the genres of business writing. Students practice writing with an emphasis on audience, readability, and document design in the digital age. Formerly ENGL 77. (4 units)

20. Introduction to Rhetoric

This course explores different ways of defining and practicing rhetoric, looking at the rhetorical operation of voice, space, performance, and materiality, as well as familiar persuasive texts like speeches. We'll work with theories of rhetoric drawn from historical and contemporary, Western and non-Western, mainstream and marginalized traditions. The goal of this course is to encourage students to recognize and shape rhetoric in their own lives; to hone critical perspectives on the rhetoric that surrounds them; and guide their formation as rhetorical agents in the world. (4 units)

25. Textual Editing

Introduces students to the history and practice of publishing and editing, including recent digital forms. Students learn about textual editing, textual criticism, annotation, and collation as they produce an edition of a book. (4 units)

26. Introduction to Writing in STEM

Introduces students to writing within and about STEM fields. Formerly ENGL 78. Prerequisites: ENGL 1A and 2A. (4 units)

28. Core Advanced Writing

Builds on learning in Critical Thinking and Writing courses to deepen familiarity with values, genres, and conventions relevant to particular disciplines such as STEM, Business, Humanities, Arts, or Social Sciences. Stresses research skills connected with analysis and rhetorical reading and writing skills, especially revision with close attention to audience and purpose. Assignments will reflect increased sophistication in critical reading and writing with a purpose for particular audiences. Prerequisites: ENGL 1A and 2A. (4 units)

33. Introduction to American Literature

Introduces students to an historical survey of American literature from its beginnings to the present. (4 units)

35. Introduction to African American Literature

Introduces students to the study of African American literatures. When offered as ENGL 35G, this course provides a gender studies focus. Also listed as ETHN 36. (4 units)

35G. Gender and African American Literature

Study of African American literature with a focus on gender. Also listed as ETHN 35 and WGST 14. (4 units)

36. Introduction to Latina/o/x Literature

Introduces students to Latina/o/x cultural, film, and literary traditions. Also listed as ETHN 21. (4 units)

37. Introduction to Native American Literature

Introduces students to the study of Native American oral and written traditions, including contemporary works. Also listed as ETHN 11. (4 units)

38. Introduction to Asian American Literature

Introduces students to Asian American literatures. Also listed as ETHN 41. (4 units)

39. Multicultural Literature of the United States

Introduces students to short stories, film, autobiography, and poetry from many cultural communities in the United States. Also listed as ETHN 70. (4 units)

39G. Gender Studies

Approaches to exploration of short stories, film, autobiography, and poetry from cultural communities in the United States. Also listed as WGST 16. (4 units)

41. Introduction to British Literature I

Introduces students to British literature via historical survey, focusing on literature written before 1800. May be repeated when topics differ. (4 units)

42. Introduction to British Literature II

Introduces students to British literature via historical survey, focusing on literature from the 1800s to the present. May be repeated when topics differ. (4 units)

44. Reading Poetry

Introduces students to the critical study of poetry and the challenging work of literary criticism and theory. Students will achieve a greater understanding, appreciation, and enjoyment of poetry through the practice of critical analysis. (4 units)

45. Reading Film

Introduces students to key texts and concepts in the study of film, including movements and figures in cinema, essential terms and concepts in film history and criticism, and the technological, economic, and institutional history of the film industry. (4 units)

54. Shakespeare

Uses close reading of Shakespeare's plays as the object of study for writing instruction focused on literary analysis. Prerequisites: ENGL 1A and 2A. (4 units)

56. Global Literatures

Introduces students to global literatures written in English and/or in translation, representing traditions of writing from non-Western cultures. (4 units)

65. Political Literature

Focuses on selected authors, works, and genres associated with the effort to extend political, social, and economic democracy. (4 units)

67. U.S. LGBTQ Literature

Explores the development of lesbian, gay, bisexual, transgender, queer (LGBTQ) literature in the United States from the mid-19th century to the present. Texts may include novels, short stories, poetry, and drama. Also listed as WGST 34. (4 units)

68A. American Literature and Women

Introduces students to the study of American literature by and about women, with special attention to questions of gender in their social and historical contexts. Also listed as WGST 56. (4 units)

68G. Global Literature and Women

Introduces students to the study of Global literature by and about women, with special attention to questions of gender in their social and historical contexts.

69A. Literature by American Women Writers of Color

A study of American women of color writing in the context of their respective cultural and social histories. Analysis of the interplay of racial images. Also listed as WGST 15. (4 units)

69G. Literature by Global Women Writers of Color

A study of global women of color writing in the context of their respective cultural and social histories. Analysis of the interplay of racial images. (4 units)

71. Fiction Writing

Writing and reading fiction in a combined craft class and workshop setting, focusing on the short story. This course provides instruction on how to read published stories as a writer, developing ideas for stories from a variety of sources, experimenting with the elements of fiction, and developing revision skills through the workshop process. Not repeatable. (4 units)

72. Poetry Writing

Writing and reading poetry in a workshop setting. This course includes finding and shaping materials for poems, experimenting with elements of craft and a variety of poetic forms, reading work by established poets for models, and developing skills to revise poems and evaluate other writers' works. Not repeatable. (4 units)

73. Life Writing

Reading contemporary models of life writing and writing memoir, autobiography, and dramatic nonfiction in a workshop setting. Prerequisites: ENGL 1A and 2A. Not repeatable. (4 units)

74. New Forms for Creative Writing

Innovative compositional techniques and experimental forms of creative writing, focusing on new writing methods rather than on traditional lyrical or narrative forms. Students read, listen to, and create different types of work, which may include sound poetry, graphic and "flash" narratives, hybrid text, and digital projects. Not repeatable. (4 units)

91. Practicum

Reading, viewing and critiquing poetry, fiction, nonfiction, and art for publication in the *Santa Clara Review*, facilitated by student editors and a faculty advisor. Students are graded P/NP only. May be repeated for credit. (1 unit)

97. Special Topics I

Explores particular authors, genres, literary or theoretical movements, or themes. May be repeated for credit when topics differ. (4 units)

Upper-Division Courses

100. Writing in the Public Interest

Engages students in analysis and development of communication skills mobilized in the spirit of public interest. The course surveys significant genres (opinion pieces, mission statements, grant proposals, needs assessments) useful for addressing wide audiences and working within nonprofit settings. Students will often be asked to work with actual clients and stakeholders in the community and industry. (5 units)

100A. Writing in the Public Interest: Archives, Museums, Memorials

The course examines archives, museums and memorials as sites of public history and memory and engages students in analyzing and developing communication skills mobilized in the spirit of understanding and representing diverse histories. Students will often be asked to work with local sites and stakeholders on campus and in the community and

to engage with broader publics through the composition of physical and digital exhibits and other public-facing projects.

100G. Grants, Proposals, and Reports

Students work in teams to prepare and submit a proposal and grant application to solicit funding for a local service agency, arts organization or community organization. They deliver a report to the group for whom they prepared their proposal which details the team's processes, defines their strategies and justifies their decisions. Instruction focuses on developing students' ability to think strategically, analyze professional documents to discover purposes and values, communicate effectively with diverse audiences, and work collaboratively to solve problems, prepare documents and give presentations. Prerequisites: ENGL 1 and 2.

100V. Virtual Santa Clara

Students will explore the history and public remembrance of Mission Santa Clara and the Native village of Thamien on which it is built. We will seek to understand how this history is researched, communicated, and remembered by examining: How missions are currently represented and remembered among public audiences (via SCU's website, on campus, etc.); the Ohlone history that is not being shown, and the role of different kinds of evidence available for recovering it; and how we might intervene in this representational/memory work by using digital media. Cross-listed with ANTH 149. (5 units)

101. Professional Writing

Designed to introduce students to workplace writing, the course focuses on documents common in the field of professional writing, highlighting flexible rhetorical strategies useful to professional writers. (5 units)

103. Topics in Writing and Rhetoric

Special topics course in writing and rhetoric. Topics may include stylistics, histories of writing and rhetoric, cultural rhetorics, science writing, feminist rhetorics, etc. May be taken more than once when topics differ. (5 units)

104. Teaching Writing

Prepares prospective teachers at all school levels (elementary, secondary, and post-secondary) and from all disciplines for their responsibilities in the instruction of writing. Topical focuses vary based upon instructor but typically include writing process theory, writing across the curriculum theory and best practices, use of emergent technology in writing instruction, etc. (5 units)

105. Literacy Studies

Examines how people learn to read and write across history, cultures, technologies, and modes. Explores theories about literacy, equity, and ethics as well as literacy practices of particular groups. (5 units)

107A. American Life Stories and Film

An examination of American life stories, theoretical texts, and films. Final project is an original film proposal and trailer. (5 units)

107G. Global Life Stories and Film

An examination of global life stories, theoretical texts, and films. Final project is an original film proposal and trailer. (5 units)

108. Writing in STEM

Instruction and practice in the close reading of STEM texts as well as writing within and about STEM fields. May be taken more than once when topics differ. Prerequisites: ENGL 1A and 2A. (5 units)

109. Internet Culture and Information Society

Introduction to major issues raised by internet-mediated community and sociability, including such issues as the proliferation of sub/counter-cultures, privacy and surveillance, circulation of ideas and media, and relationships between political/social action in online and offline spaces. The use, function, design, and implications of digital texts/objects and media are central to this class, and students will create digital projects that engage them to coding, design, and other aspects of technological creation. (5 units)

110. New Media in Theory and Practice

A writing studio course focused on multimodal writing, students will explore new media writing genres with special attention to their theoretical significance. (5 units)

111. Writing for Social Change

Students use community participatory research methods as tools for designing and collaboratively implementing community writing programming with partners in surrounding communities. Formerly ENGL 196. (5 units)

112. Technical Writing and Communication

Introduces students to the field of technical communication, presenting best practices and principles of technical writers as well as surveying typical projects presented to technical communicators (crafting instruction manuals, designing internal documents for team-based projects, etc.). Formerly ENGL 178. (5 units)

113EL. Writing Center Theory and Practice

Teaches students how to apply best practices related to writing center theory as they develop effective one-on-one relationships between writers and themselves. Formerly ENGL 191A. Prerequisites: ENGL 1A and 2A. (5 units)

114. Writing for Publication

Study of, and extensive practice in, reading and writing professional prose with an emphasis on the changing forms of professional writing (webtexts, social media writing, etc.) as well as essential tools for professional writers (editing, document design, project management, etc.). May be repeated for credit. Prerequisites: ENGL 1A and 2A. (5 units)

115. Argumentation

This course focuses on argumentative and persuasive writing. Prerequisites: ENGL 1A and 2A. (5 units)

116. Letterpress Composition

Gears whirl and type clicks into place as students create hand-pulled editions on SCU's 100-year-old letterpress. Explore concepts of close reading, critical making, and graphic design through field trips, guest speakers, and hands-on activities that challenge our dependence on all things digital. This course culminates in a portfolio of handmade student work that engages in a critical conversation about our perceived need for (digital) speed. Cross-listed with ARTS 138. (5 units)

119. Language Studies

Study of selected linguistic concepts to better understand the origins and structure of the English language with particular attention to the evolution of language across time. May be taken more than once when topics differ. (5 units)

120A. American Film Studies

Study of selected American films organized by theme or time period. (5 units)

120C. Contemporary Film Studies

Study of selected contemporary films organized by theme or time period. s (5 units)

120G. Global Film Studies

Study of selected global films organized by theme or time period. (5 units)

122. Film, Gender, and Sexuality

Interdisciplinary study of film with a focus of gender and sexuality. Topics may include, but are not limited to, feminist and queer film theory, women filmmakers, lesbian/gay cinema, and constructions of gender in popular film. May be taken more than once when topics differ. Also listed as WGST 134. (5 units)

123. Literature and Ethics

Study of some major ideas and debates in literary theory and criticism, as they have developed historically, concerning the ethical potential and responsibilities of literary and cultural texts and of their writers and readers. (5 units)

124. Literary and Cultural Theory

Exploration of one or more major movements in recent literary and cultural theory, such as Marxism, feminism, deconstruction, reader response, New Historicism, cultural studies, postcolonial theory, narrative theory. (5 units)

125. Feminist Literary and Cultural Theory

Study of 20th- and 21st century feminist literary theory and criticism. Intersectional examination of influences of gender on reading and writing literature and understanding culture. Also listed as WGST 163. (5 units)

128. Writing & Research in Literary and Cultural Studies

Builds on learning in Critical Thinking and Writing courses to deepen familiarity with the values, genres, and conventions relevant to research about literary and cultural studies, exploring topics like pop culture, wellness/disability, citizenship, et cetera from critical perspectives. Course focuses on original research and the genre of the scholarly argument. Stresses writing and research as social and recursive processes by embedding students in a community of researchers/writers composed both of their peers within the course and discourse communities of scholars/commentators. Formerly 106. Prerequisites: ENGL 1A and 2A. (5 units)

129. American Theatre from the Black Perspective

Formerly ENGL 192. Also listed as THTR 161. For course description see THTR 161. (5 units)

131. Early American Literature

Study of selected works from the beginnings of American literary history up to the 19th century. Writers, genres, and topics vary. (5 units)

132. 19th-century American Literature

Study of selected American works from the 19th century. May be taken more than once when topics differ. (5 units)

132 G. Gender and 19th-century American Literature

Study of selected American works from the 19th century with a gender studies focus. May be taken more than once when topics differ. Also listed as WGST 164. (5 units)

133. Selected American Authors

A study of selected works by particular American authors. May be taken more than once when topics differ. (5 units)

135. African American Literature

Study of selected works in African American literature. May be taken more than once when topics differ. Also listed as ETHN 130. (5 units)

136. Latina/o/x Literature and Cultural Studies

Studies in Latina/o/x literature, film, and cultural studies. May be taken more than once when topics differ. Also listed as ETHN 124. (5 units)

137. Native American Literature

Study of selected works in Native American literature. When offered as ENGL 137G, this course provides a gender studies focus. May be taken more than once when topics differ. Also listed as ETHN 111. When offered as ENGL 137G, also listed as WGST 110. (5 units)

138. Asian American Literature

Study of selected works in Asian American literature. May be taken more than once when topics differ. Also listed as ETHN 145. (5 units)

139. Topics in American Literature

Literary study of an issue, theme, or genre in American literature. May be taken more than once when topics differ. When offered as ENGL 139G, also listed as WGST 165. (5 units)

139G. Gender studies in American literature

Literary study of gender in American literature and literary criticism. May be taken more than once when topics differ. Also offered as WGST 165. (5 units)

141. Medieval Literature

Medieval literature in its political, religious, historical, social, and cultural contexts. May be taken more than once when topics differ. (5 units)

143. Renaissance Literature

Renaissance literature in its political, religious, historical, social, and cultural contexts. May be taken more than once when topics differ. (5 units)

144. 18th-Century British Literature

The literature of Britain during the long 18th century (1660--1830) in its political, religious, historical, social, and cultural contexts. May be taken more than once when topics differ. (5 units)

144G. Gender in 18th-Century British Literature

Study of gender in the literature of Britain during the long 18th century (1660-1830) as it relates to political, religious, historical, social, and cultural contexts. Also listed as WGST 141A. (5 units)

145. Victorian Literature

The literature of England from 1830 to 1902, in its political, religious, historical, social, and cultural contexts. May be taken more than once when topics differ. (5 units)

146. Selected British Authors

A study of selected works by particular British authors. May be taken more than once when topics differ. (5 units)

147. Topics in British Literature

Historically grounded courses investigating British literature with different issues, themes, and genres. May be taken more than once when topics differ. (5 units)

149. British Drama

A study of British drama. May be taken more than once when topics differ. . Also listed as THTR 111. (5 units)

150. Modern and Contemporary Literature

British, American, and world poetry, fiction, and drama since World War II. May be taken more than once when topics differ. (5 units)

151 A. Shakespeare's Tragedies

Study of Shakespeare's tragedies. May be taken more than once when different plays are taught. Also listed as THTR 116. (5 units)

151B. Shakespeare's Comedies

Study of Shakespeare's comedies. May be taken more than once when different plays are taught. Also listed as THTR 117. (5 units)

151C. Studies in Shakespeare

Exploration of issues and themes in Shakespeare's writings. May be taken more than once when topics differ. Also listed as THTR 118. (5 units)

152 A. LGBTQ Studies: U.S. Perspectives

Interdisciplinary study of gay and lesbian cultures and critical theory with a focus on U.S. perspectives. May be taken more than once when topics differ. Also listed as WGST 136. (5 units)

152 G. LGBTQ Studies: Global Perspectives

Interdisciplinary study of gay and lesbian cultures and critical theory with a focus on global perspectives. May be taken more than once when topics differ. Also listed as WGST 122. (5 units)

154 A. American Environmental Literature

Study of the natural world and its representations in American language and culture. (5 units)

154 G. Global Environmental Literature

Study of the natural world and its representations in Global language and culture, in English or in translation. (5 units)

156. Postcolonial Literature and Theory

Study of literature in the context of postcolonial theory and criticism. (5 units)

157A. African Literature

Thematic study of African literature in translation or written in English with attention to non-Western traditions of writing and to historical and social contexts and/or genre. (5 units)

157 B. South Asian Literature

Thematic study of South Asian literature in translation or written in English with attention to historical and social contexts and/or genre. (5 units)

157 C. Caribbean Literature

Thematic study of Caribbean literature in translation or written in English with attention to historical and social contexts and/or genre. (5 units)

160. Children's Literature

Study of the theory and practice of children's literature with special attention to the history of children's literature, the debate over the kinds of texts best suited for teaching reading, and multiculturalism. (5 units)

161. The Bible as Literature

Literary genres of the Bible (myth, history, wisdom, prophecy, gospel) studied in translations from the Hebrew and Greek against the background of Mesopotamian, Babylonian, Egyptian, Hellenistic, and Roman cultures. (5 units)

162. Literature and Religion

Exploration and analysis of central connections between religious and ethical questions, concerns, topics, and movements and their literary expressions in different social, cultural, individual, historical, geographical, and/or political contexts.

162 G. Gender, Literature, Ethics, and Religion

Analysis of gender in literature exploring religious and ethical issues May be repeated for credit when topics differ. (5 units)

163. Literature and Performance

Also listed as THTR 172. For course description see THTR 172. (5 units)

166. Topics in Theatre & Drama

Also listed as THTR 112 or 113. For course description see THTR 112 or 113. (5 units)

167. Dramaturgy

Also listed as THTR 185. For course description see THTR 185. (5 units)

168 A. Women and American Literature

Studies in literature by and about women. May be repeated for credit when topics differ. Also listed as WGST 167. (5 units)

168 G. Women and Global Literature

Study of global literature by and about women in explicitly theoretical contexts. May be repeated for credit when topics differ. (5 units)

168PW. Women Writers and Literature

This version of Women and Literature will examine the ways variously positioned women have used writing to accomplish individual, interpersonal, professional, and civic goals in their lives and communities. Course may be repeated for credit when topics differ. Also listed as WGST 167AW. (5 units)

169 A. Women, American Literature, and Theory

Study of American literature by and about women in explicitly theoretical contexts. May be repeated for credit when topics differ. Also listed as WGST 166. (5 units)

169 G. Women, Global Literature, and Theory

Study of global literature by and about women in explicitly theoretical contexts. May be repeated for credit when topics differ. (5 units)

170. Writing for Children and Young Adults

Workshop in writing and illustrating children's and young adults' books. (5 units)

171. Advanced Fiction Writing

Writing fiction, with emphasis on the short story. May be repeated for credit. Prerequisite: ENGL 71. (5 units)

172. Advanced Poetry Writing

Workshop in the writing of poetry. May be repeated for credit. Prerequisite: ENGL 72. (5 units)

173. Screenwriting

Introduction to the fundamentals and format of screenplay writing. Critical analysis of characterization and narrative structure in contemporary movies, as well as workshops in the writing of film treatments, outlines, and scripts. May be repeated for credit. Also listed as THTR 173. Prerequisite: ENGL 71 or permission of the instructor. (5 units)

175. Advanced Creative Nonfiction

Development of skills in the elements of creative nonfiction, such as narration, character development, persona, and voice. Focus is on one or more modes of creative nonfiction, such as landscape writing, popular culture, literary journalism, profile, and memoir. Prerequisites: ENGL 1A and 2A. (5 units)

176. Creative Writing and Social Justice

Explores the intersections of creative writing, social justice, and vocation with special attention to issues of poverty and homelessness. Students will read and write creative prose and poetry, have a brief community placement, and learn from several guest speakers. (5 units)

177. Writing Genre Fiction

Introduction to and practice in planning and drafting works of genre fiction (such as historical, science fiction, magical realism, fantasy) for an adult or young adult audience. (5 units)

178. Creative Writing and Performing

Students will experiment with writing and performing in a range of styles, such as spoken word, storytelling, flash fiction and collaborative performances, poetry and music, and monologues. The course will culminate in a student performance. (5 units)

179. Advanced Playwriting

Also listed as THTR 171. For course description see THTR 171. (5 units)

179W. Playwriting

Also listed as THTR 170. For description see THTR 170. May be repeated for credit when topics differ. (5 units)

181. Engineering Communications: Practical Writing and Presentation Skills for Engineers

Focus is on effective written and oral communication specifically targeted for engineers in the industrial environment. Major topics include audience analysis, document design, revision, the design and use of graphics, ethical issues in communications, multimodal communication methods, and oral presentation techniques. Open primarily to junior and senior engineering majors. Prerequisites: ENGL 1A and 2A. (4 units)

189. Professional/Digital Writing Internship

Applied introduction to designing, iterating, managing, and testing digital projects across modes and platforms for professional purposes (including industry, non-profit, and public sector). Internship is on-site, guided by professional writing faculty. Students will conduct user-experience research and generate content for SCU affiliated websites and social media accounts, generating a portfolio of work to document their learning, and showcase their skills. Enrollment is by permission: use this form to apply http://bit.do/ENGL_189. (2 units)

190. Senior Seminar

Special topics in English, American, or comparative literature for senior English majors. Enrollment by permission of instructor. (5 units)

194. Peer Educator in English

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

197. Special Topics II

Specific authors, genres, literary or theoretical movements, or themes. May be repeated for credit when topics differ. (5 units)

198A. Writing Internship

Work-study program for students of superior writing ability who gain course credit by supervised writing for newspapers, magazines, or for government or private agencies. Enrollment is by permission or invitation of the instructor and department chair. May be repeated once for credit. Students are graded P/NP only. (1--5 units)

198B. Writing Studio Internship

For students of superior writing ability, intensive practice preparing work for publication under the supervision of distinguished writing faculty. Students should have significant work in progress. Enrollment is by permission or invitation of the instructor and the department chair. May be repeated once for credit. Students are graded P/NP only. (1--5 units)

199. Directed Reading/Directed Research

In special circumstances and with permission of the department chair, a student may request a course in directed reading or writing from an instructor. May not be taken in a subject listed in this Bulletin. (5 units)

Department of Environmental Studies and Sciences

Professors: Leslie Gray , Lisa K. Kealhofer, Michelle A. Marvier, Virginia Matzek (Department Chair), Daniel Press, Iris Stewart-Frey

Associate Professors: Christopher Bacon, Charles Gabbe

Assistant Professors: Hari Mix

Lecturers: Stephanie Hughes, Ted Grudin

The Department of Environmental Studies and Sciences (ESS) offers interdisciplinary programs of study leading to a bachelor of science in environmental science or environmental studies. A minor in environmental studies is also available. These programs provide students with the intellectual foundation they will need in addressing crucial environmental challenges of the 21st century such as human population growth, urban development, food and agricultural systems, deforestation, global climate change, waste disposal, air and water pollution, loss of biodiversity, and the need for renewable energy.

ESS programs are enriched by colloquia featuring presentations on environmental topics by scholars and practitioners. Majors in ESS are expected to apply their knowledge outside the classroom by completing an approved internship or research experience. During their senior year, ESS students conduct research or an interdisciplinary group project with community stakeholders in ENVS 101 (Capstone Seminar).

ESS students are encouraged to study abroad. Courses such as ENVS 144 (Natural History of Baja L&L) include one week of immersion travel during University academic year breaks. Some summer and academic year courses taken through approved study abroad programs will count toward the requirements of the ESS majors and minors.

Each student works with a faculty advisor, who helps integrate the classroom curriculum with the student's plans for future study and/or work in environmental fields.

Requirements for the Majors

Major in Environmental Science

In addition to fulfilling undergraduate Core Curriculum and College of Arts and Sciences requirements for the bachelor of science degree, students majoring in environmental science must complete the following departmental requirements:

- ENVS 21, 22, 23
- MATH 11 or MATH 35
- CHEM 11, 12, 31
- ENVS 79 or PHIL 29
- ENVS 100, 101, 122, 198
- ENVS 110/BIOL 160
- ENVS 116 or CENG 160
- One selection from the following course series: BIOL 1A, 1B, 1C or PHYS 11, 12, 13 (PHYS 31, 32, 33 can be substituted)
- One selection from the approved list of upper-division social science courses

- Six upper-division environmental science courses from the following categories. At least three must be lab courses:
  - At least two courses from the approved list of biological sciences courses
  - At least two courses from the list of approved physical sciences courses
  - Up to two courses from the approved list of elective courses
- Attend 10 approved Environmental Studies and Sciences environmental colloquia
- An approved 100-hour internship

Major in Environmental Studies

In addition to fulfilling undergraduate Core Curriculum and College of Arts and Sciences requirements for the bachelor of science degree, students majoring in environmental studies must complete the following departmental requirements:

- ENVS 21, 22, 23
- ANTH 50/ENVS 50
- ENVS 79 or PHIL 29
- ENVS 100, 101, 122, 198
- One selection from the approved list of statistics courses
- ENVS 111
- ENVS 116 or CENG 160
- Five upper-division courses from the following categories:
  - One natural science lab course from the approved list of electives offered within the Department
  - Two to four additional courses from the approved list of electives offered within the Department
  - Up to two courses from the approved list of electives offered outside the Department
- Attend 10 approved Environmental Studies and Sciences environmental colloquia
- An approved 100-hour internship

Requirements for the Minor

Minor in Environmental Studies

Students must fulfill the following requirements for a minor in environmental studies:

- ENVS 21, 22, 23
- One from approved methods courses
- One selection from approved social, political and legal perspectives courses
- One selection from approved ethical or spiritual dimensions courses
- Three additional courses from the approved list of electives
- Attend 6 approved Environmental Studies and Sciences environmental colloquia

Lower-Division Courses: Environmental Studies and Sciences

1A. and 2A. Critical Thinking & Writing I and II

A two-course themed sequence featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situation. The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Topics may include the rhetoric surrounding current environmental issues, and environmental criticism with a variety of media. Successful completion of CTW I (ENVS 1A) is a prerequisite for CTW II (ENVS 2A). (4 units each quarter)

5. My Environment

What is the environment and how do I interact with it? This course explores fundamental questions about our relationship with the natural world, centered around five themes: My Earth, My Water, My Food, My Pollution and My Climate. Through assignments and labs, students gain experience in geological reasoning and interpretation; groundwater and surface water resource management; ecological footprinting; air pollution impacts; and more. Laboratory 15 hours. (4 units)

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Themes may include nature, imagination, and environment in myth, art, literature, music, drama, story, philosophy, and sacred text. Successful completion of C&I I (ENVS 11A) is a prerequisite for C&I II (ENVS 12A). (4 units each quarter)

21. Environmental Biology L&L

In this course, students will gain an understanding of how humans are affecting life on Earth. Students will explore the principles of evolution and ecology in contexts ranging from agriculture and forestry, to pollution mitigation and public health. Lecture and laboratory exercises will prepare students for upper-division science courses required for the Environmental Science and Environmental Studies major or minor. Laboratory 30 hours. Saturday field trip may be required. (5 units)

22. Introduction to Environmental Studies

This course presents environmental studies as an interdisciplinary academic field focused on society-nature relations. In part one, we examine population, markets, institutions, ethics, hazards, political economy, and social construction as core social science perspectives. Part two uses these approaches to explain nature-society puzzles related to agriculture, food, energy, climate change, biodiversity, forests, oceans, and land use change. In each of these cases, we focus on specific objects and their context (e.g., tuna in the Pacific Ocean or redwood trees in Northern California), as we analyze human-environment interdependence, and assess the complex causes, consequences, and potential responses to change processes occurring at the local, national, and global scales. We will also consider the personal and collective dimensions of social change through environmental civic engagement. (4 units)

23. Introduction to Earth Systems L&L

This course will investigate the workings and complexities of the Earth system, including the interactions, synergies, and feedbacks that link the geologic, oceanic, hydrologic, and climate system. Building on basic physical and chemical principles, students will study how continents, soils, oceans, freshwater reservoirs, and the atmosphere were formed, which processes are taking place to change them, and how they are affected by human action. Lecture and laboratory exercises will prepare students for upper-division science courses required for the Environmental Science and Environmental Studies major or minor. Laboratory 30 hours. (5 units)

50. World Geography

Provides an understanding of world geography through an appreciation of contemporary global problems in different world regions. Broad topics that will be covered include globalization, demographic trends, economic development and underdevelopment, human-environment interactions, changing cultures, and geopolitics. These topics will illustrate the distribution of political, cultural, socioeconomic, and physical processes and features around the world and will be covered at local, regional, and global scales. Also listed as ANTH 50. (4 units)

79. Environmental Thought

Using an ecocritical approach, this course examines primary and secondary sources related to the evolution of environmental thought in modern times. The work of seminal thinkers from within the conservation movement, environmental philosophy, and environmental sciences is explored, as well as the social and economic influences in post-World War II America that created the modern environmental movement. (4 units)

95. Sustainability 101

This course provides credit for participating in efforts at Santa Clara University to heighten awareness of sustainability; engaging actively in opportunities that pursue the university's sustainable mission; and reflecting on these experiences. (2 units)

Upper-Division Courses: Environmental Studies and Sciences

100. Introduction to Capstone

This class will bridge the internship and capstone experience. The first part of the class will focus on the internship and professional development, including a reflection and analysis of experiences and organizations, documentation of learning, and forward-looking vocational discernment. The second part will help students prepare for their winter quarter capstone experiences, through identifying appropriate methods, creating a proposal of work to be done during winter quarter, and submitting projects for human subjects approval. Prerequisites: Senior class standing; completion of internship; ENVS 21, 22, and 23; completion of (or concurrent enrollment) in ENVS 116 and an approved statistics course for the major. (2 units)

101. Capstone Seminar

A project-based research course that integrates both the Environmental Studies and Environmental Science majors. Student transdisciplinary teams work as consultants to address a wide range of environmental issues, with the goal of providing research of value to a community partner or agency. Topics may include ecology, water resources, sustainable planning, and food, water, and climate justice. Students develop skills in project management, research, collaboration, and communication with diverse audiences. Teams present their research findings at a poster session

for ESS faculty and community stakeholders at the end of the quarter. Prerequisites: Senior class standing; completion of internship; ENVS 21, 22, and 23; completion of ENVS 116 and an approved statistics course for the major. (5 units)

110. Environmental Statistics L&L

A course in applied statistics for environmental researchers. Students gain training in sampling, experimental design, survey design, quantitative analysis, and hypothesis testing. Theory and concepts are covered in lectures and readings. Laboratory sessions provide practical experience using the statistical programming environment R to analyze and visualize datasets. Examples used in lectures and lab assignments are derived from the fields of biology, public health, and environmental studies and sciences. Laboratory 30 hours. Also listed as BIOL 160. Prerequisite: BIOL 1C or ENVS 21. (5 units)

111. Mixed Methods for the Environment

This project-based course will introduce and develop skills for the conduct of qualitative environmental research, drawing from several social science approaches, especially ethnography, participant observation, focus groups, interviews, and surveys. Students will learn strategies for conducting effective literature reviews and learn how to conduct interviews, write field notes, and be effective participant observers. Prerequisite: ENVS 22. (5 units)

116. Introduction to GIS

Spatial analysis helps to address critical questions in the environmental field, such as whether environmental burdens are disproportionately affecting disadvantaged communities or where habitat conservation measures might be most effective. Geographic Information Systems (GIS) can be used to overlay different kinds of spatial data for mapping and analysis. The class will use a project-based approach to generating, querying, analyzing, and displaying GIS data utilizing industry standard software. Prerequisite: ENVS 21, 22 or 23; or permission of instructor. (5 units)

117. Intermediate GIS

This course is focused on using spatial analysis to solve urban and environmental problems, using R and RStudio, along with other open source tools. It also explores spatial data in augmented reality (AR) and virtual reality (VR). The course includes a strong emphasis on data management, including acquiring, cleaning, and visualizing data. Students will be introduced to new spatial analysis techniques, and will apply these techniques through labs, homework assignments, and a final project. Given the importance of replication in science, students will also create and document code that may be useful for other researchers. Prerequisite: ENVS 116. (5 units)

120. Introduction to Environmental Law and Regulation in the United States

Introduction to the U.S. legal system's approach to environmental protection. Topics include the roles of legislatures and environmental agencies at the federal, state, and local levels; the independent role of the judiciary in establishing environmental law; and specific statutes such as the Clean Air Act. Students evaluate questions of federalism, uses of economic incentives, and relationships between environmental protection and economic growth. Prerequisite: ENVS 22. (5 units)

122. Environmental Politics and Policy

This course analyzes environmental governance in the last half century and focuses on the social dimensions and impacts of policy change. Part one introduces environmental politics and policymaking processes in the context of history, different justifications, and competing interests and values. Part two compares regulatory approaches and policy tools, as we examine key pieces of environmental legislation in the United States, including the Clean Air, Clean Water, National Environmental Policy, and Endangered Species Acts. This section focuses on air pollution;

climate policy and waste; addressing issues of local, state, and national regulations, environmental justice, scientific uncertainty, representation, and the politics of policy change. Part three examines the rise of sustainability agendas, highlighting the roles of civil society and corporate firms. A concluding discussion explores how civic engagement and innovations could accelerate transitions towards a greener economy. Students compose policy memos, participate in debates, and collaborate with their peers in a team-based role-playing simulation game. Also listed as POLI 157. Prerequisite: ENVS 22 or POLI 1. (5 units)

124. Water Law and Policy

Introduction to the legal and regulatory concepts related to water. Examines rights, policies, and laws, including issues related to water supply and access (water transfers/water markets, riparian and appropriative doctrines), flood control, water pollution and quality (the Clean Water Act, EPA standards, instream flows for fish), and on-site stormwater management/flood control. A focus on California water law and policy is complemented with some national and international case studies. Also listed as CENG 124. Prerequisite: ENVS 22 recommended. (5 units)

128. Urban and Environmental Planning

This course uses the lens of sustainability to examine major issues in land use, transportation, housing, economic development, public health, environmental planning and restoration, environmental justice, and public participation. Students in this course will critically evaluate the role of urban planning in solving challenges including climate change, racial injustice, and economic inequality. In doing so, this course will also offer students the opportunity to engage with real-world planning issues in the Bay Area and beyond. Prerequisite: ENVS 22 recommended. (5 units)

131. Environmental Education

An introduction to the study and practice of environmental education. Surveys philosophies, theories, and methods of environmental education with a special emphasis on techniques for engaging K--12 students in outdoor settings to maximize learning of environmental concepts and to improve the students' understanding of their personal connections to nature. Introduces creative ways that we, as current or future teachers, parents, or mentors can use active study of and interactions with the outdoor environment to engage young people in the study of environmental systems and basic biological, chemical, and physical sciences. A portion of the course will be taught in field-based settings. Students will participate in service-learning projects that will give them practical experience planning and leading environmental education lessons. Especially valuable for future teachers. Prerequisite: ENVS 21, 22, or 23 recommended. (5 units)

132. Agroecology L&L

The goal of agroecology is to reduce the negative impact of farming while meeting the food needs of the world. This course examines in a holistic framework the ecological principles and processes that govern agroecosystem productivity and stability. A wide variety of agricultural management practices and designs are assessed and discussed in terms of their capacity to sustain long-term production. Students will also learn research methods that explore the resilience and sustainability of agroecosystems. One required weekend field trip. Laboratory 30 hours. Prerequisite: ENVS 21. (5 units)

136. Food, Culture, and the Environment

Exploration of the history and impact that food choices have made on human societies and the environment. Several foods that are staples in the world today, like sugar, pepper, and various grains, have significantly affected the environment, patterns of land use, economies (both local and global), cuisine, and the meaning of meals and food sharing. Class topics illustrate the regional and historical impacts of plant and animal domestication, the industrial

revolution, and industrial agriculture on people and the environment. Case studies highlight the cultural significance of foods, food choices, and agricultural economies. Also listed as ANTH 140. Prerequisite: ENVS 22 recommended. (5 units)

137. Historical Ecology

Historical ecology investigates the historical relationships between cultures and their environments. Students are introduced to methods used to reconstruct past environments. They draw on these, as well as historical documents, maps, and land use information, to learn how to reconstruct the historical ecology of the Santa Clara Valley. Also listed as ANTH 145. Prerequisite: ENVS 22 recommended. (5 units)

141. Environmental Biology in the Tropics

This summer course examines tropical biology and ecology and their relationship to issues of sustainable development. The course includes 1.5 weeks of instruction at SCU, and 3.5 weeks of field study in Costa Rica. Particular emphasis on tropical ecology, community ecology, reforestation and restoration ecology, sustainable agriculture and fair trade, and ecotourism. Taught in conjunction with ANTH 197. Enrollment by application via International Programs. Prerequisite: ANTH 1 or BIOL 1C or ENVS 21. (5 units)

143. Advanced Writing for the Environment

This course examines a current topic in the environmental humanities, varying from quarter to quarter. Past themes have included "Environmental Hope," "Environmental Apocalypse," and "Writing for the Birds." Exploration of environmental literature coupled with intensive writing practice in formats including personal essays, nature writing, discourse analysis, and ecocriticism. Prerequisite: Junior or senior standing. (5 units)

144. Natural History of Baja L&L

Examines the natural history of Baja California Sur, with emphasis on the taxonomy of marine and terrestrial organisms, the ecology of desert and coastal ecosystems, and the biogeography of the peninsula. Meets twice a week in winter quarter and culminates in a 10-day spring break trip to the Sierra de la Laguna region and the Isla Espiritu Santo complex. Students will become familiar with desert, riparian, beach, mangrove, and rocky intertidal habitats, develop field observation and species identification skills, and explore local conservation challenges. Laboratory 30 hours. Prerequisites: BIOL 1C or ENVS 21 or permission of instructor. Enrollment by application only. Travel fees required. Also listed as BIOL 144. (5 units)

145. Environmental Technology L&L

A hands-on lab course covering a variety of technologies, from planetary monitoring to biomimicry, from climate adaptation and mitigation to geoengineering. Addresses "bleeding edge" as well as more traditional technologies that enhance both human welfare and environmental quality in developed and developing countries. Students will explore how technology is used to monitor and assess the planet, investigating a range of sensors and spatial scales. Students will also examine solar energy approaches, ranging from photovoltaic arrays to solar thermal plants to passive solar designs. Prerequisites: ENVS 21 and 23; or permission of instructor. (5 units)

146. Agriculture, Environment, and Development: Latin America

Offers a cross-disciplinary examination of the prospects for "sustainable development" in rural areas of Latin America. Students will use diverse points of view to look at interactions between poverty, development, and environmental degradation. While there is no single, universally accepted definition of sustainable development, a central goal of this course is that each student will come away with the ability to understand the key elements that distinguish different discourses on this subject. Prerequisite: ENVS 22. (5 units)

147. International Environment and Development

Examines the intersection of environment and development in the developing world. Students will explore meanings and measures of development as well as international institutions that influence development and environmental policy. Conceptual frameworks for addressing human-environmental relationships, including globalization, famine and hunger, sustainable development, population-poverty interactions, and gender will be explored. Specific topics to be covered include deforestation, water use, conservation and development, oil extraction, and urbanization. Prerequisite: ENVS 22 recommended. (5 units)

149. African Environment and Development

Students will gain an in-depth understanding of Africa's diversity and dynamism, considering how people and environments have interacted through space and time. We will examine Africa's social, cultural, economic, political, and environmental systems to understand Africa's trajectory of development. Also listed as POLI 146. Prerequisite: ENVS 22 recommended. (5 units)

150. Political Ecology

Explores political ecology as a field of study and as a critical tool to analyze environmental issues. Focuses on going beyond simplified explanations about environmental problems, tracing environmental change to broader political, economic, and cultural issues. Topics explored will include land degradation, conservation through parks and reserves, land use conflicts, science and power, social movements, urban pollution, and public health. Course readings include case studies from across the globe to examine how political ecology research engages issues and how it offers critical insights needed to address environmental problems. Challenges students to critically examine their own interpretations and understandings of today's most important environmental issues. Prerequisite: ENVS 22. (5 units)

151. Restoration Ecology L&L

The science and practice of restoring degraded ecosystems, from tidal marshes to coral reefs, with an emphasis on California habitats and local management challenges. Students will develop skills in reading scientific literature, interpreting data, and taking field measurements. Students will learn how to monitor the success of restoration projects at meeting the goals of biodiversity and ecosystem function. Laboratory and fieldwork 30 hours. Saturday field trip may be required. Also listed as BIOL 151. Prerequisite: BIOL 1C or ENVS 21. (5 units)

153. Conservation Science

Conservation is a scientific enterprise and a social movement that seeks to protect nature, including Earth's animals, plants, and ecosystems. Conservation science applies principles from ecology, population genetics, economics, political science, and other natural and social sciences to manage and protect the natural world. Conservation is all too often seen as being at odds with human well-being and economic development. This course explores the scientific foundations of conservation while highlighting strategies to better connect conservation with the needs of a growing human population. We will examine whether conservation can protect nature, not from people, but for people. Also listed as BIOL 153. Prerequisite: BIOL 1C or ENVS 21. (5 units)

155. Environmental and Food Justice

This course unites two vibrant fields for academic study and arenas for social, political, and ecological action. Environmental justice as a principle affirms the right of all people to healthy livable communities. Environmental injustice occurs when environmental benefits and burdens are unevenly distributed along the lines of identity, including race, class, and/or nationality. Food justice research addresses inequalities in food access and studies the patterns, causes, and solutions associated with increasing hunger and obesity among eaters and the accumulation of

environmental costs in agricultural landscapes. After reviewing several seminal studies in environmental and food justice, this class delves into case studies in California and Central America. Learners will conduct a major research project, participate in team-based collaborations, and engage local communities as part of this course. Prerequisite: ENVS 22 or ENVS 79 recommended. (5 units)

156. General Ecology L&L

Quantitative study of the interrelationships of organisms with their biotic and abiotic environments. Emphasis on population dynamics, interspecific relationships, community structure, and ecosystem processes. Laboratory and field work 30 hours, including one weekend field trip. Also listed as BIOL 156. Prerequisites: BIOL 1C. (5 units)

160. Water Resources L&L

This course covers fundamental concepts in hydrology and water resources management such as precipitation, runoff and infiltration, flow in streams and aquifers, floods and droughts, water budgets, water delivery systems, and stream restoration, water cycling, use, treatment, water pollution, and conservation. Interactions between water and human societies, ecosystems, agriculture, natural resources, and climate are explored through domestic and international case studies. Course concepts are reinforced through indoor and outdoor class and laboratory exercises and field trips. Laboratory 30 hours. Prerequisites: ENVS 23. ENVS 21 and 22 recommended. (5 units)

161. Water Security

UN millennium development goals include access to safe drinking water and basic sanitation for all people, yet in many places those have remained an elusive goal. Water security invokes the idea of risk, but also of action, and resonates with governments, managers, academics, donors, activists, and organizations. In this course students analyze frameworks and approaches to water security. Through critical evaluation of the recent literature and principles from the fields of environmental science and studies, students gain perspectives on barriers and solutions to safeguarding access to adequate quantities of acceptable quality water for sustaining livelihoods, ecosystems, and human well-being. Prerequisite: Junior or senior standing. (5 units)

166. Climate Change: Past to Future L&L

Human-caused changes to the climate system are now widely accepted and expected to have great effects on physical, biological, and human systems from sea level rise to human disease, ocean acidification, and mass extinction. We will explore climate change in three broad units: (1) foundational aspects of the climate system such as Earth's energy balance, greenhouse effect, carbon cycle, and circulation of the oceans and atmosphere; (2) evolution of the climate system throughout Earth's history; and (3) impacts, vulnerabilities, and solutions for modern climate change. Students will model Earth's energy balance; examine Earth's carbon and water cycles in the field and lab; experimentally determine sea level rise with water isotopes; and use climate models to predict future changes. Lectures and discussions of current scientific literature and government documents will be motivated by student interest. Laboratory 30 hours. Prerequisite: ENVS 23. (5 units)

180. Energy and the Environment

This course exposes students to the connection between energy resources and human development, public health, and societal inequity. Students explore both traditional non-renewable supplies (coal, petroleum, natural gas, and nuclear) and renewables (natural gas, nuclear, biomass, wind, solar, hydropower, and geothermal), while recognizing the importance of energy conservation and storage. Students will explore the energy for the United States, comparing visionary scientific research with current and proposed policy strategies. Students will gain an understanding of the vast array of societal and environmental impacts of our energy demands, while defining opportunities and challenges for the future. Prerequisite: ENVS 23 recommended. (5 units)

185. Garbology

This class follows the path of our waste products as they are landfilled, burned, treated, recycled, reused, dumped on minority communities, or shipped abroad. Building on basic chemical and biological principles, we explore the ultimate fate of organic and inorganic waste. We look to the past and to other societies to better understand how we got to this throw-away society and what we can learn from past practices and other cultures. We explore sustainable solutions, including new efforts to reduce our waste such as "extended producer responsibility", design-for-disassembly, green chemistry, and zero waste. Students will also learn how to utilize the "life cycle analysis" approach as a basis for those daily decisions such as paper versus plastic. Prerequisite: ENVS 23 or permission of instructor. (5 units)

191. Urban Agriculture Practicum

The rise in urban populations, in conjunction with industrial agriculture, has resulted in a disconnect between the public and their food system. Urban farms are diverse spaces that are utilized by a wide variety of groups for food security, food sovereignty, education, and connection to nature. Through lectures and hands-on activities held at SCU's Forge Garden and Bronco Urban Garden, students will learn practical skills in sustainable urban food production. In addition to their experiential learning placement at a local school garden in downtown San Jose, students will explore urban farming models through field trips and through visits from guest speakers working in urban agriculture in Silicon Valley. (2 units)

195. Sustainable Living Undergraduate Research Project (SLURP)

This two-quarter research-based course is designed to promote a culture of sustainability at Santa Clara University and also fulfills the ESS internship requirement. Students engage in intensive research over the course of winter and spring quarters on projects to support SCU's Center for Sustainability's Strategic Plan. (2 units in each of two academic quarters)

196. Special Topics in Environmental Studies

Course content and topics vary depending on the professor. (Variable units)

197. Special Topics in Environmental Science

Course content and topics vary depending on the professor. (Variable units)

198. Environmental Proseminar

A seminar course primarily for sophomore and junior majors intended to permit reflection about vocation; develop job-searching, self-promotion, and networking skills to aid in obtaining an internship or preparing for research experience; and foster the further development of professional skills. Students are graded P/NP only. Prerequisite: Environmental Studies and Environmental Science majors only; sophomore standing or above. (2 units)

199. Directed Reading or Research

Students who want to enroll in 199A or 199B should meet with the faculty supervisor no later than the fifth week of the term preceding the start of the project. Prerequisite: A written description of the proposed project must be presented to the department chair for approval. (1--5 units)

199A. Directed Reading in Environmental Science or Environmental Studies

Detailed investigation based on directed readings on advanced environmental topics, under the close supervision of a faculty member. Prerequisite: Permission of department chair and instructor before registration. (1--5 units)

199B. Directed Environmental Research

Supervised laboratory, field, or other research under the guidance of a faculty member. The goal should be a written report suitable for publication or a conference presentation. Prerequisite: Permission of department chair and instructor before registration. (1--5 units)

Ethnic Studies Department

Professor Emeritus: Stephen Fugita

Professors: James S. Lai, Anna Sampaio

Associate Professors: Anthony Q. Hazard Jr., Sakina Hughes

Assistant Professor: Jesica Fernández

Senior Lecturer: Aparajita Nanda, (by courtesy) Department Chair

Lecturer: Allia Griffin

Ethnic studies is a compelling and dynamic discipline devoted to the critical examination of race, ethnicity, gender, sexuality, class, and intersecting modes of inequality particularly as manifest in the experiences of historically marginalized populations. In the pursuit of social justice, it challenges dominant views of racial and ethnic groups that lead to inequalities while building on the critical studies of racialization and resistance with research and courses across a broad field including education, economic development, identity and empowerment, immigration, labor and employment, media, music, and popular culture, multiracial communities, sovereignty, transnational networks, voting rights, and political representation. Ethnic studies focuses on the roles and experiences of historically marginalized racial and ethnic populations with particular attention paid to African Americans/Blacks, American Indian/Indigenous/Native Americans, Asian Pacific Islander, and South Asian Americans, Chicanas/os/xs and Latinas/os/xs and Middle Eastern and North Africans within the framework of the United States and within transnational networks. Coursework also emphasizes the comparative interaction between various racial/ethnic groups and cross-national approaches to their histories, cultural productions, and socioeconomic and political experiences.

As an academic department, Ethnic Studies fosters intersectional and interdisciplinary inquiry. The faculty comprise a community of experts in critical racial and ethnic studies, while serving as teachers, mentors, and role models for undergraduate students. The Ethnic Studies Department strives to make connections between University learning, racial and ethnic communities, and social change, and encourages a reflective engagement with society and a commitment to fashioning a more equitable, humane, and just world. The Ethnic Studies Department serves as a resource for students, faculty, and staff across the University who are interested in examining race and ethnicity and its intersections with multiple modes of inequality including class, gender, citizenship, and nationality.

The department offers students the option to complete a major in ethnic studies (Bachelor of Science) or a minor in ethnic studies, African American studies, Asian American Studies, or Latina/o/x Studies. The major provides students with advanced and concentrated training in racial and ethnic studies with coursework clustered in the upper division around six themes: Community Engagement and Social Movements; Race, Law, Politics, and Policy; Intersectionality and Hybridity; Inequality and Education; Immigration, Transnationalism, and Globalization; and Social and Cultural Analysis. Both the stand alone major and three minors enhance a student's employment opportunities in business, community service work, education, law, medicine, social work, politics, and government and do important work in establishing a foundation for students to pursue racial and ethnic justice after graduation.. For those considering graduate school, the majors provide a foundation for graduate studies particularly for those who seek to become university professors and researchers with a specialization in a variety of issues and policies impacting racial and ethnic communities.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum, students pursuing the major in ethnic studies must complete the following requirements:

- ETHN 5
- Two courses from ETHN 10, 20, 30, 40, 80
- One of the following breadth electives: ANTH 86, 90; DANC 62; ENGL 35, 35G, 36, 37, 38, 39, 69; ETHN 11, 12, 21, 22, 25, 35, 36, 41, 50, 51, 55, 59, 60, 65, 69, 70, 75, 81, 90, 95, 96; MUSC 20; RSOC 91; THTR 14, 65
- Six upper-division courses selected from at least four of the following six categories:
    - Community Engagement and Social Movements (ETHN 112, 122, 123, 125,132, 133, 142, 149, 153, 160, 163, 166,171, 196)
    - Race, Law, Politics and Policy (ETHN 120, 126, 127, 149, 153, 155, 178, 180)
    - Intersectionality and Hybridity (ETHN 100, 121, 129, 141, 151, 152, 154, 157, 163, 167, 169, 196)
    - Inequality and Education (ETHN 150, 157, 161, 167, 174)
    - Immigration, Transnationalism, and Globalization (ETHN 112, 120, 126, 127, 138, 170, 171, 172, 178,)
    - Social and Cultural Analysis (ETHN 124, 128, 130, 131, 132, 135, 136, 137, 139, 141, 144, 145, 160, 162, 164, 166, 168, 172, 175, 196)

Note: No class can be used to fulfill more than one category.

- An upper-division elective that may be completed within ethnic studies or from any other department or program (with the approval of the department chair)
- An upper-division seminar in theory and methods (ETHN 165 or 195)
- A capstone project fulfilled through one of two options: (1) completion of ETHN 198 or, (2) a research project completed in an upper-division ethnic studies seminar. In the first option, students will complete an applied research project through ETHN 198 that typically encompasses a community internship along with a weekly essay and final paper. In the second option, students will complete a research project that typically entails intensive reading and writing and the execution of a research design or some equivalent project. The capstone provides opportunities for students to apply their understanding of methodology and specific methods learned in ETHN 165 or 195 to a project explicitly centered around critical racial and ethnic studies.

Requirements for the Ethnic Studies Minor

Students must fulfill the following requirements for a minor in ethnic studies:

- ETHN 5
- Two courses from ETHN 10, 20, 30, 40, 80
- Four upper-division courses in ethnic studies

Note: For course descriptions, see the listings of the relevant departments. Students should consult with the Ethnic Studies Department Chair to determine the applicability of courses taken at other institutions or in study abroad programs.

Requirements for the African American Studies Minor

Students must fulfill the following requirements for a minor in African American Studies:

- Two courses from: ETHN 30, 35, 36, 95
- One course from: ETHN 5, 55, 59, 60, 65, 69, 70, 96

- Four upper-division courses as follows:
- Two courses from: ETHN 130, 131, 132, 133, 135, 136, 137, 138, 148, 149, 172, 175, 178.
- One course from: ETHN 100, 127, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 163, 164, 166, 167, 168, 170, 171, 172, 174, 178, 180, 184, 185, 187, 188.
- Service-Learning Requirement: A service-learning course, internship experience, or other equivalent work directly engaged withAfrican American/Black community or communities on or off campus (equivalent to one course with at minimum a 2-unit allocation). Examples include but are not limited to: ETHN 198 - Internship).

Note: For course descriptions, see the listings of the relevant departments. Students should consult with the Ethnic Studies Department Chair to determine the applicability of courses taken at other institutions or in study abroad programs.

Experiential Learning: Students pursuing this minor are strongly encouraged, but not required, to focus on African Americans for the experiential learning requirement in the Core Curriculum.

Requirements for the Asian American Studies Minor

Students must fulfill the following requirements for a minor in Asian American Studies:

- Two courses from: ETHN 40, 41, 50, 51
- One course from: ETHN 5, 55, 59, 60, 65, 69, 70, 96
- Four upper-division courses as follows:
- Two courses from: ETHN 141, 142, 144, or 145
- One course from: ETHN 100, 127, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 163, 164, 166, 167, 168, 170, 171, 172, 174, 178, 180, 184, 185, 187, 188.
- Service-Learning Requirement: A service-learning course, internship experience, or other equivalent work directly engaged with Asian American, Pacific Islander, or South Asian community or communities on or off campus (equivalent to one course with at minimum a 2-unit allocation). Examples include but are not limited to: ETHN 198 - Internship).

Note: For course descriptions, see the listings of the relevant departments. Students should consult with the Ethnic Studies Department Chair to determine the applicability of courses taken at other institutions or in study abroad programs.

Experiential Learning and Study Abroad: Students pursuing this minor are strongly encouraged, but not required, to focus on Asian American, Pacific Islander, or South Asian community or communities for the experiential learning requirement in the Core Curriculum.

Requirements for the Latina/o/x Studies Minor

Students must fulfill the following requirements for a minor in Latina/o/x Studies:

- Two courses from: ETHN 20, 21, 22, 25, or RSOC 12
- One course from: ETHN 5, 55, 59, 60, 65, 69, 70, 96
- Four upper-division courses as follows:
- Two courses from: ETHN 120, 120A, , 121,122, 123, 124, 125, 126, 128, 129, or 186.

- One course from: ETHN 100, 127, 150, 151, 152, 153, 154, 155, 157, 158, 159, 160, 161, 162, 163, 164, 166, 167, 168, 170, 171, 172, 174, 178, 180, 184, 185, 187, or 188.
- Service-Learning Requirement: A service-learning course, internship experience, or other equivalent work directly engaged with Latina/o/x community or communities on or off campus (equivalent to one course with at minimum a 2-unit allocation). Examples include but are not limited to: ETHN 198 - Internship).

Note: For course descriptions, see the listings of the relevant departments. Students should consult with the Ethnic Studies Department Chair to determine the applicability of courses taken at other institutions or in study abroad programs.

Experiential Learning and Study Abroad: Students pursuing this minor are strongly encouraged, but not required, to focus on Latina/o/x in the U.S. for the experiential learning requirement in the Core Curriculum. Students are also encouraged, but not required, to participate in a study abroad program in Latin America. Courses taken in these programs may be accepted as requirements for the minor, pending approval from the Ethnic Studies department Chair.

Lower-Division Courses

5. Introduction to the Study of Race and Ethnicity in the United States

An introduction to the history and contemporary manifestations of race and ethnicity in the United States, paying particular attention to how race and ethnicity are socially constructed, the intersections of race, gender, and class dynamics, and the institutionalization of racial and ethnic hierarchies. Through critical readings, class discussions, and films, students will have the opportunity to develop a solid academic foundation for understanding racial and ethnicdiversity in the United States. (4 units)

10. Introduction to Indigenous/Native American Studies

Interdisciplinary exploration of the diverse experiences and history life of American Indians, Native Americans, and Indigenous people of the Americas. Topics include Native history, sovereignty, politics, economics, education, health, entertainment and recreation, identity, law and government, art, literature, performance, and religion. Explores key debates within Native American studies in relation to identity and identification regarding gender, sexuality, race, class, and ethnicity. (4 units)

11. Intro to Indigenous/Native American Literature

Also listed as ENGL 37. For course description see ENGL 37. (4 units)

20. Introduction to Chicana/o/x and Latina/o/x Studies

Since 1996, Latinas/os/xs have constituted the largest racial/ethnic minority population in the United States. Despite the significance of this population, most non-Latinas/os/xs have little knowledge of the history, challenges, and important contributions made by this complex population. This class will begin to remedy that gap in knowledge by introducing students to the history and contemporary struggles of Chicanas/os/xs and Latinas/os/xs in the United States, focusing particular attention on the experiences of the largest groups of Latinas/os/xs today: Mexican Americans, Puerto Ricans, Central Americans, and Cuban Americans. (4 units)

21. Chicana/o/x Literature

Also listed as ENGL 36. For course description see ENGL 36. (4 units)

25. Sexuality and Spirituality in Latinx and Chicanx Literature and Theologies

For course description see TESP 59. (4 units)

30. Introduction to African American Studies

Students will engage in major debates about the history, politics, and cultures of communities of African descent living in the United States. Students will examine texts at the cutting edge of interdisciplinary scholarship in African American studies in order to explore the key themes of origins, power, community, identity, and expression that are central to understanding race-related issues. In addition, students will create innovative research projects to help develop positions about the ideology of race, the dynamics of group consciousness, and the significance of collective action, self-determination, and aesthetics to the African American experience. (4 units)

35. African American Women Writers

Focuses on women writers of the Harlem Renaissance and the intersections of gender, race, and class. Examines paradigms that lead to racial inequity and social injustice, and themes of gender empowerment, miscegenation, colorism, passing, sexuality, and motherhood. Using poetry, short stories, plays, and film, examines how these women engaged in acts of resistance as they sought to rescue themselves from negative stereotypes and redefine themselves in the new world. Also listed as ENGL 35G and WGST 14. (4 units)

36. African American Literature

Also listed as ENGL 35. For course description see ENGL 35. (4 units)

40. Introduction to Asian American Studies

Multidisciplinary survey of Asian Americans including Asian cultural heritage, immigration, and the formation of Asian American communities. Examines worldviews and values, religious beliefs, family and kinship, language, and contemporary community issues of identity, sex roles, stereotyping, employment, and education. (4 units)

41. Asian American Literature

Also listed as ENGL 38. For course description see ENGL 38. (4 units)

50. Introduction to Filipino American Studies

Explores mainstream representations of the Filipino American community. Twentieth-century works written by and about Filipino Americans, with an emphasis on four relevant themes: the legacy of Spanish Colonialism and American Imperialism; U.S. politics and the history of Filipino American activism and resistance; problems of identity as it relates to class, gender/sexuality, mixed heritages, and generational differences; and Filipino Americans and popular culture. (4 units)

51. Introduction to the South Asian Experience in the United States

This course addresses mainstream representations of the South Asian American community. Students will read 20th-century works, written by and about South Asian Americans, with an emphasis on the following relevant themes: the history of South Asian immigrants to the United States; U.S. politics and the history of South Asian American activism and resistance; problems of identity as it relates to class, gender/sexuality, mixed heritages, and generational differences; South Asian Americans and popular culture; and the future of South Asian Americans in the United States and the reverse brain drain to India. (4 units)

55. Racial and Ethnic Politics in the U.S.

Examination of the historical and contemporary forms of political organization, political participation and political movements among the major racial and ethnic populations groups in the United States since the 1960s with particular focus on the struggles for power and resistance among African Americans, Chicanas/os/xs and Latinas/os/xs, Asian Americans and American Indian/Native Americans. The necessary elements needed to build and to sustain multiracial coalitions along with an examination of the political future for communities of color will be addressed. Also listed as POLI 55. (4 units)

59. Feminist Approaches to Disabilities Studies

Also listed as WGST 59. For course description see WGST 59. (4 units)

60. Introduction to Journalism: Diversity and Community

Also listed as COMM 40EL. For course description see COMM 40EL. (4 units)

65. Drama of Diversity

Also listed as THTR 65. For course description see THTR 65. (4 units)

69. Literature by Women Writers of Color

Also listed as ENGL 69 and WGST 15. For course description see ENGL 69. (4 units)

70. Multicultural Literature of the United States

Also listed as ENGL 39 and WGST 16. For course description see ENGL 39. (4 units)

75. Iranian American Women Writers

The last two decades have witnessed a surge in texts published by Iranian American women. This course introduces readers to the voices of these women writers through their memoirs, art, fiction, poetry, and films. Through critical readings, class discussions, and films, students will have the opportunity to develop a solid academic foundation for understanding contemporary writings and lived experiences of Iranian American women. (4 units)

80. Introduction to the Study of the MENA Diaspora

This course is an interdisciplinary survey of the contemporary racialization of the Middle Eastern/North African Diaspora in the US. Through critical readings, class discussions, and films, students will have the opportunity to develop a solid academic foundation for understanding contemporary writings and lived experiences of MENA Americans in the US. (4 units)

81. Arab American Women Writers

This course explores the work of Arab American women writers through their memoirs, art, fiction, poetry, and films. Through critical readings, class discussions, and films, students will have the opportunity to develop an understanding of contemporary writings that center the lived experiences, the resistance, the ancestral knowledge, and the feminisms of Arab American women. (4 units)

90. Historical Fiction & Literary Resistance

In this course, students will engage with a series of novels defined as neo-slave narratives that perform what Toni Morrison has referred to as "literary archeology" through resisting the historical silences around the specific experiences of enslaved women. By the conclusion of the quarter, students will develop an understanding of Black Feminist theory, the genre of the neo-slave narrative, concepts of cultural memory, as well as the historical, political, and social contexts that shaped the production of the primary texts. (4 units)

95. African American Independent Filmmakers

This class provides an in-depth analysis and historical overview of independent African American filmmakers who made significant contributions to the genre of film. We will examine how African American filmmakers used film as a medium to heighten the consciousness of their audience, combat negative stereotypes, give voice to marginalized or underrepresented groups, and raise social awareness about issues affecting their diverse communities. Using film and text, we will read, discuss, and write about paradigms that lead to inequity and injustice. Specifically, we will examine the intersection of gender, race, and class, and note how these dynamics are illustrated in the cinema of African Americans. We will also understand how African American filmmakers were able to rise above adversity and hone and sustain their art, while confronting their myriad oppressions. (4 units)

96. Race, Class, and Culture through Film

Explores how filmmakers who are concerned about racism portray the politics, history, and culture of people of African descent. Examines how this medium can humanize subjects who are often objectified and exploited and give voice to communities whose perspectives and opinions have been historically excluded from mainstream discourses. Considers how films can interrogate the physical, cultural, and sometimes, psychological brutality of racist practices, as well as the ways that racism intersects with other forms of marginalization related to class, gender, sexuality, and citizenship. The content, production, and distribution of these cinematic portraits illuminate the political philosophies, hybrid cultures, and emancipating collective action of black communities. Integrates students in faculty research by involving students in a documentary film project about the relationship between the social movements for African liberation and black power. (4 units)

Upper-Division Courses

ETHN 100 -- Race, Class, Gender and Freedom

This course will be devoted to an exploration of the definitions and expressions of freedom within the United States by a variety of groups through the lenses of race, gender and class. The idea of freedom was present from the time our nation was founded and since then, individuals and groups within American society have claimed authority to define and defend their freedoms. The main themes will be political freedom (including speech, religion, civil rights, etc.), economic freedom, personal/sexual freedom, and exporting freedom. (5 units)

111. Studies in Indigenous/Native American Literature

Also listed as ENGL 137. For course description see ENGL 137. (5 units)

112. Indigenous/Native Peoples of the United States and Mexico

Examination of the national policies, ideologies, and attitudes that have shaped the lives of indigenous peoples living along the U.S.-Mexico border. Issues include cultural survival, cultural change, national and individual identity, gender relations, legal and political problems, and intercultural relations. (5 units)

113. Indigenous/Native Americans of the United States

Also listed as HIST 180. For course description see HIST 180. (5 units)

120. Immigration in the United States

This class examines the history of immigration to the U.S. with a particular focus on the way race and immigration have intersected and the particular experiences of Mexican immigrants in the 20th and 21st century. We will examine both historical shifts in U.S.-Mexican relations which have impacted immigration in the region and look specifically at several key political issues including: unauthorized immigration, increasing detentions and deportations of immigrants, the effects of globalization on immigration, the rise in immigrant civic participation, immigrant led social and political movements, the relationship between immigration and national security, and the ongoing efforts to build a just and equitable immigration system. (5 units)

ETHN 120A - Chicana/x and Latina/x Feminisms

This class will examine Chicana/x and Latina/x traditions of feminism with particular attention to the complex intersections of race, class, ethnicity, gender, sexuality, status and other categories of power in the lives of Chicana/xs and Latinas/xs in the United States. (5 units)

121. Chicana/o/x Families and Gender Roles

An examination of Chicana/o/x families in the United States. Addresses two general areas in family research: (1) the historical development of Mexican immigrant families and subsequent generations of communities and families of Mexican Americans, and (2) a life-cycle analysis of families with a specialized focus on gender roles and relations. (5 units)

122. Chicana/o/x Communities in the United States

Examination of the development of the social, cultural, political, and economic structures that shape Chicana/o/x communities in the United States. Themes include the evolution of barrios, the historical and contemporary impact of Mexican land grants, ghettoization, education, gangs, employment, and the political economy. (5 units)

123. The Chicana/o/x Experience

An examination of the major issues in the Chicana/o/x experience dealing with historical and contemporary topics. Themes such as race, identity and culture, immigration, community, family, gender, gangs, historical interpretations and the Chicana/Chicano movements will be examined. Politics and socioeconomic conditions including the farmworker movement and educational concerns will be addressed. (5 units)

124. Latina/o/x Literature and Cultural Studies

Also listed as ENGL 136. For course description see ENGL 136. (5 units)

125. Latinas/os/xs in the United States

This class examines the history and politics of Latinas/os/xs in the U.S. with a particular focus on the experiences of the largest ethnic groups within this population; namely Mexican Americans, Puerto Ricans, Salvadorans, Dominicans, and Cuban Americans. Throughout the class we will compare and contrast their experiences being mindful of the intersecting differences of ethnicity, race, sex, gender, class, and age that alter the composition and opportunities of these communities. The class will highlight the political development of these populations, focusing particular attention on their relationship to both European and American colonization and expansion, patterns of immigration and incorporation, discrimination and obstacles to political empowerment, and mobilization for change. (5 units)

126. Latina/o/x Immigrant Detention and Incorporation in the Age of Terrorism

This class will examine shifts in immigration politics with specific focus on the largest population of immigrants in the United States, namely Latinas/os/xs. In the course of this examination, we will pay particular attention to changes occurring after 1996 and the increasing scrutiny of both documented and undocumented immigrants that has led to surges in the numbers of immigrants detained, apprehended, incarcerated, and deported. We will be mindful of the gendered, class, and racialized dynamics at work in the development and execution of new immigration policy, and we will examine the effect of these shifts on concepts of citizenship. In the end, the course will compel students to consider the moral, political, and legal implications of an immigration policy focused disproportionately on enforcement and challenge them to find comprehensive alternatives. (5 units)

127. Race and Mass Incarceration

This course is an introduction to the development and contemporary expansion of the Prison-Industrial Complex, with particular attention to the disproportionate incarceration of individuals of color. Through critical readings, class discussions, and films, students will have the opportunity to develop a solid academic foundation for understanding contemporary discourses on mass incarceration. (5 units)

128. Mexican American Literature

Also listed as SPAN 133. For course description see SPAN 133. (5 units)

129. Mexican Popular Catholicism and Gender

From the perspective of the sociology of religion, this course contextualizes the lives of Chicanas/Mexicanas in Mexican popular Catholic tradition, practices, and belief system with particular attention to race, class, gender, and sexuality. This course repositions feminist analysis from a brief acknowledgement of the influence of Mexican popular Catholicism in the lives of Chicanas/Mexicanas to a much more encompassing critical analysis of exactly how Catholicism influences women's everyday experiences. Through the use of case studies and secondary research, students will explore the creative and complex ways Chicanas/Mexicanas participate in the workforce, in politics, in public life, and at home as people of faith. Also listed as RSOC 139 and WGST 152. (5 units)

130. Studies in African American Literature

Also listed as ENGL 135. For course description see ENGL 135. (5 units)

131. In memory of Toni Morrison

In memory of Toni Morrison, students will spend the quarter weeks sitting with her work. Through close readings of her fiction, essays, speeches and interviews, we will work to develop a complex and nuanced understanding and appreciation of her critical interventions to American literature and beyond. (5 units)

132. The History of Hip-Hop

As Chuck D of Public Enemy once said, "Rap both dictates and reflects." This course will examine the historical contexts and diasporic flows that have shaped (and been shaped by) one the most important cultural forms on the planet. We will examine the multicultural roots/routes of rap and hip-hop from its West African bardic traditions to Caribbean and African American oral traditions; study the development of rap as a musical genre extending from soul, funk, and disco styles; analyze the musical and verbal traits of rap music as exemplary of an urban street/hip-hop aesthetic; discuss its influence on musical technology (i.e., sampling) and cultural influences in the mainstream; investigate concepts of authenticity as well as philosophical and political ideologies; review controversies and debates

concerning rap music's articulations of race, gender, and sexuality; and examine the global impact of hip-hop culture. Musical examples and video documentaries will be used in conjunction with class lectures, discussion, and presentations by guest artists. Also listed as MUSC 132. (5 units)

133. Malcolm and Martin

This course explores the lives, philosophies, and political activism of Malcolm X and Martin Luther King Jr. In an effort to complicate the violence/non-violence paradigm, which has often pitted the two men as political opponents, this course seeks to uncover the long trajectory of the philosophical development and political activism of both men through the end of each of their lives, in 1965 and 1968 respectively. Both figures' lives and activism are situated within the black freedom movement of the 20th century, which was both transnational and global. As such, this course attempts to locate these two figures within various iterations of black nationalism, civil right activism, anti-colonialism, and Black Power. Also listed as HIST 168. (5 units)

135. African Americans in Postwar Film

This course examines the presence of African Americans in mainstream Hollywood films during the postwar period. How did Hollywood representations of African Americans change after World War II? What shifts and continuities occurred during the postwar period? And how did those changes reflect the ebbs and flows of civil rights activism through the 1970s? The goal of this course is to gain a deeper understanding of broader social and historical change by engaging the politics of race through a core aspect of American popular culture. Also listed as HIST 185. (5 units)

136. American Theatre from the Black Perspective

An exploration of the contributions black artists have made to enrich the American theatre as playwrights, actors, designers, and directors. Also listed as ENGL 129 and THTR 161. For course description, see THTR 161. (5 units)

137. African American Pursuit of Freedom

Also listed as HIST 155. For course description, see HIST 155. (5 units)

138. Black Migration in the World

Also listed as HIST 157. For course description, see HIST 157. (5 units)

141. Asian American Women

An examination of Asian American women from a historical and contemporary framework within U.S. society. Focuses on the struggle for identity and adjustment in the first generation and the conflicts with subsequent generations of Asian American women. Analyzes two major themes: (1) the interplay of gender identity formation and conflict, both in the family and in the paid labor force; and (2) the development of individual and collective survival strategies. Also listed as WGST 111. (5 units)

142. Asian American Communities

An examination of selected topics affecting Asian Americans in the United States. Issues include the changing nature of communities, community institutions, anti-Asian violence, occupational glass ceilings, higher education, political mobilization, gender relations, identity formation, and the new patterns of Asian immigration. (5 units)

144. Asian Americans in the Media

This course will explore historical and contemporary representations of Asian Americans in the media, with a particular emphasis on cinema. Starting with the era of silent film and through an analysis of race, ethnicity, gender, and class, we will examine how Asian Americans have been portrayed on the screen over time, as well the ways they have participated in Hollywood and independent productions as both performers and filmmakers. Class lectures and readings will address the social contexts of these productions and provide tools for interpreting visual culture. By studying media as sites of knowledge, we will develop a critical understanding of how ideas of and about Asian Americans are constructed, perpetuated, and contested. (5 units)

145. Studies in Asian American Literature

Also listed as ENGL 138. For course description see ENGL 138. (5 units)

149. Civil Rights and Anti-Colonial Movements

This course examines the connections between two historical developments often treated separately: the U.S. civil rights struggle and African anti-colonial movements. By placing these two movements in a transnational framework, the course explores the global challenge to the racialized world order of the 19th and early 20th century. How did the civil rights struggle gain momentum in the aftermath of World War II? What was the longer history and role of "black nationalism" and Pan-Africanism in the transnational struggle? What were the connections between the civil rights movement and contemporary independence movements in Africa and Asia? One of the central goals of the course is to show how we can expand our understanding of U.S. history by reaching beyond the interaction between the U.S. government and other nation-states to examine political and cultural change. Also listed as HIST 153. (5 units)

150. Urban Education and Multiculturalism

This course takes a critical multicultural approach to understanding urban education, encouraging a connection between theory and personal experience and observations. With a focus on schools in large urban contexts, this course centralizes the experiences of low-income, students of color. Race and class will be two critical lenses with which we will examine (1) the historical context of educational inequality, (2) current issues of educational inequity, and (3) the movement towards educational justice. Students should leave the course with a stronger understanding of the social and historical foundations of U.S. education. (5 units) Also listed as CHST 106.

151. Race, Class, and Gender in the United States

Also listed as SOCI 153 and WGST 115. For course description see SOCI 153. (5 units)

152. Multiracial Identities

This course focuses on multiracial identity constructs in African American and Asian American literature. Using journey as a metaphor, the course seeks to define "movement" and "place" in contexts where physical, spiritual, voluntary, or forced journeys contribute to the transformative possibilities of race, class, gender, and identity. (5 units)

153. Minority Politics in the United States

Also listed as POLI 153. For course description see POLI 153. (5 units)

154. Women of Color in the United States

Explores the historical and present-day issues for women of color in the United States inclusive but not limited to key topics such as sexuality, family, work, media, and activism. Students will examine the impact of racism, sexism, heterosexism, and classism on African American, Asian American, Chicana/x and Latina/x, and American

Indian/Indigenous/ Native American women in the United States. Using an interdisciplinary approach, students will also investigate their shared experiences as well as their differences. Also listed as WGST 112. (5 units)

155. Racism in the United States

Multidisciplinary study of racism in the United States. Its historical manifestations from the arrival of Europeans in North America to contemporary times; its psychological and political dimensions; and its impact on U.S. culture, law, and economy. (5 units)

157. Race, Gender, Class, and the College Experience

How do we understand our experiences in college? Explores student experiences in higher education by using lenses that focus on race, gender, and class. Activities, self-reflection, lecture, and discussion will be used to explore student identity, the history of higher education, college access and retention, campus climate, and student development. Also listed as WGST 114. (5 units)

158. Race, Gender, and Politics in the News

Also listed as COMM 168A and WGST 117. For course description see COMM 168A. (5 units)

159. Race, Gender, and Public Health in the News

Also listed as COMM 164A and WGST 116. For course description see COMM 164A. (5 units)

160. Documentary Making for Social Justice

This creative course provides students the opportunity to write, dissect, and produce their own 10-minute documentaries that are committed to social justice. In addition to producing their own films, students will examine how documentary filmmakers use film as a medium to heighten the consciousness of their audience, combat negative stereotypes, give voice to marginalized or underrepresented groups, and raise social awareness about issues affecting their diverse communities. Reading film as "text"---complete with their own arguments, aesthetic concerns, social, political, and historical influences---we will understand how documentaries are used to illuminate disparities or confront issues of inequity and injustice. Specifically, we will examine the intersection of gender, race, class, spirituality, and sexuality, and note how these dynamics function in film to enlighten our global community. Writers in this course will be moved from idea to script and, ultimately, film. (5 units)

161. Creating Diverse College-Going Communities

In this course, students will develop an understanding of diversity issues in college access, reflect on their own experiences, utilize this knowledge to develop workshop curriculum to enhance college-going, and then implement this curriculum in high school classrooms as a community-based learning opportunity. This course introduces students to the background of colleges and universities in the United States, (including history, institutional types, and diverse student representation), then explores the many factors that influence college access and experiences in college (including class, race, gender, first-generation college student status, financial aid, and admissions processes). Students will reflect on their own college application and selection process and their experiences in college. Using this knowledge, students will engage in community-based learning (CBL) in which they provide college-related tutoring, mentoring, and workshops for high school students. (5 units)

162. Diversity and the Media

This course focuses on the complex, changing, dynamic, and powerful relationships between dominant and underrepresented groups in society, the mass media, and broader social contexts; and discusses media representations of social groups, contexts of media production, and media use among underrepresented groups. The concepts of hegemony, power, social construction, and intersectionality are vital for understanding these relationships, and vital for the course. The course connects to the field of cultural studies in that it focuses on the everyday uses of symbolic forms and aims to make students aware of, and sensitive to, some of the dynamics connected with media images, symbolic power, and the production of meaning in today's world. Students are encouraged to formulate, question, and put into context, their own versions of reality. Also listed as COMM 121A. (5 units)

163. Multiracial Communities in Central California

This course will examine the process of racialization in various communities throughout California and uncover how various ethno-racial groups within these communities live, work, and thrive together in their specific locales. This course will begin by interrogating definitions of community, spatial geography, political economy, as well as attempting to understand social attitudes about race and racism. Then we will examine various cities as case studies to understand the different ways multiracial communities formed. The end goal is to understand the nuances of how multiracial communities, both urban and rural, developed and inscribed meaning onto the geography of California. (5 units)

164. Popular Music, Race, and American Culture

Also listed as MUSC 134. For course description see MUSC 134. (5 units)

165. Community-Based Research Methods

Provides students with the epistemological, theoretical and ethical foundations for engaging in community-based research methodologies with ethnically and culturally diverse communities. Students will examine decolonizing and anti-oppressive methodologies toward engaging in social justice and participatory action research. This course is designed to equip students with the skills and abilities to engage in community-based, action-oriented and collaborative research projects. The goal is for students to think critically and reflexively, while examining, reflecting and re/deconstructing how research methods and knowledge are reproduced. More specifically, this course engages students in community-based projects where knowledge is co-produced in collaboration with communities of color, who are most affected by social structural issues, and well positioned to identify and address injustices through direct-actions and/or deconstructing systems of power and oppression. This course is exclusively for ethnic studies majors and minors. (5 units)

166. Race and Religion in the United States

Also listed as RSOC 184. For course description see RSOC 184. (5 units)

167. Race and Inequality

Also listed as SOCI 175. For course description see SOCI 175. (5 units)

168. Contemporary Struggles of Writers of Color

This course centers the voices of writers of color in the U.S. Students will explore what is made possible through literature by examining a variety of genres. Through critical readings, class discussions, and film screenings, students will have the opportunity to develop a complex understanding of the contemporary issues addressed by writers of color in their novels. (5 units)

169. Gender, Sexuality & Social Movements in the 20th century U.S.

Also listed as HIST 119 and WGST 168. For course description see HIST 119. (5 units)

170. Immigrant Businesses in the United States

Also listed as SOCI 150. For course description see SOCI 150. (5 units)

171. Immigrant Communities

Also listed as SOCI 180. For course description see SOCI 180. (5 units)

172. Whiteness Studies in the 21st Century

Explores the impact of immigration to the United States, particularly the effect of the immigration reform law of 1965 that resulted in large increases in immigration to the United States particularly from Latin America and Asia. This wave of immigrants and their U.S.-born children have significantly changed the fabric of American society. Examines case studies of immigrants and the second generation from Cuba, Mexico, Nicaragua, Vietnam, and Haiti using a comparative sociological perspective. Also listed as HIST 183. (5 units)

174. Educational Inequality, Racism and Resistance

This course critically examines the connection between educational inequality, racism and resistance from a multicultural perspective. Encouraging students to view racism beyond isolated incidents by individuals, this course will expose racial inequality in schools as sustained by laws and formal institutions. In this course, students will be exposed to both theory and research that explore concepts including race and racism, racial microaggressions, stereotype threat, racial battle fatigue, internalized racism, and resistance. Students will examine the extent to which these forces impact multiple minority communities in K-16 contexts, as well as community efforts for social justice. (5 units)

175. Black Power

This course explores the history of Black Power by examining the philosophical positions and plans of action that defined this branch of the Black Freedom Movement. As Black Power activists sought to fight racism and achieve liberation by asserting Black political, cultural, and economic autonomy, the course therefore centers critiques of capitalism, political organizing, community empowerment, and artistic expression as articulated and practiced by Black Power activists throughout the 20th century. (5 Units)

178. Race and World War II

World War II stands as one of the most explosive moments in U.S. and global history in the 20th century because of the myriad ways the conflict influenced the postwar world. The United States emerged from the war as the premiere global superpower in terms of combined military, diplomatic, and financial supremacy. However, the United States found itself under increased scrutiny due to its history and maintenance of structural or institutionalized racism. In the midst of military and ideological conflict against the Nazi regime in Germany, and addressing the claims of civil rights and anti-colonial activists, the United States became a composite site of the tensions that defined a democratic society struggling with ongoing racism. This reading seminar explores these tensions, which were exacerbated by the rise of anti-racist perspectives in the anthropological and biological sciences just preceding the war. The assigned readings and discussions engage these phenomena in order to properly explore the significance of "race" in the World War II era. Also listed as HIST 178. (5 units)

180. Race, Voting, Campaigns, and Elections

This class examines how the traditional vehicles of American political participation -- namely voting, campaigns, and elections -- have been racialized throughout American history and the particular impacts and responses among African Americans and Latinas/os/xs. As part of this examination we look closely at the participation of racial and ethnic minorities in various forms of electoral activity (as both voters and candidates), we analyze enduring obstacles to their political empowerment (both structural and resource constraints), and highlight efforts to remove those barriers. A critical examination of the upcoming national elections will feature prominently throughout this course and students will have the opportunity to examine local elections more closely through an original research project designed to study the intersection of race and voting in San Jose, California. (5 units)

184. Seminar - Women of Color in the United States

Explores the historical and present-day issues for women of color in the United States inclusive but not limited to key topics such as sexuality, family, work, media, and activism. Students will examine the impact of racism, sexism, heterosexism, and classism on African American, Asian American, Chicana/x and Latina/x, and American Indian/Indigenous/Native American women in the United States. Using an interdisciplinary approach, students will also investigate their shared experiences as well as their differences. (5 units)

185. Seminar in U.S.Racial and Ethnic Politics

Selected topics in U.S. politics. Also listed as POLI 195DW. This course has Diversity and Advanced Writing components. Prerequisites: POLI 153; CTW 1&2 for the Advanced Writing component. (5 units)

186. Seminar - Contemporary Latina/o/x Immigration Issues

This class creates a seminar version of ETHN 120 Mexican Immigration to the U.S. (see description above) by covering the same topics but focusing outcomes on producing original student research (either paper or project) and highlighting student participation and presentations through weekly readings and other course material. (5 units)

187. Seminar - Youth Activism & Contemporary Social Movements

Youth Activism & Contemporary Social Movements examines current social movements catalyzed and led by young people. The course specifically examines youth community organizing and youth activism as a context for social justice work that parallels, yet differs from the Civil Rights Movements of the 1960s. In this course, we engage an intersectional analysis of race, age, and other markers of identity and difference. Through this perspective we will examine the contributions and role of young people in contemporary 21st-century social movements from the 1960s through the present that have contributed to contemporary youth activisms. Within a U.S. context, social movements have often been grouped into three different time periods: the Civil Rights Movement, the post-1960s, and the contemporary social movements. The thematic organization of these periods reflects the different struggles experienced by social groups within societies, and the varied approaches and mechanisms through which communities and young people organized. Although these social movements and waves of political activism are characterized and shaped by the timeframe of their unique sociopolitical context, there are similarities across all periods. One similarity across these times frames concerns the significant leadership and activism of young people---children, youth, and young adults---to resist and challenge structures of power and systems of oppression. From Anti-Islamophobia movements; to Black Lives Matter; to Undocumented & Unafraid; to LGBTQ and women's rights movements; to the institutionalization of ethnic studies curricula and the ending of gun violence in schools---all of these movements underscore the power of young people. (5 units)

188. Seminar - Civil Rights and Anti-Colonial Movements

This course examines the connections between two historical developments often treated separately: the U.S. civil rights struggle and anti-colonial movements across the globe. By placing these movements in a transnational framework, we will explore through readings and the production of an original research paper, the global challenge to the racialized world order of the modern world. What was the longer history and role of Black Nationalism and Pan-Africanism in the transnational struggle? How did women contribute to the longer struggle against white supremacy in both the United States and colonial world? The central goal of the course is to expand our understanding of anti-racist struggle by moving beyond the formal boundaries of the United States of America in the 20th and 21st centuries. (5 units)

194. Peer Educator in Ethnic Studies

Peer educators in ethnic studies work closely with a faculty member to help students in an ethnic studies course understand course material, think more deeply about course material, benefit from collaborative learning, and/or to help students enjoy learning. Enrollment is by permission of the instructor. (2 units)

195. Advanced Seminar in Critical Race Theory and Methods

This course serves as an introduction to several of the methods used in advanced research in critical race and ethnic interdisciplinary research. The course will examine a range of theoretical and applied topics in research methods including: debates in epistemology, objectivity, interdisciplinary, and intersectionality; how to formulate a research design (from research question to presentation of findings); and applications of specific methodological tools such as interviews, participant observation, biography, content analysis, experimental design, and survey research. This course is exclusively for ethnic studies majors and minors. (5 units)

196. Praxis and Practitioners of Critical Racial and Ethnic Studies

This class is organized around a weekly presentation, lecture, film, or other engagement by a local, regional, or national practitioner or activist whose work addresses key challenges and social justice work within racial and ethnic minority communities. The weekly presentation will serve as a focal point for critical analysis of contemporary racial and ethnic studies including pressing social, cultural, economic, and political issues within historically marginalized racial minority communities. Students are required to attend the weekly presentation and write a short reflect that summarizes their individual experiences. Prerequisite: Any Ethnic Studies course . (2 units)

197. Special Topics in Ethnic Studies

(1--5 units)

198. Internship

(2--5 units)

199. Directed Research

A capstone senior project that involves intensive reading and writing, culminating in a final research project under the direction of an ethnic studies faculty member Prerequisite: Written approval by the director of the Ethnic Studies Department prior to registration. (2--5 units)

Department of History

Professors Emeriti: Dorothea R. French, Steven M. Gelber, George F. Giacomini Jr., Jo B. Margadant, Timothy J. O'Keefe, Peter O'M. Pierson, Sita Anantha Raman, Robert M. Senkewicz

Professors: Naomi J. Andrews, Barbara A. Molony (Walter E. Schmidt, S.J., Professor), Amy E. Randall (Department Chair), David E. Skinner, Nancy C. Unger

Associate Professors: , Arthur F. Liebscher, S.J. (on leave through 2023), Paul P. Mariani, S.J. (Edmund Campion, S.J., Professor), Matthew L. Newsom Kerr, Harry N.K. Odamtten, Thomas P. Turley

Assistant Professors: Sonia C. Gomez

Lecturers: Gregory Wigmore

Courtesy Appointments: William S. Greenwalt (Professor of Classics), Anthony Q. Hazard Jr. (Associate Professor of Ethnic Studies)

The major program in history provides students with an understanding of the human experience through the analysis of evidence derived from both the recent and more distant past. As history majors, students learn essential skills, understand the breadth and similarities of the human experience, and acquire specific geographical and thematic knowledge. A degree in history provides excellent preparation for careers in education, journalism, media, government, law, business, and international affairs---all of which are careers that utilize the history major's expertise in discovering, organizing, and analyzing the forces that shape the contemporary world.

Requirements for the Major

In addition to fulfilling university Core Curriculum requirements for the bachelor of arts degree, students majoring in history will complete 13 history courses distributed in the following manner:

- Four lower-division courses, which may include HIST 11A and 12A
- Nine upper-division courses, encompassing:
  - HIST 100
  - HIST 101S
  - Six other upper-division courses.
  - One seminar course taken after the student has completed both HIST 101S and 115 quarter units
- From among the student's lower- and upper-division courses (excluding HIST 100 and 101S), at least one course from four of the following six fields: Global History, the United States and Canada, Latin America, Europe, East/South Asia, Africa/West Asia
- An optional senior project (HIST 197), which is essential to be eligible for Honors in History, may be taken as one of the required upper-division courses

Honors in History

History majors may be selected for graduation with Honors in History provided they have a grade point average of 3.5 or higher in their history courses and complete a senior project (HIST 197) in a manner approved by the faculty honors committee.

Students may also qualify for Phi Alpha Theta, the international honor society in history, Phi Beta Kappa, Alpha Sigma Nu, and other academic honor societies, as well as the honors at graduation. For more details, see Chapters 8 and 10.

Directed Reading/Research

Students can complete directed reading/research (HIST 199) in source materials and secondary works dealing with selected historical problems in world and comparative history. Prerequisite: Permission of department chair and instructor.

Requirements for the Minor

Students must fulfill the following requirements for a minor in history:

- Seven history department courses, at least four of which must be upper-division

Lower-Division Courses: Cultures & Ideas

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address such topics as civilization and the city; explorations, migrations, and nations; and empires and rights. Successful completion of C&I I (HIST 11A) is a prerequisite for C&I II (HIST 12A). (4 units each quarter)

Required Upper-Division Courses

100. Historical Interpretation

An investigation of the diverse methods historians use to examine the past. Required of all majors. For history majors or with permission of the instructor. (5 units)

101S. Historical Writing

Researching and writing history papers. Required of all majors. For history majors and minors; majors will be given priority. Recommended to be taken in the sophomore or junior year. (5 units)

Lower-Division Course: Global History

21. Human Rights and Humanitarianism

From reading current news articles, one might surmise that the dignity of human beings and their inherent right of freedom from undue suffering are self-evident, universally acknowledged goods that we should all pursue regardless of culture, place, or time. In fact, however, contemporary ideas about human rights, as well as humanitarian efforts, (often pursued in far distant locales) have a particular history, one rooted in Western Enlightenment-era ideals of individual liberty and the brutal experiences of European imperialism. In this class, we will examine the histories and ideologies of human rights and humanitarianism; consider their underlying assumptions and power dynamics; and investigate the ways these histories relate to current legal, political, and humanitarian organizations and movements. (4 units)

43. The Haitian Revolution in World History and Memory

Between 1789 and 1804, the French Caribbean colony of Saint-Domingue was the site of the most profound and violent realization of the revolutionary spirit sweeping the Atlantic in the "age of democratic revolutions." This era is usually associated with the French and American revolutions, both key events in the history of democracy and the rhetorical development of human rights as an agenda in the West. However, both stopped short of the most radical realization of the promises of the age of Enlightenment, particularly with regard to slavery and the racial discrimination that went along with it. The slave revolt on Saint-Domingue and the Haitian revolution, by contrast, witnessed the fullest realization of these promises in the form of the only successful slave revolt in human history. The events on Hispaniola took place at the nexus of world historical forces of globalization through commerce, cross-cultural encounter, racial mixing, and the dispersal of radical Enlightenment ideas and their realization in the form of revolution. As a result of the powerful currents of human history that flowed through the region, the Haitian revolution has proved to be an enduring source of both fear and creativity in the history of race relations, slavery, and abolition, and the forging of a new world identity for the descendants of the once enslaved populations of the island. This course will examine the history of the revolutionary years in Haiti, its near erasure from Western historical memory, and the literary and historical recovery of its importance in the 20th and 21st centuries. (4 units)

68. Global 1968

History is not only an account of what happened, but also why things change. This class will focus on the political, cultural and social events of 1968, both within and without the United States, and the legacies and ramifications for twenty-first century political culture. A better comprehension of where we are at present comes from an understanding of the past. In addition to gaining some knowledge of history, the aim of this course is to help students improve their interpretive analyses and critical thinking skills through reading, writing, and class discussions. (4 units)

79. Technology: Steam to Cyborgs

This course provides an overview of important technological advances since the Industrial Revolution and takes a close look at a few specific technological touchstones from the 1760s to the 1920s. The rise of machines during this period profoundly influenced and challenged what it means to be human. A key goal is to question and explore the social and cultural context of emerging technologies and use the past as a guide for preparing ourselves in our own time of rapid change. Topics include the factory system, steam engines, photography, sound recording, cinema, industrial automation and design, and artificial intelligence. (4 units)

93. Cold War

This course concentrates on the origins and consequences of the Cold War from a global perspective. The course covers the period from 1945 until 1991, considering economic, political, and social implications of the ideological conflict of communism versus capitalism. The course explores the origins of the conflict, the formation of opposing blocs, the interplay between periods of tension and détente, the engagement with contemporary anti-colonialism movements, and the relationship between the center of the conflict in the North Atlantic/European arena and its global periphery, the demise of the Soviet Union, and the enduring legacies of the Cold War. (4 units)

Upper-Division Courses: Global History

102S. Genocide and Gender in the 20th Century

This course explores the gendered dimensions of genocide, focusing largely but not only on the Armenian genocide in the Ottoman Empire, the Holocaust during World War II, the Bosnian genocide in the 1990s after the collapse of communism in the former Yugoslavia, and the Rwandan genocide in 1994. Also listed as WGST 108. (5 units)

104. World History Until 1492

An overview of the great civilizations of the world prior to the Columbian Exchange, focusing on the geographical, cultural, economic, and political features of the complex societies in East Asia, Southeast Asia, South Asia, Africa, the Middle East, Europe, the Americas, and Oceania. Survey of the foundations of each region. Patterns of connection and interdependence in world history. (5 units)

116. Sex and Gender in the Age of High Imperialism

An examination of the role of sexuality and gender in the global expansion of European hegemony in the 19th and 20th centuries. Explores these themes through literature, historical scholarship, and film. Also listed as WGST 124. (5 units)

121. Human Rights and Humanitarianism

From reading current news articles, one might surmise that the dignity of human beings and their inherent right freedom from undue suffering are self-evident, universally acknowledged goods that we should all pursue regardless of culture, place, or time. In fact, however, contemporary ideas about human rights, as well as humanitarian efforts (often pursued in far distant locales), have a particular history, one rooted in Western Enlightenment-era ideals of individual liberty and the brutal experiences of European imperialism. In this class, we will examine the histories and ideologies of human rights and humanitarianism, consider their underlying assumptions and power dynamics, and investigate the ways these histories relate to current legal, political, and humanitarian organizations and movements. (5 units)

123. History of Plagues, Epidemics, and Infections

An exploration of scientific, social, cultural, political, and ethical contexts in the history of infectious diseases and epidemics. Particular attention is given to how the social framing of epidemiological thought has shaped responses by societies, how public health is an intrinsically political matter, and how we can envision the place played by social justice perspectives in fashioning global public health. (5 units)

124. History of Sexually Transmitted Diseases

This course will survey the impact of sexually transmitted infections in a variety of national contexts, from the early modern period to recent times. The focus is mainly upon the history of classic venereal diseases such as syphilis and gonorrhea as well as more recently HIV/AIDS. How have medical debates about sexual contagion both influenced and been influenced by cultural conventions of blame, stigma, and moral judgment? Do representations of STDs provide a window into how a society organizes gendered expectations and constructs an image of deviant sexuality? How have responses to the problem of STDs changed over time? Can we examine these changes to better understand broader cultural adjustments to issues as diverse as prostitution and promiscuity, medical treatment and prophylaxis, and the politics of feminism, gay rights, and patients rights. (5 units)

138S. Gender and Rights in the Modern Era

This seminar examines gender and rights in the contexts of citizenship, marriage and divorce, reproduction, health, the workplace, the body, and other categories of analysis with cases taken from modern Asia, Europe, the Americas, Africa, and Oceania. Also listed as WGST 127. (5 units)

143. The Haitian Revolution in World History and Memory

Between 1789 and 1804, the French Caribbean colony of Saint-Domingue was the site of the most profound and violent realization of the revolutionary spirit sweeping the Atlantic in the "age of democratic revolutions." This era is usually associated with the French and American revolutions, both key events in the history of democracy and the rhetorical development of human rights as an agenda in the West. However, both stopped short of the most radical realization of the promises of the age of Enlightenment, particularly with regard to slavery and the racial discrimination that went along with it. The slave revolt on Saint-Domingue and the Haitian revolution, by contrast, witnessed the fullest realization of these promises in the form of the only successful slave revolt in human history. The events on Hispaniola took place at the nexus of world historical forces of globalization through commerce, cross-cultural encounter, racial mixing, and the dispersal of radical Enlightenment ideas and their realization in the form of revolution. As a result of the powerful currents of human history that flowed through the region, the Haitian revolution has proved to be an enduring source of both fear and creativity in the history of race relations, slavery, and abolition, and the forging of a new world identity for the descendants of the once enslaved populations of the island. This course will examine the history of the revolutionary years in Haiti, its near erasure from Western historical memory, and the literary and historical recovery of its importance in the 20th and 21st centuries. (5 units)

145. Islam in the Modern World

Islam is an understudied and thus poorly understood force in world affairs. As a result, many myths and fears have developed about its ideas, institutions, and activities. This course analyzes the diversity and complexity of Muslim cultures and societies in global affairs during the past two centuries. Special attention is paid to Muslims in Europe and the United States. (5 units)

153. Civil Rights and Anti-Colonial Movements

Also listed as ETHN 149. For course description see ETHN 149. (5 units)

179. Technology: Steam to Cyborgs

This course provides an overview of important technological advances since the Industrial Revolution and takes a close look at a few specific technological touchstones from the 1760s to the 1920s. The rise of machines during this period profoundly influenced and challenged what it means to be human. A key goal is to question and explore the social and cultural context of emerging technologies and use the past as a guide for preparing ourselves in our own time of rapid change. Topics include the factory system, steam engines, photography, sound recording, cinema, industrial automation and design, and artificial intelligence. (5 units)

Lower-Division Courses: United States History

27. Digital and Public History

This course is an introduction to the intersection of digital history and public history. The course will explore digital literacy, with a focus on public history. Students will discuss how public history differs from academic history and how public history presents its material. Students will consider how digital history provides a unique outlet for public history. Students will explore how history is preserved online both in primary and secondary sources. Students will learn about the continuity and sustainability of digital history, including a lifelong commitment to both preservation and creation of history. Students will also explore how historians access sources created digitally, which has rapidly changed in just a few decades meaning some sources are inaccessible without old technology. In this course, students will interact and use a variety of digital tools and resources. Students will learn how these technologies have changed and have the opportunity to use some of the technologies to present their own research on a topic of their choosing. Also listed as History 127. (4 units)

60. Immigration & Race in the U.S.

Since its founding immigration has been one of the most celebrated characteristics of the United States, but it is also one of the most contested. This course will look at the history of immigration to the territory that makes up the United States from the late 18th century to the present day. We will examine immigration policies and practices, integration and exclusion, race and citizenship, and anti-immigrant movements. We will examine the forces driving immigration and the experiences of individuals and communities, as well as the reception of immigrants based on social categories like race, ethnicity, gender, sexuality, socioeconomic status, and religion. As such, we will cover salient issues in immigration discourse over the last century including xenophobia, exclusion laws, deportation policy, and border policing - all of which are pertinent to immigration policy today. This class will ground students in the history of immigration in the United States, but will also provide opportunities to reflect on current debates. (4 units)

65. United States Political History: Democracy and Elections

An exploration of U.S. politics from the creation of the American republic to the present. Themes studied will include the rise and demise of political party systems, clashes between rival interest groups, and the evolving relationship between Americans and their government. The course will focus on several critical turning points in U.S. history when events, individuals, and various social and cultural factors helped shape the nation's political development. (4 units)

70. The American Revolution

Intensive study of the origins, progress, and culmination of the American Revolution to 1800. Emphasis is on the interplay between constitutional, social, economic and racial issues during the formative era of the United States. (4 units)

72. The Civil War Era

An examination of the social and political history of the United States during the half-century following the American Revolution. Course topics will include: the creation of the American republic; social and economic changes since the colonial period; the rise of political parties; the evolution of slavery, race relations, and white supremacy; early American expansion and foreign relations, including interactions with Native peoples; and the evolving role of government. (4 units)

75. Natives and Newcomers: Early North America

This course explores the history of North America from the eve of European colonization through the mid-18th century. It focuses on key social, economic, and political developments during the period and on cross-cultural interactions between (and among) Euro-American colonists, Native peoples, and peoples of African descent. While the course examines the settler colonies that subsequently became the United States, it also emphasizes the development of the rival French and Spanish empires in North America as well as the rise of pan-Native movements aimed at resisting colonial domination. This course strives to investigate North America's colonial past by considering a wide range of perspectives, reflecting the diversity of the various peoples who shaped its development. (4 units)

83. American Historical Geography

America's geography is not just the stage for American History but an integral player in that history. This course explores how Americans' interactions with the continent's physical geography and built environments have shaped the nation from the pre-colonial era through the present day. Topics covered include: land use by Native peoples and settlers; U.S. expansion; immigration and internal migrations; urbanization, suburbanization, and gentrification; the conservation, preservation and environmental movements; and the response to natural and human-instigated disasters. Special emphasis is placed on topics related to California, and on the experiences of people marginalized by race, class and gender. (4 units)

84. United States Women's History

Examination of the rich history of the changing social, economic, political, and intellectual life of women in the United States. Focuses on issues of gender, race, class, geographic setting, and ethnicity. Primary and secondary sources will be used to examine women's self-conceptions and self-identifications, as well as gender constructs and prescribed roles. Also listed as WGST 57. (4 units)

85. United States Environmental History

Study of American environmental history from the pre-Columbian period to the present. Examines the interactions in history between the physical environment and economics, politics, gender, race, ethnicity, and religions. (4 units)

96A. Colonization, Revolution, and Civil War: The United States, Origins to 1877

A survey of the history of the United States from European colonization to Reconstruction. Political, economic, social, and intellectual aspects of America's first 250 years. (4 units)

96B. Globalization, Reform, and War: The United States, 1877 to Present

A survey of the history of the United States from Reconstruction to the present. Political, economic, social, and intellectual aspects of America in an era of industrialization, international involvement, and domestic change. (4 units)

Upper-Division Courses: United States History

119. Gender, & Social Movements in the 20th c. U.S.

Gender and sexuality are oftentimes excluded from the studies of political movements, although both intersect with other core categories of analysis (i.e. race, economic status, and citizenship, etc.) that have shaped and been shaped by a century of social and political movements in the United States We will move chronologically, exploring major and minor movements, beginning with a discussion of the uses of gender in historical analysis and ending with an exploration of current social movements. In between, we will read primary and secondary sources that illuminate the various, often contradictory, ways that ideas about race, gender, and sexuality have converged to influence major social and political movements that continue to shape our world today. Also listed as WGST 168. (5 units)

History 127. Digital and Public History

This course is an introduction to the intersection of digital history and public history. The course will explore digital literacy, with a focus on public history. Students will discuss how public history differs from academic history and how public history presents its material. Students will consider how digital history provides a unique outlet for public history. Students will explore how history is preserved online both in primary and secondary sources. Students will learn about the continuity and sustainability of digital history, including a lifelong commitment to both preservation and creation of history. Students will also explore how historians access sources created digitally, which has rapidly changed in just a few decades meaning some sources are inaccessible without old technology. In this course, students will interact and use a variety of digital tools and resources. Students will learn how these technologies have changed and have the opportunity to use some of the technologies to present their own research on a topic of their choosing.

153. Civil Rights and Anti-Colonial Movements

Also listed as ETHN 149. For course description see ETHN 149. (5 units)

155. African-American Pursuit of Freedom

The course covers various strategies African Americans used to attain freedom. These include slave rebellions, moral suasion for the Abolitionist movement, pamphleteering and political tracts by Black intellectuals and their impact on contemporaneous political discourse. Conversely, it engages with important judicial, executive, and legislative decisions that affected the African American struggle for freedom, equality, and manhood/womanhood in the 19th century. It will therefore give particular attention to film and written documentaries on rebellions like the Nat Turner rebellion, cases such as The Missouri Compromise (1820), and laws like The Fugitive Slave Law (1850), It will also examine cases like Dred and Harriet Scott (1857), and proclamations like the Emancipation Proclamation/13th Amendment (1863--1865). Also listed as ETHN 137. (5 units)

156. African-American History

The diversity of the African-American experience---freedom and justice, community and identity, ethnicity and class---continuing through the crusade for political and civil rights, and the impact of gender within the black community, and struggle into the present century. (5 units)

158. Turmoil and Reform: United States 1877--1920

This informal lecture/discussion course examines the rich history of the evolving social, economic, political, and intellectual life of Americans from the end of Reconstruction through the peace following World War I. This course traces the dramatic changes that took place as the United States transformed into an urban industrial giant. This course also examines tensions between poverty and wealth, and the nation's struggles over immigrants, gender, race, and America's rightful role in global politics. (5 units)

160. America's Immigrants

This course will look at the history of immigration to the territory that makes up the United States of America. From the 18th century to events in the modern United States, we will explore the forces driving immigration and the process of acculturation in the United States. Varied case studies provide a starting point to better understand forced migration from Africa, 18th- and 19th-century immigration from Europe, migrant communities from Asia, and 20th- and 21st-century migrations from the Americas into the United States. Beyond understanding the factors driving immigration and the experiences of immigrant communities, this course explores the reception of migrants based on the influence of categories like race, gender, and religion. This class will ground you in the history and politics of immigration within the United States, but also will provide opportunities to reflect on the current debates around immigration, refugees, and other relevant contemporary issues. (5 units)

165. United States Political History: Democracy and Elections

An exploration of U.S. politics from the creation of the American republic to the present. Themes studied will include the rise and demise of political party systems, clashes between rival interest groups, and the evolving relationship between Americans and their government. The course will focus on several critical turning points in U.S. history when events, individuals, and various social and cultural factors helped shape the nation's political development. (5 units)

168. Malcolm and Martin

This course explores the lives, philosophies, and political activism of Malcolm X and Martin Luther King Jr. In an effort to complicate the violence/nonviolence paradigm, which has often pitted the two men as political opponents, this course seeks to uncover the long trajectory of the philosophical development and political activism of both men through the end of each of their lives, in 1965 and 1968 respectively. Both figures' lives and activism are situated

within the black freedom movement of the 20th century, which was both transnational and global. As such, this course attempts to locate these two figures within various iterations of black nationalism, civil rights activism, anti-colonialism, and Black Power. Also listed as ETHN 133. (5 units)

170. The American Revolution

Intensive study of the origins, progress, and culmination of the American Revolution to 1800. Emphasis is on the interplay between constitutional, social, economic, and racial issues during the formative era of the United States. (5 units)

171. The New Nation: U.S. From Hamilton to Jackson

An examination of the social and political history of the United States during the half-century following the American Revolution. Course topics will include: the creation of the American republic; social and economic changes since the colonial period; the rise of political parties; the evolution of slavery, race relations, and white supremacy; early American expansion and foreign relations, including interactions with Native peoples; and the evolving role of government. (5 units)

S172. The Civil War Era

A study of the major aspects of the antebellum period, the Civil War, and the problems of Reconstruction. Emphasis is on the development of the slave system and resistance to it on the part of African Americans and other abolitionists, and the role of race and gender in the conduct of the war and in the development of Reconstruction. (5 units)

172A. American Slavery/Emancipation

An investigation of slavery and the slave trade in North America, focusing especially on the United States and its colonial antecedents. We will consider the ways in which Euro-American colonization and the American and Haitian revolutions influenced ideas about race and slavery. We will also examine challenges to slavery, including various forms of resistance by the enslaved, as well as the anti-slavery and abolitionist movements that undermined the institution and contributed to its demise. The course will emphasize the lived experiences of the enslaved and of freed people in the wake of emancipation, as well as slavery's lingering role in shaping ideas about race. Finally, we will consider more recent depictions of slavery intended for broader audiences, such as literature and film, in order to discuss the place of slavery in public consciousness and historical memory. (5 units)

173. Flappers to Beatniks: The U.S. from 1920 to 1960

This course will introduce students to the crucial decades of the 1920s to the 1960s. Through readings and discussions we will examine a variety of influential issues and themes, including politics (both domestic and foreign), sexuality, race, ethnicity, religion and gender. The assigned readings have been selected to provide a sampling of the variety of current historical approaches to this crucial period that includes the \"Roaring\" Twenties, the Great Depression and the New Deal, World War II, the Cold War, and postwar challenges to domestic conformity leading up to 1960. Students will be able to hone their own historical skills through both written and oral critiques of these readings. (5 units)

174. Protest and Activism: The U.S. in the 1960s and 1970s

A study of social reform and reaction in America during the 1960s and 1970s. Emphasis is on the relationship among various social movements, such as the civil rights movement, the women's movement, the anti-war movement, and the conservative movement. We will also examine the continuing effects of these various campaigns upon the overall culture of the United States. (5 units)

175. Natives and Newcomers: Early North America

This course explores the history of North America from the eve of European colonization through the mid-18th century. It focuses on key social, economic, and political developments during the period and on cross-cultural interactions between (and among) Euro-American colonists, Native peoples, and peoples of African descent. While the course examines the settler colonies that subsequently became the United States, it also emphasizes the development of the rival French and Spanish empires in North America, as well as the rise of pan-Native movements aimed at resisting colonial domination. The course strives to investigate North America's colonial past by considering a wide range of perspectives, reflecting the diversity of the various peoples who shaped its development. (5 units)

176. Celebrity and Politics: U.S. 1980s to Present

An investigation of the United States from 1980 to the present. The focus of the course is on the changing nature of American society that intertwines celebrity and politics beginning with the conservative revolution of the Reagan years and ending at our current divisive political landscape and the virtual unlimited access to public figures. The course also examines the changing international context which helped to shape America's role in the world, especially the fall of the Soviet Union and American military action in the Arab world. (5 units)

177. Gays and Lesbians in United States History

Examination of the significance of gay men and lesbians across the broad sweep of American history, beginning with pre-Columbian Native Americans and concluding with the modern era. Religious, intellectual, economic, political, and social ramifications will all be examined. Also listed as WGST 138. (5 units)

178. Race and World War II

Also listed as ETHN 178. For course description see ETHN 178. (5 units)

180. Indigenous/Native Americans of the United States

Native American history from colonial times to the present from the perspective of native peoples. The focus is on selected Indian peoples in each historical period with an emphasis on native responses to changing historical circumstances, the continuity of Native American cultures, and Indian relations with the U.S. government in the 19th and 20th centuries. Topics include colonialism, Native Americans and environments, regional, and tribal histories. Also listed as ETHN 113. (5 units)

183. Whiteness and Immigration in the United States

In this seminar, by examining the changing conceptions of "whiteness" over time, students will gain insight into the political, cultural, and economic shifts that have occurred in American history, reshaping the broader dynamics of race and ethnicity that continue to inform American life in the 21st century. Also listed as ETHN 172. (5 units)

184. American Historical Geography

America's geography is not just the stage for American History but an integral player in that history. This course explores how Americans' interactions with the continent's physical geography and built environments have shaped the nation from the pre-colonial era through the present day. Topics covered include: land use by Native peoples and settlers; U.S. expansion; immigration and internal migrations; urbanization, suburbanization, and gentrification; the conservation, preservation, and environmental movements; and the response to natural and human-instigated disasters. Special emphasis is placed on topics related to California and on the experiences of people marginalized by race, class, and gender. (5 units)

185. African Americans in Postwar Film

Also listed as ETHN 135. For course description see ETHN 135. (5 units)

186. California

Survey of the state's history: its Native American origins, Spanish invasion and missionization, Mexican period, U.S. conquest, gold rush, and development to the present. (5 units)

188S. The Making of Modern America: The Progressive Era

This seminar examines the progressives (1880--1920), a group of reformers who struggled to more equitably redistribute the wealth and power of the newly industrialized, urbanized America, achieving mixed results. The impact of this crucial period of reform on politics, gender, class, business, the environment, leisure, and foreign affairs will be examined in order to illuminate current political and social views and actions. Students are evaluated on their informed participation and a research paper. (5 units)

189. Special Topics in United States History

Courses offered occasionally on subjects outside the standard curriculum in modern United States history. (5 units)

Lower-Division Courses: European History

16. Ancient Greek Religion

Also listed as CLAS 67. For course description see CLAS 67. (4 units)

17. Ancient Roman Religion

Also listed as CLAS 68. For course description see CLAS 68. (4 units)

30. The French Revolution: An Introduction

The French Revolution of 1789 topped the greatest monarchy in Europe and ultimately ushered in Napoleon Bonaparte's empire. But it also introduced into the Western world the political vocabulary we still use today. Whenever we use political designations such as left and right, or talk about nationalism and citizenship and the rights of man, the French Revolution is being invoked, whether we know it or not! This class explores the exciting events of the revolution through literature, art, and film and the often-heated debates among historians about the real meaning of these dramatic years. (4 units)

39. Late Modern France and the World

This course surveys the history of France from the founding of the Third Republic in 1870 to the present day with particular emphasis on republican universalism, French overseas imperialism, the Dreyfus Affair, the struggle for women's equality, the role and experience of France in the two World Wars, and late-20th century patterns of decolonization and migration. (4 units) Also listed as HIST 139.

94. Europe

A thematic approach to European history, from Early Modern to the present. (4 units)

Upper-Division Courses: European History

106. The Rise of Macedonia through the Youth of Alexander the Great

Europe's first royal dynasty---that of the Macedonian Argead House---produced two kings in the fourth century BCE, Philip II and Alexander III (the "Great"), who changed the course of Western history forever. Thoroughly steeped in the culture of the polis, Macedonia and its kings nevertheless represented the antithesis of the city states' political achievements. This course will focus on the development of the Macedonian kingdom from its earliest days through the reign of its greatest king, Philip (circa 650--336 BCE). It will preface the meteoric career of Macedon's most famous monarch, Alexander, and the Hellenistic age that followed. Also listed as CLAS 118. (5 units)

107. The World of Gladiators

This course provides an introduction to the study of the Roman world, with emphasis on the use of quantitative and qualitative research methods. Students will be introduced to the disciplines of archaeology, numismatics, epigraphy, and ceramic studies, and within these disciplines will examine and compare different methods of evaluating ancient evidence and data sets. Through utilizing different types of evidence and modes of analysis, this course introduces students to the society, culture, history, and economy of the Roman world from the Iron Age to Late Antiquity. Also listed as CLAS 172 and ANTH 173. (5 units)

108. Ancient Greece

Also listed as CLAS 108. For course description see CLAS 108. (5 units)

109. The Hellenistic Age

Also listed as CLAS 109. For course description see CLAS 109. (5 units)

110. Roman Republic

Also listed as CLAS 110. For course description see CLAS 110. (5 units)

111. Roman Empire

Also listed as CLAS 111. For course description see CLAS 111. (5 units)

115S. Revolutions in Sex, Race, and Rights

In the modern world, the contrast between slavery and freedom shaped discussions of human rights, whether that of the abstract citizen or of slaves, free blacks, European women, or colonized peoples. This course examines the terms by which the notion of citizenship was defined and granted over the course of the past three centuries with a focus on the Atlantic world. Key historical questions we will explore include: Who is a citizen and what defines him or her as a citizen? On what grounds were rights granted to citizens? How were gender and race defined, and how did those definitions determine the meaning of citizen? How did disenfranchised groups argue for their rights, and in what situations were their claims successful? Also listed as WGST 169. (5 units)

117. State and Church in the Middle Ages, 1000--1450

This course examines the struggles between state and church that formed modern Western political institutions. Topics include the rise of royal and papal theocracy, the emergence of the idea of limited government, the foundation of representative institutions as well as modern legal institutions, and the origins of the modern state. (5 units)

118. Representation, Rights, and Democracy, 1050--1792

This course charts the development of modern democracy from its roots in the Middle Ages to its implementation during the American and French revolutions, with a major emphasis on the tension of political theory and practice in its formation. Topics include the evolution of representation and citizenship and the place of social, economic, racial, and gendered forces in the formation. (5 units)

120. The Crusades: Christian and Muslim Perspectives

This course traces the history of the Crusades from the 11th to 16th centuries, using both Christian and Muslim perspectives on these wars to gauge their impact upon both Western Europe and the Islamic society of the Mediterranean. Students will explore the interplay of religious, social, political, and economic forces that motivated Christians and Muslims during these struggles, the impact the Crusades had upon both Christian and Muslim religious and social sensibilities, and the reasons for the success of the early Crusaders, the complex response of Muslim authorities to the European invasion, and the eventual success of Muslim forces in driving Christian forces far back into Europe. (5 units)

122. The Holocaust

Introduces students to the history of the Holocaust, the persecution and mass murder of Jews in Nazi Germany and Nazi-occupied Europe from 1933 to 1945. Also considers violence, including mass murder, carried out against other groups deemed racially and politically undesirable by the Nazis (e.g., people with mental and physical disabilities, the Romanies, members of the LGBT+ community, Afro-Germans, Slavic peoples). (5 units)

126. Conflicts in Medieval Christianity

This course is an examination of the religious tensions and conflicts that helped form later medieval Christianity. It treats heresies, the Inquisition, developing notions of orthodoxy and authority, the warrior Christianity of the Crusades, mendicancy and urban attitudes toward Christian perfection, the new monasticism, the development of a new personal approach to religion, lay tensions with the clergy, and the climate of reformation that spread through Europe. (5 units)

128. Crime, Prostitution, and Poverty in Victorian London

This course explores the social and cultural history of London from the 1830s to 1900. Particular emphasis is placed on the strong contrast that Victorian London offered between imperial splendor and grinding misery. Students will examine Victorian perception and experiences of London poverty, filth, prostitution, and assorted vices, as well as art, culture, entertainment, and social reform movements. (5 units)

130. Special Topics in European History

Courses offered occasionally on subjects outside the standard curriculum in modern Europe. (5 units)

130A. French Enlightenment and Revolutions in Global Context

This course surveys the history of France from the Enlightenment through the late-19th century with particular emphasis on France's empire and transnational connections. Particular areas of emphasis include the development of French nation identity; the Revolution's key role in the development of democracy and republican political institutions and language; and Enlightenment ideas of religious tolerance and human rights. (5 units)

131. Britain and the First World War

World War I gave birth to a range of difficult questions regarding the relationship between democratic ideals and how societies organize for modern conflicts, setting a strong pattern for the 20th century and continuing to possess strong resonances for today. What strains and opportunities does war place upon democratic societies? Does modern patriotism enable or distort the aspirations of free societies? What forces propel individuals to assist or resist modern war making? This course encourages students to think of war as not an activity solely directed by generals and politicians, but rather a social and cultural event that is formed and negotiated by citizens, workers, and parents. This course places the World War I battlefront in the context of British imperial history, and especially examines how four years of fighting shaped Britain's modern national and civic identity. Readings and materials cover the significance of the home front in many forms including the propaganda machine, the Irish problem, public school tradition, industrial organization and trade union activity, and the women's vote campaign. Civic groups organized by peace protesters, conscientious objectors, suffragists, and striking workers will be explored alongside groups such as national service advocates, Empire leagues, Boys Scouts, and civil preparedness organizations. (5 units)

132. Democracy Under Siege: Ancient Athens and Modern America

Also listed as CLAS 113. For course description see CLAS 113. (5 units)

133. History of Sexuality

Study of the history of sexuality in modern Europe. Examination of topics such as the politics of prostitution, abortion, and pornography; changing sexual norms and practices; the invention of homosexuality and heterosexuality; professional and state involvement in the supervision and regulation of sexualities; intersections of sexuality with gender, ethnicity and race, nationality, class, and religion; connections between sexuality and imperialism; sexual communities and movements. Also listed as WGST 137. (5 units)

134. Reformers and Revolutionaries in Tsarist Russia

Examination of politics, society, and culture in the Russian Empire from the reign of Peter the Great to the fall of the Romanov Dynasty in 1917. Themes include state building and modernization; peasant rebellion and the institution of serfdom; the nobility and its discontents; imperial expansion and the multiethnic Empire; the Orthodox Church and popular religion; aristocratic revolt and the Russian revolutionary intelligentsia; Alexander II and the Great Reforms; the growth of radicalism; industrialization and social change; the Revolution of 1905; and the crisis of the Old Regime. (5 units)

136. Gender, Race, and National Identity in 20th-Century Eastern and Western Europe

An exploration of the ways in which social anxieties and ideas about gender, race, nationality, class, and sexuality shaped political, economic, social, and cultural developments in Eastern and Western Europe in the 20th century. Topics include challenges to bourgeois society in pre-war Europe; World War I in a raced and gendered world; the threat of the Soviet East and gender and sexual "disorder" in the 1920s; gender and anti-colonialism in India; the rise of fascism and its intersections with racism, sexuality, and misogyny; World War II and the Holocaust; communism and anti-Semitism in Czechoslovakia; gender and culture in Cold War Europe; the battle for Algerian independence and the gendered politics of decolonization; the 1968 revolutions in Eastern and Western Europe; the feminist and gay and lesbian liberation movements; race, gender, and national identity in post-WWII and a postcolonial and Europe; the gendering of communism and its collapse; ethnic cleansing and genocide in the former Yugoslavia. Also listed as WGST 172. (5 units)

137. The Soviet Experiment

An examination of the Soviet experiment to build the first self-proclaimed socialist government in history. Emphasis on political and economic policies, cultural practices, everyday life, and the evolution of social identities and roles, taking into account gender, regional, and national differences. (5 units)

139. Late Modern France and the World

This course surveys the history of France from the founding of the Third Republic in 1870 to the present day with particular emphasis on republican universalism, French overseas imperialism, the Dreyfus Affair, the struggle for women's equality, the role and experience of France in the two World Wars, and late-20th century patterns of decolonization and migration. Also listed as HIST 39. (5 units)

139. Special Topics in European History

Courses offered occasionally on subjects outside the standard curriculum in modern Europe. (5 units)

Lower-Division Courses: African, West Asian, Middle Eastern History

91. Africa in World History

Historical survey of the origins and development of African cultures from ancient times to the onset of European colonialism in the 20th century. Focus on selected civilizations and societies. Patterns of African social, economic, and political life. (4 units)

97. West Asia and the Middle East

A survey of the cultural, religious, economic, and political development of western Asia and northeastern Africa up to 1900 CE. (4 units)

Upper-Division Courses: African, West Asian, Middle Eastern History

140. African Lives: The Atlantic Era

This course will explore writings by African-born individuals during the Atlantic period. It will focus on how they describe their experience of slavery and colonialism in Africa, their perceptions of and experiences in the Western World, as well as African-American perceptions of and experiences in Africa. The themes we will explore will include, but not limited to, colonialism, slave captivity narratives, autobiographical and biographical accounts of free blacks and African slaves in Europe and the Americas, the experiences of African royalty abroad, and African contributions to the birth of African-American culture and the emergence of "Creole" societies in the New World. (5 units)

141. Politics and Development in Independent Africa

African economic, social, and political problems after independence. Major ideologies and international conflict. (5 units)

144S. Islam in Africa

Examination of the history and contemporary role of Islam in Africa. The principal topics are the development of Islamic ideas and institutions, the impact of Islam on African cultures, the role of Islam in contemporary political and economic development, and the interaction between African and non-African organizations and governments. (5 units)

149. Special Topics in African or Middle Eastern History

Courses offered occasionally on subjects outside the standard curriculum in African or Middle Eastern history. (5 units)

157. Black Migration in the World

This course examines the dynamic and sustained relationship between Africa and the African Diaspora through the multiple lenses of U.S. blacks, West Indian, Afro-Brazilian, Afro-European, and Afro-Cuban missions, travel, migration, and repatriation to various locations in Africa. The course entails a consideration of the religious exchanges, ethnic/racial transformations, travel tropes, and discourses on Pan-African identity that characterized the Back-to-Africa Movement in various locations of the Atlantic World. It will introduce students to a historiography of Black intellectuals, individuals, and groups who look to Africa as not only an ancestral homeland, but as a site of Christian evangelization, trade, pursuit of freedom and happiness, as well as social justice. Also listed as ETHN 138. (5 units)

Lower-Division Courses: East Asian, South Asian, and Indian Ocean History

92. Modern East Asia

An examination of the emergence of modern nations from the rich and diverse cultures of the Pacific and their mutual transformations since 1600. Analyzes linkages within the region and with other regions using concepts borrowed from anthropology, cultural studies, economics, and political science. Particular focus on China, Japan, and Korea from the 1600's to the present.(4 units)

Upper-Division Courses: East Asian, South Asian, and Indian Ocean History

146A. Medieval and Early Modern Japan

From the early medieval period through the middle of the 19th century, Japan developed as a blend of indigenous cultures, religions, and institutions and continental (Chinese and Korean) civilization and later European and American ideologies and imperialism. This course examines culture, ideas, religions, society/economy, and global interactions. (5 units)

146B. Modern Japan in the World

An examination of Japanese history in its global context since 1600, with emphases on its 19th century "economic miracle"; problems faced by a rapidly modernizing and globalizing society; questions of national security and imperialism; reconstructing gender, personhood, and rights of Japanese men and women at several key moments in "modern" society; social and political movements such as suffrage and labor; war and reconstruction; and diaspora, both of people and ideas. (5 units)

147A. Wonders of Ancient China

Chinese civilization from the earliest times to the early modern global encounter with the West. Includes Shang oracle bones, Emperor Qin Shi Huang and his terracotta army, the origins of the Great Wall and the Silk Road, Genghis Khan and the Mongol conquest, Tang empresses, Marco Polo, Zheng He and his expedition to Africa, the glories of the Ming dynasty, and Jesuit missionaries. Topics also include the evolution of Confucianism, Taoism, and Buddhism; development of political institutions; analysis of the pre-industrial economic experience; and state-society relations. (5 units)

147B. China in Revolution, 1840-Present

Social, political, economic, and cultural development of China from the early 19th century to the present. Topics include China's state formation from monarchy to socialism; cultural history from Confucianism to individualism; issues of poverty and population; intellectual and cultural changes and the role of the West in these changes; and the indigenous forces shaping China's modern evolution. Students will also have the opportunity to research a current topic as China emerges as a global technological, economic, and military power. (5 units)

150. Gender and Sexuality in East Asia

The historical study of women and men is necessarily the historical study of gendered societies. While there are important linkages among China, Japan, and Korea---for example, shared religious traditions, the varied experiences of imperialism, the central role of women and the construction of gender in modernity, and the physical movement of women and men among the three countries---there are also significant differences. This course will explore changes over time in sexualities, work experiences, civic culture, the gendered state, and marriage and family in the three countries. Also listed as WGST 126. (5 units)

151. Imperialism in East Asia

This course examines the cultural, social, political, and economic effects of imperialism in East Asia. Imperialism took varied forms, depending on the interests of the imperialist country and the conditions in the country under imperialism. Readings will use both literary and historical sources. (5 units)

152. History of Christianity in China

The history of Christianity in China from the seventh century to the present. We will explore the earliest evidence of Christianity in China, the Franciscan missions to the Mongols, the arrival of the Jesuits, the Chinese rites controversy, the persecution of Christianity, the rise of Protestant missions, and the explosive growth of Christianity in China today. We will also explore issues of church-state conflict, religious debate and conversion, and the complex interplay between foreign missions and Chinese developments. We end with a discussion of the current surveillance and control of Christianity in China. (5 units)

159. Special Topics in Asian History

Courses offered occasionally on subjects outside the standard curriculum in Asian history. (5 units)

Lower-Division Courses: Latin American History

64. Central America

Survey of Central America from independence to the present. Focus on three Central American countries: Nicaragua, Guatemala, and El Salvador. Emphasis on recent developments; social, economic, and political problems (militarism, dictatorship); and the nature of U.S. policy vis-à-vis Central America. (4 units)

95. Modern Latin America

In the 20th century, Latin American nations emerged onto the world scene with economic growth that brought conflict and control, dependence and revolution, dictatorship and democracy. The course focuses on Mexico, Argentina, Brazil, Cuba, and Central America as it studies their underlying similarities and differences up to the present. (4 units)

Upper-Division Courses: Latin American History

161. Modern Mexico

Mexico since the Benito Juárez regime to the present. Emphasis on the Porfiriato, the 1910 Revolution and its institutionalization, and the development of the modern state. (5 units)

162. Argentina

Soldiers and missions, cities and plains, gauchos and immigrants, war and poetry, beef and wheat, politicians and a pope---these things and more describe the history of the complex, sophisticated land that occupies the southern part of the hemisphere. This course explores Argentina's progress from a remote mystery to a cosmopolitan center of learning and business. The course brings into focus the challenges of unity, democracy, nationalism, freedom, and justice, with attention to the populist, authoritarian, and constitutional conflicts of the present. (5 units)

163. Cuba and the Caribbean

A survey from the colonial period to the present of three Caribbean nations: Cuba, the Dominican Republic, and Puerto Rico. Emphasis on 20th-century developments; social, economic, and political issues (dictatorship, revolution, social stratification); and the role of U.S. policy vis-à-vis Cuba and the Caribbean. (5 units)

164S. The Catholic Church in Latin America

Readings, discussion, and research focused on the historical place, social role, and religious significance of the Catholic Church in Latin America, with attention to church-state issues, liberation theology, and the impact of the Church in nations affected by development, globalization, and poverty. (5 units)

166. Latin America: Empires

This course studies the four great traditions that give rise to the dominant peoples and cultures of Latin America. Beginning with the priests and warriors of Maya and Aztec Mexico and the children of the mountains and the sky in the Andes, it examines the soldiers, mystics, and ranchers of the Spanish viceroyalties, and the traders and planters of Brazil. The course concludes with the major independence movements in Mexico, Argentina, Gran Colombia, and Brazil. (5 units)

169. Special Topics in Latin American History

Courses offered occasionally on subjects outside the standard curriculum in Latin American history. (5 units)

Individual Studies Program

Director: Linda Garber

The Individual Studies Program (ISP) major has been established to meet the needs of students who wish to design a course of studies with a multidisciplinary perspective. ISP majors can lead to a bachelor of arts (B.A.) degree or a bachelor of science (B.S.) degree in social science. ISP does not offer a bachelor of science (natural science) degree option.

Courses for the ISP major must be chosen from a significant number of different disciplines. Such curricular diversity for ISP proposals is considered essential and defining of any ISP major. There is a strong preference for curriculum for the proposed ISP major to be constituted from existing courses, as opposed to independent study or directed readings courses.

Study abroad courses can play an important role in an ISP major but are subject to limits. Courses taken abroad may be used to complete no more than four courses in the proposed plan of study.

The student must identify and secure a faculty advisor who agrees to oversee the ISP major. All continuing SCU faculty members in good standing may serve as the academic advisor for an ISP major. The faculty member's area(s) or expertise must intersect with the student's proposed area of study. The faculty member is responsible for reviewing and approving the coursework (including possible electives and, if necessary, substitutions) and for providing the ISP student with at minimum annual advising during the spring quarter. The faculty advisor also agrees to complete the student's pre-graduation audit associated with the ISP major requirements.

Requirements for the Major

In addition to fulfilling Undergraduate Core Curriculum requirements for the bachelor of arts or bachelor of science (social science) degrees within the College of Arts and Sciences, students majoring in ISP must complete the following programmatic requirements:

- Be a full-time student at Santa Clara for at least one year
- Have fewer than 111 quarter units of academic work completed at the time of application
- Have a minimum 3.0 grade point average
- Submit a Petition for Admission to the ISP director for review and approval. The petition should include:
    - A clear, logical, and conceptually refined description of the proposed program
    - A well developed argument, supported by appropriate evidence, showing that no existing academic major can meet the student's educational objectives
    - A plan of study listing courses, seminars, internships, etc., that meets the student's educational objectives and fulfills the requirements of the undergraduate Core Curriculum
    - An academic advisor whose expertise is associated with the proposed area of study and who has agreed to serve as the student's academic advisor for the ISP major

Students who want to pursue an ISP major should begin by scheduling a meeting with the program director to obtain a list of instructions regarding administrative details.

Department of Mathematics and Computer Science

Professors Emeritus: José Barría, Leonard Klosinski, Edward F. Schaefer

Professors: Frank A. Farris (Department Chair), Daniel Ostrov, Richard A. Scott, Dennis C. Smolarski, S.J.

Associate Professors: Glenn D. Appleby, Robert A. Bekes, Tamsen McGinley, Nicholas Q. Tran, Byron L. Walden

Assistant Professors: Smita Ghosh, Mustafa Hajij, Michael Hartglass, Shiva Houshmand, Sara Krehbiel, Howard Levinson, Nicolette Meshkat (Clare Boothe Luce Professor)

Senior Lecturers: Mona Musa, Laurie Poe

Lecturers: Linda Burks, Joshua Grice, Corey Irving, Phillip Jedlovec, Natalie Linnell, Mary Long, Norman Paris, Luvreet Sangha

Halmos Professor: Ami E. Radunskaya, Pomona College

The Department of Mathematics and Computer Science offers major programs leading to the bachelor of science in mathematics or the bachelor of science in computer science, as well as required and elective courses for students majoring in other fields. Either major may be pursued with any of three principal goals: preparation for graduate studies leading to advanced degrees in pure mathematics, applied mathematics, computer science, statistics, operations research, or other fields; preparation for secondary school teaching of mathematics or computer science; or preparation for a research career in business, industry, or government. The major in mathematics may be taken with an emphasis in applied mathematics, data science, financial mathematics, mathematical economics, or mathematics education. The emphasis in mathematics education is designed to prepare majors to take the California Subject Examination for Teachers (CSET). The major in computer science offers emphases specializing in algorithms and complexity, data science, security, software, or one of the student's choosing. Minors in mathematics or computer science are also available.

The Department of Mathematics and Computer Science maintains a program for the discovery, encouragement, and development of talent in mathematics or computer science among undergraduates. This program includes special sections, seminars, individual conferences, and directed study guided by selected faculty members. Students are also encouraged to participate actively in research projects directed by faculty.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in mathematics or computer science must complete the following departmental requirements for the respective degree:

Major in Mathematics

- CSCI 10 (or demonstrated equivalent proficiency in computer programming)
- MATH 11, 12, 13, 14, 23, 51, 52, and 53
- PHYS 31 and 32. Students with a special interest in the application of mathematics in the social sciences or economics may substitute ECON 170 or 173 for PHYS 32. Students planning to teach in secondary schools may substitute, with approval of the department chair, PHYS 11 and 12 for PHYS 31 and 32.
- Seven approved 5-unit upper-division courses in mathematics or computer science, which must include at least one course in analysis (MATH 102, 105, or 153), at least one course in algebra (MATH 103 or 111), and at least one course selected from geometry (MATH 101, 113, or 174), or from discrete mathematics (MATH 176 or 177),

or from applied mathematics (MATH 122, 125, 141, 144, 146, 155, or 166). MATH 100, 192, 195, and CSCI 192 do not count toward the seven courses.

It is not required to select an emphasis for the major in mathematics. Students planning to undertake graduate studies in pure mathematics should plan to take MATH 105, 111, 112, 113, 153, and 154. Students planning to undertake graduate studies in applied mathematics should complete the emphasis in applied mathematics and take MATH 105, 144, 153, 154, and 155.

Emphasis in Applied Mathematics

Complete the requirements for a bachelor of science in mathematics with the following specifications and additions:

- MATH 102, 122, and 123
- Two courses from MATH 125, 141, 144, 146, 147, 155, 166, 178, or an approved alternative 5-unit upper-division mathematics (but not computer science) course
- One course from MATH 166, 147

Emphasis in Data Science

Complete the requirements for a bachelor of science degree in mathematics with the following specifications and additions:

- MATH 122, 123
- CSCI 10, 60, 61, 183
- CSCI 184 or COEN 178
- Two courses from CSCI 163; MATH 127, 146, 147, 166; COEN 166, 169; ECON 174

Emphasis in Financial Mathematics

Complete the requirements for a bachelor of science degree in mathematics with the following specifications and additions:

- MATH 102, 122, 123, 125
- Either MATH 146 and 147 or MATH 144 and 166
- BUSN 70
- ACTG 11, 12
- FNCE 121, 124

Emphasis in Mathematical Economics

Complete the requirements for a bachelor of science degree in mathematics with the following specifications and additions:

- MATH 102, 122, 123, 146, 147
- ECON 113
- Two courses from MATH 125, MATH 166, ECON 170--174

Emphasis in Mathematics Education

Complete the requirements for a bachelor of science degree in mathematics with the following specifications and additions:

- MATH 101, 102, 122, 123 (or 8), 170, 175 (or 178)

- CHST 191

Students are strongly advised to complete the College's Urban Education minor. Students will need to learn the definitions, and some examples, of rings and fields for the CSET

Major in Computer Science

- MATH 11, 12, 13, 14, 51, 53
- CSCI 10, 60, 61
- One of ANTH 1, PHYS 31, CHEM 11 and 11T, or ENVS 21
- COEN 20 and 20L, COEN (or ELEN) 21 and 21L
- MATH 122, CSCI 161 and 163, and COEN 177 and 177L
- Five additional 4- or 5-unit upper-division courses in one of the following emphases:

Algorithms and Complexity emphasis:

- CSCI 162, CSCI 164
- Two more courses from CSCI 146, 147, 165, 181; MATH 101, 175, 176, 177, 178
- One more course from the list above or any other additional 4-5 unit upper-division CSCI course below 190 or COEN course below 188

Data Science emphasis:

- CSCI 182, 183, 184
- Two more courses from CSCI 127, 146, 147, 164, 166; MATH 123; COEN 166, or any other additional 4-5 unit upper-division CSCI course below 190 or COEN course below 188

Security emphasis:

- MATH 178, CSCI 180, CSCI 181
- Two more courses from MATH 175, COEN 152 and 152L, COEN 161 and 161L, COEN 146 and 146L, or any other additional 4-5 unit upper-division CSCI course below 190 or COEN course below 188

Software emphasis:

- CSCI 169, CSCI 187, COEN 146 and 146L
- One more course from CSCI 183, 180, 168, or any other additional 4-5 unit upper-division CSCI course below 190
- One other course from CSCI 183, 180, 168; COEN 161, 178 or any other additional 4-5 unit upper-division CSCI course below 190 or COEN course below 188

Individual emphasis of the student's choosing: In order to pursue this emphasis, a student must get their courses approved along with their advisor's signature at least three quarters before they graduate. Three of the five upper-division courses must be CSCI or MATH. The following are two examples:

- **Computer Science and Art emphasis**:
  - CSCI 168, COEN 165/ARTS 173, and one of ARTS 174 or ARTS 185
  - Two more courses from CSCI 127, MATH 101, 141; or any other additional 4-5 unit upper-division CSCI course below 190
- **Computational Biology emphasis**:

- CSCI 127, BIOL 175, BIOL 178
- Two more courses from CSCI 183, 168; Math 141; or any other additional 4-5 unit upper-division CSCI course below 190
- Although COEN 178 is recommended, it does not count toward the five courses.

It is highly recommended that students (especially students in the Software emphasis) take additional upper-division courses beyond the minimum required for the degree, such as COEN 178.

For the major in either mathematics or computer science, at least four of the required upper-division courses in the major must be taken at Santa Clara. A single upper-division course in the Department of Mathematics and Computer Science may not be used to satisfy requirements for two majors or minors.

Students should decide their emphasis by the end of junior year.

Requirements for the Minors

Minor in Mathematics

Students must fulfill the following requirements for a minor in mathematics:

- MATH 11, 12, 13, 14, and either 52 or 53
- Three approved 5-unit upper-division mathematics courses with no more than one course selected from MATH 165 and 166. In place of MATH 165 or 166, a student may select an upper-division computer science course, **but two of the three courses must be designated MATH.** MATH 100, 192, 195, and CSCI 192 do not count toward the minor.

Minor in Computer Science

Students must fulfill the following requirements for a minor in computer science:

- CSCI 10, 60, and 61
- MATH 51
- COEN 20 and 20L
- A total of three 4 or 5-unit upper-division courses, as follows: Two upper-division CSCI courses and one upper-division CSCI or COEN course. CSCI 192 does not count toward the minor.

Preparation in Mathematics for Admission to Teacher Training Credential Programs

The State of California requires that students seeking a credential to teach mathematics or computer science in California secondary schools must pass the California Subject Examination for Teachers (CSET), a subject area competency examination. The secondary teaching credential additionally requires the completion of an approved credential program, which can be completed as a fifth year of study and student teaching, or through an undergraduate summer program internship. Students who are contemplating secondary school teaching in mathematics or computer science should consult with the coordinator in the Department of Mathematics and Computer Science as early as possible.

Lower-Division Courses: Mathematics

4. The Nature of Mathematics

For students majoring in arts and humanities. Topics chosen from set theory, logic, counting techniques, number systems, graph theory, financial management, voting methods, and other suitable areas. Material will generally be presented in a setting that allows students to participate in the discovery and development of important mathematical ideas. Emphasis on problem solving and doing mathematics. (4 units)

6. Finite Mathematics for Social Science

Introduction to finite mathematics with applications to the social sciences. Sets and set operations, Venn diagrams, trees, permutations, combinations, probability (including conditional probability and Bernoulli processes), discrete random variables, probability distributions, and expected value. (4 units)

8. Introduction to Statistics

Elementary topics in statistics, including descriptive statistics, regression, probability, random variables and distributions, the central limit theorem, confidence intervals and hypothesis testing for one population and for two populations, goodness of fit, and contingency tables. (4 units)

9. Precalculus

College algebra and trigonometry for students intending to take calculus. Does not fulfill the undergraduate Core Curriculum requirement in mathematics. Requires enrollment in weekly lab session - MATH 9L. (4 units)

9L. Precalculus Lab

Focus on active learning to prepare students for calculus. Does not necessarily coordinate topics with Math 9 on a weekly basis. Instead, the lab sessions are designed to help students to build overall strength in non-routine problem solving. (1 unit)

11. Calculus and Analytic Geometry I

Limits and differentiation. Methods and applications of differentiation. Ordinarily, only one of MATH 11, 30, or 35 may be taken for credit. Note: MATH 11 is not a suitable prerequisite for MATH 31 or 36 without additional preparation. Prerequisite: MATH 9 or a passing grade on the Calculus Readiness Exam. If MATH 9 is taken, a grade of C- or higher is strongly recommended before taking MATH 11. (4 units)

12. Calculus and Analytic Geometry II

Further applications of differentiation. Integration and the fundamental theorem of calculus. Methods and applications of integration. Only one of MATH 12, 31, or 36 may be taken for credit. Note: MATH 30 and 35 are not suitable prerequisites for MATH 12 without additional preparation. Prerequisite: MATH 11 or equivalent. A grade of C- or higher in MATH 11 is strongly recommended before taking MATH 12. (4 units)

13. Calculus and Analytic Geometry III

Taylor series, vectors, quadric surfaces, and partial derivatives, including optimization of functions with multiple variables. Prerequisite: MATH 12 or equivalent. Students who have taken Math 31, Math 36, or an equivalent course may take Math 13 after consultation with an instructor. A grade of C- or higher in MATH 12 is strongly recommended before taking MATH 13. (4 units)

14. Calculus and Analytic Geometry IV

Vector functions, line integrals, multiple integrals, flux, divergence theorem, and Stokes' theorem. Prerequisite: MATH 13 or equivalent. A grade of C- or higher in MATH 13 is strongly recommended before taking MATH 14. (4 units)

22. Differential Equations

Explicit solution techniques for first order differential equations and higher order linear differential equations. Use of numerical and Laplace transform methods. Only one of MATH 22, 23, or AMTH 106 may be taken for credit. Prerequisite: MATH 13. (4 units)

23. Series and Differential Equations

Sequences, series, and analytic functions. Use of explicit, numerical, and series methods to solve ordinary differential equations. Complex numbers. Only one of MATH 22, 23, or AMTH 106 may be taken for credit. Prerequisite: MATH 13. (4 units)

30. Calculus for Business I

Differentiation and its applications to business, including marginal cost and profit, maximization of revenue, profit, utility, and cost minimization. Natural logarithms and exponential functions and their applications, including compound interest and elasticity of demand. Study of the theory of the derivative normally included in MATH 11, except trigonometric functions not included here. Ordinarily, only one of MATH 11, 30, or 35 may be taken for credit. Note: MATH 30 is not a suitable prerequisite for MATH 12 or 36 without additional preparation. Prerequisite: MATH 9 or a passing grade on the Calculus Readiness Exam. If MATH 9 is taken, a grade of C- or higher is strongly recommended before taking MATH 30. (4 units)

31. Calculus for Business II

Integration and its applications to business, including consumer surplus and present value of future income. Functions of several variables and their derivatives. Emphasis throughout the sequence on mathematical modeling, the formulation of practical problems in mathematical terms. Only one of MATH 12, 31, or 36 may be taken for credit. Note: MATH 11 and 35 are not suitable prerequisites for MATH 31 without additional preparation. Prerequisite: MATH 30 or equivalent. A grade of C− or higher in MATH 30 is strongly recommended before taking MATH 31. (4 units)

35. Calculus for Life Sciences I

Modeling with functions, limits, and derivatives. Derivative rules and tools. Applications to the life sciences. Ordinarily, only one of MATH 11, 30, or 35 may be taken for credit. Note: MATH 35 is not a suitable prerequisite for MATH 12 or 31 without additional preparation. Prerequisite: MATH 9 or a passing grade on the Calculus Readiness Exam. If MATH 9 is taken, a grade of C- or higher is strongly recommended before taking MATH 35. (4 units)

36. Calculus for Life Sciences II

Integration, differential equations, and probability. Applications to the life sciences. Only one of MATH 12, 31, or 36 may be taken for credit. Note: MATH 11 and 31 are not suitable prerequisites for MATH 36 without additional preparation. Prerequisite: MATH 35 or equivalent. A grade of C- or higher in MATH 35 is strongly recommended before taking MATH 36. (4 units)

51. Discrete Mathematics

Predicate logic, methods of proof, sets, functions, sequences, modular arithmetic, cardinality, induction, elementary combinatorial analysis, recursion, and relations. Also listed as COEN 19. (4 units)

52. Introduction to Abstract Algebra

Groups, homomorphisms, isomorphisms, quotient groups, fields, integral domains; applications to number theory. Prerequisite: MATH 51 or permission of the instructor. (4 units)

53. Linear Algebra

Vector spaces, linear transformations, algebra of matrices, eigenvalues and eigenvectors, and inner products. Prerequisite: MATH 13. (4 units)

90. Lower-Division Seminars

Basic techniques of problem solving. Topics in algebra, geometry, and analysis. (1--4 units)

Upper-Division Courses: Mathematics

Note: Although CSCI 10 is not explicitly listed as a formal prerequisite, some upper-division courses suggested for computer science majors may presuppose the ability to write computer programs in some language. A number of upper-division courses do not have specific prerequisites. Students planning to enroll should be aware, however, that all upper-division courses in mathematics require some level of maturity in mathematics. Those without a reasonable background in lower-division courses are advised to check with instructors before enrolling.

100. Writing in the Mathematical Sciences

An introduction to writing and research in mathematics. Techniques in formulating research problems, standard proof methods, and proof writing. Practice in mathematical exposition for a variety of audiences. Strongly recommended for mathematics and computer science majors beginning their upper-division coursework. MATH 100 may not be taken to fulfill any mathematics or computer science upper-division requirements for students majoring or minoring in mathematics or computer science. Offered on demand. Prerequisites: CTW 1, CTW 2. (5 units)

101. A Survey of Geometry

Topics from advanced Euclidean, projective, and non-Euclidean geometries. Symmetry. Offered in alternate years. Prerequisite: MATH 13. (5 units)

102. Advanced Calculus

Topics to be chosen from the following: Open and closed subsets of R^{n}, the definition of limits and continuity for functions on R^{n}, the least upper bound property on R, the intermediate and extreme value theorems for functions on $R^{n}\ $, the derivative of a function on R^{n} in terms of a matrix, the matrix interpretation of the chain rule, Taylor\'s theorem in multiple variables with applications to critical points, the inverse and implicit function theorems, multiple integrals, line and surface integrals, Green\'s theorem, Stokes\' theorem, the divergence theorem, and differential forms. Prerequisites: MATH 14, 51, and 53. (5 units)

103. Advanced Linear Algebra

Abstract vector spaces, dimensionality, linear transformations, isomorphisms, matrix algebra, eigenspaces and diagonalization, Cayley-Hamilton Theorem, canonical forms, unitary and Hermitian operators, applications. Prerequisite: MATH 53. (5 units)

105. Theory of Functions of a Complex Variable

Analytic functions. Cauchy integral theorems, power series, conformal mapping. Riemann surfaces. Offered in alternate years. (5 units)

111. Abstract Algebra I

Topics from the theory of groups. Offered in alternate years. Prerequisites: MATH 52 and 53. (5 units)

112. Abstract Algebra II

Rings and ideals, algebraic extensions of fields, and the Galois theory. Offered in alternate years. Prerequisite: MATH 111. (5 units)

113. Topology

Topological spaces and continuous functions. Separability and compactness. Introduction to covering spaces or combinatorial topology. Offered in alternate years. Prerequisites: MATH 14 and 51 (102 recommended). (5 units)

122. Probability and Statistics I

Sample spaces; conditional probability; independence; random variables; discrete and continuous probability distributions; expectation; moment-generating functions; weak law of large numbers; central limit theorem. Prerequisite: MATH 14. (5 units)

123. Probability and Statistics II

Confidence intervals and hypothesis testing. Maximum likelihood estimation. Analysis of variance (ANOVA) and analysis of categorical data. Simple and multiple linear regression. Optional topics may include sufficiency, the Rao-Blackwell theorem, logistic regression, and nonparametric statistics. Applications. Prerequisites: MATH 53 or permission of instructor, and MATH 122. (5 units)

125. Mathematical Finance

Introduction to Ito calculus and stochastic differential equations. Discrete lattice models. Models for the movement of stock and bond prices using Brownian motion and Poisson processes. Pricing models for equity and bond options via Black-Scholes and its variants. Optimal portfolio allocation. Solution techniques will include Monte Carlo and finite difference methods. Also listed as FNCE 116, FNCE 3489, and AMTH 367. Prerequisites: MATH 53 or permission of instructor and MATH 122 or AMTH 108. (5 units)

133. Logic and Foundations

Deductive theories. Theories and models. Consistency, completeness, decidability. Theory of models. Cardinality of models. Some related topics of metamathematics and foundations. Open to upper-division science and mathematics students and to philosophy majors having sufficient logical background. Offered on demand. (5 units)

134. Set Theory

Naive set theory. Cardinal and ordinal arithmetic. Axiom of choice and continuum hypothesis. Axiomatic set theory. Offered on demand. (5 units)

141. Mathematical Models

Matching the real world with mathematical structure using such things as differential equations, difference equations, and stochastic processes, at the instructor's discretion. Topics related to continuous or discrete models may be selected from topics, including the following: qualitative analysis, simulation, parameter estimation, steady-state analysis, shock waves, random walks, Markov chains, agent-based models, and cellular automata. Offered in alternate years. Prerequisites: MATH 53 and one of MATH 22, 23, and AMTH 106. (5 units)

144. Partial Differential Equations

Linear partial differential equations with applications in physics and engineering, including wave (hyperbolic), heat (parabolic), and Laplace (elliptic) equations. Solutions on bounded and unbounded domains using Fourier series and Fourier transforms. Introduction to nonlinear partial differential equations. Offered in alternate years. Prerequisite: MATH 14. Recommended: MATH 22 or 23 or AMTH 106. (5 units)

146. Optimization I

Methods for finding local maxima and minima of functions of multiple variables in either unconstrained or constrained domains: the Hessian matrix; Newton's Method; Lagrangians; Karush-Kuhn-Tucker conditions; Convexity and Convex Programming; Methods for determining functions that optimize an objective, like maximizing profit or minimizing task completion time; Calculus of variations; Optimal control; and Deterministic dynamic programming. Also listed as CSCI 146. Prerequisites: CSCI 10 (or prior programming experience), MATH 14, and MATH 53. (5 units)

147. Optimization II

Algorithms for computing local and global optima. Stochastic dynamic programming. Numerical methods for finding local optima, including gradient descent and Nelder-Mead. The simplex method for linear programming and the duality of zero-sum games. Metaheuristics for approximating global optima. Also listed as CSCI 147. Prerequisites: MATH 122 and MATH/CSCI 146. (5 units)

153. Intermediate Analysis I

Rigorous investigation of the real number system. Concepts of limit, continuity, differentiability of functions of one real variable, uniform convergence, and theorems of differential and integral calculus. Offered in alternate years. Prerequisite: MATH 51 and either 102 or 105. (5 units)

154. Intermediate Analysis II

Continuation of MATH 153. Offered in alternate years. Prerequisite: MATH 153. (5 units)

155. Ordinary Differential Equations

Systems of linear differential equations with constant coefficients. Numerical methods and applications. Autonomous systems, critical points, and stability of linear and nonlinear systems. Elementary Liapunov theory. Existence and uniqueness of solutions. Offered in alternate years. Prerequisite: MATH 53 or permission of instructor. Recommended: MATH 22 or 23 or AMTH 106. (5 units)

166. Numerical Analysis

Numerical algorithms and techniques for solving mathematical problems. Linear systems, integration, approximation of functions, solution of nonlinear equations. Analysis of errors involved in the various methods. Direct methods and iterative methods. Also listed as CSCI 166. Prerequisites: CSCI 10 or equivalent, and MATH 53, or permission of the instructor. (5 units)

170. Development of Mathematics

A selection of mathematical concepts with their historical context. Offered in alternate years. Prerequisite: Upper-division standing in a science major. (5 units)

172. Problem Solving

Use of induction, analogy, and other techniques in solving mathematical problems. Offered in alternate years. (5 units)

174. Differential Geometry

Introduction to curves and surfaces. Frenet-Serret formulas, Gauss' Theorema Egregium, Gauss-Bonnet theorem (as time permits). Offered in alternate years. Prerequisite: MATH 53. (5 units)

175. Theory of Numbers

Fundamental theorems on divisibility, primes, congruences. Number theoretic functions. Diophantine equations. Quadratic residues. Offered in alternate years. Prerequisite: MATH 52. (5 units)

176. Combinatorics

Permutations and combinations, generating functions, recursion relations, inclusion-exclusion, Pólya counting theorem, and a selection of topics from combinatorial geometry, graph enumeration, and algebraic combinatorics. Prerequisite: MATH 51. (5 units)

177. Graph Theory

Selected topics from planarity, connectedness, trees (enumeration), digraphs, graph algorithms, and networks. Offered in alternate years. Prerequisite: MATH 51. (5 units)

178. Cryptography

History, classical cryptosystems, stream ciphers, AES, RSA, discrete log over finite fields and elliptic curves, and signatures. This course followed by CSCI 181. (5 units)

190. Upper-Division Seminars

Advanced topics in algebra, geometry, or analysis. Research projects. May be repeated for credit. (1--5 units)

192. Undergraduate Research

Research project supervised by a faculty member in the department. Prerequisite: Permission of the professor directing the research must be secured before registering for this course. (1--5 units)

195. Math Education and Social Justice

This course will examine issues of social justice surrounding mathematics education in U.S. public schools. Topics may include problem solving and pedagogical methods, learning challenges, diversity, accessibility, and educational technology. Students will explore these topics while interacting with local students in high schools that serve students from socially- and economically-disadvantaged communities. Students will provide support and guidance to precalculus students and serve as higher education role models, while also gaining insight into public mathematics

education issues through personal interactions with teachers and students. Students will learn, reflect, analyze and integrate through their personal interactions, structured written critical reflections, in-class discussions, and a final research project. (5 units)

197. Advanced Topics

Areas of mathematics not ordinarily covered in regularly scheduled courses, often areas of current interest. May be repeated for credit. (5 units)

198. Internship/Practicum

Guided study related to off-campus practical work experience in mathematics or statistics. Enrollment restricted to majors or minors of the department. Prerequisite: Approval of a faculty sponsor. (1 unit)

199. Independent Study

Reading and investigation for superior students under the direction of a staff member. This can be used only to extend, not to duplicate, the content of other courses. May be repeated for credit. (1--5 units)

Lower-Division Courses: Computer Science

3. Introduction to Computing and Applications

An overview course providing multiple perspectives on computing. Students will learn the structures of computer programming without writing code, gain high-level understanding of important computing systems such as the Internet and databases, and discuss the impact of technology on society. Offered on demand. (4 units)

10. Introduction to Computer Science

Introduction to computer programming and computer science. Basic programming structures, conditionals, loops, functions, arrays. Topics relating to the applications of and social impact of computing, including privacy, artificial intelligence, computation in physics, psychology, and biology. Discussion of cryptography, computation through history, networks, hardware. Includes weekly lab. CSCI 10 may be taken for credit if the student has received credit for COEN 10, but not COEN 11 or a similar introductory programming course. (5 units)

60. Object-Oriented Programming

Object-oriented programming techniques using C++: abstract data types and objects; encapsulation; inheritance; polymorphism; the Standard Template Library; the five phases of software development (specification, design, implementation, analysis, and testing). Includes weekly lab. Prerequisite: A grade of C− or better in CSCI 10 or equivalent. (5 units)

61. Data Structures

Specification, implementations, and analysis of basic data structures (stacks, queues, graphs, hash tables, binary trees) and their applications in sorting and searching algorithms. Prerequisite: A grade of C− or better in CSCI 60 or equivalent. CSCI 61 and COEN 12 cannot both be taken for credit. (4 units)

90. Lower-Division Seminars

Basic techniques of problem solving. Topics in computer science. (1--4 units)

Upper-Division Courses: Computer Science

Note: Although CSCI 10 is not explicitly listed as a formal prerequisite, some upper-division courses suggested for computer science majors may presuppose the ability to write computer programs in some language. A number of upper-division courses do not have specific prerequisites. Students planning to enroll should be aware, however, that all upper-division courses in computer science require some level of maturity in computer science and mathematics. Those without a reasonable background in lower-division courses are advised to check with instructors before enrolling.

127. Computer Simulation

Techniques for generation of probability distributions. Monte Carlo methods for physical systems. Applications of computer models, for example, queuing, scheduling, simulation of physical or human systems. Offered on demand. Prerequisite: CSCI 10 or equivalent (MATH 122 recommended). (5 units)

146. Optimization I

Methods for finding local maxima and minima of functions of multiple variables in either unconstrained or constrained domains. The Hessian matrix; Newton's Method; Lagrangians. Karush-Kuhn-Tucker conditions; Convexity and Convex Programming.;Methods for determining functions that optimize an objective, like maximizing profit or minimizing task completion time; Calculus of variations; Optimal control; and Deterministic dynamic programming. Also listed as MATH 146. Prerequisites: CSCI 10 (or prior programming experience), MATH 14, and MATH 53. (5 units)

147. Optimization II

Algorithms for computing local and global optima. Stochastic dynamic programming. Numerical methods for finding local optima, including gradient descent and Nelder-Mead. The simplex method for linear programming and the duality of zero-sum games. Metaheuristics for approximating global optima. Also listed as MATH 147. Prerequisites: MATH 122 and MATH/CSCI 146. (5 units)

161. Theory of Automata and Languages

Classification of automata, formal languages, and grammars. Chomsky hierarchy. Representation of automata and grammars, BNF. Deterministic and nondeterministic finite state automata. Regular expressions and languages. Push-down automata. Context-free languages. Context-sensitive grammars and linear bounded automata. Recursively enumerable languages. Turing machines; normal forms; undecidability. Prerequisite: MATH 51 or equivalent. (5 units)

162. Computational Complexity

Turing machines. Undecidable problems. Time- and space-bounded complexity classes. Reducibility and completeness. P vs. NP. Offered in alternate years. Prerequisite: MATH 51. (5 units)

163. Theory of Algorithms

Introduction to techniques of design and analysis of algorithms: asymptotic notations and running times of recursive algorithms. Design strategies: brute-force, divide and conquer, decrease and conquer, transform and conquer, dynamic programming, greedy technique. Intractability: P and NP, approximation algorithms. Also listed as COEN 179. Prerequisites: MATH 51; and either CSCI 61 or COEN 12, or equivalents, with a grade of C- or above. (5 units)

164. Advanced Theory of Algorithms

Advanced techniques for the design, analysis, and implementation of algorithms with an emphasis on graph algorithms and application: routing and shortest paths, network flow, vertex coloring, social network analysis and geometric/topological graph algorithms. Prerequisites: CSCI 163 or COEN 179. (5 units)

165. Data Privacy and Algorithmic Fairness

The theoretical foundations of data privacy and algorithmic fairness for applications including machine learning, graph analysis, quantifying bias in statistical models, and socially-aware algorithm design. Emphasis on research skills such as designing project proposals, reading academic papers, presenting and critiquing work-in-progress, and producing a final research project. Prerequisites: MATH 51 and CSCI 10; CSCI 163 and basic probability recommended. (5 units)

166. Numerical Analysis

Numerical algorithms and techniques for solving mathematical problems. Linear systems, integration, approximation of functions, solution of nonlinear equations. Analysis of errors involved in the various methods. Direct methods and iterative methods. Also listed as MATH 166. Prerequisites: CSCI 10 or equivalent, and MATH 53 or permission of the instructor. (5 units)

168. Computer Graphics

Systematic and comprehensive overview of interactive computer graphics, such as mathematical techniques for picture transformations and curve and surface approximations. Prerequisites: CSCI 10 or equivalent, and MATH 13. (5 units)

169. Programming Languages

Comparative study of major classes of programming languages, with particular focus on functional programming. Introduction to theoretical definitions of languages and run-time concerns, with emphasis on strong points and weak points of various languages and on using the appropriate language for a given task. Programs written in several languages (e.g., Python, Java, Scala). Prerequisites: CSCI 61 and MATH 51, or permission of the instructor. (5 units). Credit will NOT be granted for both CSCI 169 and COEN 171.

180. Computer Security

Fundamental security topics may include, but are not limited to, security principles, operating system security, access control, memory safety, software and system security, authentication and impersonation, threats and attacks, web security, and network security. Prerequisite: COEN 20. (5 units)

181. Applied Cryptography

Key management, hash functions, stream ciphers, Web of trust, time stamping, secret sharing, quantum cryptography, running time analysis, cryptanalytic techniques. Prerequisites: MATH 178 and CSCI 60 or permission from instructor. (5 units)

182. Web and Data Mining

Web and data mining paradigms, data pre-processing and analysis, information retrieval and search engines, text analysis, link analysis, ranking, advanced topics. Prerequisites: A grade of C- or above in CSCI 61 or equivalent, and MATH 53 and 122, or permission of the instructor. CSCI 169 strongly recommended. (5 units)

183. Data Science

Data manipulation, analysis, and visualization. Statistical modeling, dimension reduction and techniques of supervised and unsupervised learning. Big data software technologies. Prerequisites: A grade of C- or above in CSCI 61 or equivalent, and MATH 53 and 122, or permission of the instructor. CSCI 169 strongly recommended. (5 units)

184. Applied Machine Learning

Introduction to machine learning. Selected topics from supervised and unsupervised learning. Current applications and technologies in machine learning development. Prerequisite: A grade of C- or above in CSCI 183. (5 units)

187. The Design and Management of Software

Students will learn best practices for the design and implementation of large software projects, including building their own quarter-long programming project. In addition to discussing and enacting the systems development life cycle, students will learn the basics of user experience design and formal software verification. Prerequisite: A grade of C- or better in CSCI 61, COEN 70, or COEN 79. Credit will not be given for both CSCI 187 and COEN 174. (5 units)

190. Upper-Division Seminars

Advanced topics in computer science. Research projects. May be repeated for credit. (1--5 units)

192. Undergraduate Research

Research project supervised by a faculty member in the department. Permission of the professor directing the research must be secured before registering for this course. (1--5 units)

197. Advanced Topics

Areas of computer science not ordinarily covered in regularly scheduled courses, often areas of current interest. May be repeated for credit. (5 units)

198. Internship/Practicum

Guided study related to off-campus practical work experience in computer science. Enrollment restricted to majors or minors of the department. Prerequisite: Approval of a faculty sponsor. (1 unit)

199. Independent Study

Reading and investigation for superior students under the direction of a faculty member. This course can be used only to extend, not to duplicate, the content of other courses. May be repeated for credit. (1--5 units)

Department of Modern Languages and Literatures

Professor Emeritus: Francisco Jiménez

Professors:, Catherine R. Montfort

Associate Professors: Jimia Boutouba (Department Chair), Josef Hellebrandt, Jill L. Pellettieri, Alberto Ribas-Casasayas, Tonia Caterina Riviello

Assistant Professors: Abel Cruz Flores, Evelyn Ferraro, José Ortigas, Tripp Strawbridge, Juliana Blair Watson

Senior Lecturers: Marie Bertola, Irene Bubula-Phillips, Nina Tanti

Lecturers: Maria Bauluz, Laura Callahan, Seiko Horibe Fujii, Yujie Ge, Mohammed Kadalah, Ariel Schindewolf, Mai Takeuchi, Hsin-Hung Yeh

The Department of Modern Languages and Literatures educates students to be global citizens prepared to confront the complex challenges of our 21st century's interdependent world community. Our faculty of professional language educators and scholars integrates the teaching of language and culture throughout our curricula in order to enable students to communicate effectively across cultures; to appreciate cultural diversity; to interpret and discuss words, images, texts, and discourses in their sociocultural context; and to identify and analyze problems across cultural and national boundaries. With rigorous, high-quality programs deeply rooted in our Jesuit values and in the principles of the liberal arts experience, we offer students unique learning experiences, both in and out of the classroom, which enrich their personal lives, help them discern a future career path, and prepare them to compete locally and globally for a wide variety of careers.

The Department of Modern Languages and Literatures offers courses in Arabic, Chinese, French, German, Italian, Japanese, and Spanish, as well as degree programs leading to the Bachelor of Arts in French and Francophone studies, Italian studies, and Spanish studies. Honors programs are available for French majors. The department offers minors in French and Francophone studies, Italian studies, Japanese studies, and Spanish studies. Students can also combine language studies, especially Arabic, Chinese, or German with interdisciplinary minors (e.g., Arabic, Islamic, and Middle Eastern studies; Asian studies; international studies; international business) or an individual studies major, which is offered by the College of Arts & Sciences.

Many modern languages and literatures' courses fulfill Core requirements, including the Core Second Language requirement, Cultures & Ideas (1, 2, 3), Diversity, Civic Engagement, ELSJ, and several Pathways. All courses are open to any student with the requisite preparation. Some of these courses are offered in English as noted in the course descriptions. Courses offered in English do not fulfill the Core Second Language requirement.

A placement recommendation is a prerequisite for all SCU language courses. All students must complete the language placement process prior to registering for their first language course at SCU. See the Department of Modern Languages and Literatures' website for more information on the placement process. Study abroad is a valuable enhancement of the undergraduate experience and is particularly recommended for students pursuing a major or minor in a foreign language. Both the Global Engagement Office and the student's modern languages' advisor should be consulted to ensure appropriate integration of the work done abroad into the student's program of study.

Requirements for the Majors

In addition to fulfilling Undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in modern languages and literatures must complete the following departmental requirements for their specific major:

Major in French and Francophone Studies

- FREN 100, 101 (in any order),or department-approved substitutions
- At least one course in French and Francophone literatures
- Remaining electives in French and Francophone studies to total 40 quarter upper-division units chosen with the approval of the student's major advisor. At least 20 of these units must be taken at SCU or taught by SCU faculty.

Major in Italian Studies

- ITAL 100 and 101, or department-approved substitutions
- Remaining electives in Italian language, literature, and culture to total 40 quarter upper-division units, chosen with the approval of the Italian advisor. At least 20 of these units must be taken at SCU or taught by SCU faculty.

Major in Spanish Studies

The major consists of a total of 40 upper-division units, 20 units must be taken at SCU or taught by SCU faculty

- One course from 100 or 101 (or 101M)
- One course from 102 or 103
- One course from 100 to 110 (not taken to fulfill the above two requirements)
- Spanish 175 or 176, or an approved equivalent
- One course in literature and culture studies above 110
- One additional course above 110 (not taken to fulfill the above requirements)
- Any two upper-division (100-199) Spanish courses not taken to satisfy any of the above requirements.

Requirements for the Minors

Students must fulfill the following requirements for the specific minor in modern languages and literatures:

Minor in French and Francophone Studies

- FREN 100, 101 (in any order), or department-approved substitutions
- At least one course in French and Francophone literatures
- Remaining electives to total at least 19 quarter units of upper-division work in French and Francophone Studies. At least 10 of these units must be taken at SCU or taught by SCU faculty.

Minor in Italian Studies

- ITAL 100 and 101, or department-approved substitutions
- Remaining electives to total at least 19 quarter units of upper-division work in Italian. At least 10 of these units must be taken at SCU or taught by SCU faculty.

Minor in Japanese Studies

- JAPN 100, 101, and 102, or department-approved substitutions
- Remaining electives to total at least 19 quarter units of upper-division work in Japanese. At least 10 of these units must be taken at SCU or taught by SCU faculty.

Minor in Spanish Studies

- One course from 100 or 101

- One course from 102 or 103
- One course in literature above 110
- One upper division elective not taken to fulfill the above three requirements

Lower-Division Courses: Arabic Studies

1. Arabic Language and Culture I

This course introduces students to Modern Standard Arabic (MSA) and the cultures of the Arabic-speaking world. Through the four basic skills of listening, speaking, reading, writing, as well as cultural knowledge, students will acquire basic knowledge and understanding in the writing system; sounds and pronunciation of Arabic letters; Arabic grammar; writing and reading basic sentences; and building a list of vocabulary in MSA and colloquial Arabic. (4 units)

2. Arabic Language and Culture II

A continuation of ARAB 1 designed for students to acquire additional vocabulary, the rules of Arabic grammar, and reading more complex materials. MSA through Al-Kitaab series textbooks will be used to allow students to acquire additional knowledge and understanding in many areas of the Arabic language. Students in this course are exposed to authentic reading and listening materials that are of more depth and length than those used in ARAB 1. Prerequisite: ARAB 1 or Placement Test recommendation. (4 units)

3. Arabic Language and Culture III

A continuation of ARAB 2 in which students will acquire additional vocabulary, a more advanced understanding of Arabic grammar, and will write and read more complex materials with comprehension of case system and sentence structure. MSA through Al-Kitaab series textbooks will be used to allow students to acquire additional knowledge and understanding in the structure of the Arabic language. Students in this course are exposed to authentic reading and listening materials through lectures, discussions, exercises, and communicative language activities. Prerequisite: ARAB 2 or Placement Test recommendation. (4 units)

11A. Cultures & Ideas: Arabic Media, Culture, and Politics

Students will learn how media, culture and politics intersect in the contemporary Arab Middle East. Students will examine the role of the evolving Arab media landscape in shaping the socio-political information environment in Arab countries. Topics include Arab Enlightenment & Nationalism, Arab press, rise of satellite television, the Al-Jazeera phenomenon, censorship and free speech. Does NOT satisfy the CORE language requirement. Prerequisites: NONE (4 units)

12A. Cultures & Ideas: Arabic Media, Culture, and Politics

Students will learn about the Arab Spring (AS) and the role of media, journalistic writings, short films, songs, social media, and reporting. They will examine authoritarianism in the Middle East, the sociology of social movements and uprisings. The course will include case studies of the uprisings in Tunisia, Libya, Syria, Yemen, and Egypt. It scrutinizes the dynamics of the uprisings, demonstrations, activists, and eye witness accounts. Does NOT satisfy the CORE language requirement. Prerequisites: NONE (4 units)

21. Arabic Language and Culture IV

This course is intended for students who completed ARAB 3 or equivalent. Students will learn to understand short to medium length texts, write longer complex sentences using connectors such as and, but, in addition, etc. describe a variety of real life situations and topics such as describing a city, a friend, a place, etc. Students will learn to communicate effectively in social situations such as introducing one's lifestyle, habits, hobbies, ordering food, etc. Students will present and explain in Arabic social and cultural aspects of Arabic culture such as music, holidays, and education. Students will compare elements in Arabic culture with their own culture. Prerequisite: ARAB 3 or Placement Test recommendation. (4 units)

22. Arabic Language and Culture V

Continuation of Intermediate ARAB 21 with focus on building additional vocabulary, using Arabic-English dictionary, reading and discussion of Arabic texts dealing with the literature, arts, geography, history, and culture of the Arabic-speaking world. The teaching/learning process in this level is proficiency-oriented where emphasis is placed on the functional usage of Arabic, in social interactions, greetings, and the discovery and appreciation of the rich cultural diversity of the Arab world and its place in the global arena.. Prerequisite: ARAB 21 or Placement Test recommendation. (4 units)

23. Arabic Language and Culture VI

Continuation of ARAB 22 with focus on grammatical and linguistic structure in texts dealing with the literature, arts, geography, history, and culture of the Arabic-speaking world. The teaching/learning process in this level is proficiency-oriented where emphasis is placed on the functional usage of Arabic. Prerequisite: ARAB 22 or Placement Test recommendation. (4 units)

50. Intermediate Arabic Conversation

This course focuses on the spoken Arabic dialect of the Levant (Lebanon, Syria, Jordan, and Palestine) as one of the major Arabic dialects spoken and understood in the Arab world. The course is a combination of lecture, discussion, exercises, and communicative language activities. It aims to develop conversational skills focusing on the use of topic-structured drills and activities that are appropriate to the context in which the language will be spoken. Representative examples of colloquial literature, plays, songs, and TV series will be introduced. Colloquial Arabic will be the primary language of instruction. (4 units)

Upper-Division Courses: Arabic Studies

137. Modern Arabic Culture and Society

This course will introduce the students to the major aspects of Arabic and Islamic culture in the context of the complex history of the Arabic world. It will include coverage of religious and ethnic diversity, language, the Arabic family structure, values, traditions, and customs. Arabic literature and poetry from the classical period to the present will be introduced. The Arabic visual and performing arts, music, food, and clothing will be covered. This course is open to all upper-division students who are interested in learning about Arabs and their culture. This course is taught in English; knowledge of Arabic is desirable but not required. Course does not fulfill University Core foreign language requirement. (5 units)

171. Reading the Quran

This class will introduce students to the Quranic discourse in English translation as a literary product of 7th-century Arabia. No prior knowledge of Arabic or the Quran is required, though it is encouraged. The Quran is the sacred scripture of 2 billion Muslims, or 1 in 4 people in the world, and by 2030 it is estimated that 1 in 3 people will be Muslim. Yet, few Americans have ever read the Quran and even fewer understand its literary significance. This class

looks at the Quran within its historical context, first as an aural experience, and second as a written scripture unfolding over the course over the 23-year mission of the Prophet Muhammad. For 1,400 years, the Quran has served as the gold standard of the Arabic language and the pinnacle of Arabic literary and linguistic achievement. Course is taught in English. Prerequisite: None. (5 units)

185. Arab Americans: History, Literature, and Culture

This course explores how Arab-Americans write about and reflect on being American. We will explore themes such as immigration, citizenship, religious differences, gender relations, cultural politics and cross-cultural encounters. Our course will be oriented toward answering important questions such as: How did Arabs blend into American society and became American? Why are Arab-Americans concentrated in Michigan, New York, and California? How did they recreate their communities? How did historical events shape and influence their writing and texts? What traditions and cultural practices have they preserved, e.g., foods, language, religion? We will explore how writers and filmmakers elaborate new modes and spaces of representation; how they address issues of marginalization, race, gender, identity, cultural hybridity and intergenerational conflicts. Course taught in English. Does NOT satisfy the CORE language requirement. Prerequisites: NONE (5 units)

194. Peer Educator in Arabic

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

199. Directed Reading

Individually designed programs of advanced readings. Written permission of the instructor and department chair is required in advance of registration. (1--5 units)

Lower-Division Courses: Chinese Studies

1. Introduction to Chinese Language and Chinese-Speaking Cultures I

Designed for those having no previous study of Mandarin Chinese. A proficiency-based course emphasizing the four critical communicative language skills (listening, speaking, reading, and writing). Development of a cultural understanding of Chinese and Chinese-speaking communities. No prerequisite. (4 units)

2. Introduction to Chinese Language and Chinese-Speaking Cultures II

Continuation of CHIN 1, Chinese 2 continues basic training in the four critical communicative language skills. Further development of cultural understanding of Chinese and Chinese-speaking communities. Prerequisite: Chinese 1 or Placement Test Recommendation. (4 units)

3. Introduction to Chinese Language and Chinese-Speaking Cultures III

CHIN 3 completes first-year Chinese. This course emphasizes the development of the four critical communicative language skills (listening, speaking, reading, and writing). Development of a cultural understanding of Chinese and Chinese-speaking communities. Prerequisite: CHIN 2 or Placement Test recommendation. (4 units)

21. Chinese Language and Chinese-Speaking Cultures I

The first course in a three-part learning of the fundamentals of spoken and written Mandarin Chinese at the intermediate level. Progressive and authentic readings and exercises in conversation and composition. Development of a cultural understanding of Chinese and Chinese-speaking communities. Prerequisite: CHIN 3 or Placement Test recommendation. (4 units)

22. Chinese Language and Chinese-Speaking Cultures II

Continuation of CHIN 21, CHIN 22 focuses on Chinese and Chinese-speaking cultures , together with progressive development of all Chinese language skills and cultural literacy. Broadening appreciation of Chinese cultures and Chinese-speaking communities through authentic readings and discussions. Prerequisite: CHIN 21 or Placement Test recommendation. (4 units)

23. Chinese Language and Chinese-Speaking Cultures III

Completion of Intermediate Chinese. The successful completion of Intermediate Chinese may prepare students for Upper-Division courses in broader Chinese cultures and other aspects in Chinese-speaking communities. Prerequisite: CHIN 22 or equivalent. (4 units)

Upper-Division Courses: Chinese Studies

100. Advanced Chinese I

This course is aimed at expanding the student's vocabulary in written and spoken Chinese, and developing the ability to comprehend and use complex grammatical structures with ease. Course conducted in Chinese. Prerequisite: CHIN 23 or equivalent. (5 units)

101. Advanced Chinese II

The second in a series of three courses, CHIN 101 is aimed at expanding vocabulary in written and spoken Chinese, and developing the ability to comprehend and use complex grammatical structures with ease. Course conducted in Chinese. Prerequisite: CHIN 100 or Placement Test recommendation. (5 units)

102. Advanced Chinese III

This course completes the advanced Chinese series and is aimed at expanding the vocabulary in written and spoken Chinese and developing an ability to comprehend and use complex grammatical structures with ease. Course conducted in Chinese. Prerequisite: CHIN 101 or equivalent. (5 units)

125. Language of Love in Sinophone Films

This course is an introduction to cinemas in Sinophone (Chinese-speaking) communities, with a special focus on the representation and the language of love (family, friends, romance, etc.). Beyond \"what\" is represented, students are expected to explore \"how\" and \"why\" love is represented and the embedded sociocultural and sociolinguistic aspects. This introductory course is discussion-based and invites students from various cultural backgrounds to participate via comparisons with their own cultural products and perspectives. This course is taught in English, and it does not fulfill the Second Language Core Requirement. PREREQUISITES: NONE (5 Units)

127. Chinese History and Culture

This course introduces students to key aspects of China's history and culture. This course explores the legacies of various dynasties and significant historical events and figures in chronological order; and introduces traditional Chinese ideology, traditions and values, arts and crafts, folk customs, etc. Course conducted in Chinese. Prerequisite: Two years of Chinese language or equivalent. (5 units)

137. Modern Chinese Culture

This course introduces students to the culture in modern China through literature (fiction and other reading matter), popular music, and film with an emphasis on business etiquette and culture in China. All readings are in English. No Chinese language is required, though students with Chinese language background are encouraged to work with Chinese sources if they wish. This course does not fulfill the University Core foreign language requirement. Prerequisite: None. (5 units)

194. Peer Educator in Chinese

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

197. Special Topics

Variable topics in culture, literature, and film. May be retaken for credit. (5 units)

198. Directed Study

Individually designed programs of advanced study. Restricted to seniors who find themselves in special circumstances (i.e., Asian studies or international studies minors). May be taken only once. Courses exempted from challenge may not be taken as directed study. Prerequisite: Written course outline must be approved by instructor and department chair in advance of registration. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. Prerequisite: Written permission of the instructor and department chair is required in advance of registration. (1--5 units)

Lower-Division Courses: French and Francophone Studies

1N. Introduction to Elementary French I

This course is designed to develop basic communicative skills in preparation for FREN 1 and FREN2. Conducted in level-appropriate French. Prerequisite: Placement Test survey recommendation. (4 units)

1. Introduction to French Language and Francophone Cultures I

FREN 1 is an elementary, proficiency-based course, which aims to develop students' communicative language skills and intercultural competence. It requires active in-class performance, emphasizing interaction (speaking, viewing/listening, reading, writing) in authentic contexts and engagement with French and Francophone cultures and perspectives. Conducted in French. Prerequisite: Placement Test survey and test recommendation. (4 units)

2. Introduction to French Language and Francophone Cultures II

FREN 2 expands students' communicative language skills and Intercultural competence. This proficiency-based course requires active participation in class, emphasizing interaction (speaking, viewing/listening, reading, writing) in authentic contexts and engagement with French and Francophone cultures and perspectives. Offered only in winter. Course conducted in French. Prerequisite: French 1 OR a Placement Test recommendation. (4units)

3. Introduction to French Language and Francophone Cultures III

This course continues to expand students' communicative language skills and intercultural competence. This proficiency-based course requires active participation in class, emphasizing interaction (speaking, viewing/listening, reading, writing) in authentic contexts and engagement with French and Francophone cultures and perspectives. Offered only in Spring. Course conducted in French. Prerequisite: French 2 OR a Placement Test recommendation. (4units)

11A. Cultures and Ideas: The French-Speaking World

Part 1 of two part course in the study of the French-speaking world. Does NOT satisfy the CORE language requirement. Prerequisites: NONE(4 units)

12A. Cultures and Ideas: The French-Speaking World

Part 1 of two part course in the study of the French-speaking world. Does NOT satisfy the CORE language requirement. Prerequisites: NONE (4 units)

21. French Language and Francophone Cultures I

This intermediate-level course focuses on real-world language use, the integration of French and Francophone cultures and the development of students' reading, writing, listening and speaking skills. The course reviews first-year grammar while introducing new vocabulary and structures. It emphasizes engagement with authentic materials in order to deepen students' cultural awareness of the Francophone world and fosters critical thinking and reflection. Course taught in French. Prerequisite: FREN 3 OR a Placement Score and recommendation. (4 units)

21A. Close Encounters of a Different Kind: Tales and Legends from the Francophone World

This intermediate-level language course aims to improve the student's ability to speak, read, and write in French, to systematically review grammar previously studied, to master new vocabulary and concepts in French, and to enhance their knowledge of the cultural diversity of the French-speaking world through the study of (folk/fairy) tales and legends and the characters that inhabit them. Students will be introduced to a variety of oral and written art forms, customs, and material culture from different Francophone regions; they will sharpen their cultural and critical skills, and develop an active understanding of the importance of folk traditions (folklife) and the various ways they help us discover and express who we are and how we fit into the world. This course will heavily emphasize oral communication; students will be expected to speak in French in a number of situations ranging from question and answer to oral presentations, group work and/or situations. Prerequisite: FREN 3 or Placement Test Recommendation. (4 units)

22. French Language and Francophone Cultures II

This advanced intermediate-level course expands students' engagement with real-world language use and authentic materials in order to improve their communicative skills (reading, writing, listening, and speaking). The course also aims to deepen students' knowledge of Francophone cultures and societies and to foster their critical thinking and reflection. Offered only in winter. Prerequisite: FREN 21/21A OR a Placement Test score and recommendation. (4 units)

22A. Language, Film, & Youth Cultures

This advanced intermediate-level course is designed to provide students with the opportunity to improve their grammar as well as conversational and writing skills through the exploration of youth cultures as they are represented in French & Francophone Cinema. It is built around viewing and discussing feature-length French ilms to enable students to reach an advanced level of language proficiency and to foster a better understanding of contemporary French and Francophone cultures. The course will emphasize extensive grammar practice in speaking and writing in French as well as building practical vocabulary with an emphasis on comprehension and oral/written expression. PREREQUISITE: This course is offered to students who have successfully completed FREN 21 or FREN 21A or Placement Test score and recommendation. (4 units)

50. Intermediate French Conversation

A course concentrating on development of a student's ability to speak and understand various French accents. Film viewing each week. Recommended for students going abroad. Course includes French-speaking field trips and discussions with French visitors. No auditors. Prerequisite: FREN 22 or equivalent. (4 units)

Upper-Division Courses: French and Francophone Studies

100. Introduction to French and Francophone Studies

This foundational course provides students with a systematic review of the fundamental structures of French grammar and emphasizes the development of oral communication, cultural literacy, and analytic skills through different genres of cultural expression. In this course, students will gain a deeper insight into French thought, history, and culture. An essential course for studying abroad. Course conducted in French. Prerequisite: FREN 22/22A or Placement Test Recommendation. (5 units)

101. Introduction to Literary and Cultural Analysis

This is an introductory course on literary analysis preparing students to all subsequent upper-division courses in French and Francophone Studies. This course is designed to help students develop critical thinking and reflect on how language and culture impact the creation of meaning in different genres including prose, poetry, and theater. Students will acquire critical vocabulary and skills that they will apply to close readings of literary texts. Course conducted in French. Prerequisite: FREN 22, 22A, or 100 or Placement Test recommendation. (5 units)

102. Advanced French III

Variable topics in specific fields. Studies abroad. (Units vary based on program)

103. Critical Writing in French

This foundational course develops students' advanced writing skills in French so as to foster their analytical skills and creativity. Students will engage with different genres and learn about different aspects of advanced writing, including language, structure, description, various writing concepts and techniques that will help them develop more organized writing and a sophisticated argument in narrative form.It is recommended that all Majors and Minors take at least one advanced writing course.. Prerequisite: FREN 100 or equivalent. (5 units)

103A. (W)rites of Passage: French Writing Workshop

French 103A is a foundational course for students wishing to improve their written French. The class will be organized around the theme of youth and include the following topics: coming of age, self-discovery, falling in love, social justice and the university experience. College is, after all, a rite of passage that symbolically marks the end of childhood and the start of adulthood. This course therefore, is about rites of passage, but also writing the passage: exploring various writing styles, practices and techniques in order to develop your own "voice" and become a more creative, skilled and confident writer. It is recommended that all Majors and Minors take at least one advanced writing course. Prerequisite: FREN 100 or equivalent. (5 units)

104. The Art of Story-Telling: Creative Writing Workshop

In this writing workshop, students will craft creative stories in French based on their own life experiences as well as invent original pieces of fiction with more fantastical settings. The connection between reading and writing will be stressed and students will read texts from established authors for inspiration and to use as models to improve their own writing. Students will give and receive feedback on their writing from their peers and the instructor. The course will provide a full review of French grammar as students develop the ability to revise and edit their own work. If you love French and have a passion for story-telling, then this writing workshop is for you! It is recommended that all Majors and Minors take at least one advanced writing course. Prerequisite: FREN 100 or equivalent. (5 units)

105. Across Language Borders: Interpretation and Translation

This translation workshop will introduce students to the art and practice of translation. Students will learn to examine how meaning travels across cultural and linguistic borders and how translation serves as a tool for cross-cultural communication. We will focus on the process of translating by examining the structural and stylistic differences between English and French, and the issues of literalness, imitation, analogy, interpretation and cultural transfer. Although some of the reading material will be in English, the course will be conducted in French. It is recommended that all Majors and Minors take at least one advanced writing course. . Prerequisite: FREN 100 or equivalent. (5 units)

106. Oral Communication in French

Intensive oral practice of French in the context of socio-political issues and themes as they relate to contemporary French and Francophone societies. Extensive practice and debate will help students express themselves, understand French in a variety of situations and reflect about socio-political and cultural complexities. An added value of this course is its "practicum forum" which leads students to make audio sketches, reports, debates, mock interviews and thus assess their own ability and progress.Prerequisite: FREN 101 or equivalent. (5 units)

108. French Business Culture and Institutions

Basic French business terminology and practices. Business letter writing emphasized. Examination of French business institutions (agriculture, finance, advertising, transportation, etc.). Special emphasis on understanding the underlying cultural mores that make French business different from U.S. business. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units).

110. Contemporary France: Cultures, Society and Politics

In this course, students will take a close look at fundamental issues reflecting the rapidly changing dimensions of contemporary French culture and society. Through an interdisciplinary approach combining close readings of literary and historical texts, films, visual arts, as well as critical and theoretical articles, we will explore the social, political, and cultural evolution of France as well as gain a firm understanding of important historical events. Prerequisite: FREN 101 or equivalent. (5 units)

111. Introduction to the Francophone World

Cultural, political, economic, educational, and social aspects of the Francophone world. Exploration through literary works, film excerpts, newspapers, as well as critical articles of issues involving nationalism, race, gender, identity, and alienation. Geographic areas include the Caribbean, Morocco, sub-Saharan Africa, and Vietnam. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

113. Sub-Saharan African/Caribbean Women Writers

An introduction to literature written by sub-Saharan African/Caribbean women writers. Through literature (interviews, personal testimonies, novels, autobiography) and film (documentaries, movies), students will witness the changing faces of sub-Saharan Africa, from colonial times to the present, as seen through the eyes of women. Course conducted in French. Also listed as WGST 123. Prerequisite: FREN 101 or equivalent. (5 units)

114. Literatures and Cultures of the Maghreb

This course focuses on works by Francophone writers and filmmakers from North Africa (Morocco, Tunisia, Algeria). We shall examine the historical and aesthetic evolution of this literary and filmic production, and how it reflects on the colonial past and the postcolonial condition. Other topics include the way these writers and filmmakers seek to construct identities in the wake of profound cultural changes brought about by colonization, decolonization, immigration, and globalization, and how they expose the power conflicts along the lines of class, gender, race, ethnicity, and national belonging. Attention will also be devoted to the discursive strategies and filmmaking practices that they elaborate to address these issues in a resistant, subversive, and direct criticism. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

115. French Literature & Culture I

Readings in French literature from its beginnings in the Moyen Age to the end of the 18th century. Rotated topics include the theme of love, the comic, the writer's relationship to societies, the emerging genre of the theatre, etc. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

116. French Literature & Culture II

Readings in French literature of the 19th and 20th centuries. Rotated topics include drama, the novel, literature and the arts, experimentation (literary and dramatic), etc. Course conducted in French. May be taken independently of FREN 115. Prerequisite: FREN 101 or equivalent. (5 units)

117. French Orientalism: Representation of Otherness in Literature, Cinema, and Visual Arts

This course examines differing constructions of the Oriental "Other" as it took shape in French literary and non-literary representations from the 18th to the 21st century. We will analyze how politics and ideology inform the construction and reproduction of knowledge about the "Other" as well as the complex interactions between race, ethnicity, gender, sexuality, exoticism, and the various subject-object positions occupied by the observer, traveler, writer/voyeur. We will also analyze how these French writers, painters, photographers, travelers, and filmmakers have used alterity as a mirror for self-reflection, as a tool to critique sociopolitical practices, and as the locus of a threat to cultural homogeneity and national identity. This course will engage theories of Orientalism, identity and difference, and colonialism and postcolonialism. Selected literary texts, paintings and films include works by Montesquieu, Pierre Loti, Théophile Gautier, Flaubert, Delacroix, Matisse, Albert Camus, Allegret, and Coline Serreau. Prerequisite: FREN 101 or equivalent. (5 units)

140. Special Topics in French & Francophone Theatres

In this course, we will examine plays from the French and Francophone world, and the language of performance. We will center on the sociopolitical and cultural contexts of the plays as well as representations of critical issues such as class, gender, politics, sexuality, immigration, terrorism, as well as the role of language. We will look at theatre as a written text, an art form, a performance, and spectacle. Prerequisite: FREN 101 or equivalent. (5 units)

150. The French Revolution in a Global Context

This course focuses on the 18th century, called the century of light (meaning the "light" of "reason"), when French writers, philosophers, pamphleteers, artists, who considered themselves European and citizens of the world, shook off traditional authorities of kings, priests, fathers, and refused the legitimacy of ready-made ideas. We shall examine their ideals of liberty, equality, and justice and their attacks on war, colonialism, slavery, the death penalty, intolerance, and religious fanaticism. We will seek to discover the relationship between our societies and their legacy as that legacy had a global impact---inspiring the American and French revolutions. Readings of representative novels, short stories, "discours," letters and plays, and study of artworks in their cultural (political, social, historical) contexts. Prerequisite: FREN 101 or equivalent. (5 units)

171. 20th-Century France: War, Memory, and Trauma

This course will explore some of the major literary and artistic movements of the 20th century, such as the Engagée literature, the Anti-theatre, the New Novel, the New Wave. We will examine the aesthetic evolution of this literary and filmic production, and how it reflects on the profound cultural, social, political and historical changes in France. Class discussions, scholarly research and critical analysis form part of the course and foster the understanding and assimilation of basic methodological concepts and tools. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

172. Introduction to French Cinema

An examination of the evolution of style and theme in French cinema from its birth in 1895 to the present. Study of films by major directors (Renoir, Pagnol, Cocteau, Truffaut, Malle, Beineix, Diane Kurys). Main themes of French culture illustrated in the films. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

173. Immigration, Race, and Identity in Contemporary France

This course explores the experience of immigrants and their children to France as portrayed by authors and filmmakers from different origins. It centers on the historical and political circumstances that form the context of this artistic production and examines the theoretical problems involved in analyzing questions of immigration, marginalization, race, gender, ethnicity, and national identity in France. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

174. French and Francophone Novels and Films: Culture, Gender, and Class

Covers both French and Francophone novels (including novels from sub-Saharan Africa, the Caribbean, and Vietnam), and films based on the same texts. The goals are (1) to introduce students to French and Francophone culture through analysis of significant texts and through the lens of films, and (2) to develop critical skills of interpretation applicable to all disciplines. Course taught in French. (Note: At times, this course may be conducted in English but would contain a French component for French and Francophone studies majors and minors). Also listed as WGST 175. Prerequisite: FREN 101 or equivalent. (5 units)

175. Transnational Cinema

Increased mobility, new patterns of migration, demographic changes, and global exchanges characterize the development of a transnational film culture with its own trends and aesthetics. This course introduces students to the concept, practices, and the sociopolitical discourses of transnational filmmaking. Particular attention will be devoted to the historical and cultural contexts that have shaped the development of transnational cinemas, asking how this cinema reflects the cultural, social, linguistic, and political realities of an increasingly interconnected world. This course will also further students' understanding of film language and contemporary critical debates on global issues including multiculturalism, transnational identity, politics of location, cultural conflicts, displacement, diasporic practices, and "contact zones." Prerequisite: FREN 101 or equivalent. (5 units)

176. French Perspectives on Social Justice

The term social justice is an old one, dating back at least to Enlightenment France, but it is now more present than ever in 21st century politics and culture, especially in the debates over feminism, sexuality, race, immigration, inequality and environmentalism. This course examines the idea of social justice through the lens of French culture and history, and it raises the following questions: What is social justice? How has it been articulated or invoked? How can we gain insight into contemporary calls for social justice, both in France and around the world? Class discussions will be structured around short readings of French history and literature, as well as viewings of world cinema. Prerequisite: FREN 101 or equivalent. (5 units)

177. Technology, Science and Society: From Romanticism to the Digital Age

When we think of technology today, we tend to think of smartphones, social media and the Internet. Technology has come to be identified with what is only a particular kind (i.e., information technology), but the concept itself is far broader. Accordingly, this class seeks to study the formative influences and social impacts of technology and techno-culture. Its starting point will be the utopian science of nineteenth-century Paris, which saw the rise of photography, daguerreotypes, automata, panoramas and electrodynamics, amongst other interesting experiments. Such "romantic" technologies were described in terms of spiritual quest and self-expression, often in ways which anticipate contemporary obsessions with social media and technological progress. In order to explore both romantic and present-day understandings of technology and its social implications, we will establish a dialogue between nineteenth-century techno-culture and our current digital age. Prerequisite: FREN 101 or equivalent. (5 units)

182. Women in French Literature

Analysis of the representation of women in the works of major French writers, both male and female, from the Middle Ages to the 21st century. Provides information on French women writers' contributions with, as background, information on French women's roles and experiences throughout the ages. Special attention will be given to the continuity among women writers and to the impact of their minority status upon their writing. Readings set against the backdrop of the Monarchy, the French Revolution of 1789, the Napoleonic regime, the Franco-Prussian war, and the two World Wars will point out to an emerging feminist awareness that found expression in both literature and political activism. Course conducted in French. Also listed as WGST 176. Prerequisite: FREN 101 or equivalent. (5 units)

183. 20th- and 21st-Century French Women Writers

The varied literary contributions of French and Francophone writers such as Colette, Simone de Beauvoir, Marguerite Duras, Gabrielle Roy, Mariama Bâ, Linda Lê; their differing perceptions of the traditional stereotypes of women and perspectives related to social class. Consideration of whether feminine literature has unique qualities. Course conducted in French. Also listed as WGST 177. Prerequisite: FREN 101 or equivalent. (5 units)

185. French Applied Linguistics

Aspects of modern French linguistics (phonology, phonetics, morphology, syntax). Contrastive analysis. Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

186. Politics of Love

Students will focus on the theme of love (from the passionate love of Tristan and Iseult to the modern concept of love and marriage) and study how different literary movements have adapted love stories to reflect their values and their visions of the world. Why do these cultural representations and social constructions of the gendered human body and sexuality often show off the social insertion of the hero and the exclusion of feminine characters? In other words, what are the social, sexual, political consequences of the power games present in the love stories read this quarter? Course conducted in French. Prerequisite: FREN 101 or equivalent. (5 units)

194. Peer Educator in French

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

197. Special Topics

Variable topics in culture, literature, and film. May be retaken for credit. (5 units)

198. Directed Study

Individually designed programs of advanced study. Normally restricted to seniors who are declared French and Francophone studies majors or minors and who find themselves in special circumstances. May be taken only once. Courses exempted from challenge may not be taken as directed study. Prerequisite: Written course outline must be approved by instructor and department chair in advance of registration. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. Prerequisite: Written permission of the instructor and department chair is required in advance of registration. (1--5 units)

Literature and Culture in Translation Courses

Note: The following courses are literature and culture in translation courses taught in English and cannot be used to fulfill the undergraduate Core Curriculum second language requirement. One course may be counted toward the French and Francophone studies major. (Minors should plan to take courses taught in French.)

112. Human Rights in France, Sub-Saharan Africa, and the Caribbean

Provides a framework on France and its colonial empire, presents important male writings during the colonial period, and deals with texts written by women writers in a recent past. Focuses on cultural identity and human rights, yet special attention will be given to the ways in which self-representation is achieved by the female writing subject. Conducted in English but contains a French component for French and Francophone studies majors and minors. (5 units)

184. 20th-Century French Women Writers in Translation

Critical analysis of major works by leading women writers in France and the Francophone world such as Charlotte Delbo, Pierrette Fleutiaux, Annie Ernaux, Linda Lê, Anna Moï, Calixte Beyala, Marie Darrieussecq, Eliette Abecassis, Amélie Nothomb, Paula Dumont and Kim Thuy. Study of themes related to the 20th-century and contemporary French experience (the Shoah, World Wars, migrant experience, the Bosnian war, terrorism) in short stories, autobiographies, BD, migrant tales, and paintings. Conducted in English but contains a French component for French and Francophone studies majors and minors. (5 units)

Lower-Division Courses: German Studies

1. Elementary German I

Designed for those having no previous study of German. A proficiency-based course emphasizing communicative language skills (understanding, speaking, reading, and writing). Introduces students to the language and culture of German-speaking countries. Offered only in fall. Prerequisite: None. (4 units)

2. Elementary German II

The second in a series of three courses, GERM 2 emphasizes the development of communicative language skills (understanding, speaking, reading, and writing). Expands student exposure to language and culture of the cultures of German-speaking countries. Offered only in winter Prerequisite: GERM 1 or equivalent. (4 units)

3. Elementary German III

GERM 3 completes first-year German. This course emphasizes the development of communicative language skills (understanding, speaking, reading, and writing). Further increases student exposure to language and culture of German-speaking countries. Offered only in spring. Prerequisite: GERM 2 or equivalent. (4 units)

21. German Cities: From Berliners to Frankfurters to Leipzigers

With a focus on selected cities and regions from Germany, GERM 21 invites students to experience the culinary highlights of Germany's capital, the financial appeal of Germany's Mainhattan as well as Leipzig's role in Germany's reunification. In doing so, GERM 21 offers a review of the essentials of German grammar, short stories, or essays on culture and civilization. Prerequisite: GERM 3 or placement test recommendation (4 units)

22. Intermediate German II

Continuation of GERM 21. Expanded readings, conversation, and writing. Further development of students\' linguistic and cultural knowledge. Offered only in winter. Prerequisite: GERM 21, or Placement Recommendation, or equivalent. (4 units)

50. Intermediate German Conversation

Designed for the intermediate level, the course focuses on further developing students' conversational abilities and their cultural knowledge of German-speaking countries. Emphasis is placed on presentations and discussions of current events, contemporary films and a timely, authentic soap opera. It is recommended for students preparing for advanced course work or those pursuing stays or studies abroad. Prerequisites: GERM 22 or Placement Recommendation, or equivalent (4 units)

Upper-Division Courses: German Studies

100. Advanced German I

A language course aimed at expanding students' abilities in reading, listening, writing, and conversation, with a focus on written and oral expression. Required of all majors and minors. Offered every two years alternating with GERM 106. Prerequisite: GERM 22 or equivalent. (5 units)

101. Advanced German II

Deepening of students' abilities in all four language skills. Required of all majors and minors. Completion or equivalent knowledge admits students to higher-numbered courses. Offered every two years alternating with GERM 140. Prerequisite: GERM 100 or equivalent. (5 units)

106. Advanced German Conversation

This course promotes conversational practice in German. Focus will be on topics from contemporary German films and print media. Offered every two years alternating with GERM 100. Prerequisite: GERM 22 or equivalent. (5 units)

108. German Business Culture and Institutions

Introduction to the language of business German. Insights into Germany's place in the global economy. The topics, language, and skill-building exercises offer an excellent preparation for students who, after two years of college-level German, plan to pursue careers in international companies and institutions. At the same time, the materials are appropriate for German majors or minors who want to gain insight into contemporary German culture and civilization. (5 units)

110. History of German Civilization

Cultural history of the German-speaking countries from earliest times to 1945. Prerequisite: GERM 100 or equivalent. (5 units)

111. Contemporary German Civilization

Geography, culture, education, politics, and the economy in the German-speaking countries since 1945. Prerequisite: GERM 100 or equivalent. (5 units)

112. Germany in the Media

How do Germans and Americans view Germany? This course highlights the role of the media in portraying Germany's image inside and outside of Germany. It examines how print and electronic media in both countries present selected themes and topics in the following categories: arts, economy, education, politics, and the sciences; and how the media shape public opinion about Germany. (5 units)

113. German Film: From Fassbinder to Fatih Akin

This course introduces students to German cinema from the 1970s to the present. Through films such as *The Marriage of Maria Braun*, *Run Lola Run*, *Nowhere in Africa*, *Good Bye, Lenin!*, and *Gegen die Wand*, students gain insights into the cultural, social, and political history of modern Germany. Prerequisite: GERM 22 or equivalent. (5 units)

140. German Fairy Tales

German fairy tales and their origins across Europe. Selected works by the Grimm Brothers and their predecessors. Offered every two years alternating with GERM 101. (5 units)

150. 20th-Century Novel

Works by Kafka, Hesse, Thomas Mann, Christa Wolf, Böll, and others. (5 units)

160. The German Novelle

Characteristic features of the Novelle as opposed to Roman and Erzählung. Examples from Theodor Storm to Thomas Mann. (5 units)

174. German Novels and Films

Various topics will be covered. (5 units)

182. Women in German Literature: Authors and Characters

Works by and about German women. Authors studied include Droste-Hulshof, Böll, Wolf, Handke, Kaschnitz, Wander, and others. Also listed as WGST 179. (5 units)

194. Peer Educator in German

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

197. Special Topics

Variable topics in culture and literature. May be retaken for credit. (5 units)

198. Directed Study

Individually designed programs of advanced study. Normally restricted to seniors who are declared German studies majors or minors and who find themselves in special circumstances. May be taken only once. Courses exempted from challenge may not be taken as directed study. Written course outline must be approved by instructor and department chair in advance of registration. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. Written permission of the instructor and department chair is required in advance of registration. (1--5 units)

Literature in Translation Courses Taught in English

Note: The following course is a literature in translation course taught in English and cannot be used to fulfill the second language requirement. One course may be counted toward the German studies minor.

115. German Literature in English Translation

Reading and analysis of masterpieces of German literature written between 1750 and 1970. Selection dependent upon available translations. (5 units)

Lower-Division Courses: Italian Studies

1. Introduction to Italian Language and Culture I

This is the first in a series of three elementary-level courses that should be taken in sequence. ITAL 1 is designed for students with no prior experience with Italian. It emphasizes the development of communicative language skills and cultural competence. This proficiency-based course requires active participation in class. Offered only in Fall. The elementary sequence is highly recommended for students who intend to apply for a study abroad program in Italy. Prerequisite: none. (4 units)

2. Introduction to Italian Language and Culture II

This is the second in a series of three elementary-level courses. It emphasizes the development of communicative language skills and cultural competence. This proficiency-based course requires active participation in class. Offered only in Winter. The elementary sequence is highly recommended for students who intend to apply for a study abroad program in Italy. Prerequisite: ITAL 1 or equivalent course abroad or scoring at level 2 in the SCU placement exam. (4 units)

2A. Italian for Spanish Speakers II

This accelerated beginning Italian course, designed for students who are proficient speakers of Spanish, covers in one quarter materials usually taught in Elementary Italian 1 and Elementary Italian 2. A proficiency-based course, emphasizing the development of communicative language skills (understanding, speaking, reading and writing) and understanding of Italian culture. Prerequisites: either one year of college Spanish, or three years of high school Spanish; or be a native or heritage speaker of Spanish; or scoring at level 21 in the SCU Spanish placement exam. (4 units)

3. Introduction to Italian Language and Culture III

This course completes the first-year elementary Italian sequence. It emphasizes the development of communicative language skills and cultural competence. This proficiency-based course requires active participation in class. Offered only in Spring. The elementary sequence is highly recommended for students who intend to apply for a study abroad program in Italy. Prerequisite: ITAL 2 or equivalent course abroad or scoring at level 3 in the SCU placement exam. (4 units)

3A. Italian for Speakers III

Continuation of Italian 2A. Designed for students who are already proficient speakers of Spanish, it emphasizes the development of communicative language skills in Italian (understanding, speaking, reading and writing) and understanding of Italian culture. Prerequisites: ITAL 2A; or ITAL 2 paired with proficiency in Spanish: either three years of high school Spanish or one year of college Spanish, or be native or heritage speaker of Spanish. (4 units)

10EL. Introduction to Italian Language for Engineers

This course is designed for Engineering students with no prior experience with Italian, but it is open to all students. It emphasizes the development of communicative language skills, critical and cultural awareness, and commitment to engaged global citizenship through the exploration and discussion of three global issues: gender inequality, immigration and diversity, and sustainability and environmental justice. This course does not satisfy the CORE Second Language Requirement. This course satisfies the Core ELSJ Requirement and it requires participation in community-based learning (CBL) experiences. (4 units).

11A. Cultures and Ideas: Gateway of Culture

Italy, geographically situated at the crossroads between Europe, Asia, and Africa, has long been considered foundational for an understanding of Western culture. In this course, we will investigate Italy as a syncretic melting pot for modern and contemporary ideas and practices. In the first of this two-course sequence, we will focus on: the formation of Italy as a nation, ideas of modernity, colonialism, emigration and Fascism. Course is taught in English and therefore does not satisfy the Core second language requirement. (4 units each quarter)

12A. Cultures and Ideas: Gateway of Culture

Italy, geographically situated at the crossroads between Europe, Asia and Africa, has long been considered foundational for an understanding of Western culture. In this second course we will extend our examination of Italy as a syncretic melting pot for ideas and practices to the present day. We will explore how late 20th- and 21st-century Italy, though its changing political role and waves of migrations, has returned to question its relationship to global culture. Course is taught in English and therefore does not satisfy the Core second language requirement. (4 units each quarter).

21. Work-Life Balance in Italy

Italian 21 is an intermediate-level course that focuses on real-life language use, contemporary life in Italy, and the continued development of students' communicative skills and intercultural competence through authentic multimedia materials. Students will review and expand first-year grammar structures and vocabulary while exploring themes and issues related to emotional, physical, social and career well-being. Offered only in Fall. Course conducted in Italian. Prerequisite: ITAL 3 or the equivalent course abroad, or scoring at level 21 in the SCU placement exam. (4 units)

22. Italian Media, Language and Communication

Italian 22 is an intermediate-level course that focuses on real-life language use, contemporary life in Italy, and the continued development of students' communicative skills and intercultural competence through authentic multimedia materials. Students will review and expand first-year grammar structures and vocabulary while exploring the process and goals of language learning and the role of the media in changing language expression and intercultural communication. Offered only in Winter. Course conducted in Italian. Prerequisite: ITAL 21 or the equivalent course abroad, or scoring at level 22 in the SCU placement exam. (4 units)

50. Intermediate Italian Language & Culture

The course reviews first-year grammar while introducing new vocabulary and structures; it emphasizes engagement with authentic materials such as articles, websites, news reports and film excerpts in order to deepen students\' communicative skills and cultural awareness. Prerequisite: Italian 3 or a Placement Test score and recommendation is required. (4 units)

Upper-Division Courses: Italian Studies

100. Introduction to Italian Studies

This foundational course emphasizes the development of oral communication, cultural literacy, and analytic skills through different genres of cultural expressions, including literary texts. In this course students will gain a deeper insight into Italian language, history, geography, and cultural practices and perspectives. Course conducted in Italian. Required of all majors and minors. Prerequisite: ITAL 22 or equivalent course abroad or scoring at level 100 in the SCU placement exam. (5 units)

101. Introduction to Cultural Analysis

This foundational course is designed to help students prepare for more advanced upper-division courses in Italian Studies. Students will develop cultural literacy, analytic skills, and critical thinking, through the practice of oral and written analysis of literary texts and other cultural expressions. Students will hone their language skills, and learn critical vocabulary and skills that they will primarily apply to close readings of literary texts. Course conducted in Italian. Required of all majors and minors. Prerequisite: ITAL 100 or equivalent course abroad or Placement Test recommendation. (5 units)

102. Made in Italy and Italian Entrepreneurship

In this course, students will examine Italian business language, culture, and practices. The course will address topics such as professional communication, branding, localization, entrepreneurship, international migration and labor mobility, and design through the lenses of *Made in Italy*. Students will develop awareness of the significance, value, and importance of linguistic proficiency and cross-cultural competence in Italian in today's job market. Classroom work will be complemented with guest speakers, panels, and interaction with Italian businesses and nonprofit organizations. Prerequisite: ITAL 101 or equivalent. (5 units)

103. Italian Food Culture

This course examines the relationship between food and Italian culture. Students will look at food in its social, cultural, and linguistic context from a broad interdisciplinary perspective (history, geography, literature, music, art, cinema, and ethics). This is a foundational course designed to develop students\' analytical and critical thinking skills, in addition to language proficiency and intercultural competence. Active participation in class discussions is expected. Prerequisite: ITAL 100 or equivalent. (5 units)

106. Advanced Italian Conversation

Advanced work stressing the development of self-expression in Italian. Prerequisites: ITAL 101 or equivalent, and permission of the instructor. (5 units)

108. Translation Workshop

This workshop introduces students to the practice and theory of translation. Students will learn strategies for translating from Italian into English and from English into Italian, understand structural and stylistic differences between the two languages, and explore how translation facilitates cross-cultural communication. Course conducted in Italian. Prerequisite: ITAL 100 or equivalent. (5 units)

113. Introduction to Italian Cinema

Introduction to Italian Cinema. This is an introductory course that explores Italian cinema in connection with social and cultural change. It is designed to prepare students to subsequent upper-division courses in Italian studies. Students will acquire key vocabulary and develop analytical and critical skills with regard to different film genres, including *commedia all'italiana*, historical productions, and more recent reinterpretations of classic genres by a new generation of Italian filmmakers. Prerequisite: ITAL 101 or equivalent. (5 units)

114. Contemporary Italian Culture

This foundation course explores cultural issues in contemporary Italy: national identity, economy, family, immigration, and pop culture as reflected in literature, film, music, and media. Class discussions will be conducted in Italian and students will develop language competence and understanding of different language registers. Presentation skills will be practiced through written assignments and oral reports. Prerequisite: ITAL 100 or equivalent. (5 units)

120. Italian Literature and Culture I

From its origin to the Seicento. Prerequisite: ITAL 101 or equivalent. (5 units)

121. Italian Literature and Culture II

From the Settecento to the present. Prerequisite: ITAL 101 or equivalent. (5 units)

125. Colloquium: Italian Literature and Culture

Topics vary. Study and discussion of selected themes in Italian literature and culture. May be retaken for credit. Prerequisite: ITAL 101 or equivalent. (5 units)

154. Nature and the Italian Literary Imagination

This course examines ideas and representations of nature in the Italian literary and cultural tradition. It explores the ways in which we imagine human relationship to natural and built environments, and how they shape each other. Interdisciplinary theoretical readings will guide our analysis of Italian representations of nature and spur critical reflections on global issues and Italian specificities. Class discussions will be in Italian. Presentation skills will be practiced through written assignments and oral reports. Prerequisite: ITAL 101 or equivalent. (5 units)

180. Novecento Italian Literature of the 20th Century

Main trends in poetry, drama, and the novel from Pirandello to the present. Prerequisite: ITAL 101 or equivalent. (5 units)

182. 20th-Century Italian Women Writers

Critical analysis of major works by leading women writers and the changing role of women in 20th-century Italian society: Grazia Deledda, Sibilla Aleramo, Elsa Morante, Natalia Ginzburg, Maria Bellonci, Laudomia Bonanni, Lalla Romano, Milena Milani, Francesca Sanvitale, Romana Petri, Isabella Bossi Fedrigotti, and Gina Lagorio. Prerequisite: ITAL 101 or equivalent. Also listed as WGST 185. (5 units)

183. Women in Italian Cinema: The Impact of Globalization

Focus is on the films with a global viewpoint of numerous Italian film directors. Examination of Italian masterpieces (including black-and-white films of the 1940s and 1950s) with special focus on the changing aspects of global society and their impact on individuals, especially women. Films by women directors whose work may give a contrasting vision of globalization and its enabling and challenging aspects. Prerequisite: ITAL 101 or equivalent. (5 units)

187I. Destination Italy: Immigration in Film and Literature

A country with a long history of emigration, Italy has, since the 1980s, become a destination for immigrants from all over the world. The Italian cultural landscape is being reshaped by a growing number of engaging literary, filmic, and other cultural works by and about immigrants. We will analyze how writers and filmmakers create new modes of representation that actively engage with issues of marginalization, race, citizenship, labor, gender, and national identity. Course taught in Italian. Prerequisite: ITAL 101 or equivalent. Course fulfills the Civic Engagement Core Curriculum requirement. (5 units)

194. Peer Educator in Italian

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

197. Special Topics

Variable topics in culture, literature, and film. May be retaken for credit. (5 units)

198. Directed Study

Individually designed programs of advanced study. Normally restricted to seniors who are declared Italian studies majors or minors and who find themselves in special circumstances. May be taken only once. Courses exempted from challenge may not be taken as directed study. Written course outline must be approved by instructor and department chair in advance of registration. Prerequisite: ITAL 101 or equivalent. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. For seniors only. Written permission of the instructor and department chair is required in advance of registration. Prerequisite: ITAL 101 or equivalent. (1--5 units)

Literature, Film, and Culture Courses Taught in English

Note: The following courses are literature, film, and culture courses taught in English and cannot be used to fulfill the undergraduate Core Curriculum second language requirement. Only one course may be counted toward the Italian studies minor. Two courses may be counted toward the Italian studies major with permission of advisor.

185. The Italian American Experience

This course studies the presence of Italian Americans in the United States from their first massive immigration at the end of the 19th century to the present. We will explore how Italians gradually transformed themselves from cultural and political outsiders into integral performers for the development of the United States as a nation. Additionally, by studying how Americans and Italians negotiated different ideas concerning identity, tradition, and community, we will draw attention to contemporary parallels pertaining the immigration of groups that have threatened or threaten ideas of what it means to be an American citizen in the 21st century. Course counts for Diversity Core and American Studies Pathway. Conducted in English, but contains an Italian component for Italian Studies majors and minors. Prerequisite: None. (5 units)

187. Destination Italy: Immigration in Film and Literature

This course explores contemporary immigration to Italy through the lens of film and literature. It analyzes how filmmakers and writers from different backgrounds are creating new modes of representation that actively engage with issues of marginalization, race, citizenship, cultural hybridity, gender, and national identity. We will also reflect on Italy's colonial past in Africa, the connections between emigration and immigration, and the effects of Mediterranean crossings and global migrations on the Italian nation today. Course counts toward Civic Engagement Core and Cinema Studies Pathway. Conducted in English, but contains an Italian component for Italian Studies majors and minors. DOES NOT satisfy the 2nd Language CORE requirement. Prerequisite: None. (5 units)

Lower-Division Courses: Japanese Studies

1. Japanese Language and Culture I

This is the first in a series of six basic courses in Japanese language and culture. JAPN 1 is designed for students with no prior experience with Japanese. It aims to develop students' communicative language skills and intercultural competence through active in-class conversation activities as well as engagement with Japanese culture and perspectives. Offered only in fall. Prerequisite: None. (4 units)

2. Japanese Language and Culture II

This is the second in a series of six basic courses in Japanese language and culture. This proficiency-based course aims to develop students' communicative language skills and intercultural competence further through active in-class conversation activities and engagement with cultural topics. Offered only in winter. Prerequisite: JAPN 1 or placement test recommendation. (4 units)

3. Japanese Language and Culture III

This is the third in a series of six basic courses in Japanese language and culture. This proficiency-based course aims to expand students' communicative language skills in more varieties of situations and contexts, while developing intercultural competence further. Offered only in spring. Prerequisite: JAPN 2 or placement test recommendation. (4 units)

21. Japanese Language and Culture IV

This is the fourth in a series of six basic courses in Japanese language and culture. This proficiency-based course is designed to further develop effective communication skills, both spoken and written, focusing on familiar, everyday topics (e.g., making an appointment by phone, planning a trip, giving and asking for advice), while also improving presentation skills. Students will also cultivate a greater awareness and understanding of Japanese culture to foster interaction at a more functional level. Course conducted predominantly in Japanese in a highly interactive environment. Offered only in fall. Prerequisite: JAPN 3 or placement test recommendation. (4 units)

22. Japanese Language and Culture V

This is the fifth in a series of six basic courses in Japanese language and culture. This proficiency-based course is designed to further develop effective communication skills, both spoken and written, focusing on familiar, everyday topics (e.g., communicating in restaurants and stores), while being exposed to some formal language usage. Offered only in winter. Prerequisite: JAPN 21 or placement test recommendation. (4 units)

23. Japanese Language and Culture VI

This course completes the two-year basic Japanese language and culture series. It emphasizes socio-culturally appropriate interactions in Japanese, while fostering communication skills in everyday interactions and intercultural competence. Offered only in spring. Prerequisite: JAPN 22 or placement test recommendation. (4 units)

Upper-Division Courses: Japanese Studies

100. Oral Communication in Japanese

This course aims to develop proficiency in Japanese language skills (speaking, listening, reading, and writing), and to foster cultural competence and critical thinking skills. Students will learn the oral communication skills necessary to participate in Japanese-speaking communities. Students will also explore a variety of cultural artifacts and media to understand and critically analyze the values, customs, beliefs, and perspectives embedded in Japanese interactions. This course is taught entirely in Japanese. Prerequisite: JAPN 23 or a placement test recommendation for 100-level Japanese UD courses. (5 units)

101. Japanese Popular Culture

This course aims to develop proficiency in Japanese language skills (speaking, listening, reading, and writing), and to foster cultural competence and critical thinking skills through the exploration of Japanese popular culture (e.g., manga, anime, songs). Students will explore a variety of cultural artifacts and multi-media to understand and critically analyze the values, customs, beliefs, and perspectives that popular culture brings to Japanese-speaking communities. This course is taught entirely in Japanese. Prerequisite: JAPN 23 or a placement test recommendation for 100-level Japanese UD courses. (5 units)

102. Contemporary Japanese Society through Media

This course aims to develop proficiency in Japanese language and students' understanding of Japanese society through examination of Japanese TV dramas and films that handle contemporary issues in Japan. Students will examine language usage in the media and discuss the societal issues at hand, compare and contrast with the situations in the U.S. and other cultures. This course is taught entirely in Japanese. Prerequisite: JAPN 23 or a placement test recommendation for 100-level Japanese UD courses. (5 units)

103. Japanese Culinary Culture

Students will examine Japanese food cultures, and the relationship between food and history, geography, sociology, religion, and globalization. This course aims to develop students' critical thinking skills and global competence. Through analyzing different media and texts, students will deepen their understanding of contemporary Japanese society through its food cultures, and reflect on their own food cultures. Course conducted in Japanese. Prerequisite: JAPN 100 (or equivalent), or a placement test recommendation for 100-level Japanese UD courses. Course fulfills the C&I 3 Core Curriculum requirement. (5 units)

113. Readings in Japanese I

Readings and discussions in Japanese of selected sociological, literary, and journalistic texts. Prerequisite: JAPN 102 or equivalent. (5 units)

114. Readings in Japanese II

Continuation of JAPN 113. Prerequisite: JAPN 113 or equivalent. (5 units)

115. Readings in Japanese III

Completion of readings in Japanese. Prerequisite: JAPN 114 or equivalent. (5 units)

194. Peer Educator in Japanese

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

198. Directed Study

Individually designed programs of advanced study. Normally restricted to seniors who are declared Japanese studies minors and who find themselves in special circumstances. May be taken only once. Courses exempted from challenge may not be taken as directed study. Written course outline must be approved by instructor and department chair in advance of registration. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. Written permission of instructor and department chair required in advance of registration. (1--5 units)

Literature and Culture Courses Taught in English

Note: The following course is a literature and culture course taught in English and cannot be used to fulfill the undergraduate Core Curriculum second language requirement. One course (5 units) may be counted toward the Japanese studies minor.

137. Japanese Culture

This course explores the interaction between Japanese culture and communication in contemporary Japan. Key sociocultural concepts/topics to be examined include: group consciousness, meaning of inner and outer groups, private vs. public stance, politeness, gender, social minorities in Japan, and intercultural communication. Note: Course taught in English and cannot be used to fulfill the University Core Curriculum second language requirement. Course counts toward the Japanese minor. Prerequisite: None. (5 units)

Lower-Division Courses: Spanish Studies

1N. Introduction to Elementary Spanish

Designed for those who have not previously studied Spanish. A proficiency-based course dedicated to developing basic communicative and intercultural skills in preparation for Spanish 1. Emphasis is on: 1) functional language use (speaking, viewing/listening, reading, writing) in simple activities of daily life, and 2) engagement with Hispanic cultures and perspectives. Conducted in level-appropriate Spanish. Prerequisite: Placement survey recommendation to take Spanish 1N required (4 units)

1. Introduction to Spanish and Spanish-Speaking Cultures 1

An elementary course designed for those who have had some exposure to Spanish studies in high school. A proficiency-based course dedicated to expanding students' communicative and intercultural competence. Emphasis is on interaction (speaking, viewing/listening, reading, writing) in authentic contexts related to daily routines, family and social life, and 2) engagement with Hispanic cultures and perspectives. Conducted in level-appropriate Spanish. Prerequisite: placement survey and test recommendation to take Spanish 1, or completion of Spanish 1N at SCU. (4 units)

2. Introduction to Spanish and Spanish-Speaking Cultures 2

An elementary course designed for those who have had some exposure to Spanish studies in high school, and/or SPAN 1. A proficiency-based course dedicated to expanding students' communicative and intercultural competence. Emphasis is on interaction (speaking, viewing/listening, reading, writing) in authentic contexts related to tasks of daily life, entertainment, customs and traditions, and 2) engagement with Hispanic cultures and perspectives. Conducted in level-appropriate Spanish. Prerequisite: placement survey and test recommendation to take Spanish 2, or completion of Spanish 1 or 1N at SCU. (4 units)

3. Introduction to Spanish and Spanish-Speaking Cultures 3

An elementary course designed for those who have had some exposure to Spanish studies in high school, and/or SPAN 2. A proficiency-based course dedicated to expanding students' communicative and intercultural competence. Emphasis is on interaction (speaking, viewing/listening, reading, writing) in authentic contexts to complete tasks

across a range of topics of social and global importance, and 2) engagement with Hispanic cultures and perspectives. Conducted in level-appropriate Spanish. Prerequisite: Placement survey and test recommendation to take Spanish 3, or completion of Spanish 2 at SCU. (4 units)

21. Crossing Boundaries (Intermediate)

This course explores themes and topics related to childhood, family, education and travel both within and between Spanish speaking countries. Through comparison, summarization, and story-telling, students will develop a greater intercultural awareness of the diverse experiences and social classes in different Spanish speaking countries, including the US. This intermediate-level course develops speaking, reading, and writing comprehension and production skills through multimedia and a novel. Course is conducted in Spanish. Prerequisite: Completion of SPAN 3 or Placement recommendation for Intermediate Spanish. (4 units)

21A. News and Culture in the Hispanic World (Intermediate)

What is new and newsworthy in the Spanish-speaking world? Who decides this, and does that process differ between U.S. and Spanish-speaking cultures and societies? In this intermediate-level course with its emphasis on oral interaction and comprehension, students will deepen their knowledge of Hispanic cultures and societies within a project-based framework that focuses on analysis of news media in its many forms. Prerequisite: Completion of SPAN 3 or Placement recommendation for Intermediate Spanish. (4 units)

21EL. Intermediate Spanish I. Experiential Learning

Progressive readings and exercises in conversation and composition. Development of an understanding of Hispanic culture. All sections of SPAN 21EL contain an integrated Experiential Learning component, using a reflective community-based learning placement. All students enrolled in SPAN 21EL will be automatically enrolled in SPAN 97 (Community-Based Learning Practicum) at the end of the first week of class. Course conducted in Spanish. Prerequisite: Completion of SPAN 3 or placement recommendation for Intermediate Spanish.(4 units)

22. Latino Cultures and Identities in Contemporary Film (Intermediate)

The course will explore identity in contemporary film from Spanish-speaking countries, looking at immigration, social class, and national identity. What are some of the parallels and contrasts that can be seen across cultures and nations? This intermediate level course will focus on developing oral speaking and comprehension skills as well as academic reading and writing skills. Students will work in all major tenses to discuss and analyze linguistic and cultural nuances using a communicative approach. Course conducted in Spanish. Prerequisite: Completion of SPAN 3 or Placement recommendation for Intermediate Spanish. (4 units)

22A. Gender, Identity, and Food Cultures in Latin America

This intermediate-level course is designed to improve students' conversational and writing abilities in Spanish through a content-based approach focused on the study of food cultures as represented in the documentary series Street Food: Latin America, and other excerpts of novels and articles. We will explore multiple stories of both "fitting the mold" and "breaking the mold" of gender and cultural norms and finding passion in food production,preparation and consumption. The course also aims to equip students with critical tools to understand and evaluate the relationship between food and culture in Latin America at local levels. Students will work in all major tenses to discuss, analyze, express opinions on linguistic and cultural commonality and diversity. Prerequisite: Completion of SPAN 3 or Placement Recommendation for Intermediate Spanish. (4 units)

22EL. Immigration Stories: Cultural, Political, and Personal Narratives (Intermediate)

This course includes a minimum of 16 hours working with and learning from community partners. All students enrolled in SPAN 22EL will be automatically enrolled in SPAN 97 (Community-Based Learning Practicum) at the end of the first week of class. The course will explore stories of immigration to the U.S. from Mexico and Central America from past and present, using film, literature, and other media. Students will integrate contemplation of cultural, political, and personal factors into written and oral reflections on their community-based learning experiences, and will likewise integrate what they learn from community partners into their contemplation of these issues. This course will also focus on developing speaking and listening comprehension skills as well as academic reading and writing skills. Course conducted in Spanish. Note: This course requires participation in community-based learning (CBL) experiences off campus. Prerequisite: completion of SPAN 3 at SCU (or equivalent) or SCU Modern Languages & Literatures Department placement recommendation for Intermediate Spanish. (4 units)

23. Activism and Social Justice in the Spanish-speaking World (Intermediate)

This course introduces different aspects of the intersection of the arts, activism and social justice in the Spanish-speaking world. Students will explore said topics in numerous Spanish-speaking countries, including the US, to gain a deeper intercultural comprehension of inequality in their own communities and abroad, through communicative and project-based projects, class discussions, and reading and writing assignments. Course is conducted in Spanish. Prerequisite: Completion of SPAN 3 or Placement recommendation for Intermediate Spanish.(4 units)

23EL. Experiential Learning (Intermediate)

Progressive readings and exercises in conversation and composition. Development of an understanding of Hispanic culture. All sections of SPAN 23EL contain an integrated Experiential Learning component, using a reflective community-based learning placement. All students enrolled in SPAN 23EL will be automatically enrolled in SPAN 97 (Community-Based Learning Practicum) at the end of the first week of class. Course conducted in Spanish. Prerequisite: Completion of SPAN 3 or Placement recommendation for Intermediate Spanish.(4 units)

97. Community-Based Learning Practicum

For students concurrently enrolled in SPAN 21EL, 22EL, or 23EL, an Experiential Learning for Social Justice component, an integrated, reflective, community-based learning placement. Includes eight weeks of participatory work in a community agency. Requirements: Two hours per week at agency site over course of the placement. (1 unit)

Upper-Division Courses: Spanish Studies

100. Introduction to Cultural Analysis in Spanish

Advancement of Spanish-language skills through an introduction to basic conceptual tools to analyze narrative or visual works of art, or other forms of non-fictional discourse in the Spanish language. Practical approach to these works through class discussion, oral presentation, and written essay. Prerequisites: completion of SPAN 23 or the equivalent; or placement recommendation for Spanish 100-110. (5 units)

101. Discourse and Interpretation: Introduction to Literature and Film Analysis in Spanish

Foundation for more thorough study of works in the Spanish language through the practice of oral and written analysis of literary and filmic works tied together by a common theme.

Prerequisites: Completion of SPAN 23 or the equivalent; or placement recommendation for Spanish 100-110. NOTE: Students who have scored a 5 on the Spanish Advanced Placement Literature test are encouraged to take Spanish 101 instead of Spanish 100. (5 units)

101M. Discourse and Interpretation: Narratives of Migration

Foundation for more thorough study of works in the Spanish language through analysis of literary and filmic works tied together by themes of migration and displacement. Prerequisites: SPAN 23 or the equivalent; or placement recommendation for Spanish 100-110. NOTE: Students who have scored a 5 on the Spanish Advanced Placement Literature test are encouraged to take Spanish 101 instead of Spanish 100. (5 units)

102. The Sounds & Words of Spanish

What is an accent and who has one? Can a second language learner ever sound just like a native speaker? Can you teach someone to roll their R's? This course offers an introduction to the sound system of Spanish from the perspective of linguistic science, which will help you answer these questions and more. We will explore how Spanish sounds are produced and perceived by native speakers, how Spanish learners can improve their pronunciation of the language, how the pronunciation of Spanish varies across different geographic and social varieties, and how these sounds combine with others in systematic ways to form Spanish words. By studying the relationship between sounds and words, students can also improve their comprehension of written and spoken Spanish. This course is conducted in Spanish. Prerequisites: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

103. The Structure of Spanish Words and Phrases

What's the difference between a phrase and a sentence? Is vos the same as vosotros? Why don't native speakers always use the subjunctive according to the same rules you learn in Spanish classes? This course offers an introduction to the grammatical structures of Spanish from the perspective of linguistic science, which will help you answer these questions and more. We will explore how Spanish speakers create and manipulate meaning through word and sentence structures, and how these structures vary across different geographic and social varieties. By studying Spanish from this linguistic perspective, students will improve their grammatical acumen, their comprehension of both spoken and written Spanish, and their writing abilities. Prerequisites: completion of at least one course in Spanish 21 - 23 at SCU (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

NEW 106B. Spanish for Business

What are the various political, social, and economic contexts of business practices in the Spanish-speaking world? How do issues around identity, race, and socioeconomic status influence these practices? What does it mean to engage in "intercultural communication" and what effect does this dynamic have on international business? Students will collaborate to critically engage with these issues, and to advance their own linguistic and intercultural development in Spanish. In addition to analyzing current issues relating to business practice in the Spanish-speaking world, students will prepare their own professional materials in Spanish, including a mock business plan proposal. Prerequisites: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

NEW 106I. Spanish for International Relations

This is a learner-centered course in which students build the cultural, political, and linguistic competence required to communicate appropriately and effectively in Spanish in the context of international relations. The content of the course comprises three main areas: Latin American's process of democratization, the effects of corrupt governments in fragile democracies in Latin America, and the negotiation of the peace agreement in Colombia signed in 2016. The course includes written and oral materials including reports from international organizations, news articles, and films. Prerequisites: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

107. Writing Workshop

Development of proficiency in written Spanish through a collaborative workshop. Focus on close reading, complex sentence construction, structure and disposition of arguments through practical exercises and peer review. Prerequisites: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

108. The Art of Narrative Nonfiction: Creative Writing Workshop

This is a foundational course focusing on creative writing in Spanish narrative nonfiction, especially journalism and memoir. We will learn through readings and creative writing assignments about all aspects of nonfiction narrative writing, including structure, language, character development, scene development, storyline, plot, rhythm, description, and, ultimately, how to develop a sophisticated argument in narrative form. Readings will be in Spanish, focusing on the best narrative journalism from and about the Spanish-speaking world. The course will build toward a final project in which students will write their own work of narrative journalism or memoir. Prerequisite: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

110. Oral Communication in Spanish

This course introduces students to various forms of oral interaction in their cultural contexts. Emphasis is placed on learning to employ the linguistic features (words, phrases, intonation, gestures) of Spanish necessary to function and actively participate in Spanish-speaking communities. Through analysis of native-speaker interactions and active practice, students will learn how to initiate, manage and close conversations, negotiate (e.g. with a landlord), tell a joke, give a compelling speech, etc. Students will also engage with cultural topics through readings, film, videos, other media, and discussion. Course activities include pair and group conversations, role-plays, vlogs and podcasts, etc. All students will be required to carry-out conversation activities with native Spanish-speakers outside of class hours. This course is conducted in Spanish. Prerequisites: completion of Spanish 23 (or equivalent) OR SCU Modern Languages & Literatures Department placement recommendation for Spanish 100-110. (5 units)

112. Mexican Culture

Although Mexico is a neighboring country, bordering California itself, its image in America is profoundly deformed and simplified. Through a selection of readings and films, the course offers an introductory review of Mexican history, contemporary social and political developments, and fine arts and music, with particular attention to cultural values. Most readings in Spanish, films in Spanish with English subtitles. Prerequisite: SPAN 100 or equivalent. (5 units)

113. The Revolution in Mexican Culture

The Mexican Revolution (1910-1940) was a foundational event in that nation's history. Both a political and social revolution, it sought to fundamentally reshape the Mexican social order through land and education reform, the protection of workers' rights, the nationalization of resources, and the championing of peasant and indigenous communities. Though the Constitution of 1917, one of its most important legacies, was one of the first national documents in the world to enshrine both political and socio-economic rights, the Revolution only partially achieved its lofty goals. In this course, we will examine the works of Mexican authors, artists, and filmmakers who reflect on the Revolution's triumphs and its failings, as well as its lasting repercussions in contemporary Mexican society. Prerequisite: Spanish 101, or equivalent. (5 units)

114. Culture and Society of the U.S-Mexico Border

A study of social and cultural aspects of the U.S.-Mexico border. This course discusses topics such as labor, environmental, immigration, and women's issues, but with attention also to current discourse on the border in cultural critique and the arts. By the end of the course, students will be expected to have developed a more coherent and sophisticated view of the border region than that generally purported by commercial media outlets. Prerequisite: SPAN 100 or equivalent. Recommended prerequisite: SPAN 101 or equivalent. (5 units)

123. Contemporary Spanish Culture

In this course we will utilize a multi-disciplinary approach grounded in cultural studies to consider the evolving expression of overarching themes such as migration, gender, and class in an effort to better understand modern Spanish society. We will focus initially on the sociopolitical context of the Spanish Civil War (1936-39), the subsequent Franco dictatorship, and the Transition to democracy that began upon Franco's death in 1975. We will then consider questions of gender, migration, and nationalisms in recent decades. We will analyze a variety of texts, including short stories, poetry, architecture, visual art, and contemporary films. Prerequisite: Completion of at least one upper-division course in Spanish, level 100-110 (SPAN 100, 101, 101C, or 101M recommended) or permission of instructor. (5 units)

125. Colloquium: Spanish Literature and Culture

Topics vary. Study and discussion of selected themes in Spanish Peninsular literature and culture. May be retaken for credit. Prerequisite: SPAN 101 or equivalent. (5 units)

130. Survey of Latin American Literature I

Latin American literature from the pre-Columbian period to 1888. Prerequisite: SPAN 101 or equivalent. (5 units)

131. Survey of Latin American Literature II

This course is an upper-division level survey of major works of contemporary Latin American poetry and narratives, including figures such as Roberto Bolaño, Rigoberta Menchú, Gabriel García Márquez, Mario Vargas Llosa, Jorge Luis Borges, Gabriela Mistral, Alfonsina Storni, among others. The class will be conducted in Spanish. Prerequisite: SPAN 101 or equivalent. (5 units)

132. Hispanic Voices for Social Change

This course examines coherent strategies of resistance and adaptation that respond to experiences of social injustice, inequality, and geographic displacement throughout the 20th- and 21st-centuries in the Spanish-speaking world. Through the analysis of short fiction, poetry, film, testimonio, and critical texts, the course explores four principal historical events: the Spanish Civil War, the Guatemalan indigenous genocide, the effects of neoliberal capitalism on U.S.-Mexico relations, and Argentina's Dirty War. Prerequisite: Completion of at least one upper-division course in Spanish, level 100-110 (SPAN 100, 101, 101C, or 101M recommended) or permission of instructor. (5 units)

133. Mexican American Literature

Reading, analysis, and discussion of Mexican American literature in its historical context. Emphasis on the novel and short story. Also listed as ETHN 128. Prerequisite: SPAN 101 or equivalent. (5 units)

135. Colloquium: Latin American Literature and Culture

Topics vary. Reading and discussion of selected themes in Latin American literature and culture. May be retaken for credit. Prerequisite: SPAN 101 or equivalent. (5 units)

136. Contemporary Latin American Short Story

Examination of the Latin American short story from Quiroga to the present. Representative works reflecting the diverse cultural backgrounds and ideologies of the authors. Prerequisite: SPAN 100 or equivalent. (5 units)

137. Latin American Cultures and Civilizations

Exploration of factors and conditions that have molded and continue to shape the diverse lives and institutions of contemporary Spanish-speaking peoples of the Americas. Prerequisite: SPAN 101 or equivalent. (5 units)

138. Hispanic Poetry

An introduction to poetic expression in the Spanish language. The course will involve an overview of Spanish meter and rhyme followed by the study of classical forms (love, mystical, and satirical poetry), as well as contemporary periods and forms (Romanticism, modernismo, the Vanguards, revolutionary, and experiential poetry). Prerequisite: SPAN 101 or equivalent. (5 units)

139. Haunted Literature: Ghosts and the Talking Dead in Latin American Narrative

Ghosts hauntings and the talking dead are recurrent tropes in the Latin American cultural imagination. Through a selection of fiction and critical writings, this course will examine the recurrence and significance of this imagery in contemporary narrative genres. Discussions may include the following writers and directors: María Luisa Bombal, Juan Rulfo, Julio Cortázar, Gioconda Belli, Tomás Eloy Martínez, Guillermo del Toro, and Alejandro González Iñárritu. Prerequisites: SPAN 101 or the equivalent and at least one survey course in Latin American literature. (5 units)

140. Narratives of Money

Study of literature, film, and other cultural expressions in Spanish with a focus on financial issues and their impact on Latin American and Spanish societies and cultures. The course may explore a variety of topics connected to money and material exchanges, such as debt, precarity, extractive economies, labor, or inequality. Prerequisites: SPAN 101 or any other course with a focus on literary analysis, or permission of the instructor. (5 units)

142. Narconarrativa

By most estimates, the wave of violence that has assailed Mexico since then-president Felipe Calderón launched the war on drug trafficking in 2006 has claimed nearly 200,000 lives. This seemingly pervasive brutality has precipitated its aesthetic representation across a wide range of genres and discourses, including journalism, literature, music, and the visual arts. Principal among these cultural productions is a subgenre of crime novel known as the narconovela. In this course we will examine how narconarrativa presents the drug trade between the U.S. and Mexico and analyze its literary and cinematic representations, considering both their limitations and function as social critique. Course prerequisite is SPAN 101, or equivalent. (5 units)

143. Detective Short Story

Detective fiction is considered by many as mere escapist entertainment. However, as we will discover in this course, it can contain a subtle yet mordant denunciation of social injustice. This is especially true in societal conditions that preclude an open discussion of institutional abuses, as was the case in the dictatorial and post-dictatorial states of Ibero-America in the second-half of the 20th century. In more recent decades, the detective story can be read as a commentary on the social inequality that characterizes modern society. In this class we will read a selection of short stories from various sub-genres of detective fiction and analyze how each of these texts serves as social critique. Prerequisite: SPAN 101 or equivalent. (5 units)

146. Latin American Documentary

Students will become aware of contemporary social and political issues in Latin America through a selection of recent and thought-provoking documentary films. The course aims to stimulate cultural competence as well as critical thinking in Spanish by exposing students to relevant matters in the target cultures. Prerequisite: SPAN 100 or the equivalent. (5 units)

147. Cinema, Politics, and Society in Latin America

The course aims to introduce the students to current political and social issues in Latin America through exposition to and discussion of some relevant commercial or independent films of recent decades. Textbook material and additional readings from journalistic, literary, or academic contexts will further expand on the themes exposed in each film. Prerequisite: SPAN 100 or the equivalent. (5 units)

148. 20th-Century Latin American Women Writers

Reading, analysis, and discussion of novels and short fiction by major Latin American women writers of the 20th century (e.g., Bombal, Garro, Poniatowska, Allende, Valenzuela, and others). Prerequisite: SPAN 101 or equivalent. (5 units)

156. Representations of the Migrant Condition in Contemporary Spain

In this course we will explore themes related to exile, immigration, racism, gender, identity, nationalism, and citizenship in 20th- and 21st-century Spain. We will analyze a variety of cultural productions (short story, testimony, novel, film, and critical texts) created about and by migrants. In these texts, we will consider guiding questions that include: Who are "we" and who are "others"? What identities are typically cast as normative and which as marginal? What dichotomies become manifest in the narrative or filmic expressions of those identities that comprise present-day Spain? Do bicultural identities exist in contemporary Spain? Prerequisite: SPAN 101 or equivalent. (5 units)

165. Cervantes: Don Quijote

Cervantes' masterpiece, as a reflection of Spanish society during the Spanish Empire, an exemplar of Baroque art, and a synthesis and culmination of narrative prose. Prerequisite: SPAN 101 or equivalent.(5 units)

170. Spanish & the Community

Conducted in Spanish, this course fulfills the Core ELSJ requirement. It integrates classroom and community engagement to learn about the strengths of a local Hispanic community, to examine issues of social justice most relevant there, and to advance your language and cultural competence and analytic skills. Includes a minimum of 16 hours working with and learning from community partners. In class, we analyze academic, journalistic and social media texts related to course topics (e.g. immigration, disparities in health and education, etc.), engage in structured reflection about your experiences, and build language and cultural skills to communicate appropriately and effectively in both the community and academic settings. Prerequisite: Completion of at least one upper-division course in Spanish, level 100-110 or permission of instructor. (5 units)

175. History of the Spanish Language

A study of the evolution of the Spanish language from its roots on the Iberian Peninsula to its spread throughout the world. From a linguistic perspective. Special attention will be paid to social and political factors that have helped to shape the language in its modern forms. Prerequisite: Completion of one upper-division course in Spanish. (5 units)

176. Spanish and Latinxs in the United States

We will examine the major topics associated with Spanish and Latinxs in the United States: regional and social variation, the linguistic and sociolinguistic consequences of contact with English, Spanish language maintenance, bilingual education, the teaching of Spanish to heritage speakers, language ideologies, and the relationship between language and identity for U.S. Latinxs. An overarching theme is linguistic discrimination as a proxy for racial discrimination. Taught in Spanish. Prerequisite: Completion of one upper-division course in Spanish (Span 102 or 103 recommended).(5 units)

194. Peer Educator in Spanish

Peer educators are invited by faculty to work closely with them, facilitating learning in a lower-division course. May be repeated for credit by permission of the instructor. (2 units)

195. Spanish Translation I

Skills and strategies involved in the art of translation. A variety of texts (general, historical, cultural, technical, etc.) illustrate the different modes and nuances of translation. Students assigned special translation projects. May be retaken for credit but will only be accepted once toward the Spanish studies major or minor. Prerequisites: SPAN 101 and permission of the instructor. (5 units)

197. Special Topics

Variable topics in specific fields. Studies abroad. (Units vary based on program)

198. Directed Study

Individually designed programs of advanced study. Normally restricted to seniors who are declared Spanish studies majors or minors and who find themselves in special circumstances. May be taken only once. Courses exempted from challenge may not be taken as directed study. Written course outline must be approved by instructor and department chair in advance of registration. (1--3 units)

199. Directed Reading

Individually designed programs of advanced readings. Prerequisite: Written permission of the instructor and department chair is required in advance of registration. (1--5 units)

Upper-Division Courses Taught in English: Modern Literature and Culture

Note: Knowledge of a foreign language is not necessary for the following courses. **They cannot be used to fulfill a major or minor requirement in a foreign language or to fulfill the second language requirement.**

112EN. Mexican Culture

This course will help students develop an in-depth knowledge of Mexican culture from Pre-Columbian times to the 21st century. The course will adopt an interdisciplinary approach for the examination of Mexican cultural production. We will study materials from diverse origins, including literature, history, anthropology, art, and film. The class will focus on the relationship between race, gender, and multiculturalism, and the effects that these three elements have in Mexican culture. In addition to learning specifically about Mexican culture, this course will also help students expand their global competence and critical thinking, as well as their appreciation of sociocultural diversity. Language of instruction: This course will be conducted in English. Prerequisites: None. (5 units).

180. International Cinema

An interdisciplinary course treating film as a medium of cultural expression in China, England (or Australia or Canada), France, Germany, Italy, Japan, Latin America, Russia, and Spain. (5 units)

Department of Music

Professor Emeritus: Lynn R. Shurtleff

Professors: Hans Boepple, Teresa McCollough

Associate Professors: Nancy Wait-Kromm, Bruno T. Ruviaro (Department Chair), Christina Zanfagna

Assistant Professor: Scot Hanna-Weir

Senior Lecturer: William Stevens

Lecturer: Carl Schultz The Department of Music offers a degree program leading to the bachelor of arts in music as well as a minor in music. A minor in musical theatre is available in conjunction with the Department of Theatre and Dance. The Department of Music's curriculum is designed to provide students of diverse backgrounds with the skills necessary to comprehend, perform, and appreciate music's role in human history and its power to enhance the lives of all people. Because individual study and performance is essential to the expression and acquisition of music as a language and art form, private instruction and membership in all departmental music ensembles is available to all Santa Clara students.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements, students majoring in music must complete the department's lower and upper-division requirements.

Lower-Division Core

- MUSC 1, 2, 3
- MUSC 1A, 2A, 3A
- Two courses from Introduction to Listening series: MUSC 7, 8, 9, 10
- Three lower-division units of private (applied) instruction
- Six lower-division units in an approved departmental ensemble
- Music at Noon: one quarter of MUSC 16/116

Upper-Division

- Five upper-division electives
- One Ethnomusicology/Music History upper-division elective from: MUSC 130,131, 132, 133, 134, 136, 139, 189, 190, 192, 194, 195, 196
- Three upper-division units of private (applied) instruction
- Six upper-division units in an approved departmental ensemble
- At least one course (lower or upper division) must be an Electronic Music course: MUSC 9, 57/157, 115, 119

Requirements for the Minor

Students must fulfill the following requirements for a minor in music:

Music Skills/Literacy courses

- Two Music Theory courses
- Two Musicianship courses
- Two courses from the Introduction to Listening series: MUSC 7, 8, 9, 10
- One course selected from MUSC 3, 3A, or any upper-division elective
- One Ethnomusicology/Music History upper-division elective from: MUSC 130, 131, 132, 133, 134, 136, 139, 189, 190, 192, 194, 195, 196
- Two units of private (applied) instruction
- Music at Noon: One quarter of MUSC 16/116
- Six units in an approved departmental ensemble
- At least one course (lower or upper division) must be an Electronic Music course: MUSC 9, 57/157, 115, 119

Note: Students may take a Music Theory Placement Exam to test into a course that is appropriate for their skill level, but must still complete two courses from both the Theory and Musicianship sequences.

Lower-Division Courses

1. Music Theory I

Beginning course in a comprehensive theory sequence that covers notation, modes, scales, intervals, chords, rhythm, and meter. Required for musical theatre minor. Prerequisite: None. Majors and minors with extensive theory background are recommended to take the Theory Placement Exam. (4 units)

1A. Musicianship I

This is the introductory course in a sequence offering comprehensive, hands-on training in rhythm, melody, and harmony through the fundamentals of sight-reading, sight-singing, ear training, and improvisation. Prerequisite: None. This course is recommended to be taken in conjunction with MUSC 1. Majors and minors with extensive musicianship training are recommended to take the Musicianship Placement Exam. (4 units)

2. Music Theory II

Continuation of Music Theory sequence. Introduction to basic common practice harmonic progressions: triad relationships, part writing, figured bass, and harmonic analysis. Prerequisite: MUSC 1 or permission of instructor. (4 units)

2A. Musicianship II

Continuing course to develop aural skills through solfège and rhythmic training, keyboard harmony, improvisation, and dictation. This course is recommended to be taken in conjunction with MUSC 2. Prerequisite: MUSC 1A or permission of instructor. (4 units)

3. Music Theory III

Continuation of Music Theory sequence. Further instruction in common practice harmony; figured bass and part-writing; dominant and diminished seventh chords and resolutions; harmonic dictation and some score analysis. Prerequisite: MUSC 2 or permission of instructor. (4 units)

3A. Musicianship III

Continuing course to develop aural skills through solfège and rhythmic training, keyboard harmony, improvisation, and dictation. This course is recommended to be taken in conjunction with MUSC 3. Prerequisite: MUSC 2A or permission of instructor. (4 units)

7. Introduction to Listening: Global Music

This course explores the relationship between music and culture as it introduces students to a wide range of musical styles throughout the world. Designed for both majors and minors, students will learn basic ethnomusicological concepts and explore musical cultures from Africa, the Americas, the Middle East, South and Southeast Asia, and Europe. (4 units)

8. Introduction to Listening: Western Music

This course offers an introduction to Western music history. Students will learn about musical elements, forms, and techniques through listening, lecture, and performance activities. Designed for both majors and non-majors, this course focuses on strategies for listening to, and writing about music. (4 units)

9. Introduction to Listening: Electronic Music

This course combines elements of history, theory, and practice of electronic music. The computer becomes the instrument through which students explore new ways of manipulating and organizing sound. Designed for both majors and non-majors, this course creates a space for discussion and critical listening of different types of electronic music (contemporary, popular, and experimental), culminating in a final creative project by each participant. No previous computer or electronic music experience required. (4 units)

10. Introduction to Listening: Jazz

This course offers an introduction to jazz music and history, focusing on key stylistic developments and major artists. Designed for both majors and non-majors, this course focuses on strategies for listening to, analyzing, and writing about jazz music. (4 units)

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address music and language; the ways people around the world have cultivated music and used music to cultivate other aspects of themselves and their societies; and other topics. Successful completion of C&I I (MUSC 11A) is a prerequisite for C&I II (MUSC 12A). (4 units each quarter)

16/116. Music at Noon

This class is organized around the Music at Noon series of concerts and performances. The weekly series brings the opportunity to experience live performances of music from all parts of the world by artists of local, national, and international renown. Students are required to attend all performances and write short reflections that summarize their individual experience. Prerequisite: None. Required class for music majors and minors. (1 unit)

30. Beginning Piano Class

Introductory instruction in piano in a classroom setting. Class limited to 18 students. (4 units)

33. Performance Practicum

This class is designed to offer practical experience in performance and professional development. Students will meet to discuss a specific performance-based topic and perform in a weekly studio class setting in the Recital Hall. Class discussions will include a range of topics in professional and career development. Recommended for music majors and minors. May be repeated for credit. (1 unit)

34. Beginning Voice Class

Study and application of basic vocal techniques to develop singing facility. Practical experience in performing. May be repeated for credit. Required for musical theatre minor. (4 units)

36. Beginning Guitar Class

Examination of essential elements required to play guitar in the classical style, including fundamental principles of technique, sight-reading, pedagogical repertoire, history, and literature. May be repeated for credit. (4 units)

37. Beginning Composition Class

This course explores personal expression through the creation of original music. Students explore the music and acoustical properties of sound while developing the creative and technical skills necessary to write a song or complete a finished musical piece. (4 units)

Upper-Division Courses

104. Music Theory IV/Advanced Harmonic Language

Continuation of Music Theory sequence. Introduction to chromatic harmony: secondary dominant chords, altered chords, tonicization and modulation, score analysis, harmonic dictation, and creative application of four-part writing using non-harmonic tones. Prerequisite: MUSC 3 or permission of instructor. Meets the elective requirement for music majors and minors. (5 units)

105. Modal Musicianship

This advanced-level musicianship course explores the modal system, modern mixture, and complex mode relationships from melodic and harmonic perspectives. Students will be asked to explore this vocabulary creatively through improvisation and composition activities. Advanced rhythmic vocabulary often associated with modal improvisation will also be introduced, including odd and mixed meters, tuplets, and polyrhythms. Prerequisite: MUSC 3A. Meets the elective requirement for music majors and minors. (5 units)

106. Jazz Musicianship

This advanced level musicianship class will explore melodic, rhythmic, and harmonic aspects of the jazz language including the blues and Bebop principles, the seventh chord as consonance, harmonic extensions, the ii V7 I progression, and swing, shuffle, and Latin rhythmic styles. Prerequisite: MUSC 3A. Meets the elective requirement for music majors and minors. (5 units)

107. Tonal Musicianship

This course offers advanced level musicianship training focusing on melodic, harmonic, and rhythmic aspects of musical language characteristic of the tonal period of Western Art Music (ca. 1600--1910). The emphasis will be on studying tonicization and modulation in the context of classical functional harmony. Prerequisite: MUSC 3A. Meets the elective requirement for music majors and minors. (5 units)

108. Pan-Tonal Musicianship

This advanced level musicianship course will explore aspects of musical language that extend beyond the diatonic scale and functional harmonic relationships characteristic of classical tonality. Topics will include even divisions of the octave, symmetrical scales, navigating chromatic space by thinking intervallically, trichords, non-metered rhythms, simultaneous meters, and metric modulation. Prerequisite: MUSC 3A. Meets the elective requirement for music majors and minors. (5 units)

109. Lyric Diction

This course provides singers and actors with a vital introduction to the fundamentals of accurate pronunciation in English, French, German, Latin, and Italian language, with an emphasis on lyric (sung) diction. Pronunciation and comprehension of the International Phonetic Alphabet is taught. Required for musical theatre minors, lyric track. Meets the elective requirement for music majors and minors. (5 units)

110. Instrumentation/Arranging

An exploration of orchestration and arranging for all instruments, in various styles. Prerequisite: MUSC 2 or permission of instructor. Meets the elective requirement for music majors and minors. (5 units)

111. Counterpoint

Detailed study and creation of two-part contrapuntal music in the 16th-century Renaissance and 18th-century Baroque styles. Prerequisite: MUSC 3 or permission of instructor. Meets the elective requirement for music majors and minors. (5 units)

112. Music and Cultural Appropriation

This course examines the aesthetic, social, and political effects of cultural appropriation in music from the United States and around the world. What is at stake when music crosses boundaries of culture, race, ethnicity, gender, class, religion, and nation state? Students will research specific instances and iterations of appropriation through sound and movement, such as sampling, cultural borrowing, and cross-cultural collaboration, as well as forms of cultural and economic exploitation. (5 units)

113. Form and Analysis

Study of the relationship in Western music between shape/form/structure and harmonic/melodic/thematic content. Music from 1650--1950 will be analyzed in order to achieve this goal, focusing on the primary structures used throughout, and since the Common Practice period. Prerequisite: MUSC 3 or permission of instructor. Meets the elective requirement for music majors and minors. (5 units)

114. Decolonizing Music Education

This course seeks to address and disrupt the racist, sexist, ableist, homo- and transphobic, and imperialist practices in Western music education, especially at the college level. Working against histories of exclusion and white privilege, students will collaborate with faculty to create new pedagogical models for teaching music theory, history, and musicianship and be active participants in the Music department's ongoing curriculum development. (5 units)

115. Experimental Sound Design

This course is about creating sounds on the computer from scratch. From simulating nature sounds to creating unique synthesizers, this class provides basic tools for the discovery of new timbres. Using the powerful SuperCollider language in a hands-on class environment, students will learn the basics of various digital synthesis techniques and explore their creative applications in electronic music composition and in other fields. Meets the elective requirement for music majors and minors. (5 units)

117. 20th-Century Music Theory

Study of musical structures and systems used from the late 19th century through mid-20th-century compositions, including atonality and serialism. Prerequisite: MUSC 3 or permission of instructor. Meets the elective requirement for music majors and minors. (5 units)

118. Directed Study in Pedagogy

A teaching practicum in which junior or senior music majors work with a music faculty member in a classroom, studio, or ensemble framework to assist in the planning and execution of a course. Music majors only. (1 unit)

119. Music, Technology, and Society

This course examines how technology in music and the arts reflects and informs societal and cultural change. The course explores the ways in which music production, consumption, and distribution inform and are informed by digital technology. Assignments include readings and critical analysis, as well as composing pieces and collaborating on creative projects that explore the topics presented in class. Meets the elective requirement for music majors and minors. (5 units)

120. Junior Recital

Presentation of 30 to 45 minutes of music in recital. All Junior Recitals require a pre-recital hearing, and approval of the student's applied teacher and assigned committee. Junior Recitals take place in the Winter quarter only, except by permission of department chair. Registration by permission number only. More information about the recital hearing can be found on the department's website. Open to majors and minors only. Students enrolled in Junior Recital are recommended to take MUSC 33. (1 unit)

121. Senior Recital

Presentation of 45 to 60 minutes of music in recital. All Senior Recitals require a pre-recital hearing, and approval of the student's applied teacher and assigned committee. Registration by permission number only. More information about the recital hearing can be found on the department's website. Open to majors and minors only. Students enrolled in Senior Recital are recommended to take MUSC 33. (2 units)

122. Motown and the Sound of Young America

This course will examine the various contexts surrounding the founding, establishment, and thriving of the Motown Label in the United States. Various topics surrounding the civil rights movement, race, gender, socio-politics, and Detroit in the 1950s-1960s will be integrated into the class as well as the career paths and profiles of favorite artists such as Stevie Wonder, Marvin Gaye, Diana Ross, and Michael Jackson. (5 units)

130. Anthropology of Music

An intellectual history of ethnomusicology. Approaches and theories from anthropology, musicology, folklore, religious studies, linguistics, critical theory, and gender studies will be explored in order to interrogate music's relationship to culture, power, and practice. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. Also listed as ANTH 153. (5 units)

131. Music Research and Writing

This course is an introduction to research methods in music scholarship. Students will engage in local fieldwork-based projects and learn techniques for documenting, interpreting, and writing about musical cultures. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

132. The History of Hip-Hop

This course will examine the historical contexts and diasporic flows that have shaped (and have been shaped by) hip-hop music. Topics explored will include the multicultural roots of hip-hop from West African bardic traditions to Jamaican sound system culture to African-American oral practices. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. Also listed as ETHN 132. (5 units)

133. Music in the Community

Music in the Community is a course designed to provide exploratory, analytical, and hands-on experience with civic and other arts organizations that utilize music education and performances as a source for advocacy and community outreach. Students will be introduced to various foundations, programs, and artistic endeavors, to gain perspective about the many components that form community arts initiatives. Learning will be focused on activities in and outside the classroom, including interactive outreach and project-based learning. (5 units)

134. Popular Music, Race, and American Culture

A cultural history of blues-based American popular music from minstrelsy to disco. Emphasis will be placed on the development of a wide range of musical styles, such as ragtime, classic blues, swing, rhythm and blues, rock and roll, soul, and funk. Major themes include the impact of the music industry, the commercialization of black music, race and gender politics, social movements, and technology. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. Also listed as ETHN 164. (5 units)

135. Music and Ecstasy

This course will study the relationship of music to the experience of ecstasy or transcendence. Religious or supernatural phenomena are the basis of many musical compositions throughout history and the experience of spiritual transcendence through musical composition and performance crosses all genres of music-making. Interweaving themes from religion, science, psychology, music theory, history, and philosophy, students will examine why music speaks to us in ways that words cannot. (5 units)

136. Music of Africa

This course focuses on the history, musical characteristics, and sociopolitical, economic, and cultural roles of selected musical traditions from across Africa. Major themes include nationalism, resistance, and urbanization. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. Also listed as ETHN 148. (5 units)

137. Jazz: Culture, Race, and Spirit

This course is designed to explore the musical traditions of jazz by studying identity, spirituality, cultural transmission, and race relations. Topics will include the cultural roots of jazz, New Orleans as the birthplace for jazz, the Harlem Renaissance, the birth of bebop, John Coltrane's music and spirituality, jazz and social protest, and spiritual practices of Herbie Hancock and Wayne Shorter. The course will include lectures, in-depth listening, readings, class discussions, and student presentations. Meets the elective requirement for music majors and minors. (5 units)

139. Flamenco History and Performance

This course explores the musical and social history of flamenco, from its roots in India along the "gypsy" trails through North Africa, Asia, and Europe. Students will examine how this dynamic art form grew out of the cultural legacy of the "gitanos" (gypsies) in Andalusia, Spain and learn about flamenco song forms, dances, and rhythms. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

156. Improvisation

This class explores the process of creating music through interactive activities designed to awaken students' imagination and expand and deepen their understanding of music as an art form. The class community itself will be an improvising performance ensemble. Prerequisites: Theory I and/or Musicianship I; or commensurate experience and permission of the instructor. Meets the elective requirement for music majors and minors. (5 units)

189. Sacred Music and the Church

This course examines the interplay between church doctrine, musical style, and the power of social, political, and cultural forces, primarily through the genre of the mass. Gregorian chant, sacred concert music, modern service music, and non-Western music traditions will be studied. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

190. Music of the Middle Ages and Renaissance

Survey of Western music from approximately 800--1600 CE. Works to be studied include chant, motets, masses, and the development of polyphony through various sacred and secular music of the Medieval and Renaissance periods. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

191. Environmental Consciousness and Music

This course examines music and musical philosophies which are a strategy for interdisciplinary environmental activism in the climate change era. As sound is an original element of the Earth's ecosystem, the Gaian perspective of music as a living component of the biosphere will be explored from both scientific and cultural perspectives. Both non-western and western music will be examined for how it expresses environmental consciousness, from Javanese and Aboriginal music, to the more explicit strategies of composers from John Cage to Björk, as well as the Acoustic Ecology and Auditory Culture movements. (5 units)

192. Music of the Baroque and Classical Periods

Survey of Western music from approximately 1600 to 1827 CE, including study of the great works of J.S. Bach, Handel, Haydn, Mozart, and Beethoven. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

193. Special Topics

Special topics course in Music. May be taken more than once when topics differ. (5 units)

194. Music of the Romantic Period

Survey of Western music of the 19th century, including the great works of late Beethoven, Brahms, Wagner, and others. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

195. Early 20th-Century Music

Survey of Western music from Debussy to World War II, including Strauss, Schoenberg, Stravinsky, and others. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

196. Music and Social Change Since 1945

Survey of Western music from 1945 to the present, including the rise of technology in music and cross-cultural trends of the late 20th and early 21st centuries. Meets the elective and Ethnomusicology/Music History requirement for music majors and minors. (5 units)

197. Senior Honors Project

This course is designed to allow senior music majors and minors an opportunity to pursue in-depth musical studies within the parameters of a project or thesis in one of the following areas: music history/ethnomusicology, composition/music theory, or performance studies. This project is administered solely by the Department of Music as a course offering, and is separate from the University Honors program. (5 units)

Performing Ensemble Courses

Note: These ensemble courses meet the ensemble requirement for music majors and minors, and may be repeated for credit. Students should enroll with the appropriate lower- or upper-division course number, depending on their status.

40/140. University Orchestra

Preparation and concert performance of major works of orchestral literature. Open to all SCU students. This course fulfills the ensemble requirement for music majors and minors. (2 units)

42/142. Concert Choir

A mixed ensemble of select singers that performs a wide variety of a cappella and accompanied secular and sacred choral music from every period in music history through the present day. Emphasis is on a comprehensive survey of choral literature through performance, as well as development of choral tone, blend, diction, and sight singing skills. See instructor for voice part assignment. Fulfills the ensemble requirement for music majors and minors. (2 units)

43/143. Chamber Singers

An 18--24 voice mixed ensemble of highly select advanced singers. Repertoire includes a variety of sophisticated chamber choral music from the Renaissance to the present day. By audition only. Fulfills the ensemble requirement for music majors and minors. (2 units)

45/145. Jazz Ensemble

Preparation and performance of jazz literature for large ensemble. By audition only. Fulfills the ensemble requirement for music majors and minors. (2 units)

46/146. Jazz Combo

Focus on jazz improvisation, techniques, and theory in small group performance. By audition only. Fulfills the ensemble requirement for music majors and music minors. (2 units)

52/152. World Music Ensemble

World Music Ensemble provides opportunities for students to perform music outside the Western art tradition. Open to all SCU students regardless of musical experience. Fulfills the ensemble requirement for music majors and music minors. (2 units)

53/153. Music Theater Workshop

Preparation of solo and ensemble operatic excerpts in a workshop setting. Technical, stylistic, and dramatic preparation employing music reading skills, ornamentation, gesture, and choreography resulting in a public performance presented at the end of the quarter. Fulfills the ensemble requirement for music majors and music minors (2 units)

54/154. Wind Ensemble

Study and performance of symphonic concert band literature in a wide variety of styles. By audition only. Fulfills the ensemble requirement for music majors and minors. (2 units)

55/155. New Music Ensemble

Study and performance of a variety of works written in the 20th and 21st centuries. Open to all SCU students. Fulfills the ensemble requirement for music majors and music minors. (2 units)

57/157. Laptop Orchestra (SCLOrk)

Computer-mediated music ensemble and learning environment for experimental electronic music composition and performance practice. This interdisciplinary course explores the intersections of music, computer science, composition, and live performance. Students present their work in a public concert at the end of the quarter. No music background is required. Registration by permission number only. Fulfills the ensemble requirement for music majors and music minors. (2 units)

Private Instruction

The College of Arts and Sciences offers applied instruction in composition, improvisation, conducting, vocal, and instrumental studies. Please contact the Department of Music for further information on specific areas of interest.

Note: Applied lessons are available to music majors and minors, theatre majors and minors, musical theatre minors, and students enrolled in departmental ensembles. Students may enroll in 1-hour (1 unit), 45-minute (0.75 units), or 30-minute (0.5 units) lessons. A full description of the private instruction protocols is available on the Department of Music website. Nine private lessons are given each quarter. All students taking lessons are required to participate in an end-of-quarter jury hearing. Private lessons may be repeated for credit.

Neuroscience Program

Director: Christelle Sabatier (Biology)

Assistant Director: Patti Simone (Psychology)

Faculty: Lang Chen (Psychology), Laura Cocas (Biology), Lindsay Halladay (Psychology)

A Bachelor of Science degree in neuroscience at SCU will provide students with the scientific foundation needed to understand the nervous system at many levels, from molecular to patient symptomatology. Students will use interdisciplinary approaches to examine the biological, computational, and psychological underpinnings of the nervous system. Students will come to appreciate the interactions between neurological and environmental factors in contributing to disease, disorders, and development. They will be challenged to consider ethical issues in neuroscience research and practice. Students who graduate with a neuroscience major will be prepared for diverse careers in health care, policy, business, law, biomedical, and clinical research or in graduate level studies in neuroscience-related disciplines.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in neuroscience must complete the following requirements:

- NEUR 1, 10, 150, 190
- BIOL 1A, 1B, 1C, 122, 160
- CHEM 11, 12, (or 14) 31, 32, 33
- MATH 35 or 11 (35 recommended)
- MATH 36 or 12 or CSCI 10
- PHIL 32 (recommended)
- PSYC 1, 165, 169
- One from BIOL 110, 120, 123, 165, 172, 174, 175, 178; CHEM 143
- One from PSYC 120, 166, 167, 196
- One additional course from: BIOL 110, 119, 120, 123, 123A, 124, 165, 171, 172, 174, 175, 178; CHEM 141
- One additional course from: COMM 176A; PHIL 113, 117, 153, 158, 160, 161; PSYC 120, 130, 138, 166, 167, 196
- Recommended courses for students intending to pursue graduate work in Neuroscience: PHYS 11, 12, 13 or PHYS 31, 32, 33

Lower-Division Courses

1. Introduction to Neuroscience

This course introduces fundamental concepts in neuroscience. Students will consider the importance of biological and environmental factors on brain function and behavior. Students will examine interdisciplinary approaches to problems in neuroscience and engage with important ethical and societal issues in neuroscience (e.g., Alzheimer's disease,

cognition, addiction). (4 units)

10. Explorations in Neuroscience

A course with a focus on foundational knowledge essential to the field (e.g., neurons, neuroanatomy, neurophysiology) with an introduction to research methodologies to be able to understand and conduct neuroscience research. Lecture and lab. Prerequisite: NEUR 1 and Neuroscience major or permission of instructor. (5 units)

Upper-Division Courses

150. Neuroscience Research Seminar

Junior-level course using journal readings and invited neuroscientists from on- and off-campus to discuss research from several disciplines (e.g., biology, chemistry, engineering, ethics, psychology). An opportunity for majors to explore potential career paths and strategies, discuss the scientific merit of original research and be introduced to neuroscientists in a variety of fields and professions. Course may be repeated multiple times. Prerequisite: NEUR 10. Recommended but not required: ENVS 110/BIOL 160. (2 units)

190. Neuroscience Capstone

This senior-level capstone experience examines the breadth and depth of the neuroscience discipline, using in-class primary research presentations, career exploration and preparation projects, as well as a final capstone project to investigate both theory and practice to answer new questions in neuroscience today. Prerequisites: BIOL 122, NEUR 150 and ENVS 110/BIOL 160. (5 units)

198. Neuroscience Internship

A course where students can learn how they can best apply classroom instruction to their career objectives through an academically supported work or volunteer experience outside of Santa Clara University. Internships should encourage career skills and professional growth and serve to introduce the student to the range of opportunities afforded a degree in the discipline. To be eligible for this course, students must present an outline of their projected work as part of the internship to the Neuroscience program director no later than the sixth week of the term preceding the start of the project. Number of units will be determined based on the expected time commitment. Prerequisite: departmental and University permission. P/NP grading. (1-5 units)

Department of Philosophy

Professors Emeriti: James W. Felt, S.J., William A. Parent, William J. Prior

Professors: Philip J. Kain, Christopher B. Kulp, Michael J. Meyer, Lawrence J. Nelson

Associate Professors: Meiline M. Chinn, Scott LaBarge (Department chair), Erick Ramirez, Mark A. Ravizza, S.J. (on leave), Eric Yang

Assistant Professors: Justin Clardy, Kimberly Dill

Senior Lecturer: Brian Buckley

Lecturers: Erin Bradfield, Robert Shanklin

The Department of Philosophy offers a degree program leading to the Bachelor of Arts in philosophy. Philosophy inquires directly into the relation of human beings to the world: what we are, how we know, what values are, how we live. Worth pursuing for its own sake, philosophical inquiry also promotes analytical thinking and precise expression and, thus, is excellent undergraduate preparation for a number of professional careers in areas such as law, government, finance, media, writing, and computer programming. To qualify for honors in philosophy, the major ordinarily must have a 3.5 grade point average in philosophy courses and complete PHIL 197 with a grade of A−, or better.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in philosophy must complete the following departmental requirements:

- One lower-division course from PHIL 40--45. Waived for students who completed a *Foundations* Core sequence in Philosophy (PHIL 1A/2A or PHIL 11A/12A)
- PHIL 14, 15, and 16 (History of Western Philosophy)
- PHIL 17 or 18 (Informal or Formal Logic)
- PHIL 19 (Knowledge and Reality)
- One course from PHIL 124--127, 141A--151, 174--181A (History of Philosophy)
- One course from PHIL 174--180 (Non-Western Philosophy)
- One course from PHIL 109--112, 120--129, 152 (Ethical Theory)
- One course from PHIL 150--165 (Metaphysics and Epistemology)
- Four additional upper-division courses elected from PHIL 108--199
- No one class may fulfill both the Non-Western Philosophy and the History of Philosophy requirement
- To qualify as an upper-division elective, any PHIL 199 class must be 5 units

Requirements for the Minor

Students must fulfill the following requirements for a minor in philosophy:

- PHIL 14 and 15 (History of Western Philosophy)

- PHIL 17 or 18 (Informal or Formal Logic)
- Four upper-division courses PHIL 108--199
- To qualify as an upper-division elective, any PHIL 199 class must be 5 units

Emphases in Philosophy

An emphasis may be taken as part of a philosophy major or minor. Four emphases in philosophy are offered: Pre-Law and Justice (P), Ethics and Values (E), Science and Analysis (S), and History of Philosophy (H).

To graduate with an emphasis, students must complete four upper-division courses (PHIL 108--199) chosen from the following approved list:

- Pre-Law and Justice (P) courses: PHIL 108, 110, 113, 116--129, 152, 156, 162, 185A, 185B, 186
- Ethics and Values (E) courses: PHIL 108--129, 141, 152, 159, 165, 176, 181, 183, 184, 185A, 185B, 186
- Science and Analysis (S) courses: PHIL 128, 150--165
- History of Philosophy (H) courses: PHIL 124--127, 141--151, 155, 174--181, 184

Lower-Division Course: Critical Thinking & Writing

1A. and 2A. Critical Thinking & Writing I and II

A two-course themed sequence featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, information literacy, and rhetorical situation. There are course-by-course variations as to the theme of the course. Successful completion of CTW I (PHIL 1A) is a prerequisite for CTW II (PHIL 2A). (4 units each quarter)

Lower-Division Course: Cultures & Ideas

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in philosophy and culture over a significant period of time. Courses may address autonomy, personhood, community, justice, human dignity, law, the self, religion, cosmology, and other topics. Successful completion of C&I I (PHIL 11A) is a prerequisite for C&I II (PHIL 12A). (4 units each quarter)

Lower-Division Courses: History of Western Philosophy

14. History of Western Philosophy: Classical and Medieval

Beginnings of Western philosophy. Representative philosophers of the Greek and medieval traditions, with attention to their historical milieu and their relevance to contemporary thought. Also listed as CLAS 51. (4 units)

15. History of Western Philosophy: Early Modern

Principal fashioners of the modern mind. 17th- and 18th-century philosophers studied in the historical context of their times with attention to their impact on the present. (4 units)

16. History of Western Philosophy: Modern

Introduction to later modern and contemporary philosophy, from the critical revolution of Kant to some of the dominant currents of the 20th century. Prerequisite: PHIL 15 strongly recommended. (4 units)

Lower-Division Courses: Logic and Reasoning

17. Informal Logic

Introduction to the art of logical reasoning. Emphasis on the ability to recognize common fallacies of argumentation. (4 units)

18. Introduction to Formal Logic

Introduction to the study of deductive inference, including traditional and modern techniques. (4 units)

Lower-Division Course: Contemporary Philosophical Writing

19. Knowledge and Reality

Introduction to fundamental philosophical concepts and debates in epistemology (the study of knowledge) and metaphysics (the study of fundamental reality), through exposure to selected works that exemplify the best qualities of contemporary philosophical writing. Students will engage in intensive writing practice to develop their own competency in contemporary philosophical writing. Prior completion of PHIL 14 or 15 required. Course fulfills Advanced Writing Core requirement. (4 units)

Lower-Division Courses: Ethics

21A. Introduction to Ethics

Consideration of the traditional theoretical questions posed in moral philosophy: standards that determine the morality of an action, the motives and consequences of an act, the good life. Authors studied may include Plato, Aristotle, Aquinas, Bentham, Mill, Kant. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

21B. Introduction to Ethics in Chinese Philosophy

Consideration of the major ethical questions, answers, and practices in Chinese philosophy. Traditions studied include, but are not limited to, Confucianism, Daoism, Mohism, and Legalism, as well as contemporary interpretations of these traditions. Close attention will be paid to concepts such as virtue, ritual, self-cultivation, social harmony, family reverence, and the roots of human morality. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

22. Ethics in the Digital Age

Formal inquiry into normative ethics and the ethical dimensions of the digital revolution, including (but not limited to) privacy and surveillance, intellectual property, hacking and cybercrime, robotics, artificial intelligence, computer games, virtual identities, and virtual worlds. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

23. Ethics and Gender

Formal inquiry into normative ethics. Emphasis on ethical principles and theories as they apply to concepts and practices related to sex, masculinity, and femininity. Special attention to gender theory and feminism. Topics studied may include pornography, sexuality, heterosexual/gay marriage and family life, domestic violence and rape on and off campus, abortion and reproduction, fashion and appearance, gender discrimination, sex-based affirmative action, and sexual harassment. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. Also listed as WGST 58. (4 units)

24. Ethics and Gender in Film

Formal inquiry into normative ethics. Emphasis on ethical principles and theories as they relate to concepts of gender and sex applicable to both males and females. In addition to written texts about ethics and gender, both dramatic and documentary films will be studied to illustrate how gender is both experienced by men and women and portrayed in the lived world. Topics studied may include sexuality and sexual orientation, male and female gender roles, heterosexual/homosexual marriage and family life, sexual violence, transsexuality, abortion and reproduction, and gender discrimination. Films studied may include *The Hunting Ground*, *Thelma and Louise*, *Southern Comfort*, *Boys Don't Cry*, *The Bro Code*, *Sliding Doors*, *The Mask You Live In*, *If These Walls Could Talk*, *The Laramie Project*, and *In the Company of Men*. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School.(4 units)

25. Ethics in Society

Formal inquiry into normative ethics. Special attention to general ethical principles and to the practical application of these principles to current ethical issues in society. Topics may include the concepts of freedom, obligation, value, rights, justice, virtue, and moral responsibility, as applied to issues such as abortion, punishment, economic distribution, racial and sexual discrimination, sexuality, political obligation, nuclear war, and pornography. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

26. Ethics in Business

Formal inquiry into normative ethics. Special attention to general ethical principles and the application of these principles to current moral issues in business. Topics may include truth in advertising, corporate social responsibility, affirmative action, capitalism, government regulation, quality of work-life, environmental and resource issues, and ethical codes of conduct. Students who take MGMT 6 or MGMT 6H may not take this course for credit. Fulfills the Ethics Core requirement for the bachelor's degree in all undergraduate colleges. Partial fulfillment of the Civic Engagement Core requirement for students in the Business School. (4 units)

27. Ethics in Health Care

Formal inquiry into normative ethics. Special attention to general ethical principles and the application of these principles to current moral issues in medicine and the health sciences. Topics may include the definition of death, informed consent, the just distribution of health care, euthanasia and assisted suicide, genetic manipulation, assisted reproduction, research involving human subjects, decisions to forgo life-sustaining medical treatment, truth-telling, and organ transplantation. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

28. Ethics in Politics

Formal inquiry into normative ethics. Emphasis on moral issues in political theory. Possible topics include the concepts of rights, justice, dignity, equality, personhood, desert, retributivism, and utility. Issues discussed may include alienation, individualism, community, discrimination, capital punishment, sexual equality, civil disobedience,

revolution, and world hunger. Satisfies the Ethics Core requirement for the Bachelor's degree in all undergraduate colleges except the Business School. (4 units)

29. Ethics and the Environment

Formal inquiry into normative ethics. Emphasis on moral issues and the environment. Topics include animal rights, anthropocentrism, cost-benefit analysis, human rights, interspecies justice, land (use and value), population control, rights (of future generations and natural objects), values (moral and aesthetic) and preferences, wildlife protection, and wilderness. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

30. Ethics and the Law

Formal inquiry into normative ethics. Emphasis on moral issues and concepts in contemporary legal debates such as the rule of law, the duty to aid, the relationship between law and ethics, freedom of speech, the right to die, criminally charging minors as adults, the legalization of drugs, obscenity and indecency, the moral justification for punishment, including capital punishment, and state regulation of marriage. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

31. Ethics and Marginalized Persons

Formal inquiry into normative ethics. Emphasis on ethical principles and the application of these theories to persons who are gay, disabled, elderly, and poor. Special attention given to recognition, voice, authenticity, dialogue, and place as basic needs of personhood. Subjects raised will address marginalization and the damage it does to persons. Topics studied may include difference, shame, fear, loneliness, desire for accommodation, invisibility, justice, and discrimination. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. Also fulfills the ELSJ Core requirement.(4 units)

32. Neuroethics

Formal inquiry into normative ethics. Emphasis on issues in the ethics of neuroscience and the neuroscience of ethics. Questions raised include: how do advances in fMRI resolution impact our right to keep our mental lives private? In light of advances in medical care, should we amend the current medical definition of brain death? Is neurosurgery a morally acceptable approach to certain mental illnesses? What do the neurosciences tell us about what it means to be a rational and moral agent? Do the neurosciences prove that we lack free will? Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

33. Ethics and Race

Formal inquiry into normative ethics. Emphasis on moral issues regarding race in society. Personhood, character, fairness, empathy, and justice (substantive and procedural) will be offered as ethical lenses to evaluate racial questions. Issues discussed may include nobodiness, affirmative action, intersectionality, stereotyping, mass incarceration, Black Feminist thought, redlining, poverty and employment, the Radical Contract, privilege, policing, and lateral violence. Particular emphasis will be given to the African-American experience. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

34. Ethics and Adulthood

A philosophical inquiry into the ethical challenges facing young people as they transition into adulthood. The course is grounded in major normative ethical theories in the Western philosophical tradition. Ethical issues dealt with may include: the nature and cultivation of moral virtue, the ethical dimensions of autonomy and responsibility, marriage,

friendship, duties to self and others, and the implications of electronic technology for personal relationships. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

35. The Ethics in Drama, The Drama in Ethics

An examination of philosophical ethics both in theory and in the dramatic portrayal of characters struggling with particular ethical problems. Also an exercise in writing original dialogue for characters contending with ethical decisions and in acting dramatic dialogue taken from published plays and student scene writing. Students' attention and efforts will be directed not only to the cognitive, but also to the affective and bodily dimensions of ethical decision-making in particular circumstances. This course is intended to be a melding of philosophical reflection and inquiry with theatrical artistic expression in order to better understand what it means to be a virtuous person who lives a good life in an ambiguous world. Also listed as THTR 60. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (4 units)

Lower Division Course: Science, Technology, and Society

40. Science, Technology, and Society

An investigation of the philosophical questions surrounding the social impact of science and technology, exploring issues such as technological determinism, the impact of technology on moral life, and the complex relationship among science, technology, and modern culture. Special attention may be given to the social and ethical implications of specific technologies such as robotics, nanotechnology, neuroimaging, and/or technologies for digital communication. Course fulfills the STS Core requirement. (4 units)

Lower-Division Course: Diversity and Experiential Learning for Social Justice

41. Diversity and Disability

Examines the nature and meaning of disability: what it is like living with disability (one's own or others'); the legal, social, and ethical aspects of disability (particularly on justice and individual and personal treatment of disabled persons); and the intersections of disability with other social categories such as class, ethnicity, sexual orientation, age, and race. Students will be exposed to these issues by reading scholarly and nonfiction texts, doing research, viewing films, and working with disabled persons in the community through the Arrupe partnerships for community-based learning. Course fulfills the ELSJ and Diversity: U.S. Perspectives Core requirements. (4 units)

Lower-Division Courses: Religion, Theology, and Culture

42. Faith and Reason

Exploration into possible combinations of faith and reason. Does faith alone provide truth? Must faith precede knowledge? Do faith and reason work in harmony, or does faith act as a barrier to accurate reasoning? Additional questions may include: If belief is not to be blind, what preambles to faith are required? What constitutes sufficient reasons for reasonable belief? Is faith rational or irrational or neither? If faith relies on reasoning, what type of reasoning? What defines belief? Special attention may be given to how persons of faith employ philosophy to explore and articulate their belief. Course fulfills the RTC 2 Core requirement. (4 units)

43. Religion and American Law

Examination of the interface of religion and American constitutional, statutory, and common law. Topics may include the legal status and definition of religion; the First Amendment guarantee of free exercise of religion and prohibition on government establishment of religion; religious objections to health services; conscientious objection to war and military service; free exercise and dangerous or restrictive activities; clergy malpractice and improper sexual behavior; the ministerial exception to employment anti-discrimination laws; religion and politics; disputes over ownership of church property; and teaching in public schools about religion and science. Texts will include judicial opinions and other legal materials. Course fulfills the RTC 2 Core requirement. (4 units)

Lower-Division Course: Civic Engagement

44. Free Speech, Hate Speech, and Civil Discourse

Examination of the ethical, legal, and social implications of the exercise and limitation of free speech with special emphasis on regulation of speech and intellectual inquiry on college campuses. Topics may include "politically correct" speech; opposition to campus speech from individuals with controversial or biased views; use of "trigger warnings"; academic freedom and unpopular speech about gender, race, ethnicity, and religion; definitions of "hate speech"; the value of intellectual diversity of viewpoints; the virtue of tolerance; the differences among ethical, legal, and prudential limits on speech; and importance of civil discourse for engagement with social and legal policy. Course fulfills the Civic Engagement Core requirement. (4 units)

45. Civility and Democracy

Civility is derived from *citizen* and *city*. This course will explore the ability of humans to live together and thrive as citizens within democratic order. Primary emphasis will be given to defining civility (and incivility), exploring its connections with justice, questioning whether or not it may coincide with civil disobedience, describing its links to law and the rule of law, and highlighting its reliance on vibrant public discourse. Specific topics may include marginalization, tolerance, free speech, safety, empathy, political rhetoric, voting, and education. Fulfills Civic Engagement Core Requirement. (4 units)

Upper-Division Courses

Note: Upper-division courses that may be used to fulfill an emphasis requirement are indicated in the course title with a parenthetical letter: Pre-law and Justice (P); Ethics and Values (E); Science and Analysis (S); and History of Philosophy (H).

Upper-Division Courses: Ethics

108. Special Topics in Applied Ethics (E, P)

Selected philosophical problems in applied ethics studied at an advanced level. (5 units)

109. Special Topics in Ethical Theory (E)

Selected philosophical problems in ethical theory studied at an advanced level. (5 units)

110. Classic Issues in Ethics (E, P)

Exploration of the fundamental questions of ethics through close study of some of the great works of moral philosophy, such as Plato's Republic, Aristotle's Nicomachean Ethics, Kant's Groundwork, and Mill's Utilitarianism. (5 units)

111. Ethical Theory (E)

Examination of major philosophers or issues in moral and social philosophy. Topics may include dignity, moral rights and obligations, justice, moral relativism, virtue, the good, and happiness. (5 units)

112. Ethics, Authenticity, Freedom, and Vocation (E)

An inquiry into the moral ideal of being an authentic self, the meaning and moral significance of freedom, and the relation of these to vocation understood as an individual's choice of major projects in the world and fundamental values, as response to the multiple calls of that which is outside of the self, and as the common experience of being summoned by a specific person seeking help or attention and of having to respond to this summons. The central premise of the course is that anyone who asks the classic questions of vocation (What am I good at doing? What am I passionate about doing? What are my values? Where do I find meaning in life? Where do I and the needs of the world and other persons intersect?) should reflect systematically on what it means to be an authentic self and what it means to be an agent with freedom of choice, as well as on the basic moral values that attach to authentic freedom. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

113. Bioethics (E, P)

Examination of ethical concepts and problems encountered in the practice of medicine and other health professions as well as the conduct of biomedical science. Subjects studied may include the protection of human and animal subjects involved in scientific research, stem cell research and clinical investigation, public support for biomedical research, the proper character and scope of the clinician-patient relationship, informed consent, truth-telling, confidentiality of medical information, the duty to warn third parties of familial genetic risks and of threats posed by mentally disturbed patients, genetic testing and screening, abortion, the right to refuse life-sustaining medical treatment, surrogate decision making for the incompetent, physician assisted suicide, euthanasia, allocation of scarce medical resources, the definition of death, organ transplantation, and justice in providing access to basic health care services. (5 units)

116. Environmental Philosophy and Ethics (E, P)

Formal inquiry into normative ethics. Investigation of environmental issues from the point of view of classical ethical perspectives and consideration of how questions about the moral value of the environment provide new challenges to such classical theories. Topics may include animal rights, human rights, the rights of future generations, the rights of nature, anthropocentrism, interspecies justice, land (use and value), wilderness, and values and preferences. (5 units)

117. Bioethics and the Law (E, P)

Bioethics (normative ethics as applied to medicine and the health care professions, the life sciences, and biotechnology) is partially constituted by legal norms and values. Exploration of the evolving relationship between law and bioethics, as well as the substantive law and ethics of selected topics by studying cases and bioethical texts. Topics studied may include the definition of death, informed consent, the physician-patient relationship, euthanasia/assisted suicide and the law of criminal homicide, advance directives for health care, confidentiality, involuntary civil commitment for mental illness, regulation of research involving human subjects, the use of nonhuman

animals in biomedical research, the legal and moral status of prenatal humans, parental control over the medical care of minor children, tort law and medical practice, and state licensure of healthcare professionals. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

118. Ethics and Constitutional Law (E, P)

Exploration of how the constitutional rights and interests of individuals and groups of individuals can be understood and justified by moral and social/political philosophy. Particular constitutional subjects to be studied may include the Fourth Amendment (search and seizure), obscenity and pornography, equal protection, gender discrimination, freedom of speech, freedom of association, free exercise of religion, State establishment of religion, discrimination against queer persons, privacy and personal autonomy, privacy and reproductive freedom, and substantive due process. Readings typically consist of Supreme Court cases. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

119. Ethics and Criminal Law (E, P)

Examination of the moral and conceptual foundations of contemporary criminal law. Topics studied may include ethical justifications of punishment (utilitarianism, retributivism), sentencing and proportionality, the nature of criminal acts and the guilty mind (mens rea), degrees of culpability, mental capacity for mens rea, causation, justification and excuse, types of criminal homicide and the death penalty, women's rights and feticide laws, the right of self-defense/defense of others, necessity, duress, the insanity defense, trying juveniles as adults, attributions of criminality (attempt, complicity, conspiracy), plea bargaining and justice, applicability of theories of justice to criminal behavior, constitutional and moral rights of suspects and convicts, and the criminal liability of corporations. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

120. Feminism and Ethics (E, P)

Exploration of theories of feminism, patriarchy, and gender, and of ethics as applied to the contemporary experience and social situation of women. Topics may include equality, affirmative action, comparable worth, pornography, sexuality, reproductive technologies, maternal-fetal relations, rape and domestic violence, female body image, cosmetic surgery, "alternative" families, militarism, and environmentalism. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. Also listed as WGST 184. (5 units)

121. Political Philosophy and Ethics (E, P)

Moral issues in political philosophy, especially traditional ethical justifications for political authority. Topics may include theories of political authorization and contract theory, rights, liberty, equality, justice, community, revolution, civil disobedience, and others. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

122. Virtue Ethics (E, P)

Exploration of various basic issues in ethics, such as friendship, courage, or compassion, from the point of view of virtues or (moral) character. Close study of classic authors---for example, Aristotle---as well as contemporary writers on virtue ethics. (5 units)

123. Philosophy of Law (E, P)

Investigation into the defintion, use, and application of law. Particular attention will be given to the intersection (or non-intersection) of law and morality. Specific topics may include civil disobedience, the rule of law, duty to follow the law, and legal interpretation. (5 units)

124. Natural Law Tradition (E, P, H)

Examination of the intersection (or non-intersection) of morality and law within the 2,500-year natural law tradition and its most famous exponent, Thomas Aquinas. Particular topics addressed may include justice, politics, rights, the social contract, international law, positive law, and the sources of law. Applications of natural law reasoning in areas such as criminal justice, civil law, civil disobedience, and international criminal tribunals (e.g., Nuremberg) may be addressed. Specific questions considered will include what law is for, how natural law may be known, and what elements of human nature provide a basis for universal morality in law. (5 units)

125. Aristotle and Aquinas on Justice (E, P, H)

Exploration of the role of justice in a virtuous society through the lens of Aristotle and Thomas Aquinas. Emphasis will be placed on the study of human nature and its need for the habit of justice for personal perfection within a complete society. Particular questions will include: What is justice and what is its connection to law and society? What does it mean to deprive someone of justice? Are there different types of justice? How can a person practice justice as a virtue? What is the common good and how does it differ from the greater good? (5 units)

126. Utilitarianism (E, P, H)

Philosophical inquiry into utilitarianism as a mode of consequentialist ethics. Particular attention will be given to questions concerning the particular good(s) sought (pleasure, happiness, preferences, avoidance of pain), the vehicles used (acts, rules), as well as the manner of evaluating the theory for a particular case (options and prognoses). Criticisms of consequentialist ethical evaluation will also be considered. Readings may draw from ancient, modern, and contemporary sources. (5 units)

127. Marx and Ethics (E, P, H)

Examination of Marx's ethical thought in the context of traditional ethical theory (Aristotle, Kant) and in relationship to his political views and philosophy of history. Topics may include alienation, the human essence, the individual, community, needs, freedom, equality, rights, and justice. Satisfies the Ethics Core requirement for the bachelor's degree in all undergraduate colleges except the Business School. (5 units)

128. Metaethics (E, P, S)

Examination of the nature, status, and foundations of ethics and morality. Topics explored may include: Are there moral truths? Are there moral facts? Is anything really right or wrong, permissible or impermissible, etc.? What is "the good" and how have different people and peoples conceived of it? Conceptions of ethics discussed may include: moral non-cognitivism, moral relativism, moral nihilism, moral realism, moral naturalism, and non-naturalism. Prerequisites: Recommended: one course in ethics; PHIL 19. (5 units)

129. Feminist Political Theory (E, P)

Examination of the nature of equality through the lens of gender and race, especially the intersection of these. Our focus will be the development of feminist political theories, which both influenced and came out of political struggles for equality (especially those dealing with the intersection of gender and race). These theories will provide us with frameworks through which to analyze the pursuit of women's equality and the way in which this continues to be intertwined with the pursuit of racial justice in the United States. Topics covered include power imbalances and how they shape ethical and legal rights claims, intersectional feminism, justice in the family, workplace discrimination, feminist critiques of group rights arguments, representation and recognition, sexual exploitation, and pornography. Fulfills the Diversity: U.S. Perspectives Core requirement. (5 units)

Upper-Division Courses: History of Western Philosophy

141. Ancient Philosophy (E, H)

Study of one major philosopher or philosophical issue (such as substance, causation, or virtue) from the ancient period. Specific variations include 141A (Socrates; also listed as CLAS 146), 141B (Plato), 141C (Aristotle), 141D (Love and Relationships in Classical Antiquity; also listed as WGST 133 and CLAS 141), 141E (The Stoics), 141F (Hellenistic and Roman Philosophy) and 141G (Special Topics). Recommended: PHIL 14. (5 units)

142. Medieval Philosophy (H)

Study of one major philosopher or philosophical issue (such as universals, existence and the nature of God, or free will) from the medieval period. Specific variations include 142A (Neoplatonism), 142B (Augustine), 142C (Aquinas), 142D (Special Topics). Recommended: PHIL 14. (5 units)

143. Modern Philosophy (H)

Study of one major philosopher or issue (such as mind and body, skepticism and knowledge, or causation) from the modern period. Specific variations include 143A (Descartes), 143B (Hume), 143C (Kant), 143D (Hegel), 143E (Kierkegaard), 143F (Nietzsche), and 143G (Special Topics). Recommended: PHIL 15 for 143A, B, and G; PHIL 16 for 143C--F. (5 units)

144. Contemporary European Philosophy: Phenomenology (H)

An introduction to the 20th-century phenomenological tradition of philosophy, addressing the foundational works of philosophers such as Husserl, Heidegger, Sartre, Ricoeur, and Merleau-Ponty as well as contemporary developments in the field. (5 units)

145. Contemporary European Philosophy: Existentialism (H)

Survey of existentialism, its analysis of the basic structures of human existence, particularly freedom and the experience of living in a broken---even absurd---world, and its major thinkers such as Kierkegaard, Dostoevsky, Nietzsche, Heidegger, Camus, Sartre, and de Beauvoir. (5 units)

Upper-Division Courses: Metaphysics and Epistemology

150. Wittgenstein (H, S)

A study of the philosophy of the 20th-century philosopher Ludwig Wittgenstein, focusing on his logical theory, metaphysics, epistemology, and works such as *Philosophical Investigations* and *On Certainty*. (5 units)

151. The Analytic Tradition (H, S)

Examination of the major currents in 20th-century Anglo-American philosophy. Philosophers studied may include Frege, Russell, Carnap, Moore, Wittgenstein, and Austin; movements may include logical positivism and ordinary language philosophy. Recommended: PHIL 19. (5 units)

152. Problems of Moral Knowledge (E, P, S)

An investigation into the intersection of ethics and epistemology. This course is principally concerned with (1) the nature of ethics and (2) the nature and possibility of moral knowledge. Issues to be discussed may include cognitivism and noncognitivism in ethics, moral relativism, moral realism, moral intuitionism, and moral skepticism. Recommended: PHIL 19 (5 units)

153. Philosophy of Science (S)

Exploration of selected philosophic questions that arise in contemporary science, especially physics. Topics include the nature of scientific knowing, the roles of theory and experiment in scientific progress, the sense in which theoretical entities like quarks and electrons can be said to be "real," and the paradoxes of quantum mechanics. Special attention will also be given to the complex relationship between science and society, and the role of values in scientific inquiry. Recommended: PHIL 19. Fulfills STS Core requirement. (5 units)

154. The Problem of Free Will (S)

Philosophical investigation of the free-will problem. Discussion of concepts of freedom, fate, causation, and God. Recommended: PHIL 19. (5 units)

155. Skepticism (H, S)

Study of the problem of skepticism from its origins in ancient Greece to the present day. Considers both skeptical positions and views critical of skepticism. Readings may include Sextus Empiricus, Descartes, Hume, and Wittgenstein. Recommended: PHIL 14, 15, or 19. (5 units)

156. Knowledge, Truth, and Belief (P, S)

Examination of major issues in the theory of knowledge. Topics may include justification of belief, a priori knowledge, perception, and theories of truth. Recommended: PHIL 19. (5 units)

157. Analytical Metaphysics (S)

This course will introduce students to several core topics in contemporary metaphysics, which is roughly the study of the fundamental structure or nature of reality. We will investigate questions such as: What are properties or attributes, and how do we explain the fact that two distinct objects seem to share the same property? What is time, and is time travel possible? How do things persist through time, and what makes a human person remain the same person over time? Is free will and determinism compatible, and how is free will possible if actions are undetermined? Recommended: PHIL 19. (5 units)

158. Philosophy of Mind (S)

Examination of issues relating to the existence and nature of mind and its relation to body. Recommended: PHIL 19. (5 units)

159. Social Construction of Reality (E, S)

This course is a philosophical examination of the social construction of reality. What does it mean to say that something is socially constructed? What is the relation between social construction and reality? What is the relation between social construction and justice? Topics may include the nature of material objects, facts and scientific inquiry, knowledge, sexuality, gender, and race. Recommended: PHIL 19. (5 units)

160. Philosophy of Mental Illness (S)

Examination of issues relating to the existence and nature of mental illness and its relation to the body. Recommended: PHIL 19. (5 units)

161. Philosophy of Emotion (S)

Examination of issues relating to the existence and nature of emotions and their relation to the body. Recommended: PHIL 19. (5 units)

162. Philosophy of Language (P, S)

Examines the nature of meaning, communication, and language itself, as well as how language and thought relate to the world. (5 units)

164. Special Topics in Metaphysics and Epistemology (S)

Selected philosophical problems in metaphysics and/or epistemology studied at an advanced level. Recommended: PHIL 19. (5 units)

165. Philosophical Issues in Virtual Reality (E, S)

An in-depth examination of the psychological, technological, and philosophical issues emerging as a result of virtual reality (VR) technologies. Students will gain competence identifying and using different virtual and augmented reality technologies both theoretically and practically. Psychological questions concerning the nature of "presence" and empathy in VR environments will be explored, along with ethical questions about the permissibility of using VR technology for various purposes. Recommended: PHIL 19. (5 units)

Upper-Division Courses: Non-Western Philosophy

174. Uncertainty, Conflict, and Self-Development: Chinese Perspectives (H)

In-depth study of one or more influential classic texts and/or figures of Chinese philosophy, from the ancient through the modern period. Connections to Western and other traditions of philosophy, as well as contemporary issues. Readings may include the Yijing (or *Classic of Changes*), the Analects of Confucius, the Daodejing, the Zhuangzi, the Sunzi (or *Art of War*), the Platform Sutra, Zhu Xi, and others. Recommended: PHIL 14, 15, 16, or 19. Fulfills Culture and Ideas 3 Core requirement. (5 units)

175. Chinese Philosophy (H)

Study of major philosophical traditions of China, including Confucianism, Daoism, Mohism, Legalism, and Buddhism. Areas of emphasis may include topics in ethics, social and political philosophy, and aesthetics, including the cultivation of self and community, proper governance, liberation, cosmology, and the arts. Fulfills Culture and Ideas 3 Core requirement. (5 units)

176. Buddhist Philosophy (H, E)

This course concerns the philosophy of Buddhism. Topics may include the Four Noble Truths, the Eightfold Path, Buddhist metaphysics, including the nature of the self, karma, rebirth, salvation, and dependent origination, and Buddhist ethics. The course may also address the differences between various Buddhist traditions and Buddhism's impact on Western philosophy. Fulfills Culture and Ideas 3 Core requirement. (5 units)

177. Indian Philosophy (H)

This course is a historical and thematic examination of the major orthodox and heterodox philosophical systems of India, including those of the *Vedas*, *Upanishads*, *Bhagavadgita*, Vedanta, Jainism, and Buddhism. Central themes and questions include: What are valid sources of knowledge? What is consciousness? What is the nature of the self? Who is the ethical agent? (5 units)

178. Arabic Philosophy (H)

This course explores the main questions of Islamic philosophy from the great translation movement of ancient Greek texts in the eighth-to-ninth centuries CE until the debates of the 13th-to-14th centuries CE. Philosophers considered may include al-Kindi, al-Farabi, Ibn Sina (Avicenna), al-Ghazali, and Ibn Rushd (Averroes). Particular topics may include debates over the use of Greek thought (Aristotelian and Neoplatonic) in religion, being, eternity, God, freedom, ethics, creation, and law. (5 units)

179. Jewish Philosophy (H)

Exploration of ancient, medieval, and modern Jewish philosophy. Particular emphasis will be placed on the combination of Greek and Hebraic thought in understandings and examinations of God, time, freedom, universals, justice, transcendence and immanence, and translation and interpretation of religious texts (allegorical, symbolic, etc.). Further topics may include the role of the Holocaust, personhood, infinity, ethics, politics, and law. Key figures may include Philo, Judah Halevi, Moses Maimonides, Gersonides, Buber, and Levinas. (5 units)

180. Special Topics in Non-Western Philosophy (H)

This course will be an in-depth study of a single topic, philosopher, or philosophy in a non-Western tradition. For example, the course may focus on the works and ideas of a single philosopher such as Confucius, Zhuangzi, or Dogen. Or the course may focus on a theme as treated by various philosophers from a tradition, such as debates about perception in Indian philosophy, ethical cultivation in Chinese philosophy, or the nature of the self in Japanese philosophy. Additionally, this course may include comparative philosophy approaches in which a topic is addressed in more than one non-Western tradition. (5 units)

Upper-Division Courses: Other

181. Philosophy of Art (E, H)

Philosophical examination of the historical development of the aesthetic concepts of taste and beauty. Specific variations include 181A (Kant and 19th Century Aesthetics), 181B (Contemporary Aesthetics), 181C (Aesthetics and the Avant Garde), 181D (Cross-Cultural Aesthetics), and 181E (Special Topics in Aesthetics). (5 units)

183. Philosophy and Film (E)

This course focuses on the aesthetic and ethical dimensions of English language films, from the silent era to the present. We will discuss at least some of the following topics: What makes a film, screenplay, or novel, "good"? This will include discussion of the aesthetic and ethical values that contribute to the quality of film and literature. What is the role of artistic intention in understanding and evaluating film (including the "auteur theory" account of cinematic creation and the "intentional fallacy"). What role do various types of interpretation and genre play in understanding and evaluating the quality of film and literature? What, if any, is the proper place of various types of censorship, from the "production code" of the 1930s to the Motion Picture Association of America (MPAA) rating system in place today? (5 units)

184. Philosophy of Religion (E, H)

Philosophical inquiry, based on both classical and contemporary views, as to whether the existence of God can be rationally demonstrated, whether it is compatible with evil, how human beings relate to God, the nature of faith, and the nature of religious language. (5 units)

185A. University Ethics Bowl Team (E, P)

Participation in the Santa Clara University Ethics Bowl Team, including in-depth weekly analyses of cases in applied ethics, culminating in a regional or national debate. Students will be required to study background facts, key definitions, relevant moral principles, and methods of applying those principles to answer questions about the applied ethics cases. Field trips required. This course may be repeated as PHIL 185B for 1 unit. 185A fulfills Civic Engagement Core requirement. (5 units)

185B. University Ethics Bowl Practicum (E, P)

See description of PHIL 185A. (1 unit)

186. Philosophy of Race (E, P)

Examination of scholarship regarding the conceptual, ontological, epistemological, and normative questions pertaining to race. Subjects studied may include the historical origins and development of the concept of race, race as a biological category, contemporary philosophical debates over whether races actually exist, the relationship between the continued use of racial categories and the persistence of racism, the differences between race and ethnicity, debates among moral, political, and legal philosophers over the validity and source of racial identity, racial solidarity, race-based culture, and race-specific public policies such as affirmative action and race-based representation. Fulfills Diversity: US Perspectives Core requirement. (5 units)

197. Senior Research thesis for Honors in philosophy

Creation of a carefully researched and scholarly paper, under the active direction of a selected member of the department's faculty. Required of senior majors who wish to qualify for Honors in philosophy. Prerequisite: previous arrangement with instructor and department chair. (5 units)

198. Senior Research Thesis

Creation of a carefully researched and scholarly paper, under the active direction of a selected member of the department's faculty. Of particular value to senior students who intend to pursue graduate studies. Prerequisite: Previous arrangement with instructor and department chair. (5 units)

199. Directed Research

Tutorial work with demanding requirements for advanced students in particular problem areas not otherwise accessible through courses. Prerequisite: Previous arrangement with the instructor and department chair. (2--5 units)

Department of Physics

Professor Emeritus: William T. Duffy Jr.

Professors: Richard P. Barber Jr., Christopher P. Weber, Betty A. Young (Department Chair and Lee and Seymour Graff Professor II)

Associate Professors: John T. Birmingham, Philip R. Kesten, Guy Ramon

Assistant Professor: Bachana Lomsadze

Lecturers: Kristin Kulas, Nathan Williams

Senior Lab Instructors: Omid Ahmadi-Gorgi, Roxana Flacau

The Department of Physics offers major programs of lecture and laboratory instruction leading to the bachelor of science in physics, the bachelor of science in physics with a biophysics emphasis, and the bachelor of science in engineering physics. The department also provides an academic minor in physics and required and elective courses for students majoring in other fields.

Common career goals of physics majors include professional employment in industry, in a government lab, or at a university. It is not uncommon for physics majors to become entrepreneurs, work in the business or finance sector, or teach at the secondary school level. The undergraduate major program in physics is appropriate preparation for graduate study in physics, astronomy and astrophysics, biophysics, environmental science, geological science and geophysics, medical physics and medicine, patent law, oceanography, and other fields.

Popular second majors, or minors for physics majors, include mathematics, computer science, chemistry or areas of engineering .The SCU physics major is offered in two forms. Students can choose between a traditional "physics track" or a "biophysics track". Both tracks provide a solid preparation for graduate studies and for nearly all of the postgraduate opportunities open to traditional physics majors. Students who complete the biophysics track will have additional opportunities in medicine, the life sciences, and related industries.

The engineering physics major is particularly appropriate for the applied science student who intends to do research and development work in industry, or attend graduate school in physics, applied physics, materials science or various engineering disciplines. The engineering physics major covers a broad spectrum of courses in mathematics, engineering, and physics. This program emphasizes, to a greater extent than the traditional engineering major, the physics fundamentals that are applicable to new technologies as well as to the more established ones.

Research in the department is currently funded by the Department of Energy, National Science Foundation, NASA and private industry. Majors in physics and engineering physics often participate in faculty research projects through PHYS 198 (Undergraduate Physics Research) or external grants, internships or fellowships, including Geoff and Josie Fox Summer Research Fellowships. Students also have opportunities for part-time employment assisting faculty in laboratory and related teaching activities.

A student whose GPA is below a 2.5 must obtain approval from the department chair to declare a Physics or Engineering Physics major.

Requirements for the Major

The department offers two versions of the physics major (a "physics track" and a "biophysics track"), as well as a separate major in engineering physics. In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree in physics, students majoring in physics must complete the following departmental requirements:

Major in Physics

- CHEM 11 or CHEM 14
- MATH 11, 12, 13, 14
- MATH 22 or MATH 23 or AMTH 106
- PHYS 31, 32 (preferred) or PHYS 11, 12
- PHYS 33, 34, 70, 103, 111, 192
- Completion of either the "physics track" or "biophysics track" course requirements specified below

Physics Track

- PHYS 112, 120, 121, 122, 151
- One elective chosen from CSCI 10, COEN 10, COEN 11, COEN 44, COEN 45, CHEM 12
- Three upper-division electives AND one supplemental laboratory chosen from: PHYS 104, 113, 113L, 116, 123, 123L, 161, 162, 171

Biophysics Track

- BIOL 1A, 1B, 1C
- CHEM 11, 12, 31, 32, 33 (CHEM 50 recommended) or CHEM 14, 15, 31, 32, 33 (CHEM 50 recommended)
- PHYS 120 (or CHEM 152)
- PHYS 121 (or CHEM 151)
- PHYS 171
- Ten upper-division elective units chosen from: PHYS 112, 113L, 116, 122, 123L, 151(L); BIOL 122(L), 124(L), 175(L); CHEM 141, 143(L), 150, 154(L); BIOE 154, 155, 161(L), 162(L), 163(L), 167, 168, 172(L). (At least one elective must be from PHYS if CHEM 152 or 151 is taken in place of PHYS 120 or 121.)

Major in Engineering Physics

- CHEM 11 or CHEM 14
- MATH 11, 12, 13, 14
- AMTH 106 or MATH 22 or MATH 23
- One course chosen from CSCI 10, COEN 10, COEN 11, COEN 44 or COEN 45
- PHYS 31, 32, 33, 34, 70, 103, 111, 112, 121, 192
- One upper-division physics elective chosen from PHYS 104 -171
- PHYS 120 (preferred) or MECH 121
- At least four courses chosen from MECH 10, MECH 11, MECH 15, MECH 122, MECH 123 or ELEN 123, CENG 41, CENG 43, COEN 11 or CSCI 60, ELEN 21 or COEN 21, ELEN 100, ELEN 110, ELEN 115, ELEN 118, ELEN 144
- An approved cluster of five additional technical courses focused in a specific area chosen by the student and subject to advisor consent. A few of the many possible course cluster areas include: computational, electronics, materials science, solid state, and mechanical. See the engineering physics program coordinator for additional information or go to the physics department website.

Requirements for the Minor

Students must fulfill the following requirements for a minor in physics:

- PHYS 31, 32, 33, 34, 192
- Four additional and approved physics courses numbered 70--171

Lower-Division Courses

1. Hands-On Physics!

How do scientists know what they "know?" The course is taught in a "Workshop Physics" style emphasizing hands-on experimentation and timely topics in today's world. Instrumentation and "learning by doing" are emphasized. Includes student-designed, peer-reviewed group projects. (4 units)

2. Introduction to Astronomy: The Solar System

An introduction to astronomy with a particular focus on the origin and evolution of the solar system, planets, and their satellites. Topics include a brief history of the science of astronomy, telescopes and observational methods, gravitation, spectra and the sun, asteroids, comets, astrobiology, searches for new planetary bodies, and Earth science. Students should be familiar with arithmetic and basic algebra. Evening observational lab meets five times during the quarter. (4 units)

3. Introduction to Astronomy: The Universe

An introduction to astronomy with a particular focus on the origin and evolution of the universe, galaxies, and stars. Topics include a brief history of the science of astronomy, understanding the night sky and phases of the moon, telescopes and observational methods, gravitation, spectra and the sun, the big bang, and the expansion and ultimate fate of the universe. Special emphasis is given to stellar evolution, from the birth of stars to their ultimate demise, and stellar remnants such as neutron stars and black holes. Students should be familiar with arithmetic and basic algebra. Evening observational lab meets five times during the quarter. (4 units)

4. The Physics of Dance

An exploration of the connection between the art of dance and the science of motion with both lecture/discussion sessions and movement laboratories. Topics include mass, force, equilibrium, acceleration, energy, momentum, torque, rotation, and angular momentum. Movement laboratory combines personal experience of movement with scientific measurements and analysis, in other words: "dance it" and "measure it." This is a lab science course, not a dance technique course. Also listed as DANC 4. (4 units)

5. Physics and Technology for Future Leaders

Examples of how science and technology impact daily life are ubiquitous. Each day brings new comforts and challenges to communities around the world. Leaders in government, industry, finance, and elsewhere are expected to make important and impactful decisions every day on issues related to power consumption, new materials technology, transportation, terrorism, global resources, radiation, climate change, energy sources, conservation, and more. To make the best decisions, leaders must be literate in modern science and technology. This course aims to help students understand the need-to-know physics behind many of the debates impacting our world today. Most

importantly, the course aims to give students, the future leaders of our world, the basic tools needed to independently and critically analyze technologically relevant material presented in the media everyday. Assumes basic algebra only. (4 units)

7. Physics of Music

The course explores the physical foundations underlying the production, propagation, and perception of music. No prior knowledge of either physics or music is expected, and math will be restricted to basic algebra. At the end of this course, students should possess a basic understanding of the nature of sound; the basic workings of string, wind, and brass instruments, as well as the human voice and ear; knowledge of basic musical notation; and a familiarity with some acoustical problems and their solutions. Through laboratory investigations, students will become familiar with methods of scientific exploration and gain an appreciation of the experimental method. (4 units)

8. Introduction to Space Sciences

An introduction to space exploration and how observations from space have influenced our knowledge of Earth and of the other planets in our solar system. This is synthesized within the context of the field of astrobiology, an interdisciplinary study of the origin of the universe, and the evolution and future of life on Earth. (4 units)

11. General Physics I

One-dimensional motion. Vectors. Two-dimensional motion. Newtonian laws of motion. Law of gravitation. Planetary motion. Work. Kinetic and potential energy. Linear momentum and impulse. Torque and rotational motion. Rotational energy and momentum. Equilibrium. Elastic deformation of solids. Density and pressure of fluids. Bernoulli's principle. Buoyant forces. Surface tension. Includes weekly laboratory. Prerequisite: MATH 11, 12, 13, 14, 35, or 36, or permission of the instructor. The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

12. General Physics II

Temperature. Thermal expansion of solids and liquids. Thermal energy. Heat transfer. Specific heat. Mechanical equivalent of heat. Work and heat. Laws of thermodynamics. Kinetic theory of gases. Ideal gas law. Entropy. Vibration and wave motion. Hooke's Law. Sound. Electric charges, fields, and potential. Gauss's Law. Ohm's Law. Potential difference. Electric potential. Capacitors. Electric current. Resistance and resistivity. Electric energy and power. Kirchhoff's Rules. RC circuits. Magnetic fields and forces. Ampere's Law. Induced EMF. Faraday's Law. Lenz's Law. Self-inductance. Includes weekly laboratory. Prerequisite: PHYS 11. The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

13. General Physics III

RCL series circuit. Power in an AC circuit. Resonance. Transformers. Optics: reflection, refraction, mirrors, and lenses. Total internal reflection. Diffraction. Young's double slit interference. Polarization. Optical Instruments. Relativity. Wave-particle duality. Photoelectric effect. X-rays. Pair production and annihilation. Bohr Atom. Spectra. Uncertainty principle. Quantum numbers. Radioactivity. Nuclear particles and reactions. Subnuclear particles. Includes weekly laboratory. Prerequisite: PHYS 12. The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

19. General Physics for Teachers

A primarily conceptual general physics course designed for future teachers. Topics covered include scientific inquiry, mechanics, gravitation, properties of matter, heat, sound, electricity and magnetism, light, relativity, atomic and nuclear physics, and astronomy. (4 units)

31. Physics for Scientists and Engineers I

Measurement. Vectors. Straight-line kinematics. Kinematics in two dimensions. Laws of inertia, mass conservation, and momentum conservation. Center-of-mass and reference frames. Force. Newtonian mechanics and its applications. Work and kinetic energy. Potential energy and energy conservation. Rotational dynamics. Statics. Includes weekly laboratory. Prerequisite: MATH 11, 12, 13, or 14. (Students concurrently enrolled in MATH 11 will be considered.) The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

31H. Physics 31H Honors Supplement

Weekly seminar for 15--20 students that extends the treatment of PHYS 31 topics to more challenging/thought-provoking problems. The seminar is being offered so that PHYS 31 can count for Honors credit. Students who are not in the Honors Program but who have a strong math background and some physics experience, and who want the added fun of working on intriguing problems and solutions techniques, may also enroll. (1 unit).

31R. Physics 31R Recitation Supplement

Weekly, 1-hour recitation supplement for Physics 31. Highly recommended for students who are new to physics or who need a refresher for the math used in Physics 31. Required for students who have not yet completed MATH 11. (1 unit)

32. Physics for Scientists and Engineers II

Simple harmonic motion. Gravitation. Kepler's Laws. Fluids. Waves. Sound. Interference, diffraction, and polarization. Thermodynamics. Includes weekly laboratory. Prerequisites: MATH 12, 13, or 14 and PHYS 31 or PHYS 11. (MATH 12 may be taken concurrently.) The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

32H. Physics 32H Honors Supplement

Weekly seminar for 15--20 students that extends the treatment of PHYS 32 topics to more challenging/thought-provoking problems. The seminar is being offered so that PHYS 32 can count for Honors credit. Students who are not in the SCU Honors Program but have a strong interest in physics or math, and who want the added fun of working on intriguing problems and solutions techniques, may also enroll. (1 unit)

33. Physics for Scientists and Engineers III

Electrostatics. Gauss's Law. Potential. Capacitance. Electric current. Resistance. Kirchhoff's rules. DC circuits. AC circuits. Magnetic force. Ampere's Law. Electromagnetic induction. Includes weekly laboratory. Prerequisites: MATH 12, 13, or 14 and PHYS 32. (MATH 13 may be taken concurrently.) The PHYS 31/32/33 sequence and the PHYS 11/12/13 sequence cannot both be taken for credit. (5 units)

34. Physics for Scientists and Engineers IV

Special relativity. Historical development of modern physics: black body radiation, photoelectric effect, Compton scattering, X-rays, Bohr atom, DeBroglie wavelength, Heisenberg uncertainty principle. Quantum waves and particles. Schrödinger equation. Nuclear structure and decay. Particle physics. Introduction to semiconductors. Includes weekly laboratory. Prerequisite: PHYS 33. (5 units)

70. Electronic Circuits for Scientists

Linear electric circuits. DC analysis, network theorems, phasor AC analysis. Diode circuits. Physics of p-n junction. Junction diodes, field-effect devices, bipolar junction transistors. Elementary amplifiers. Small-signal device models. Logic gates, digital integrated circuits, Boolean algebra, registers, counters, memory. Operational amplifier circuits. Linear amplifier bias circuits. Includes weekly laboratory. Prerequisite: PHYS 33. (5 units)

Upper-Division Courses

103. Numerical Methods in Physics

Basic elements of programming in MATLAB. Ordinary and partial differential equations. Fourier transforms and spectral analysis. Linear regression and curve fitting. Numerical integration. Stochastic methods. Selected applications include planetary motion, diffusion, Laplace and Poisson equations, and waves. Weekly computer lab. Prior exposure to basic linear algebra will be helpful but is not required. Prerequisite: MATH 22 or MATH 23 or AMTH 106. Strongly recommended prerequisite: CSCI 10 or COEN 10 or COEN 44 or COEN 45. (5 units)

104. Analytical Mechanics

Calculus of variations. Hamilton's principle. Lagrangian and Hamiltonian approaches to classical dynamics. Central force motion. Noninertial reference frames. Dynamics of rigid bodies. Selected topics in classical dynamics such as coupled oscillators, special relativity, and chaos theory. Prerequisites: PHYS 31 and MATH 22 or MATH 23 or AMTH 106. (5 units)

111. Electromagnetic Theory I

Review of vector calculus. Dirac delta function. Electrostatic fields. Work and energy. Laplace and Poisson equations. Separation of variables. Fourier's trick. Legendre equation. Multipole expansion. Computational problems. Prerequisites: PHYS 33 and MATH 22 or MATH 23 or AMTH 106. Co-requisite: PHYS 103. (5 units)

112. Electromagnetic Theory II

Magnetostatics. Induced electromotive forces. Maxwell's equations. Energy and momentum in electrodynamics. Electromagnetic stress tensor. Electromagnetic waves. Potential formulation. Computational problems. Dipole radiation. Prerequisite: PHYS 111 or ELEN 104. (5 units)

113. Advanced Electromagnetism and Optics

Geometric optics. Polarization and optically active media. Interferometry. Optical signal and noise in detection and communication. Interaction of light with metals, dielectrics, and atoms. Thermal radiation. Laser operation. Most students will take 113 and 113L simultaneously. Prerequisite: PHYS 112 or consent of instructor. Also listed without lab as ELEN 725. (4 units)

113L. Advanced Electromagnetism and Optics Lab

Weekly lab to accompany PHYS 113. Most students will take PHYS 113 and PHYS 113L simultaneously. Corequisite: PHYS 113 OR consent of instructor. (1 unit)

116. Physics of Solids

Crystal structure. Phonons. Free electron theory of metals. Band theory of solids. Semiconductors. Electrical and thermal transport properties of materials. Magnetism. Superconductivity. Topics from current research literature. PHYS 116 is taught as a capstone course. Prerequisites: PHYS 120, 121, and senior standing. (5 units)

120. Thermal Physics

Laws of thermodynamics with applications to ideal and non-ideal systems. Kinetic theory of gases. Entropy. Classical and quantum statistical mechanics. Bose and Fermi systems. Selected topics from magnetism, materials, and low-temperature physics. Prerequisites: PHYS 34 and 103 or AMTH 118. Recommended: PHYS 121. (5 units)

121. Quantum Mechanics I

The Schrödinger equation. The wave-function and its interpretation. One dimensional potentials. Harmonic oscillator. Methods in linear algebra including matrix operations, unitary transformations and rotations, eigenvalue problems and diagonalization. Hilbert space, observables, operators, and Dirac notation. The hydrogen atom. Angular momentum. Prerequisites: PHYS 34 and 103 or AMTH 118. Recommended prerequisite: MATH 53. (5 units)

122. Quantum Mechanics II

Angular momentum and spin. Electrons in EM field. Addition of angular momenta. Identical particles. Time-independent perturbation theory. Fine and hyperfine structure. Time-dependent perturbation theory and its application to light-matter interaction. Fermi's golden rule. Prerequisite: PHYS 121. (5 units)

123. Quantum Mechanics III

Variational principle. WKB approximation. Scattering theory. Single-particle relativistic quantum theories. Quantum paradoxes. Introduction to quantum electrodynamics and/or quantum computation: qubits, quantum gates and circuits, quantum teleportation, quantum algorithms, error correction codes. Quantum computer implementations. Most students will take PHYS 123 and PHYS 123L simultaneously. Prerequisite: PHYS 122. (4 units)

123L. Quantum Mechanics III Lab

Weekly lab to accompany PHYS 123. Most students will take PHYS 123 and PHYS 123L simultaneously. Prerequisite: PHYS 121 and consent of instructor. (1 unit)

141. Modern Topics in Physics

A course focused on a topic in current physics research selected by junior and senior Physics majors in consultation with department faculty. Recent topics have included quantum information and quantum computation, quantum paradoxes, and high-energy physics. May be repeated for credit. (4--5 units)

151. Advanced Laboratory

Students conduct intensive laboratory-based experiments in the areas of atomic, nuclear, quantum and condensed matter physics, RF detection, signal processing and more. Emphasis on in-depth understanding of underlying physics, experimental techniques, data analysis, and dissemination of results. Additional design and implementation of independent table-top project also required. Introduction to LabVIEW programming and LaTeX. Written and oral presentations. Prerequisite: Senior standing in physics or consent of instructor. (5 units)

161. Introduction to Astrophysics

A survey of astronomy for science majors focused on the physics and mathematics that astronomers use to interpret observations of planets, stars, and galaxies. Topics include the kinematics of objects in the solar system, the nature of stars and their evolution, and the evolution and formation of galaxies. Prerequisite: PHYS 33. PHYS 34 recommended but not required. (5 units)

162. Cosmology

A survey of cosmology for science majors. Much of the course will focus on the properties of an idealized, perfectly smooth, model universe. Topics include the formation of galaxies and clusters in an evolving universe, the Benchmark Model of the universe, dark matter and dark energy, the cosmic microwave background and its fluctuation spectrum, recent results from such experiments as WMAP and Planck, Big Bang nucleosynthesis, and problems with the standard Big Bang models and inflation theory. Prerequisites: PHYS 34 or 161. Knowledge of calculus through differential equations is assumed. (5 units)

171. Biophysics

Diffusion and dissipation in cells. Friction and inertia in biological systems. Entropic and chemical forces. Macromolecules. Molecular machines. Ion pumps. Nerve impulses. Prerequisite: PHYS 33 or consent of instructor. (5 units)

190. Senior Seminar

Advanced topics in selected areas of physics. Enrollment by permission of instructor. (2 units)

192. Physics and Society

Colloquium course that focuses on Physics research topics with significant societal impact. Weekly speakers come from academia, the private sector, industry, non-profits, and government laboratories. Students participate in weekly discussions and write short reflection papers. Prerequisite: PHYS 34. (1 unit)

198. Undergraduate Physics Research

Departmental work under close professorial direction on research in progress. Permission of the professor directing the research must be secured before registering for this course. (1--5 units)

199. Directed Reading in Physics

Detailed investigation of some area or topic in physics not covered in the regular courses; supervised by a faculty member. Permission of the professor directing the study must be secured before registering for this course. (1--5 units)

Department of Political Science

Professor Emerita: Janet A. Flammang

Professors: Elsa Y. Chen, Jane L. Curry, Dennis R. Gordon, Timothy J. Lukes, Peter I. Minowitz, Terri L. Peretti

Associate Professors: Anne E. Baker, Gregory P. Corning (Department Chair), Naomi Levy, Farid D. Senzai

Assistant Professor:, Eric Mosinger

Senior Lecturer: Diana Morlang, Kenneth Faulve-Montojo

The Department of Political Science offers a degree program leading to the bachelor of science in political science. The department introduces students to the analysis of political behavior, values, institutions, and governments. It also offers preparation for various graduate and professional studies and for careers in public service, education, and the private sector.

The department offers opportunities to participate in a variety of programs that combine practical field experience and academic credit. It assists students in arranging academic credit for internships. Placements include government agencies, legislative or judicial bodies, political parties, and nongovernment organizations. On the national level, Santa Clara partners with American University's Washington, D.C., program, in which students receive credit for internships and intensive seminars in the nation's Capitol. Santa Clara also participates in the Panetta Institute's Congressional Internship Program, which fully subsidizes students who study and intern with the California Congressional delegation on Capitol Hill. On the international level, the department encourages student participation in the numerous University-operated and approved study abroad programs around the world.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in political science must complete the departmental requirements listed below. Please note that students in the Political Science Honors Program must complete the requirements noted under the Honors Program.

- One course from the following list to satisfy the Core mathematics requirement: MATH 8, 11, 30, or 35 (with MATH 8 preferred)
- POLI 1; 2; 25; 30; 40 (ECON 1 or 2 may be substituted for POLI 40); and 99
- Seven upper-division courses in political science, including one lecture course from four of the following five subfields: United States politics, comparative politics, international relations, political philosophy, and applied quantitative methods; two upper-division electives from any political science subfields, one of which may be a 5-unit internship class; and a political science senior seminar taken after achieving senior status or with the permission of the instructor

Requirements for the Minor

Students must fulfill the following requirements for a minor in political science:

- Any three lower-division political science courses: POLI 1, 2, 25, 30, 40 (ECON 1 or 2 cannot be substituted for POLI 40), 45, 55, 99
- Any three upper-division 5-unit political science lecture courses
- One additional upper- or lower-division political science course

Honors Program

The Department of Political Science Honors Program is intended to help students prepare for graduate study and facilitate their participation in the intellectual life of the department and the student community. Applications to the program will be made available to any political science major who is not a senior and who has completed at least two of the lower-division sequence of courses with a GPA of 3.0 or better. Transfer students may be considered on the basis of comparable courses taken at other institutions. A maximum of fifteen students per graduating cohort will be admitted. Please see the department website for details about the program and the application process.

Program Requirements

All requirements for the political science major must be fulfilled. Additionally, each honors student will:

- Complete a Senior Thesis.
- Complete one of the following three supplemental curriculum requirements: a) a minor or a second major; b) Economics 1 and 2; c) Language 21 and 22.
- Take an upper-division lecture course in all five subfields: U.S., Comparative, IR, Political Philosophy, and AQM.
- Submit a 2-3 page Senior Activity Report by the end of the senior year.
- Take a highly active role in the affairs of the department.

Optional Emphasis

Political science majors may select an emphasis in pre-law, public sector studies, or international relations, which will be noted on the student's transcript.

Emphasis in Public Sector Studies

The public sector emphasis is a specialized area of concentration within the political science major allowing students to focus their coursework toward public sector studies. The emphasis is designed to provide a closer look at the creation, implementation, and analysis of public policies, and the operation of governments and public organizations. The public sector emphasis provides an excellent foundation for those who would like to pursue careers or graduate studies in public policy, public administration, public affairs, urban planning, and law. Requirements for the public sector emphasis include a variety of courses both inside and outside of the political science department. For the most up-to-date information about the public sector emphasis, please contact the emphasis advisor.

- ECON 1 and 2
- POLI 167 with a grade of C or better
- Upper-division POLI internship: POLI 198A, 198B, or equivalent, including Washington Semester Program internships
- One upper-division POLI course for public sector: POLI 152, 153, 154, 158, 160, 161, 163, 165, 166, 168, 170, 172
- Two additional lower-division courses: POLI 45; ACTG 11, 12, 20; BUSN 71; CENG 5; COMM 2, 20; ECON 3; ELSJ 50; ENVS 11A, 12A, 20, 50; MGMT 6; PHIL 28, 29, 30; PHSC 1, 2; SOCI 33, 65; or others as approved by the emphasis advisor.
- Two additional upper-division courses (outside of the political science department): ANTH 151; BIOL 171; CHST 106; COMM 113B, 120A, 124B; ECON 111, 113, 114, 115, 120, 126, 129, 136, 137, 150, 160, 166, 173, 181, 182, 185, 190; ENVS 120, 122, 128, 147, 150, 162; HIST 176; MGMT 169, 171; PHIL 108, 116, 117, 118; PHSC

156; PSYC 134; SOCI 132, 137, 138, 140, 153, 159, 160, 161, 165, 172, 176, 180; or selected courses from the Washington Semester Program or others as approved by the emphasis advisor.

Emphasis in International Relations

The international relations emphasis allows students to focus on the international system and the interaction of national and non-national actors on the global stage. Sample topics addressed by the international relations emphasis include international organizations; transnational movements; conflict resolution, peace, and reconciliation; military-strategic issues; international political economy; human rights; development and economic justice; and global sustainability.

Requirements for the international relations emphasis include a variety of courses both inside and outside of the political science department. For the most up-to-date information about the international relations emphasis, please contact the emphasis advisor.

- Senior seminar: POLI 196 (International Relations) or POLI 192 (Comparative Politics)
- Three upper-division international relations courses : POLI 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 131;or 116A and 116B combined.
- One international relations-related course outside the political science department: ECON 3, 129, 137, 181, 182; ENVS 147; HIST 105, 116S, 121, 131, 141, 142, 144S, 151, 163; TESP 159; SOCI 133, 134; or other courses as approved by the program director.
- One off-campus academic experience with an international relations component: Study Abroad; Washington Semester Program; Arrupe placement; local internship approved by the emphasis advisor; or POLI 116A and 116B, if not counted above as an upper-division course.

Emphasis in Pre-Law

Political science is one of the most common majors for pre-law students. After all, political science is the closest of all majors to the institutions and values with which law deals. The primary study of law is the state, and so too for political science. Additionally, the demands of political science courses (reading of complex texts, independent research, frequent class presentations, and demanding writing assignments) strengthen the analytical and communications skills that the practice of law requires.

Requirements for the pre-law emphasis include a variety of courses from both inside and outside of the political science department. At most, six courses are required: three within the political science department and three from outside the political science department, although many of these courses fulfill other Core and political science major requirements. For the most up-to-date information about the pre-law emphasis and specific courses, please contact the emphasis advisor.

- Three courses from List A: POLI 45, 124, 125, 160, 161, 167, 168, 171,195L; POLI 198A, 198B (internship must be law-related and be approved by the pre-law program director)
- One course from List B: ANTH 151; BUSN 85; COMM 170A; ECON 126; ELSJ 50; ENVS 120; ETHN 126, 127; PHIL 30, 43, 117, 118, 119, 123; PSYC 155; SOCI 159, 160, 161, 162; WGST 189
- One course from List C: ENGL 100, 115, 115H; PHIL 17
- One additional course from either List B or List C

Lower-Division Courses

1. Introduction to U.S. Politics

Critical analysis of U.S. political values, institutions, and processes. The U.S. political tradition, the Constitution, the presidency, Congress, the bureaucracy, Supreme Court, elections, political parties, interest groups, mass media, political opinion and participation, domestic policies, and foreign policy are examined in depth. (4 units)

2. Introduction to Comparative Politics

Government and politics in several states. Emphasis on the development of analytical abilities and critical skills in the evaluation of political culture, processes, and institutions. (4 units)

25. Introduction to International Relations

Conceptual models used to analyze international relations, contemporary problems of world politics, and the methods states employ to provide peace and security. (4 units)

30. Introduction to Political Philosophy

An exploration of some of the principal themes and questions of political philosophy through the writings of authors such as Plato, Machiavelli, Marx, and Mill. Prominent themes include theory and practice, individual liberty, morality and politics, freedom, obligation, and justice. (4 units)

40. Politics of U.S. Economic Policies

Covers basic concepts in microeconomics, macroeconomics, and international economics in order to demonstrate the relationship between the science of economics and the politics of U.S. economic policies. Case studies such as poverty issues, agricultural policies, and immigration and international trade dynamics will demonstrate how economic and political issues, as well as domestic and international policies, are interrelated. (4 units)

45. Criminal Justice System

Basic understanding of the U.S. criminal justice system: police, courts, probation, imprisonment, parole, and relations with other governmental agencies. Goals, successes, and failures of the system, and possible remedies. (4 units)

55. Racial and Ethnic Politics in the U.S.

Examination of the historical and contemporary forms of political organization, political participation and political movements among the major racial and ethnic populations groups in the United States since the 1960s with particular focus on the struggles for power and resistance among African Americans, Chicanas/os/xs and Latinas/os/xs, Asian Americans and American Indian/Native Americans. The necessary elements needed to build and to sustain multiracial coalitions along with an examination of the political future for communities of color will be addressed.

Also listed as ETHN 55. (5 units)

99. Political Science Research

This course provides the necessary tools to understand, critically evaluate, and perform political science research. Students will learn how to conduct a literature review, produce an annotated bibliography, and propose a theoretically informed research design. Topics include case selection; measurement of variables; hypothesis testing; qualitative research methods including interviews, content analysis, and ethnography; survey research; and interpretation and presentation of charts and tables. (4 units)

Upper-Division Courses

Note: Upper-division courses in each area below have required prerequisites as noted in each section. In special cases, the instructor of a particular course may make an exception to the requirements. It is recommended that majors complete POLI 99 before undertaking upper-division coursework in political science.

Upper-Division Course: Applied Quantitative Methods

Note: POLI 99 is a required prerequisite for POLI 101.

101. Applied Quantitative Methods

An applied introduction to statistical techniques that are especially relevant to data from the social sciences. (5 units)

Upper-Division Courses: Political Philosophy

Note: POLI 30 is a required prerequisite for upper-division political philosophy courses.

105. Special Topics in Political Philosophy

Selected topics in political philosophy. (5 units)

107. American Political Thought

Selected topics and themes in the history of American political thought. (5 units)

109. Liberty and Diversity

Examination of the relationship between liberty and diversity. Beginning with pioneering "classics"---particularly Locke's *Letter on Toleration* and Mill's *On Liberty*---that extolled both, the course will proceed to explore the contemporary tensions between them, especially regarding free speech. (5 units)

111. History of Political Philosophy I: Greek and Christian

Development of Western political thought from its Greek origins in the work of Plato and Aristotle through the work of Aquinas. (5 units)

112. History of Political Philosophy II: Liberalism and Its Roots

Western political thought from Machiavelli through the origins of liberalism in the writings of Hobbes, Locke, and Rousseau. (5 units)

113. History of Political Philosophy III: Post-Liberal Theories

Writers and themes in political thought from the 19th century to the present, including those offered by Friedrich Nietzche, Simone de Beauvoir, Herbert Marcuse, Isaiah Berlin, Catharine MacKinnon, and Allan Bloom. (5 units)

Upper-Division Courses: International Relations

Note: POLI 25 is a required prerequisite for upper-division international relations courses.

116A. Model United Nations Prep

Model United Nations (UN) is a simulation program in which students participate in mock sessions of the United Nations. POLI 116A is a preparatory course for the Model UN conference in spring quarter. Students will learn about the principles of international law and conflict resolution. Note: This course does not meet the upper-division major requirement for International Relations. (2 units)

116B. Model United Nations: International Conflict Simulation

Simulated United Nations sessions, representing member-nations, debating and preparing resolutions, and engaging in other aspects of diplomacy. Prerequisite: POLI 116A. Note: This course does not meet the upper-division major requirement for International Relations. (2 units)

119. The European Union

Evolution of European political, social, and economic integration in the postwar period. Emphasis on the institutions and politics of the European Union since the Maastricht treaty, and current issues of European integration, such as the addition of new members, monetary union, and internal democratization. (5 units)

121. Politics of the Global Economy

An introduction to the politics and institutions of the global economy. Topics include: liberal, realist, and structuralist theories of the global economy; the international trading system and economic regionalism; the international financial system and financial crises; multinational corporations; North-South relations and Southern development. Prerequisite: POLI 40 or ECON 1. (5 units)

122. Asia-Pacific International Relations

An overview of the political, economic, and security dimensions of international relations in East Asia with a focus on the foreign policies of the United States, China, and Japan. The course examines regional flashpoints such as the Korean Peninsula; the role of emerging players such as India and ASEAN; and developments in the East Asian regional economy. (5 units)

123. Global Environmental Politics

Explores the political, social, scientific, and economic challenges in the pursuit of a just and sustainable global environment. Case studies include climate change, the environmental effects of war, sustainable development, and cross-border pollution which are studied through the lenses of national, intergovernmental, and nongovernmental actors and social forces. (5 units)

124. Law, Security, and Force

An examination of traditional international legal principles involving the use of force in self-defense with case studies to understand how the justification of armed conflict is changing. Discussion of the international community's adjustment to the evolving nature of sovereignty, increasing globalization, and national defense. (5 units)

125. International Law

Sources, nature, and function of international law in world politics. Special attention to the subjects of international law, international transactions, and the rules of war. Viewpoints presented from Western and non-Western perspectives. (5 units)

126. International Organization

International organization in world affairs. Political, economic, and social role of the United Nations, regional organizations, specialized agencies, and nonstate transnational actors. (5 units)

127. Special Topics in International Relations

Selected topics in international relations. (5 units)

128. U.S. Foreign Policy

Aims, formulation, and implementation of U.S. foreign policy since World War II, focusing on diplomacy, war, security, and trade. (5 units)

Upper-Division Courses: Comparative Politics

Note: Either POLI 2 or 3 is a required prerequisite for upper-division comparative politics courses.

131. The Military and Politics

Introduction to concepts and issues in civil-military relations. Historical and comparative analysis of different patterns of military participation in politics, defense policy making and national development. Introduces alternative models for structuring civil-military relations, and examines the problems associated with the models adopted by the United States and other nations. (5 units)

134. Race and Ethnicity in the Politics of Developed States

An examination of the role of and attempts to deal with racial/ethnic identity and conflict in the politics of the United States, South Africa, the former Soviet Union, Yugoslavia, and Western Europe. (5 units)

137. Politics in Latin America

Political cultures, processes, and institutions of selected Latin American countries. Dictatorship and revolution, democratization, economic development, and social movements. (5 units)

140. Politics in Less Developed Countries

Multidisciplinary study of politics and political culture in selected states in Africa, Asia, and/or Latin America. Comparisons within and across regions exploring democratization, economic development, racism, diversity and inclusion, and sustainability. (5 units)

142. Politics in the Middle East

Designed to give students an understanding of the complexities of Middle East politics, the importance of the region to the world, and the role history and religion have played in the political and social development of the various countries in the region. (5 units)

143. Democracy and Democracy Building

Designed to give students an understanding of theories of democracy and how democracies are built out of military defeat (Germany and Iraq) and internal change either by leaders relinquishing power or popular uprising. Course includes reports of participants about decision making in democratizing processes. (5 units)

144. European Politics

An examination of European politics in the postwar era through political parties and institutions. Evaluation of current challenges facing European governments such as immigration, changing welfare states, regional diversity, and an expanding European Union, using national comparisons. (5 units)

145. Politics of Former Communist States

An examination of transitions of the diverse states of the former Soviet Union and East Europe, with a focus on differences in transitions, progress toward democracy, and the impact on people's attitudes and lives. Students will work with their peers from these countries. (5 units)

146. African Environment and Development

Examines how history, politics, and policies have shaped the contemporary political, social, and cultural dimensions of development and environmental challenges in sub-Saharan Africa. Special topics include the politics of natural resource use, the causes of hunger and famine, problems of conservation and environment, environmental health and gender, and development. Also listed as ENVS 149. (5 units)

149. Special Topics in Comparative Politics

Selected topics in comparative politics. (5 units)

Upper-Division Courses: United States Politics

Note: POLI 1 is a required prerequisite for upper-division U.S. politics courses.

150/150AW. The Presidency

Analysis of the presidency as it has evolved throughout U.S. history. Comparison of presidential powers with those of Congress, the courts, the bureaucracy, the press, political parties, and the public. Prerequisites: POLI 1 and CTW 1&2 for POLI 150AW, which has an Advanced Writing component. (5 units)

151. The Congress

History, structure, and policies of Congress. Congressional elections and theories of representation, the committee system and congressional norms, lobbying, congressional ethics and reforms, and the power of Congress relative to the president and the bureaucracy. (5 units)

152. Political Participation

An examination of who participates in U.S. politics and the various forms of political participation. Elections, political parties, interest groups, community organizing, and political protest. (5 units)

153. Minority Politics in the United States

Survey course with a focus on the historical and contemporary struggles of minority groups in the United States. The following minority groups are analyzed comparatively within a political and institutional context: African Americans, Latinx, Asian Americans, Native Americans, minority women, gays, and the disabled. This course examines various issues including theories of race, ethnicity, gender, and class to understand how these variables serve as a basis for identification and political mobilization in American politics. Also listed as ETHN 153. (5 units)

154. Women and Politics

A consideration of the various ways women have changed "politics as usual." Examination of the status of women today, varieties of feminist thought, women as voters and as an interest group, women in public office, and public policy issues. Also listed as WGST 180. (5 units)

155. Political Psychology

This course serves as an introduction to the interdisciplinary field of political psychology, which applies theoretical ideas from psychology to understand political processes. Political psychology tends to focus on how politics works at the individual (micro) level. This course will focus on the psychological roots of public opinion and the political behavior of ordinary citizens through an application of psychological theories about personality, learning, cognition, emotion, social influence, and group dynamics to individuals' political attitudes and behaviors. (5 units)

156. Politics and Mass Media

An examination of the politics of the mass media, interactions between politicians and the media, the effects of mass media, and social media on political life and public opinion, concerns of racial and ethnic minorities, and the ethics of media work. (5 units)

157. Environmental Politics and Policy

This course examines environmental politics, policy, and governance in the last half century. Part one of this course reviews major environmental legislation in the United States including the Endangered Species Act, Clean Water Act, Clean Air Act, and policy responses to global warming. In part two, learners step back to interrogate the power dynamics, social movements, legal battles, and struggles over meaning and representation that accompany significant social change. The final section examines the rise of global environmental governance highlighting the role of nonprofit organizations, civil societies, and corporate firms as voluntary environmental regulation moves from the margins to the mainstream. A concluding discussion identifies avenues for civic engagement, accountability, and environmental citizenship. Learners will gain insight into the policymaking processes by participating in simulation games, reading and research assignments, developing tools to assess policy outcomes, and finding strategies to identify political opportunities. Prerequisite: ENVS 22 recommended. Also listed as ENVS 122. (5 units)

158. Housing and Homelessness Policy

Substantive in-depth study of U.S. housing and homelessness policies. This course explores causes and correlates of homelessness such as poverty, unemployment, drug/alcohol addiction, mental illness, crime, disorder, and lack of affordable housing. Note: This course requires participation in community-based learning (CBL) experiences off campus. (5 units)

160. The Constitution and Equality

Constitutional law doctrines and decisions regarding the 14th Amendment's guarantee of equal protection. Topics include race discrimination (particularly school desegregation and affirmative action), sex discrimination, discrimination against the poor, and discrimination based on sexual orientation. (5 units)

161. Law and Politics in the United States

Examination of the U.S. legal system. Topics include legal culture, the adversary system and its alternatives, system participants (litigants, lawyers, and judges), judicial selection, and legal versus political influences on judicial decision making. Special attention to the question of the capacity of courts to serve as agents of social change. (5 units)

163. State and Local Politics

A consideration of the politics and processes of state and local governments, with particular attention given to California state, county, and municipal politics. Topics include federalism, executives, legislatures, courts, interest groups, parties, elections, financing, and issues such as education, welfare, criminal justice, transportation, housing, and urban growth. (5 units)

164. Studies in Public Policy

Selected topics and problems in public policy as viewed from a political insider's perspective. Taught by a political practitioner. (2 units)

165. Public Administration

Administration of public policies in terms of broad questions of democratic theory. Organizational theory, public employees, budget making, policy evaluation, and public finance. (5 units)

166. California Politics

An examination of the structures and processes of California politics: the state's constitution, legislature, governor, courts, and executive agencies. Special attention to democratic dilemmas of citizen participation (elections, ballot initiatives), legislative gridlock (redistricting, budget), and crucial policies (education, health and welfare, immigration, criminal justice, energy, and environment). (5 units)

167. Making Public Policy

An examination of the nature of U.S. public policy and policy analysis through the use of texts and case studies. Stages of policy development (how an idea becomes a policy, agenda setting, implementation, analysis, and evaluation). Ethical issues in public policy. (5 units)

168. Special Topics in Public Policy

Substantive in-depth study of selected issues in U.S. public policy such as health care, criminal justice, housing, and homelessness. Emphasis on the intersection of policy areas. (5 units)

169. Special Topics in U.S. Politics

Selected topics in U.S. politics. (5 units)

170. Campaigns and Elections

Campaigns and elections form the backbone of American democracy. In this course we will explore what political science can tell us about electoral politics at the federal level, including how campaigns develop strategies, how voters make decisions, and the roles parties and interest groups play in shaping the outcomes of elections. The 2016 presidential and congressional elections will also receive plenty of attention. (5 units)

171. Gender and Law in the U.S.

This course examines the ways in which the law constructs and regulates gender and sexuality through an intersectional framework. Principles such as equality, liberty, privacy, and equal protection will be explored, as will contemporary law and policy issues such as employment discrimination, sexual violence, reproductive justice, and family law. Also listed as WGST 118. (5 units)

172. Money in Politics

In politics, money talks. In this course, we will consider whether political money and the involvement of monied-interests in politics serve to advance or undermine democratic elections, political equality, freedom of speech, representation, and the production of sound public policies. (5 units)

173. Sports and Politics in the U.S.

This course is a survey of issues at the intersections of sports and politics in the United States. Topics include the development of sports culture in the United States, race and integration, gender and sexuality, protest and resistance, nationalism and sports diplomacy, the NCAA and college athletics, antitrust and labor law in professional sports, the politics of stadium finance, regulating sports gambling, and a variety of current controversies and ethical issues facing American sports leagues and institutions of government. (5 units)

Upper-Division Courses: Senior Seminars

192/192AW. Seminar in Comparative Politics

Selected topics in comparative politics in various states and regions. Prerequisite: CTW 1&2 for POLI 192AW, which has an Advanced Writing component. (5 units)

193/193AW. Seminar in Political Philosophy

Selected topics in political philosophy. Prerequisite: CTW 1&2 for POLI 193AW, which has an Advanced Writing component. (5 units)

195. Seminar in U.S. Politics

Selected topics in U.S. politics. (5 units)

195DW. Seminar in U.S. Politics

Selected topics in U.S. politics. This course has Diversity and Advanced Writing components. Prerequisites: POLI 153; CTW 1&2 for the Advanced Writing component. Also listed as ETHN 185. (5 units)

195L. Seminar in U.S. Politics

Selected topics in U.S. politics and law. This course satisfies the Pre-Law requirement. (5 units)

196. Seminar in International Relations

Selected aspects of international political behavior. (5 units)

Upper-Division Courses: Internships and Independent Study

197. Honors Research Projects

Independent research and writing on a selected topic or problem. Enrollment restricted to students in the Political Science Honors Program. This course does not satisfy any upper-division requirement for the major. (5 units)

198. Public Service Internship

Directed internships in government agencies, legislative bodies, political parties, or interest groups, public or government affairs departments of corporations, or nonprofit organizations. Open to qualified juniors or seniors with permission of the instructor. (2 units; P/NP)

198A and B. Public Sector Study and Internship

Directed internships in local government agencies, legislative bodies, political parties, interest groups, public or government affairs departments of corporations, or nonprofit organizations, integrated with classroom analyses of professions in the public sector, frequent guest speakers, and research projects. Open to qualified second-year students and above with permission of instructor. (5 units)

198EL. Public Sector Study and Internship

Directed internships in local government agencies, legislative bodies, political parties, interest groups, public or government affairs departments of corporations, or nonprofit organizations, integrated with classroom analyses of professions in the public sector, frequent guest speakers, and research projects. Open to qualified juniors and seniors. Note: This course requires participation in community-based learning (CBL) experiences off campus. (5 units)

199. Directed Reading

Independent study. Intensive work in areas not fully covered in upper-division courses. Prerequisite: A written outline of the proposed course, with required forms and all necessary signatures, must be submitted at least one week prior to registration. (1--5 units)

Department of Psychology

Professors Emeriti: Jerry M. Burger, Lucia Albino Gilbert, Robert Numan, Marvin L. Schroth, Eleanor W. Willemsen

Professors: Matthew C. Bell (Department Chair), Tracey L. Kahan, Thomas G. Plante (Augustin Cardinal Bea, S.J., University Professor), Patricia M. Simone , Kieran T. Sullivan, Tim Urdan

Associate Professors: Kathryn Bruchmann

Assistant Professors: Lang Chen, Lindsay Halladay, Birgit Koopmann-Holm, Kirsten Read

Senior Lecturer: Lisa Whitfield

The Department of Psychology offers a degree program leading to the bachelor of science in psychology. Psychology is the study of behavior, emotion, and thought using the scientific method. At the undergraduate level, the study of psychology is part of a liberal arts education. A major in psychology lays the groundwork for various careers and advanced studies, including the pursuit of graduate degrees needed for the professional practice of psychology.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in psychology must complete the following departmental requirements:

- PSYC 1, 2, 51, 52, and 53 (or 53L)
- MATH 6 and 8 or MATH 35 (or 11) and 8
- One biological psychology course from PSYC 165, 166, 167
- One developmental psychology course from PSYC 172, 184, 185, 196
- One applied psychology course from PSYC 115, 117, 140, 157
- One socio-cultural/personality course from PSYC 150, 160, 162
- One learning/cognition/perception course from PSYC 120, 130, 131, 138
- One advanced topics course from PSYC 111, 116, 118, 132, 133, 141, 151, 168, 171, 178, 199A
- Three additional approved upper-division psychology courses

Honors in Psychology

Psychology majors may be selected for graduation with Honors in Psychology provided they have a grade point average of 3.3 or higher in their psychology courses, complete PSYC 99 and a senior project in a manner approved by the faculty honors committee. Honors students are expected to participate in various department-sponsored events.

Emphasis in Gerontology

In addition to the bachelor of science and departmental requirements, students who wish to study the process of aging should inquire about the gerontology certificate program. For additional information, contact Patricia Simone, director of gerontology, at psimone@scu.edu.

Lower-Division Courses

1. General Psychology I

The scientific study of behavior. Topics include the biological basis of behavior, sensation and perception, learning, memory, language, problem solving, intelligence, sleep and dreaming, consciousness, and examines research methods and critical analysis of research. Prerequisites: None. (4 units)

1H. General Psychology I Honors

The honors version of PSYC 1. Restricted to students in the University Honors Program and students entering with AP Psychology credit. (4 units)

2. General Psychology II

The scientific study of behavior. Topics include human development, personality, abnormal psychology, clinical intervention, social psychology, psychological assessment, motivation and emotion, cross-cultural psychology, and examines research methods and critical analysis of research. Prerequisites: None. (4 units)

2H. General Psychology II Honors

The honors version of PSYC 2. Restricted to students in the University Honors Program. (4 units)

50. Ways of Knowing

Personal experience, the scientific method, journalistic techniques, anthropological observation methods, intuition, and faith (religious, paranormal) are just a few of the ways of knowing that people use. This course explores each of these ways of knowing with the goal of answering the following questions: What are the strengths of each way of knowing? What are the limitations? Which method of inquiry is best for answering different types of questions? Prerequisites: None. (4 units)

51. Statistics and Methods I

An introduction to statistical and research methods used in psychological research. This is the first course in a required three-course statistics and research methods sequence for the psychology major. Prerequisites: Declared psychology major, PSYC 1 or 2. (4 units)

52. Statistics and Methods II

A further examination of the statistical and research methods used in psychological research. This is the second course in a required three-course statistics and research methods sequence for the psychology major. Prerequisites: PSYC 1, 2, and PSYC 51. (4 units)

53. Statistics and Methods Practicum

This is the third course in a required three-course statistics and research methods sequence for the psychology major. In this course, more advanced statistics and research methods are discussed and then applied to student research projects developed and presented at the end of the course. Psychology majors must complete either Psyc 53 or Psyc

53L to fulfill lower division major requirements. Prerequisite: PSYC 52. (4 units)

53L. Statistics and Methods Practicum and Lab

This is the third course in a required three-course statistics and research methods sequence for the psychology major. In this course, more advanced statistics and research methods are discussed and then applied to student research projects developed and presented at the end of the course, along with extensive lab work. Enrollment in this lab class is by instructor permission only. Psychology majors must complete either Psyc 53 or Psyc 53L to fulfill lower division major requirements. (4 units)

65. Foundations of Behavioral Neuroscience

A basic introduction to brain structure and function. The course has standard lecture hours but integrates hands-on laboratory experiential exercises during the class sessions. Meets the Core natural science requirement. Prerequisite: None. (4 units)

99. Honors Colloquium

Skill development (including practice with data management software, public speaking, writing, and/or ethics) and career development (e.g., preparing applications for graduate programs and/or jobs after college). Students must be accepted into the psychology honors program to enroll in this course. (2 units)

Upper-Division Courses

102. Writing in Psychology

Development of writing, reading, critical thinking, and literature search skills within traditional formats for communicating scholarship in psychology. Covers the use of the American Psychological Association (APA) style for experimental reports and literature reviews. In addition to developing communication skills, assignments emphasize how to interpret experimental findings and evaluate support for hypotheses. Other assignments will require students to synthesize findings from several published studies and draw conclusions about a body of research. Prerequisites: ENGL 1 and 2, all lower-division psychology requirements or permission of instructor. (5 units)

111. Advanced Topics in Motivation

Seminar exploring theories and research in motivation and emotion. Students will read, discuss, and critically analyze current empirical research and review articles in these areas. Topics emphasized will include cultural and individual variation in motivation and emotion, development of motivation and emotion, and the social, cognitive, and biological bases of motivation and emotion. Prerequisites: Senior standing and all lower-division psychology requirements. (5 units)

112. Motivation and Emotion

Scientific study of the various motivational and emotional processes of people and higher animals. Biological drives, psychological survival needs, altered states of consciousness, social motives, and theories of emotion. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

114. Ethics in Psychology

The role of ethical behavior and decision making in the field of psychology and related behavioral, medical, and social sciences. Topics include approaches to moral issues and related to competence; integrity; professional, scientific, and social responsibility; respect for others' rights and dignity; and concern for others' welfare. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

115. Psychopathology (formerly Abnormal Psychology)

The study of psychology and human behavior in understanding the etiology, nature, development, and treatment of mental disorders. Topics include models of, psychopathology, research, diagnosis, assessment, and treatment of emotional and behavioral disorders, such as affective disorders, personality disorders, sexual disorders, substance abuse disorders, and childhood disorders. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

116. Advanced Topics in Psychopathology (formerly Abnormal Psychology)

Advanced topics in psychopathology involve the discipline and principles of psychopathology in understanding the etiology, nature, development, and treatment of behavior and emotional problems and issues. Class topics include the history of, psychiatric illness, theoretical models, assessment and intervention approaches, specialization, consultation, ethics, and current trends in the field. The course is designed for senior psychology majors interested in a career in clinical or counseling psychology or related fields. Prerequisites: Senior standing, lower-division psychology requirements, and PSYC 115, or permission of instructor. (5 units)

117. Health Psychology

Health psychology involves the discipline and principles of psychology and human behavior in understanding how the mind and body interact in health and disease. Topics include health promotion and primary prevention of illness, health enhancing and health damaging behaviors, psychosomatic illness, stress and coping, pain management, and a variety of specific behavior-related medical illnesses (e.g., heart disease, eating disorders, cancer, and AIDS). Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

118. Advanced Topics in Health Psychology

Advanced topics in health psychology that involve the discipline and principles of health psychology in understanding the etiology, nature, development, and treatment of health damaging and health enhancing topics. Class topics include theoretical models, assessment and intervention approaches, ethics, and current trends in the field. The course is designed for senior psychology majors interested in a career in health psychology or related fields. Senior standing (5 units)

119. Psychology of Death, Dying, and Loss

An introduction to theory, research, and practice on the psychology of death and dying. Students explore the implications of death, dying, and loss in their lives. Topics include death in today's health care system, the psychology of grieving and coping with loss, life-threatening illness, caregiving, as well as social, cultural, and ethical issues related to death in contemporary society. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

120. Perception

A theoretical and empirical investigation of human perceptual processes, with an emphasis on both theories and methods. Topics include sensory and perceptual processes of all sensory modalities, with more focus on the vision. We will also explore multisensory integration, the relationship between perception and high-level cognition (memory, language, social cognition, etc.,), applications to real-life problems. Also, we will develop methodological skills and make connections to your knowledge and skills learned from research methods. Prerequisites: all lower-division psychology requirements, or permission of instructor. Psychology Major: Psyc 51 and Psyc 52; Neuroscience Major: Neur 1 and Neur 10. (5 Units)

130. Psychology of Learning

A scientific investigation of learning and behavior that focuses on experimental research and related theory of the basic principles of learning. Covers both classical and operant conditioning, including topics such as stimulus control, schedules of reinforcement, choice, and punishment. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

131. Cognitive Psychology

A theoretical, empirical, and experiential investigation of human information processing. Topics include the history of cognitive psychology and the following research areas: pattern perception, attention, working memory, long-term memory, memory distortions, imagery, language processes, problem solving and decision-making. Emphasizes contemporary theory and research, including recent developments in cognitive neuroscience. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

132. Advanced Topics in Learning

Seminar examines contemporary topics in learning theory and research. This course may emphasize theory and/or application. Original research and current trends will be highlighted. Prerequisites: Senior standing and all lower-division psychology requirements. Recommended but not required: PSYC 130 or 140. (5 units)

133. Advanced Topics in Cognitive Psychology

Seminar explores contemporary theories and research in cognitive psychology and cognitive neuroscience. Class topics include consciousness, attention, memory, metacognition, and the relationship between imagery and perception. Prerequisites: Senior standing, lower-division psychology requirements, or permission of instructor. Recommended, but not required: PSYC 120, 131, or 166. (5 units)

134. Psychology of Education

Educational psychology refers to the application of psychological theories and research to educational topics and settings. In this course, we discuss how students learn, how they should be assessed, and what motivates students. Next, we examine some issues in child and adolescent development, including cognitive, social, and affective development. Then we discuss how factors such as gender, culture, ethnicity, and socioeconomic status influence the experiences and achievements of students. Finally, we explore the defining characteristics of excellent teachers, how to train teachers, and how to assess them. The course concludes with a consideration of the future directions in education and the potential for psychology to influence education. Junior or Senior standing. (5 units)

135. Psychology of Sleep and Dreaming

A theoretical, empirical, and experiential exploration of sleep, sleep disorders, and dreaming. Considers physiological, cognitive, neurocognitive, and functional approaches. Topics include psychophysiology of sleep and dreaming; purported functions of sleep and dreaming; personal and public health consequences of sleep disorders, sleep deprivation, and sleep debt; continuity in mental processes across the sleep/wake cycle; memory for dreams; approaches to working with dreams; and consciousness and dreaming, including lucid dreaming. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

137. Psycholinguistics

This course examines human language as it is studied from a psychological perspective. Psycholinguistics focuses on understanding how spoken and written language can be dissected into smaller units of sound, meaning, and structure; how language skill develops; how language is used in the social world; and what the causes and consequence are

when language breaks down. This course will cover major perspectives and controversies in the field, a variety of experimental techniques that are used to test theories and investigate language use, and how psycholinguistic research can be applied to our everyday experience. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

138. Human Memory

A theoretical, empirical, and experiential exploration of human memory. Emphasizes theory and research, including recent developments in cognitive neuroscience. Topics include historical and contemporary approaches to the scientific study of memory, attention and memory, working memory, long term memory, prospective memory, autobiographical memory, eyewitness memory, age-related changes in memory, what happens when memory fails, and strategies for improving memory. Prerequisites: All lower-division psychology requirements, or NEUR 10, or permission of instructor. (5 units)

140. Behavior Analysis

A scientific investigation of learning and behavior from a behavior analytic perspective. This course emphasizes a behavior analytic approach to understanding psychology that focuses on operant conditioning and its application to real-world problems. Prerequisites: PSYC 1 or 2, or permission of instructor. (5 units)

141. Advanced Topics in Culture and Emotion

Seminar examines contemporary topics in the cross-cultural study of emotion. Topics include the structure and categorization of affect and emotion across cultures (e.g., are there culture-specific emotions?), cultural similarities and differences in views of emotions and in different aspects of emotions (e.g., subjective experience, expressive behavior, and physiology). Prerequisites: Senior standing, all lower-division psychology requirements, and either PSYC 150 or 160, or 162, or permission of instructor. (5 units)

144. Psychological Assessment

Principles and issues related to testing and measurement in psychology. Topics include test construction, reliability, validity, and the professional and ethical use of psychological tests and test scores. Prerequisites: All lower-division psychology requirements or permission of instructor. (5 units)

150. Social Psychology

The scientific investigation of how people influence each other. Students will learn social psychological theories about the causes of human behavior, as well as how these theories can be scientifically tested and applied to solve real-world problems. Topics include social cognition, the self, attitude change, conformity, compliance, group processes, helping, stereotyping, prejudice, discrimination, intergroup relations, aggression, and attraction. Prerequisites:PSYC 1, 2, 51, and 52, or permission of instructor. (5 units)

151. Advanced Topics in Social Psychology

Seminar examines contemporary topics in social psychology with a focus on the self and identity. Topics of discussion include self-concept development, social comparison, social identity, and self-affirmation. Original research and current trends, and special focus on ongoing research and applied programs, will be highlighted. Prerequisites: Senior standing, all lower-division psychology requirements, and PSYC 150, or permission of instructor. (5 units)

153. Psychology of Close Relationships

The scientific investigation of close relationships, drawing from clinical psychology and social psychology. Topics include research methodologies for studying close relationships; theories of attraction, love, and marriage; the developmental process of relationships; and interventions for distressed relationships. Prerequisite: PSYC 1, 2 and 52, or permission of instructor. (5 units)

155. Psychology and Law

Explores relevance for law of psychological principles and findings, as well as laws pertaining to practice. Topics include eyewitness testimony, legal insanity, jury dynamics, expert testimony, and family law issues. This course is open to nonmajors. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

157. Industrial/Organizational Psychology

An introduction to the broad field of Industrial/Organizational (I/O) psychology, which includes science and practice related to personnel selection and placement, training, and development; organizational development; occupational health and safety; work motivation; and other areas concerned with human behavior in organizational contexts. Prerequisites: PSYC 1 or 2, or permission of instructor. (5 units)

160. Personality and Affective Science

The study of individual differences and personality processes. Discussion of major theories of personality and emotion. Current challenges and controversies in personality and affective science. Different methods for assessing personality and emotion. Applications of personality and affective science to everyday life. Prerequisites: PSYC 1, 2 and 52, or permission of instructor. (5 units)

162. Cultural Psychology

Introduction to the perspective and methodology of cultural psychology, which focuses on the cultural constitution of psychological phenomena. This course alternates between abstract discussions (of culture, evolution, and psychology) and more concrete examples of human cultural variation. This course will help students recognize and challenge their assumptions about "human nature," the "person," and what is "natural, good, and moral." Prerequisites: PSYC 1, 2 and 52, or permission of instructor. (5 units)

163. Substance Abuse and Addiction

This course will explore the nature and consequences of alcohol and drug addiction from biological, psychological, and public health perspectives. Students will study common drugs of addiction, the underlying causes of addiction, and treatment strategies. Societal impacts and responses to substance abuse and addiction will be examined in depth. Also listed as PHSC 160. (5 units)

165. Behavioral Neuroscience

Emphasis on the neuroanatomical, neurochemical, and neurophysiological correlates of motivation, emotion, learning, and memory. Neural regulation of sleep and arousal, mechanisms of drug action, and neuropathology are also reviewed. Prerequisites: PSYC 1, 52 or NEUR 10, or permission of instructor. (5 units)

166. Human Neuropsychology

Study of human brain function from an experimental perspective. Addresses questions such as: What are the brain mechanisms that lie at the basis of perception and memory, of speech and thought, of movement and action? What happens to these processes when individual parts of the brain are destroyed by disease? Prerequisites: PSYC 1 and 52, or permission of instructor. (5 units)

167. Psychopharmacology

Examination of the effects of various drugs (such as nicotine and alcohol) and abnormal neurochemical states (such as schizophrenia and depression) on mental functioning and behavior. Topics include the effects of various drugs on the brain and the biochemical basis of human neurosis and psychosis. Prerequisites: PSYC 1 and 52, or permission of instructor. (5 units)

168. Advanced Topics in Neuroscience

An integration from various sub-disciplines in psychology with an emphasis on the brain and behavior. Topics include neural development from fetus to early childhood, neural basis of psychopathologies (e.g., schizophrenia and depression), cognitive functions (memory, attention, and learning), and personality and related disorders. Prerequisites: Senior standing, all lower-division psychology requirements, or permission of instructor. Recommended, but not required: PSYC 165, 166, or 167. (5 units)

169. Cognitive Neuroscience

The scientific study of the biological processes and aspects that underlie cognition, with a specific focus on the neural connections in the brain that are involved in mental processes. The class will focus on the neurophysiological and neuroscientific evidence for psychological theories of higher mental function, including attention, memory, perception, consciousness, and emotion. Prerequisites: PSYC 1, 52 or NEUR 10, or permission of instructor. (5 units)

170. Truth and Consequences: Challenging What and How We Know

How do you know something to be true? We explore that fundamental question by examining different ways of knowing, pursuing a more nuanced and sophisticated understanding. We question how we come to construct and accept existing beliefs in psychology, communication, and the general public by challenging what we believe we know to be true. Drawing on humanities, arts, and sciences we will pursue developing critical thinking with the goal of enhanced decision-making reflecting *cura personalis*. Cross-listed with COMM 169. Prerequisite: upper-division standing. (5 units)

171. Advanced Topics of History of Psychology

This advanced topics course includes readings and discussions from a textbook on the history of psychology, and from original papers written by the psychologists we read about. Students will trace the history of how a topic has been conceptualized, researched, and written about over a period of at least 50 (in many cases 150 to 200) years. This course begins with philosophical and scientific ideas from the 18th and 19th centuries and then moves into the formal history of our discipline. Prerequisites: Senior standing, all lower-division psychology requirements, or permission of instructor. (5 units)

172. Adolescent Development

A focus on development during the second decade of life, from puberty through early adulthood. Topics include physical, intellectual, and social development; identity; sexuality; changing social contexts; and life transitions. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

178. Advanced Topics in Developmental Psychology

Seminar examines contemporary topics in developmental psychology. Original research, current trends, and special focus on ongoing research and applied programs will be highlighted. Focus of seminar can be children and adolescent development or young adult development. Prerequisites: Senior standing; all lower-division psychology requirements; and PSYC 172 or 185. (5 units)

181. NEW Identity

Identity is a prominent construct in several sub-disciplines within psychology, including developmental, social, personality, gender, and cross-cultural. In addition, issues of identity increasingly are recognized as an important factor affecting our behavior and beliefs. Identity politics, ethnic and racial biases, and the #TimesUp movement are but three examples of the central role of identity in current events. The purpose of this class is to understand the multifaceted nature of identity and how it has been examined in psychology. Prerequisites: All Lower-division Psychology requirements (5 units)

182. Psychology of Gender

This course examines research on the psychological gender differences and similarities, the theories behind these differences, and the application of this research to the real world. Topics include gender roles, stereotypes, relationships, the gender pay gap, and objectification. Prerequisite: PSYC 1 or 2, or permission of instructor (5 units)

184. NEW Infancy

This course will investigate the psychological development of humans from conception through toddlerhood to age three. It will include relevant genetic theory, physical, perceptual, and motor development, neurological and cognitive development, early temperament and social development, and individual differences. We will explore how these areas of growth interact within individuals as they build on their earliest foundations during the most rapidly unfolding period of life. We will unpack the unique research methods used to understand and assess these areas of development. And, students will learn first-hand about the practical applications of understanding how typical developmental progresses. Prerequisites: Psyc 1 or 2 and Psyc 51 and 52, or permission of instructor. (5 units)

185. Developmental Psychology

An upper-division survey of child development, including infancy, early childhood, middle childhood, and a brief introduction to adolescent issues. Major developmental theories and methods of studying development are introduced. Principle findings regarding social-emotional, cognitive, and physical development in the different stages of childhood are included, as well as findings about the impact on development of the societal context in which development occurs. Prerequisite: PSYC 1 or 2, or permission of instructor. (5 units)

192. NEW Ecopsychology

This course integrates psychological, philosophical (phenomenological), and ecological systems approaches in the study of human-nature relationships. We will explore and apply both first-generation and second-generation ecopsychology paradigms. First-gen ecopsychology is human-centric and emphasizes the benefits to humans of interacting with nature (e.g., experience in nature as 'therapeutic'); second gen ecopsychology views humans as but one aspect of a complex, bio-dynamic system wherein the human and more-than-human worlds are interdependent and synergistic. This course is rigorous in content and in practice: students\' final projects will evaluate and apply theoretical, empirical, and experiential ways of knowing to a contemporary issue in ecopsychology. We also consider our individual and collective responsibilities to foster environmental justice.

Pre-requisites: Declared major in Psychology or Environmental Studies, with upper-division standing; completion of at least one research methods course and at least two upper division courses in the student\'s major, or permission of instructor. This course fulfills an elective requirement in the Psychology and Environmental Studies majors. (5 units)

193. Psychology of Religion and Spirituality

The discipline and principles of psychology and human behavior in understanding religion and spirituality. Topics include empirical research and theory on religious and spiritual behavior and transformation from the various religious, spiritual, and historical wisdom traditions. Contemplative practices and spiritual tools from the various religious/spiritual wisdom traditions for psychological and physical health will be highlighted. A spiritual formation project will help students experience a hands-on activity to examine their own spiritual formation and development. This course is inclusive in that no particular religious/spiritual tradition or any tradition affiliation is assumed or required, and also highlights evidence-based empirical approaches. Prerequisites: PSYC 1 or 2, and a RTC 1 class. (5 units)

195. Research Practicum

Advanced methodological issues taught primarily through direct involvement in an experimental research project. Activities include reviewing the literature, formulating a research question, developing a design and procedure, collecting and analyzing data, and writing a professional research report. Prerequisites: Two upper-division psychology courses. Restricted to psychology majors only or permission of instructor. (5 units)

196. Psychology of Aging

Development in later life. Topics include theories of aging and development; cognition, perceptual, and social changes in aging; mental health issues in the elderly; and abnormal aging, such as Alzheimer's disease. Prerequisites: PSYC 1 or 2, or permission of instructor. (5 units)

197. Psychology Labs

Psychology labs will vary by topic and are associated with various courses offered throughout the year. Instructor permission required. (1 unit)

198. Internship/Practicum

A course where students can learn how they can best apply classroom instruction to their career objectives through academically supported work experience. Internships at Santa Clara University are closely monitored for appropriateness and practical application. Internships should encourage career skills and professional growth; they should not be just another job. Internships serve to introduce the student to the range of opportunities afforded a degree in the discipline. Students are expected to represent the University in a professional manner and to act responsibly with the client and the assignments. Selected readings. Open to upper-division students with a GPA of 3.0 or higher who have received permission from a faculty sponsor. (2--5 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. To receive course credit, the student must submit a formal written proposal and have it approved by the sponsoring faculty member and the department chair. The proposal must be submitted before the end of the previous quarter and must meet University requirements for independent study credit. (1--5 units)

199A. Advanced Topics for Directed Reading/Directed Research

Advanced topic independent projects undertaken by upper-division students with a faculty sponsor. To receive course credit, the student must submit a formal written proposal and have it approved by the sponsoring faculty member and the department chair. The proposal must be submitted before the end of the previous quarter and must meet University requirements for independent study credit and requirements for a psychology Advanced Topic course. Prerequisites: Senior standing, all lower-division psychology requirements or permission of instructor. (5 units)

Public Health Program

Dean's Executive Professor: H. Westley Clark

Professor: Craig M. Stephens (Program Director)

Associate Professors: Katherine B. Saxton , Sonja Mackenzie

Assistant Professor: Jamie Chang, Alice Villatoro

Lecturer: Hoda Abdel Magid

The Public Health Program in the College of Arts and Sciences offers the bachelor of science degree in public health science. The program also offers a minor degree in public health, and manages the Global Health Pathway of the University Core.

The public health science (PHS) major is an interdisciplinary degree focused on the health of human populations and individuals. Students will gain a solid foundation in biology and chemistry to understand the functioning of the human body in health and disease. The major further explores the influences of environmental and social factors on human health through required and elective public health courses, as well as relevant courses in the social sciences and humanities. Through the senior capstone and mandatory internship, PHS majors engage in health-focused service and research projects that apply their education to real-world public health problems, and integrate learning across disciplines. Students are encouraged to study abroad to gain perspective on global health issues.

Public health science majors will be well-prepared for careers, graduate education, or professional training in public health or health-related professions, including medicine and nursing. There are many career options in the field of public health, including health care administration, planning, and public policy; epidemiology and disease surveillance; clinical research and clinical trials management; health-related education and social work; health and science communication; and basic research.

Students intending to pursue a medical degree, or postgraduate training in other health-related professions, should contact the University pre-health advisor to discuss prerequisites for admission to such programs. Many require a full year of physics coursework (e.g., PHYS 11-13 or 31-33) in addition to the requirements for the public health science major.

Requirements for the Major in Public Health Science: Health Science Emphasis

In addition to fulfilling the Undergraduate Core Curriculum requirements for the bachelor of science degree, students must complete the following courses:

- PHSC 1, 2, 3, 100, 139, 150, 190, 197
- BIOL 1A, 1B, 1C
- CHEM 11, 12, 31, 32, 33
- Two approved introductory social science courses
- MATH 35, 36 (recommended) or MATH 11, 12
- One statistics course chosen from MATH 8, ANTH 112, BIOL 160, COMM 110, ENVS 110, OMIS 40, PHSC 50, PSYC 40, SOCI 120
- One public health elective: Any PHSC course other than the required courses listed above

- Two approved upper-division biomedical electives, at least one with a lab component
- Two approved upper-division social science or humanities electives

Requirements for the Major in Public Health Science: Health and Society Emphasis

In addition to fulfilling the Undergraduate Core Curriculum requirements for the bachelor of science degree, students must complete the following courses:

- PHSC 1, 2, 3, 50, 100, 125, 139, 150, 175, 190, 197
- BIOL 2 or BIOL 1A
- A total of six approved introductory social science courses, chosen from two departments
- MATH 35
- One approved upper-division PHSC elective
- Three approved upper-division electives from social science departments or PHSC

Internship Requirement

The PHS major requires students to complete at least 100 hours of public health-related internship work. Internships must be approved in advance by a faculty member in the Public Health Program. Internships can be done on a part-time or full-time basis, during the academic year or summer. Students may receive course credit for volunteer internships. For guidance on and approval of internships, students should contact one of the Public Health Program faculty.

Requirements for the Minor

The interdisciplinary public health minor provides an introduction to the field of public health and is particularly useful for students interested in careers related to medicine, health care, community health, social work, education, or public policy. The minor establishes a sound scientific foundation to understand the functioning of the human body in health and disease and to appreciate the mechanisms by which diseases arise and spread in populations. Students also develop a foundation in the social sciences and statistical methods. Upper-division courses address the influences of biological, environmental, cultural, economic, and historical factors on human health. Students are encouraged to study abroad, if possible, to gain perspective on global health issues. The Public Health Program is evolving and students are encouraged to petition the director of the Public Health Program to consider new relevant courses developed at Santa Clara University and partner institutions abroad in addition to the approved electives.

Public Health Courses

- PHSC 1, 2 or 3, 150, and at least two additional PHSC courses
- One statistics course chosen from MATH 8, ANTH 112, BIOL 160, COMM 110, ENVS 110, OMIS 40, PHSC 50, PSYC 40, SOCI 120

Natural Science Courses

- BIOL 1A or BIOL 2

Upper-Division Elective Courses

- At least three approved courses, including courses from at least two departments

Lower-Division Courses

1. Introduction to Public Health

As an introduction to public health, this course examines health at the population level. Topics include common infectious and chronic diseases, how diseases arise in individuals and populations, how diseases are studied, and how health is promoted at the individual and community levels. (4 units)

2. The American Health System

This course examines the fundamental aspects of the U.S. health system including organization, delivery, financing, cost, access, and quality. The focus will be on the current system, but significant attention will be given to its historical roots and to alternative approaches implemented in other developed countries. Potential policy reforms and the interface of the health care system with public health will also be discussed. Prerequisite: PHSC 1. (4 units)

3. Introduction to Community Health

This course is an introduction to community health designed for public health majors and minors. Students will investigate health from a community perspective at multiple levels---governmental, nonprofit organization, activist/member. Students will learn how to define "communities" for public health practice and research, and experience community health work with multiple stakeholders. This is a hybrid between classroom and field-based learning that will allow students to learn theories and frameworks of community health, while examining these principles in practice. Prerequisite: PHSC 1. (4 units)

7. Public Health and Ethics

Examination of the ethical and conceptual foundations of public health. Topics studied may include ethical theory and ethical justifications of public health interventions, genetic screening of newborns conducted by the state, prenatal genetic diagnosis, genomic medicine, mandatory vaccinations for children and others, parental responsibility for their children's health and welfare, public policy and law regarding the use of tobacco, alcohol, and other drugs, the allocation of vital organs for transplantation, health disparities related to race and other social categories, the legal and administrative regulation of pain management, harm reduction (such as needle exchange), health promotion and behavior modification, and defensive medicine. (4 units)

11. Women's Health

This course examines how women's health over the life course is influenced by biological, psychological, social, and cultural experiences. Topics include menarche and pubertal development, reproductive health and rights, menopausal transition, mental health, and violence. Current, historical, and cross-cultural examples are discussed. Also listed as WGST 32 (4 units)

21. Health and Aging

Analysis of the human aging process, and the biological, medical, social, and ethical issues associated with aging. Topics include theories of aging, diseases and various health care issues associated with aging, and end-of-life issues. (4 units)

28. Human Sexuality

Integrates the biological foundations of human sexuality with psychological and social aspects of sexuality. Topics include the anatomy, physiology, and neurobiology of sex, gender and sexual orientation, sexually transmitted diseases, conception and pregnancy, contraception and abortion, and sexual dysfunctions. Also listed as WGST 33. (4 units)

50. Introduction to Biostatistics for Public Health

This introductory course uses case studies to present the principles and methods of biostatistics with application to public health, focused on interpretation and communication. Topics include descriptive statistics, probability, probability distributions, point and interval estimation, hypothesis testing, chi-square, correlation, and regression. Through the combination of lectures, readings, critical review of papers, and problem sets, students without prior coursework in biostatistics will acquire the core competencies in biostatistics expected of all public health undergraduates. (4 units)

Upper-Division Courses

100. Epidemiology

This course provides an introductory overview of epidemiological principles and methods. The course examines patterns of distribution and determinants of health and morbidity in human populations, and application of epidemiologic study designs and analytical methods, focusing on topics of public health importance and questions of health equity. Laboratory 30 hours. The laboratory (computer lab) will provide students with hands-on experience with epidemiologic methods, study design, and data analysis using statistical software. Also listed as BIOL 117. Prerequisite: BIOL 1C or PHSC 1 & 50. (5 units)

103. Advanced Global Health

Interdisciplinary investigation of topics in public health in a global context, with particular attention to major issues in low and middle-income countries, and the relationships between health status, education, and poverty. Prerequisite: PHSC 1. PHSC 100 or 150 recommended. (5 units)

105. Nutrition and Public Health

This course concentrates on the nutrition status of communities and populations, and actions that public health professionals may take to improve it. Students will learn about the connections between social justice, policy, and nutrition programs and how they relate to food access, nutrition status, and health outcomes for specific populations both domestically and internationally. Students will see how public health theories and research are applied in the nutrition context. This course also considers culture and intercultural interactions, and how they influence nutrition. Also listed as BIOL 105 (5 units)

111. Health Education and Promotion

This course examines the fundamental concepts of health education and promotion in a variety of public health contexts. Major theoretical approaches and models related to behavior change, social influence, communication strategies, and community-based change are discussed, as well as multifactorial determinants of health and health-related behaviors. An overview of different research methodologies for health program design, implementation, and evaluation is provided. (5 units)

124. Health Consequences of a Western Lifestyle

This course explores the impact of living in a developed country on human health. Topics such as diabetes, obesity, heart disease, hypertension, and cancer will be discussed at the molecular, cellular, physiological, and population levels. Also listed as BIOL 106. Prerequisite: BIOL 1C. (5 units)

125. Race, Class, Gender and Public Health

This course introduces students to key theories for studying social difference and health, and examines the ways that categories of social difference---including but not limited to race, class, and gender---are socially constructed and serve as key determinants of health and health inequities. Students will consider how privilege and oppression are patterned by race, class, and gender and study contemporary and historical debates of health inequities perpetuated in institutional and interpersonal contexts, including the state, the labor force, neighborhood, the family, and the criminal justice system. Also listed as WGST 131. (5 units)

131. Community Health

This course examines key health indicators and patterns seen in individuals, families, neighborhoods, schools, and communities. Students will explore social, environmental, political, cultural, and behavioral factors that contribute to health disparities linked to racial, ethnic, socioeconomic, and geographic differences. The course will also examine the design, implementation, and evaluation of social and behavioral interventions and health policies to improve community health. (5 units)

135. Human Development and Sexuality

Examination of evolutionary, biocultural aspects of human growth, development, and sexuality throughout the life cycle. Special emphasis on how various cultural, economic, and political factors influence norms of sexual behavior in different societies. Fulfills the Science, Technology & Society requirement. Also listed as ANTH 135. (5 units)

139. Experiential Learning in Public Health

This course will examine work in diverse areas of public health through discussion and reflection, with particular attention on vocational discernment and personal and professional development. Enrollment should precede or accompany the required internship for the PHS major. Prerequisites: PHSC 3 or by permission of instructor. P/NP grading. (2 units)

142. Environment and Health

This course will help students gain a better understanding of environmental factors that affect human health. Topics covered include population growth and urbanization, human ecology, pesticides and environmental toxins, air and water pollution, waste generation and management, and climate change. Particular emphasis will be placed on how these issues affect the global poor. (5 units)

150. Evidence-Based Public Health

This course focuses on the application of scientific reasoning and epidemiological analysis to public health research and program planning. On the research side, strategies for formulating appropriate research questions, designing studies, collecting and analyzing data, and interpreting and communicating results will be emphasized. Approaches for converting evidence into action will also be covered, including needs assessments, program development and implementation, and evaluation strategies. Students will gain hands-on experience in collecting, analyzing and interpreting, and acting upon empirical evidence in public health. An overview of major theoretical approaches and models related to behavior change, social influence, communication strategies, and community-based change will also be covered. Prerequisite: PHSC 2 or 3. (5 units)

156. Health Policy

This course will examine the development, implementation, and analysis of policies impacting public health, with particular attention to competing ethics, values, and power. Students will learn to critically appraise historical, contemporary, and possible future health policies and strategies. Prerequisite: PHSC 2. (5 units)

160. Substance Abuse and Addiction

This course explores the nature and consequences of alcohol and drug addiction from biological, psychological, and public health perspectives. Students will study common drugs of addiction, the underlying causes of addiction, and treatment strategies. Societal impacts and responses to substance abuse and addiction will be examined in depth. Also listed as PSYC 163. (5 units)

172. Management of Health Care Organizations

Explores the sociological and practical issues of operations, financing, and management in organizations providing services for people with health problems (organizations such as nursing homes and hospitals) or people with infirmities (organizations such as senior care centers and assisted living facilities). Also listed as SOCI 172. (5 units)

175. Qualitative Research Methods in Public Health

This is a hands-on course in which students practice qualitative research methods in public health including ethnography, interviewing, grounded theory analysis. Qualitative research is how we understand the how and why of public health issues. Students will explore a public health topic through an IRB-approved study and be involved in the development of research questions, conducting interviews/ethnography, coding/analyzing qualitative data in programs like Atlas.TI, and developing theory-driven findings. This course will provide an applied inquiry into qualitative research, and ways to integrate it with quantitative data, to examine public health issues. Prerequisite: PHSC 3 (5 units)

PHSC 187. Structural Racism: Race, Power and Resistance in the United States

This seminar addresses systems of structural racism in the United States understood as 'the accumulation and incorporation of long-standing racialized practices into social and economic structures.' These patterns of racial discrimination reinforce white supremacy and the inequitable distribution of social and economic resources. Through in-depth, discussion-based engagement with case studies of structural racism in interconnected systems of education, criminal justice, the law, policing and surveillance, health, housing and employment, the seminar will additionally consider the critical role of anti-Black racism, white supremacy and fragility, and the construct of the 'ally' as we dismantle structural racism at the systems level. Also listed as WGST 187. Enrollment by permission of instructor (5 units)

190. Public Health Science Capstone

Integrative course organized around a different public health theme each quarter. Includes lectures, readings, guest speakers, and discussion, culminating in student research projects and presentations. The course is intentionally interdisciplinary, demanding that students address public health issues from diverse scientific and cultural perspectives, and employ a variety of analytical tools. Pre- or corequisite: PHSC 100 and 150, or permission of instructor (5 units)

191. Violence Prevention Educators

In this class, students will be trained extensively on topics related to sexual assault outreach and prevention and will learn how to facilitate interactive presentations to peers in classrooms and residence halls. Through multiple avenues of instruction, students will have the opportunity to be leaders who push the dialogue of gender based violence into mainstream campus life. Enrollment is by permission of the instructor. (4 units)

193. Engineering World Health

This course is intended for students with an interest in public health and medicine. The focus will be on health issues in low-resource contexts globally. Students will work in teams on guided research projects oriented toward identifying health problems for which engineering teams could potentially develop useful solutions that could be effective in low-resource environments. (2 units)

195. Undergraduate Research

Research project supervised by Public Health Program faculty. Five hours of research per week is expected per unit. Can be repeated for credit, with a maximum of 5 units per academic year. Must be taken P/NP. Enrollment is by permission of the instructor. (1--5 units)

196. Peer Health Education

Provides students with current information on a variety of health topics, including general wellness, alcohol and substance abuse, nutrition, eating disorders, stress, mental health, sexual health, and sexual assault. Basic listening, counseling, group facilitation, public speaking, and presentation skills are developed and nurtured. Students are challenged to grow as leaders, peer counselors, and educators. Upon completion of this course, students are eligible to become a member of the Peer Health Education (PHE) Program. Enrollment by permission of instructor. (2 units)

197. Public Health Internship

This 2-unit course is for Public Health Science majors who have recently completed or are currently engaged in a public health-related internship. Through this course, students will receive course credit for their internship, and will complete the steps necessary to document the internship (including a reflective essay) to satisfy the PHS internship requirement. PHSC 197 will include analysis of internship experiences and host organizations, and further vocational discernment. The course will build communication, teamwork, networking, and community-engagement skills, and prepare students for success in the public health senior capstone. Prerequisite: PHSC 1. P/NP grading. (2 units)

198. Peer Health Educator Practicum

This course is for students who have already completed training as peer health educators through PHSC 196 and who will be actively involved in the Peer Health Education Program during the enrolled quarter. Enrollment by permission of instructor. (1 unit)

Department of Religious Studies

Professors Emeriti: Denise L. Carmody, Diane Jonte-Pace, Frederick Parrella, David Pinault, J. David Pleins

Senior Lecturer Emeritus: Salvatore A. Tassone, S.J.

Professors: David B. Gray (Bernard J. Hanley Professor), Gary A. Macy

Associate Professors: James B. Bennett, Teresia Hinga, Akiba J. Lerner, Catherine M. Murphy, Thao Nguyen, S.J., Ana Maria Pineda, R.S.M., Philip Boo Riley (Interim Chair)

Assistant Professors: Pearl M. Barros, Cathleen Chopra-McGowan, Mark Fusco, S.J., Roberto Mata, Daniel Morgan, Karen Peterson-Iyer, Elyse Raby, Paul J. Schutz, Haruka Umetsu Cho

Senior Lecturers: William Dohar, Margaret R. McLean, Sarita Tamayo-Moraga, Sally Vance-Trembath

Lecturers: Robert Scholla, S.J., Eugene Schlesinger

The Department of Religious Studies offers a degree program leading to the bachelor of arts in religious studies. The department also offers a minor program for those who wish to concentrate in theological and religious studies. In keeping with the University's commitment to the Catholic faith tradition, the department offers a variety of courses in Scripture, history, and Catholic theology. Faithful to the Jesuit tradition of liberal education and engagement with other religions, the department offers a wide breadth of courses in various religious traditions and methodologies for the study of religion. The department also offers courses as part of the undergraduate Core Curriculum, at both lower-division and upper-division levels. Courses are clustered in three areas: Theology, Ethics, and Spirituality (TESP); Scripture and Tradition (SCTR); and Religion and Society (RSOC).

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of arts degree, students majoring in religious studies must complete the following departmental requirements:

- Three lower-division courses, one from each of the three areas (scripture and tradition; theology, ethics, and spirituality; and religion and society)
- Seven approved upper-division courses, including three designated religious studies seminars, with one in each of the three areas
- RELS 90 (Theories and Methods)
- RELS 197A and RELS 197B, a two quarter capstone seminar

Requirements for the Minor

Students must fulfill the following requirements for a minor in religious studies:

- One introductory-level religious studies course (1--19)
- Two intermediate-level courses (20--99)
- Four approved advanced-level courses (100--199), one of which must be a religious studies seminar. Of the seven courses, at least one must be from each of the three areas (scripture and tradition; theology, ethics, and spirituality; and religion and society).

Lower-Division Courses: Scripture and Tradition (SCTR)

15. Texting God

This course explores how people express their beliefs and how the technologies they use shape what they say. Focusing on Jewish and Christian "texts" (oral, written, visual, gesture), we'll examine the core beliefs that communities inscribe in them. We'll also consider how scriptural memes are reconstructed in the ongoing process of building cultural memory. We'll learn to analyze the rhetoric of various modes, and ask how changing technologies are altering our experience of text, scripture, and our relationships with God. (4 units)

19. Religions of the Book

This course offers an introduction to Judaism, Christianity, and Islam with a study of their central texts, traditions and practices. We begin the course with a paradox: religion, that which in its literal sense "binds" or "fastens together," is also that which often violently divides our world. As we examine the sacred texts of Jews, Christians, and Muslims (Hebrew Bible, New Testament, and Quran), and various methods of interpreting them, our focus will remain on what is shared and what characteristically distinguishes between the monotheistic faiths. (4 units)

26. Gender in Early Christianity

The history of early Christianity is often portrayed as a history of, by, and about men, despite clear indications that women played a prominent role in the early church. Introduces the construction of gender in antiquity, Jewish and Greco-Roman laws and customs, the biblical canon, and other Christian texts. Contemporary feminist perspectives will inform the discussion. Also listed as WGST 46. (4 units)

27. Digging Up Jesus

This course examines the archaeological and literary evidence for Jesus. We'll use these primary "texts" to reconstruct the most plausible context for Jesus' work so that we can better understand the Gospel message, and learn the criteria for assessing whether he really said and did what the Gospels report. We'll also try to appreciate what the Gospel authors were doing in translating Jesus for their communities, just as we are doing ourselves with the historical approach of the course. (4 units)

28. Women In the Hebrew Bible

This course explores stores, tropes, metaphors, poetry, and archaeology related to Hebrew Bible and Old Testament (HB/OT) women. Biblical studies methodologies and interdisciplinary lenses will be used to create access points with the material culture of the Ancient Near East (ANE), literary life and afterlives of biblical texts, as well as intersectional juxtapositions between ANE and contemporary lives of women. We will explore questions such as: Did God have a wife? Are the oldest parts of the HB/OT written by women? How many different ways can families be defined? How does the HB/OT promote leadership and women? Also listed as WGST 21. (4 units)

39. Biblical Women and Power

Hero, villain, prophet, deviant---these are some of the power roles embodied by women in the Bible. Explores the exercise of power by biblical women in actual and figurative situations, in culturally positive and negative ways. Attention will be given to the continuing impact of such traditions for gender socialization in our world today. Also listed as WGST 47. (4 units)

48. Racializing Jesus

The course explores the various ancient and contemporary ethnic representations of Jesus in art, film, regalia, and scripture. Although portraits of Jesus as a white, blue-eyed prophet, messiah, or rabbi haunt the popular cultural imagination, these often reflect the social location and racial biases of Western scholars. But, what if Jesus was black, non-white Latinx, Amerindian, Asian, or Jewish? And, why is contemporary scholarship still grappling with the idea of Jewish messiah? In order to map the politics of interpretation and presentation, the course seeks to "radicalize" Jesus by (1) exploring his Jewishness in terms of race and ethnicity; (2) critically engaging sources from the New Testament, Apocryphal narratives, Rabbinic literature, and the Quran; (3) interrogation of the racial/racist reconstructions of Western biblical scholarship; and (4) mapping the implications for marginalized ethnic communities and interracial dialogue. Key themes to explore include: race/ethnicity, colonialism and imperialism, the quests for historical Jesus, Hitler's Third Reich, eugenics, interreligious dialogue, police violence (Ferguson & Baltimore), and the polemic over Jesus' wife. (4 units)

Upper-Division Courses: Scripture and Tradition (SCTR)

111. Bible and Ecology

The Christian tradition has long been known for its anthropocentrism (human-centeredness), and traditional interpretations of the Bible have perpetuated the idea that God made the universe for humans, leaving other creatures to struggle amid both evolutionary forces and devastating human actions. What does the Bible really "say" about creation? What is the ethical significance of Jewish and Christian perspectives on the natural world, given our planet's threatened state? (5 units)

112. Martyrdom

This course interrogates the role of sacred texts in legitimizing contemporary discourses on martyrdom or "Dying in God." Crucial questions to explore include: What is martyrdom and its relationship to ancient notions of noble death? Why are notions of martyrdom so prevalent amongst Christian, Jewish, and Muslim fundamentalist groups today? How is the Torah, the Bible, and the Quran used to legitimate violence against the self and others? Key themes to explore include: notions of a noble death in antiquity, imperial violence (crucifixion), the book of Revelation, martyrdom in early Christianity, the Crusades, Jonestown, Branch Davidians, secularization, fundamentalism (Jewish, Christian, and Muslim), suicide bombing, school shootings, and the rise of the Islamic State. (5 units)

128. Human Suffering and Hope

Explores issues of human suffering, justice, and belief in light of the biblical book of Job. Best for students interested in the creative arts, fiction writing, or community service. (5 units)

132. Apocalypse Now

This course provides a comparative introduction to ideas/symbols/theologies of the "End of the World" in three major monotheistic religions. In view of the influence of apocalyptic thought upon contemporary American culture in particular, and Western and non-Western societies in general, this course prepares students to responsibly engage in discussions of "End of the World" scenarios and their religious, socioeconomic, political implications. Themes germane to the course include: colonialism, environmental disasters (e.g., Pentecostalism), and alternative religious violence (e.g., Jonestown). In order to help students explore and articulate these themes, the course will provide various interpretive approaches from the theories and methods in the study of religion. We conclude the course by reflecting on the influence of apocalyptic thought upon our own spirituality, hopes, and religious traditions. (5 units)

157. The Bible and Empire

This course explores how politics shaped the Bible as it was being written and as it has been interpreted. Specifically, we will study how the experiences of empires in antiquity colored the assumptions about power, the portrait of God, and narratives of salvation that fill biblical books. We will also examine how the Bible is implicated in recent imperial adventures, both as a tool of European and American empires, and as a liberating resource for those they colonized. Also listed as WGST 153. (5 units)

158. Postcolonial Perspectives on the New Testament

Introduces students to postcolonial critical theory and uses it to explore the political contexts of New Testament texts, raising new questions about the ethical implications of how we read these texts today. Also listed as WGST 147. (5 units)

165. Gender and Sexuality in Biblical Interpretations

This course opens the Bible to critical readings from feminist and queer theory. It examines the original contexts of contested passages (creation, the destruction of Sodom, the role of women in early Christianity) as well as subsequent interpretation, and exposes the insights and ethical challenges that gender studies pose to these classic texts. Also listed as WGST 148. (5 units)

175. Wealth, Work, and the Gospel

This course explores how Jews and Christians understood the significance of wealth and work in the Bible and in later interpretation of those texts. Beginning with the Jewish scriptures, we will probe the economic contexts of emerging beliefs and practices, and then trace how these traditions were reshaped in the New Testament, the early and medieval churches, and the Protestant Reformation. This course concludes with the rise of capitalism and a comparison of capitalist and Gospel values. (5 units)

198. Practicum

(1--5 units)

199. Directed Reading and Research

For religious studies majors only. (1--5 units)

Lower-Division Courses: Theology, Ethics, and Spirituality (TESP)

2. Magicians, Athletes, and God

An introduction to Catholic Christianity's notion of transcendence using fantasy literature to describe and inspect the selected Christian truth claims about reality: a personal God, grace, sin, doctrine, ritual, sacred texts, and the nature and role of authority. The course makes use of narratives to disclose the foundational concepts in Christian discourse. (4 units)

4. The Christian Tradition

A theological examination of the Christian tradition covering such topics as religious experience and the meaning of God; Jesus in the Gospels; the development and history of the Christian churches; and the relevance of Christianity in the 21st century global world. (4 units)

16. Religion, Science, and Ecology

Science and religion provide distinctive ways of seeing, knowing, and living in the world. Yet they are often seen as being in conflict---to the detriment of religious practice and concern for the natural world. Must religion and science compete? How might they come together to promote the flourishing of the universe and all its creatures? This course engages religious perspectives on science from the standpoint of the world's religions, exploring how religion and science might cooperate for the good of all life on a planet threatened by ecological degradation. (4 units)

114. Latinx Pentecostal Christianities

The course begins with the historical background of the Azusa Street Revival and the development of Pentecostal and Charismatic Christianities in Latinx communities in the United States. Building on this historical background, students then explore the current-day structures and diverse practices of Latinx Pentecostal/Charismatic communities. Students will reflect on how Latinx Pentecostal/Charismatic religious and ethical principles apply to their own beliefs, whether they be Christian, another religion, agnostic, or atheist. (4 units)

26. Sustainable Theologies

How do religious traditions, beliefs, and practices shape human attitudes toward earth and earth's creatures? Using scientific discussions of ecology and sustainability, this course critically evaluates religious and theological traditions' potential to promote the flourishing of life and sustainable living on a planet in peril. (4 units)

27. Lovesickness in Christian Spirituality

This course explores the phenomenon of lovesickness in the pre-modern period through the study of literature, medicine, art, and theology, with particular attention to how lovesickness became integral to Christian spirituality. The course offers students a chance to examine and reflect on their own beliefs about the nature of human and divine love in relation to historical materials. (4 units)

34. Mary and Guanyin: Catholicism and Buddhism

Comparative study of the popular devotion to Guanyin in the Mahayana Buddhist tradition and Marian devotion in the Catholic tradition will be the focus of this course. It will explore the historical development, religious practices, and important role of the female deities in these two religious traditions. (4 units)

42. Global Christianities

This course offers critical inquiry, analysis, and theological dialogue with Christian communities considering the demographic shifts that are changing global Christianity. This study challenges Eurocentrism in theology by looking at emerging contextual theologies, considers interpretations of scripture, including feminist and womanist theologies, faith, and practice. Regions and cultures of the world include: Africa, Asia, Latin America, Europe, and North America. (4 units)

46. Faith, Justice, and Poverty

Who is my neighbor, and how are we to be community? This course examines biblical theologies of social responsibility and solidarity, selected Christian social movements concerned with care for the other, and major theologians and ethicists on poverty and justice. (4 units)

50. Catholic Theology: Foundations

An examination of the fundamental theological issues of Catholicism such as the experience of God, revelation and faith, the historical foundations of the tradition, the mystery of Jesus, grace, sin and redemption, the Church sacraments, and religious pluralism, etc. (4 units)

52. Incarnating the Word: Theology and Theatre

Despite the often anxious relationship between Christianity and the performing arts, Jesuit education has long emphasized the importance of performance in forming integral human beings conscious of their place in the universe and competent to assume their roles on the stage of the world *ad maiorem Dei gloriam*. This interdisciplinary course aims at reverencing this educational tradition by exploring the dynamic relationships between fundamental theology and theatrical performance. By reading and considering theological texts alongside plays from a variety of historical periods, students will develop a deeper understanding and appreciation of theology as theatrical and theatre as theological. Also listed as THTR 109. (4 units)

56. Spirituality and Leadership

Leadership styles and approaches vary according to individual gifts, domain specific practices, cultural, scientific, historical, economic, social and theological contexts. No individual functions as a leader in the same way, but all are called to serve as leaders in some capacity. This course looks at how a selection of leaders were inspired, developed, challenged or rejected religious goals, theological interpretations of the human person and spiritual practices. (4 units)

59. Sex and Spirituality in Latinx and Chicanx Literature and Theologies

This course takes an interdisciplinary theoretical approach to investigate understandings of suffering, sexuality, and spirituality within the work of three major Chicanx thinkers: Gloria Anzaldúa, Cherríe Moraga, and Ana Castillo. It analyzes how Latinx and Chicanx Christian theologians draw upon these authors to articulate their own theologies of liberation. (4 units)

60. Hispanic Popular Religion

Study of the popular expressions of faith of the Hispanic people, exploring their theological underpinnings. Includes both classroom and field experience. (4 units)

65. U.S. Hispanic Theology

Acquaints students with the historical development of Hispanic theology in the United States. Attention will be given to the works of representative U.S. Hispanic theologians and to the themes and concerns that these works address. (4 units)

68. Creativity, Self, and Religion

Combining Julia Cameron's *The Artist's Way* and a study of creation stories throughout the world, this course explores the link between human creativity and divine creation. Topics covered include a multidisciplinary approach to the study of creation myths and exercises to access and unblock personal creativity. (4 units)

69. Christian Social Ethics

This course explores the content, language, methods, and concerns of Christian social ethics. It aims to foster an ethical awareness that can be applied to the variety of moral challenges experienced in individuals' lives, churches, and society. Through the course, students will gain an understanding of the theological foundation for a system of

ethics. Furthermore, in order to practice Christian ethical reflection, students will engage theological examination of significant contemporary social issues, including economics, migration, gender, marriage and the family, death and dying, violence and reconciliation, and ecology. (4 units)

71. Mysticism in Catholicism

An introduction to mysticism in the Catholic tradition and its relationship to both theology and spirituality. Special attention to the origins of the term within Catholicism, issues of gender, the relationship between hierarchy and a personal relationship with God, and historical controversies and discussions surrounding the possibility of union with God. (4 units)

79. Women in Christian Tradition

History as written mostly by men has obscured the important role that women have played in Christian tradition. This course will investigate the official and unofficial positions women have held in the Christian church as well as read works by particular Christian women in an attempt to restore the women to their rightful place in Christian history. Also listed as WGST 48. (4 units)

82. Witches, Saints, and Heretics: Religious Outsiders

Survey of the experience of religious exclusion across the realms of magic, holiness, and heterodoxy. While anchored in the premodern Christian tradition, the course also explores more contemporary phenomena, persons, and movements. (4 units)

88. Hope and Prophetic Politics

Focuses on Abraham Joshua Heschel and Martin Luther King Jr., two religious intellectuals whose lives and works draw on this tradition to raise and address questions basic to any discussion of the role of religion in public life. Through readings of Barack Obama and student-directed "hope projects," we will also focus on contemporary examples of what it means to both think and live in hope. (4 units)

Upper-Division Courses: Theology, Ethics, and Spirituality (TESP)

103. Theology and Transhumanism

An exploration of fundamental theological themes in light of the current transhumanism movement. Transhumanism looks to the innovations and convergences of biotechnology, nanotechnology, robotics, information and communication technology, and neurosciences. The transhumanist movement promises much and raises many new questions. How do belief systems, theological investigations, and spirituality enter into a conversation with transhumanism? Will transhumanism completely change what it means to be a human? A person? How does transhumanism challenge our understanding of the concept of soul? God? These are some of the questions and themes we will explore in the course. (5 units)

108. Human Trafficking and Christian Ethics

This course will examine the global phenomenon of human trafficking---specifically sex trafficking and forced labor trafficking---using the lenses of Christian theology and ethics. Social-scientific, legal, public policy, and autobiographical sources will be used to frame the phenomenon of human trafficking; and theological/ethical categories such as human dignity and freedom, sin and redemption, neighbor love, and solidarity will be used to

illuminate and assess its dimensions. Special attention will be given to the question of human agency as well to social, political, cultural, and gender-based analyses as these impact and shape an adequate response to human trafficking. (5 units)

109. Hispanic Spirituality: Guadalupe

One of the most popular Marian devotions for Hispanic people (of primarily Mexican descent) is that of Our Lady of Guadalupe. Study of the history and tradition of Guadalupe, exploring its religious and spiritual significance in both the past and the present. (5 units)

110. Theologies of Freedom and Justice

In response to global freedom struggles and other social movements during the latter half of the twentieth century, the face and character of contemporary Christian theology dramatically changed as new theological voices from within the United States and around the world, primarily from peoples of color and women in addition to other traditionally marginalized and excluded communities, arose in resistance and self-affirmation to expose and decry systematic injustice, inequality, and oppression in various contexts. This course aims to investigate, analyze, understand, and critique the theological assertions, contributions, and limitations of these new theological perspectives. (5 units)

113. Design Theory, Innovation, and Jesuit Principles

Corporations around the world respond differently to technological innovation and change. In this course we will focus on and develop one particular strategy, that of design theory. By critiquing best business practices and the organizational and theoretic ordering of the Society of Jesus, a unique vision of the human person and a company emerges that offers a humanistic approach and response to the introduction of new technologies. (5 units)

119. Theology, Sex, and Relationships

This course will explore the ethics of romantic and sexual relationships, including friendship, dating, intimacy, and the phenomenon of "hooking up" in contemporary campus culture. We will engage theological, philosophical, and social science sources, with the aim of developing a "theology of relationship" that reflects our best insights about our deepest human and religious identity. (5 units)

122. Good and Evil

This course explores the theological theme of good and evil, with a particular focus upon evil. The nature of the good requires our attention, but not our explanation. By definition, the good show be; we desire it, and desire that it be. Evil, on the other hand, arrests our attention and demands a response. Why is there evil? Whence does it come? Is there a "solution" to the problem of evil? Is our suffering simply meaningless? Can it be understood? Or should it merely be recognized? Most centrally, the question arises: what is the relationship between good, especially God, and evil? Should we hope? Can we? Is hell stronger than heaven? Does fire burn hotter than love? This is a text-driven course, built around "primary sources," mainly of a historical nature. We'll explore drama, biblical texts, philosophical writings, theological works, works of literature, film and television, and so on. (5 units)

124. Theology of Marriage

An examination of human relationships, intimacy, sexuality, and marriage through the social sciences, philosophy, and theology, and exploration of human love in the unconditional commitment to spouse as the expression of divine love. (5 units)

129. Religion and Peace

This course will explore the relationship between religion and peace by examining the call to peacemaking in several religious traditions. Understanding peace to be more than the absence of warfare, the class will consider foundational connections between justice and peace, varied definitions for peace and diverse perspectives on peacemaking, as well as distinct theological, ethical, and spiritual approaches to peace. A community-based learning placement through Arrupe Partnership will give students the opportunity to ground reflections on justice. (5 units)

130. Judaism and Political Philosophy

This course focuses on the intersection of modern Jewish thought and political philosophy. From the Hebrew Bible to modern thinkers like Karl Marx, Sigmund Freud, Martin Buber, the Frankfurt School, and Leo Strauss, Jewish thinkers have generated a remarkable textual conversation over what makes for a holy, just, and good society. We will explore the diverse philosophical and theological interpretive narratives by Jewish thinkers over the uses and abuses of political power in the modern era. This course provides an introductory overview of these conversations by additionally focusing on topics such as messianic resistance to empire, capitalism, religious violence, secularism, nationalism, Zionism, critical theory, ecology, feminism, liberal democratic rights, and redemption. (5 units)

131. Feminist Theologies

Through the analysis of a selected sample of feminist theological voices and themes, explores the phenomenon of feminist theologies in their emerging unity and diversity. Focuses on themes of inclusion, exclusion, and representation, which have also been major catalysts in the emergence of diverse feminist theologies. Also listed as WGST 149. (5 units)

135. Theological Anthropology and Artificial Intelligence

This course will explore the developing field of artificial intelligence (AI) by placing it into conversation with a speculative reading of theological anthropology. Theological anthropology argues that human nature must be understood in relationship with the transcendent. An exemplar of this approach, Hans Urs von Balthasar explores how a relationship with the transcendent influences our use of logic and our understanding of truth. Balthasar argues that logic and truth operate in the four areas of: (1) nature, (2) freedom, (3) mystery, and (4) participation. Is machine intelligence possible without incorporating these themes into its programming? By aligning the machine to each of these four broad concerns, will the machine then become not only self-conscious, but also, aware of the existence of a transcendent being? Can an adequately complex algorithm and comprehensive logic engine create the equivalent of a machine soul? (5 units)

142. Conscience, Christianity, and Politics

A study of the significant role that conscience has played in the history of Christian engagement with politics. We will study the meaning of conscience itself as it emerges in the works of great figures in the tradition. We will also consider the different ways in which the conscience of Christians has confronted the political order ranging from conscientious objection to civil disobedience to resistance to the collective conscience of a church in opposition to the state. Finally, conscience and Christianity and politics will be considered in light of crucial contextual matters like race and gender. (5 units)

143. Theology and Ethics of Thomas Aquinas

A study of the life, thought, and ethics of Aquinas. Basic topics to be discussed include the existence of God, human nature, and human participation in society. (5 units)

148. Christian Ethics and Controversial Topics

Have you ever wondered if Christians should take "sides" on public, controversial topics? Does Christian thought specify how we should begin to think about immigration, the death penalty, euthanasia, or racial justice? This course examines several contemporary social issues using the lenses of Christian theology and ethics, with a particular emphasis on Catholic Social Teaching. We will examine themes such as human dignity and human rights, the common good, economic justice, sin, solidarity, and a preferential option for the poor. In light of these themes, the course invites students to assess responses to various social topics, such as U.S. immigration, racism and civil rights, capital punishment, and state-sanctioned medically-assisted death. Although we will be using the lenses of Christian ethics to approach these topics, no assumptions will be made that students taking the course identify as Christian. (5 units)

149. Radical Theology: Death of God

This course introduces the student to the discipline of radical theology as a controversial modern method of understanding God in light of secularization. Beginning with suggestions of God's death in the Bible; then in Nietzsche, through an analysis of death-of-God positions submitted in 19th-century theology and philosophy; a consideration of Thomas J. J. Altizer and William Hamilton; and finally, the curriculum offers consideration of current Christian responses to secularization, human suffering and death-of-God (DOG) theology. (5 units)

152. Faith, Ethics, and Biodiversity

Critical investigation of the global collapse of biological diversity. Religious implications of the environmental crisis, and a survey of the religio-ethical analysis and response by major faith traditions in light of the greening of religion. Examines the role that ethics can play in articulating conversation initiatives. Also listed as ENVS 152. (5 units)

157. Ethics in the Health Professions

Introduction to the major issues in biomedical ethics. Basic principles of biomedical ethics, genetic interventions and reproductive technologies, euthanasia, professional responsibilities, confidentiality, and public policy issues regarding the system of delivery of health care. (5 units)

159. Ethics of War and Peace

Examination of the history of moral deliberation about war and peace in Western religious traditions, as well as contemporary, theological, and philosophical analyses of the diverse moral principles that those traditions have generated. Studies the application of theological and moral reasoning to contemporary wars. (5 units)

163. Christianity and Politics

An ethical investigation into the relationship between Christianity and the political order and into the contemporary experience of this relationship, drawing on Scripture, Augustine, Aquinas, Luther, and Calvin. A special focus on contemporary issues of Christianity and political ethics. (5 units)

164. Religious Ethics in Business

This course is an introduction to religious ethics in a business setting. Discussions include how one might live their religious ethics at work without compartmentalizing their faith tradition when religious faith or ethics conflict with business ethics. Cases may include: deception in advertising and marketing; flawed products; affirmative action; environment and pollution; discrimination; workplace issues. (5 units)

165. Romero and the Salvadoran Martyrs

The age of martyrs is not a relic of the past but a reality of our own times. In many parts of the world, people are being murdered for their faith. This course will focus on the life of the martyr, Archbishop Óscar Romero of El Salvador, and other Salvadoran men and women whose life and death exemplify the consequence of a socially conscious faith. (5 units)

175. Women's Theologies from the Margins

Women of diverse cultural communities enrich theology by voicing their lived experience from global and local perspectives. Course explores the theological works of African-American, Asian-American, and U.S. Latina women in their historical and cultural contexts. Also listed as WGST 151. (5 units)

179. The Devil and Demonization

This course will allow students to explore the history of the Devil in western culture: from its roots in Jewish and Christian scriptures, through its development in the Middle Ages, and ending in the 21st century. Students will then connect the history to contemporary ethical issues, and will not only read historical texts, art and music, but also look at the legacy of these ideas in contemporary pop culture. The focus in particular will be on how people have harnessed the power of religious notions of evil to demonize the Other. (5 units)

183. Ignatian Spirituality

An exploration of the historical background, sources, theology, and practice of Ignatian spirituality in the *Spiritual Exercises of St. Ignatius of Loyola* and other Jesuit documents, and a comparison of Ignatian methods of meditation and contemplation with other traditions of spirituality, Christian and non-Christian. (5 units)

184. Jesus Across Cultures

An exploration and study of selected significant and diverse interpretations of Jesus of Nazareth, and of the historical and cultural contexts that have shaped images and theologies of Jesus Christ (or Christologies). Approaches include biblical, Asian, African, Latin American, and feminist interpretations. The aim is critical exposure to the cross-cultural diversity of understandings of Jesus within Christianity itself. (5 units)

187. Christ and Catholic Theology

A study of contemporary Catholic Christology approached as Christology "from below." Initial consideration of some fundamental theological concepts and then Jesus Christ as a historical figure and object of faith. Course pivots around Jesus' proclamation of the "Kingdom of God" and considers his history through the resurrection. (5 units)

190. Celtic Christianity

This course explores Celtic Christianity throughout history, examining both historical evidence and historical projections. Beginning with archaeological and textual evidence from the first five centuries CE, the course explores the qualities that subsequent eras project upon this "golden age" of Celtic Christianity, how Celtic Christianity actually manifests in these eras, and what current projections upon Celtic Christianity can tell us about our cultures today. (5 units)

191. Theology, Science Fiction, Fantasy and Gaming

An exploration of fundamental theological themes in conversation with science fiction, fantasy literature, digital and board games. We will critique how these genres both employ and explicate theological, religious, and spiritual questions. (5 units)

194. Interreligious Studies

This course is a comparative study of the beliefs, ethics, values, and religious expressions of the major world religions such as Hinduism, Buddhism, Judaism, Islam, Christianity, Taoism, and Confucianism. This course also explores the interactions between these religious traditions as they encountered one another in each geographical and social context. (5 units)

198. Practicum

(1--5 units)

199. Directed Reading and Research

For religious studies majors only. (1--5 units)

Lower-Division Courses: Religion and Society (RSOC)

7. South and Southeast Asian Religious Traditions

Introduction to the major religious traditions of India and its neighbors in the subcontinent and Southeast Asia: Hinduism, Buddhism, Jainism, Sikhism, and Islam; historical development of each faith; what is distinctive in each tradition; and particular attention to the ways in which these traditions have influenced each other. (4 units)

8. Jews, Judaism and Film

This course introduces students to Judaim, Jewish history, philosophy, ethnicity, and religion through the viewing of various films. Additionally through a combination of readings, lectures, and film, we will explore central theological and ethical ideals that have defined the evolution of Judaism and the Jewish experience, particularly in the modern period. Further topics include Enlightenment and Emancipation, Kabbalah Mystical Ecstatic Experiences, Secularism, Nationalism, Zionism and Socialism, Immigration and Assimilation, Anti-Semitism, Racism, the Holocaust, Feminism, Freedom, Peoplehood, Jewish Humor and Identity. (4 units)

9. Ways of Understanding Religions

Introduces the categories by which religion is formally studied. Explores distinct perspectives or ways of thinking about religion (e.g., psychological, phenomenological, anthropological, theological, and sociological); also considers a variety of religious data (e.g., symbols, myths, rituals, theologies, and modern communities). (4 units)

10. Asian Religious Traditions

This course will introduce students to the history, major teachings, and practices of the major Asian religious traditions of South, Central, East, and Southeast Asia, namely Hinduism, Jainism, Buddhism, Sikhism, Confucianism, Daoism, and Shintoism. It will do so from a historical perspective, and will also explore the development of key theological and religious/philosophical doctrines as well as the associated practices. (4 units)

11. Asian Christianity

This course explores the world of Asian Christianity and its varied expressions of worship, arts, spirituality, and interactions with Asian religions such as Buddhism, Confucianism, Taoism, and Hinduism. (4 units)

14. Exploring Living Religions

Introduces academic approaches to the study of religion as practiced by ordinary people in everyday life. Explores religion as living practice enacted through fashioning and controlling of religious bodies and identities; appropriation, production, circulation, and consumption of religious goods; social and political structuring of authority and resistance; cultivation and nurturing of domestic, social, economic and other relationships through religious frameworks; creation and maintenance of spaces understood as "sacred" or "spiritual," etc. Draws upon approaches form anthropology, cultural studies, and critical theory to research and reflect upon what religion allows people to know, think, and do in local Bay Area communities. (4 units)

16. Ecstatic Experience, Film and Religion

This course is devoted to investigating the intersection between ecstatic experiences, film, and religion. Historically, religious traditions have drawn on dance, music, and various contemplative practices that often induce an experience of ecstasy amongst practitioners. With the increase of secularism in the modern period. Various cultural industries---particularly film, sports, and music industries---have appropriated this role of providing avenues for collective and individual ecstatic experiences. This course explores possible intersections and tensions between religious and "secular" forms of ecstatic experience, with a particular emphasis on film, music and physical activities that tend to induce states of "flow" (such as dancing, surfing, biking, swimming, hiking, etc.). (4 units)

21. Urban Religion

This course explores how cities of the Bay Area shape and are shaped by the religious practices of the people who inhabit them. The course applies methods from cultural anthropology, human geography, and social theory to develop insight on how religion is lived in urban environments. Through fieldwork-based independent projects, students with an interest in anthropology, creative writing, filmmaking, journalism, political science, sociology, and other fields will document, analyze and communicate the complex relationship between religious practice and urban culture. (4 units)

38. Religion and Culture: Africa

Introduces the study of religion from the social perspective of how religion shapes African cultures and is thoroughly shaped by them in turn. Examines texts, history, ritual practices, and modern forms of engagement with the world. (4 units)

46. African Religions

Examination of African history and its many cultures through the lens of key religious ideas, practices, and cosmologies. The power of history, geography, and political domination over the shaping of religion is matched by the power of religion as a medium of cultural expressiveness and political resistance. (4 units)

51. Religion in America

Traces the development, character, and impact of religion in America from the precolonial era to the present. Course readings and discussions will center on the relationship between religion and the development of American culture. Includes Native American traditions; slavery and religion; the rise of revivalism; gender; religion and war; immigration; modern pluralism, etc. (4 units)

54. Comparative Religion and Social Theory

A survey of recent social theory as it bears on the comparative study of religious traditions. Theorists might include Durkheim, Weber, Malinowski, Freud, Alfred Schutz, Jan Patocka, Peter Berger, Robert Bellah, Clifford Geertz, Jurgen Habermas, and Niklas Luhmann. (4 units)

61. Atheism in America

Investigates the historical and socio-cultural development of various modes of nonreligious practice in the United States, including atheism, agnosticism, and secular humanism, and the recent growth in religious un-affiliation and disidentification. Course involves fieldwork with local "freethinker" communities and practitioners to analyze their participation in, contributions to, and deviation from, wider national religious and nonreligious trends, patterns, and practices. (4 units)

64. Comparative Religion and Environmentalism

As sustainability and ecology are becoming increasingly relevant across the globe, this course examines practical environmental projects across a spectrum of world religions. The course includes myriad voices from the margins to the pinnacles of religious authority to understand how religious people engage in environmental advocacy, activism, and earth care as expressions of reverence, piety, ethics, and interconnection. (4 units)

67. Film and Judaism

Uses a variety of readings and films to explore the ideas and experiences that have shaped Jews and Judaism in the modern period. Topics include Enlightenment and emancipation, Hasidism and secularism, Zionism and socialism, immigration and assimilation, anti-Semitism and the Holocaust, denominationalism, feminism, Jewish Renewal, and the future. (4 units)

81. Islam

Introduction to the Islamic tradition focusing on the dialectic between normative theology and popular devotion. Readings include the Quran, Sufi literature, and devotional poetry. Discussion of Quranic concerns in the Sunni and Shia traditions, ecstatic mysticism, Islamic law, and contemporary issues relating to the status of women, Westernization, and modernity. (4 units)

85. Hinduism

Exploration of the historical development, theologies, symbols, rituals, scriptures, social institutions, and 20th-century politics of Hinduism, primarily in India. Main focus on the interaction of religion and culture. (4 units)

86. Buddhism

Exploration of the whole Buddhist tradition, including Indian origins, Theravada traditions of Southeast Asia, Mahayana traditions of Central and East Asia, and Buddhism in the West. Emphasis on cultural impact of religion, Buddhist philosophy and practice, and modernizing tradition. (4 units)

87. Buddhism and Film

Explores the portrayal of Buddhism in contemporary global cinema. Covers key teachings of Buddhist religious traditions, and provides an introduction to the field of film studies, with particular focus on the skills needed to write critically about film. (4 units)

88. Chinese Religions

Focuses on the historical development of Chinese religions---Confucianism, Daoism, and Buddhism---and their philosophies, as well as the interface between folk religion, society, and political institutions in traditional and modern China. (4 units)

99. Sociology of Religion

Using early and American Christianity as examples, this class examines how various social forces shape the religious beliefs and practices of people of faith. In particular it draws on a number of sociological perspectives, looking both at their historical and philosophical underpinnings and at what they can tell us about religious growth, faith in the modern world, and religiously inspired social action. (4 units)

Upper-Division Courses: Religion and Society (RSOC)

106. Zen in Theory and Practice

Explores the Chan/Zen traditions of East Asian Buddhism from the historical, theoretical, and practical perspectives. Students will explore the history and teachings of the Zen traditions, and then will learn how to undertake Zen meditative practice. The focus will be on bringing the teachings and tradition to life by experiencing them and learning about the way that practice itself drives changes in theory. (5 units)

109. Women and Buddhism from a U.S. Standpoint

This course offers the opportunity to learn about Buddhism while cultivating analytical skills to understand women and gender in religion. Through readings, films, and site visits to local Buddhist communities, students will engage in intersectional, feminist methods for studying historical and contemporary Buddhist lives. Also listed as WGST 142. (5 units)

111. Inventing Religion in America

Explores the spiritual creativity that stands at the center of the American experience and asks what characteristics facilitated such religious diversity. Looks at beliefs and practices, and also historical contexts. Includes Mormons, Christian Science, Jehovah's Witnesses, the Nation of Islam, Scientology, and Heaven's Gate, etc. (5 units)

113. Buddhism in America

Following a survey of Buddhist teachings and the history of the transmission of Buddhism to America, this course explores the diverse array of Buddhist groups in Silicon Valley. (5 units)

114. Religion and Medicine in Health Care

The history of the institutions of medicine and religion have long been intertwined in health care. In the early 20th century, the institution of biomedicine became dominant, thus rendering religious approaches as quackery. Yet, religion-based approaches to healing resurged in the late 20th century due to the decline of medical authority and a convergence of the women's health movement, alternative spirituality, and patient's rights activism. From the 1970s to the 2000s, religion-based forms of healing moved from being considered "alternative" to "integrative" medicine by the medical establishment. In this course, we will utilize critical perspectives to understand and assess the changing landscape of healthcare in relation to the institutions of religion and medicine with special attention to patient experiences and institutional authority. (5 units)

115. Tibetan Buddhism: A Cultural History

Provides an overview of Tibetan religious history and the fundamental beliefs and practices of Tibetan religious traditions. Focuses on devotional traditions centering around saints, sophisticated systems of meditation and ritual, and the experience of women in Tibetan Buddhist traditions. Also explores visual media, such as iconography and cinema. (5 units)

116. Religion and Ethnography

This course examines what makes ethnography an ideal method for studying religion and religious cultures. How might participant-observation round out knowledge from research into written text and religious/social history? How does ethnography assist researchers in understanding the relationship between religious rites and kinship? In addition to learning about the "classics" in religion and ethnography, students may explore subdisciplines, such as visual ethnography and theological anthropology. The course discusses how the study of religion and ethnography might contribute to careers in journalism, filmmaking, and others. In hands-on independent projects, students practice taking field ethnography might contribute to careers in journalism, filmmaking, and others. In hands-on independent projects, students practice taking field notes, writing ethnographic reports, and sharing their work with classmates. Also listed as ANTH 174. (5 units)

117. Is Scientology a Religion?

This course explores the controversial movement of Scientology from a religious studies perspective. Seeking an answer to the question of the course, we consider existing theories about what characteristics constitute and define religion, practices in the Scientology movement, including ritual effects as described by practitioners, and humanitarian efforts from Scientologists. As one of several data collection points, students will volunteer with Community United, a program serving at-risk youth that is informed by L. Ron Hubbard's moral guide. This course aims to look beyond the abundant anti-Scientology media and consider perspectives of persons involved with the Scientology movement in a critical intellectual analysis of the movement as well as the category of religion. (5 units)

119. Media and Religion

Examines the religious, theological, and ethical issues and perspectives raised by various media: print, visual, audio, multimedia, and virtual. Special attention will be given to the nature of their relationship and the religious and spiritual issues currently present in their interface. (5 units)

123. Religions\@Silicon Valley

Is something unique happening in Silicon Valley's religious landscape? This seminar addresses that question through different perspectives on the Valley's culture; scholarly approaches to the Buddhist, Catholic, and Muslim experiences in America; and interactions with local congregations. (5 units)

126. Sufi Islam/Christian Mysticism

A comparative study of mystical experience in the Islamic and Christian faiths. Examines the dialectic between shari'ah (Islamic law) and "outlaw" Sufism (as evidenced by Muslims such as Husain ibn Mansur al-Hallaj), with attention to how Sufi movements have influenced Islamic societies from the early caliphal era to the 21st century. Within the Christian tradition, particular focus on the experience of Christ's kenotic (self-emptying) love in the lives of mystics in the Catholic faith, with consideration of the role played by Christian spiritual practitioners (such as Père Charles de Foucauld) in interfaith encounters with Islam. (5 units)

128. Religion and Popular Culture

Examines the relationships between religious practice and culture expressions understood as appealing to the non-elite masses through various media (print, television, movies, music, etc.), personages (religious celebrities, entertainment celebrities, sports stars), embodied expressions and enhancements (clothing, jewelry, tattoos, piercings, etc.), and other material forms (mugs, water bottles, statues, posters, etc.). Consider how depictions of religion in popular cultural forms affects how we understand religious experiences, practitioners, and communities, and how religion itself functions as an element of cultural production that contributes to popular interest. (5 units)

130. East Asian Buddhism

Explores in depth the major traditions of East Asian Buddhism. Following a brief survey of their teachings and history, this course focuses on several traditions (Chan/Zen, Pure Land Buddhism, and Soka Gakkai) that are represented in the Silicon Valley area, and examines in depth the practices advocated by these traditions, as well as the social implications of these practices. (5 units)

131. Tantra in Theory and Practice

Examines the development and global spread of tantric traditions. Beginning with South Asia, explores the development of the body-oriented tantric movement and its institutionalization in Hindu and Buddhist religious contexts. Explores the spread of tantra throughout Asia and the West, and the transformation of tantric traditions in Western cultural contexts. (5 units)

134. Religion and Secularism

Is the new atheism---and by extension, therefore, philosophy---in some genuine sense a religious tradition? This course will explore the meaning and sources of the so-called "new atheists" (C. Hitchens, R. Dawkins, S. Harris, D. Dennett). We will see that the conflict between the new atheists and the religions has a long varied history with the new atheists representing one strand of philosophy. We will flesh out this particular philosophical sub-history, as well as alternative views of the religions that develop and exist alongside the stridently atheistic, materialist forms of philosophy. (5 units)

135. Architects of Solidarity

Starting with the Jesuit claim of education for "solidarity for the real world," students explore the rhetorics of solidarity in different intellectual and faith traditions and how these rhetorics frame issues such as poverty, intolerance, suffering, and globalization to inspire and justify action on behalf of others. Course requirements include field work with local organizations whose missions include solidarity across religious, economic, ethnic, or geographic differences. (5 units)

157. Religious Traditions and Contemporary Moral Issues

Explores selected moral issues and analyzes responses given to these issues by the selected religious traditions. Issues to be analyzed will include those pertaining to human life (e.g., euthanasia, HIV/AIDS), human sexuality (e.g., marriage), and global issues (e.g., war, environmental degradation, and poverty). The central approach will be to compare and contrast Western responses with responses from other cultural and religious systems in order to highlight points of difference, points of similarity, and common ground. (5 units)

168. Gender and Judaism

Explores ideas and images of Jewish "femininity," "masculinity," and "queerness" generated by Jewish and non-Jewish cultures throughout history to the present. Considers the political/economic, religious, and other cultural dimensions of these images and ideas. Also listed as WGST 145. (5 units)

170. Religion, Gender, and Globalization

Using feminist ethics as a framework, this course examines the ethical issues at the intersection of religion and globalization and unpacks the implications of this intersection for women. Focuses on the human rights of women and examines ways in which globalization has affected, supported, or undermined the human rights of women and the role of religion in their lives. Also listed as WGST 146. (5 units)

174. Jewish Philosophy: Athens and Jerusalem

"Athens" represents the philosophical world; "Jerusalem" the world of faith. An introduction to the history and major themes within modern Jewish thought. Topics investigated include secularism, capitalism, Romanticism, Marxism, critical theory, postmodernism, feminism, political theory, and prophetic politics as articulated in Judaism's encounter with modernity. These topics are united by Judaism's struggle to achieve a universal vision of hope for human redemption and liberation. (5 units)

175. Mapping Living Religion

This course explores the intersection of geography, technology, religion, and culture in Silicon Valley. Through engagement with readings, lectures, discussions, and field visits, the course will introduce students to concepts and methods from cultural geography, sociology, and religious studies, using geographic information systems (GIS) to better understand the relationship between urban transformation and religious experience. We will examine how changes in the built and natural environment, such as are planned in the development of Google's San Jose Transit Village Campus and campus ("Googleville"), along with associated demographic shifts, change the religious and spiritual communities existing in the area designated for development. In turn, we will examine the extent to which religious communities have a role in shaping this transformation. The course will be of particular interest to students in anthropology, computer science, political science, religious studies, and sociology. (5 units)

182. Shia Islam in the Contemporary World

An investigation of Shia theory, the historical origins of Shiism (especially the Twelver and Zaydi denominations), and Shia-Sunni relations in the contemporary Islamic world. Particular emphasis on issues of ritual and communal identity in Pakistan, India, Yemen, and diaspora communities in North America. (5 units)

184. Race and Religion in the United States

Begins with an examination of the living situation of people of African descent in the United States, as well as an analysis of their social context---economic, educational, and political aspects. Considerations are then given to the effects the Christian message has had in this situation. Also listed as ETHN 166. (5 units)

188. Religion and Violence

Examines the historical and contemporary relationships between religious ideologies and personal and institutional practices of coercion, force, and destruction. (5 units)

190. Islam: Reformation and Modernity

Comparative study of contemporary Islam. Beginning with the study of origins and basic doctrines of Islam, this course will study its development to the modern world. Main focus will be on Islam's interaction with different cultures, emphasizing political implications of the rise of revivalism. (5 units)

191. Religions of Colonized Peoples

The aim of this course is to analyze from an insider perspective the role of religion both in the process of colonizing Africa as well as in the process of resistance to colonization. This will include an examination of the role of religion in the African struggle against political oppression, economic injustices, racism, and cultural imperialism. Students will then critically analyze the social-political implications of religion in their own contexts. (5 units)

198. Practicum

(1--5 units)

199. Directed Reading and Research

For religious studies majors only. (1--5 units)

Lower-Division Course: Religious Studies (RELS)

(Course for Religious Studies Majors and Minors)

90. Theories and Methods

A survey of various approaches to the study of religion, scripture, and theological disciplines, focusing on hermeneutical (interpretation) theories in each of these approaches. The course involves in-depth reading, discussion, and application of hermeneutical methods to religious, ethical and theological texts, rituals and liturgies, and art, architecture, and music. (4 units)

Upper-Division Courses: Religious Studies (RELS)

(Courses for Religious Studies Majors and Minors)

197A. Capstone Seminar

This course is part one of a two-quarter seminar for religious studies majors. It will provide an introduction to research and writing skills, and then will segue into a structured independent study in which each student will work on an independent project with the support and feedback from the instructor and their peers. (3 units)

197B. Capstone Seminar

This course is part two of a two-quarter seminar for religious studies majors. It will provide an introduction to research and writing skills, and then will segue into a structured independent study in which each student will work on an independent project with the support and feedback from the instructor and their peers. (3 units)

Department of Sociology

Professor Emerita: Marilyn Fernandez

Professors: Alma M. Garcia, Laura Nichols, Charles H. Powers, Enrique S. Pumar (Department Chair and Fay Boyle Professor)

Associate Professors: Patrick Lopez-Aguado, Laura Robinson

Assistant Professors: Erick Berreleza, S.J., Di Di, Molly M. King

Lecturer: Cara Chiaraluce

The Department of Sociology offers a course of study that provides students with cutting-edge sociological ideas and foundations culminating in a bachelor of science degree. The curriculum prepares students to enter graduate school or pursue other professional opportunities. The major and minor promote sociological perspectives and insights that are applicable to our own lives. Students also gain a "sociological imagination" that unveils a greater understanding of the social forces and processes that shape our societies and influence socializations, institutions, cultures, and individual decisions.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in sociology must complete the following departmental requirements:

- SOCI 1
- SOCI 35, 118, 119, 120, 198
- SOCI 121 or 122
- Eight electives. Seven upper-division sociology electives and one lower-division from among the following: SOCI 30, 33, 49, 60, 65, and 91

Requirements for the Minor

Students must fulfill the following requirements for a minor in sociology:

- SOCI 1, 35, 119
- Three upper division sociology electives and one lower-division course from among SOCI 30, 33, 49, 60, 65, and 91,

Lower-Division Courses

1. Principles of Sociology

Introduces students to the field of sociology. Emphasis on the major sociological perspectives and the basic elements of sociological analysis. Introductory exposure to research methodology. (4 units)

11A. and 12A. Cultures & Ideas I and II: The Human Condition

This two-course sequence focuses on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Course one will cover disruption of global cultures in the context of social and economic history, and course two will cover emerging global cultures in the age of the internet. Successful completion of C&I I (SOCI 11A) is a prerequisite for C&I II (SOCI 12A). (4 units each quarter)

30. Self, Community, and Society

Explores a specific topic related to the self, community, and society. Use of sociological theories, research, community-based learning, and civic engagement activities to help students analyze and explore the role of the individual in influencing community and society as well as how the individual is shaped by these entities. (4 units)

33. Social Problems in the United States

Provides an overview of contemporary social problems in the United States from a sociological perspective, with a major emphasis on the ways race, class, and gender shape the development of specific social problems and the public policies offered to address them. Topics may include the economy, poverty, homelessness, and social inequality. (4 units)

35. Introduction to Research Design and Methods

Introduces students to the logic and basic methods of sociological research. The focus is on three research methods used regularly by sociologists: participant observation, interviewing, and surveys/statistical analysis. Through a combination of readings and exercises, students will be exposed to a few of sociology's best practices lessons using each of these methods, and making appropriate sampling decisions based on the nature of a project. We will reflect on research ethics and on opportunities for integrating quantitative and qualitative methods throughout the course. (4 units)

49. Tech, Social Media, and Society

Examines the impact new media and computer technologies have had on society as well as the role of individuals, groups, and societies on the development of this technology. Looks at the transforming or potentially transforming effects of communication technology on civic engagement. (4 units)

60. Introduction to Social Entrepreneurship---Leading Change

This interdisciplinary course examines social entrepreneurship and innovation in the context of global and local social issues. Critical skills such as creativity, critical and ethical thinking, reflection, transformative communication, leadership, empathy, and teamwork, are enhanced. Students participate in a human-centered design thinking skills training, innovate a solution to a social or environmental problem, and create a business model canvas and case study of the innovation for the final project. (4 units)

65. Crime and Delinquency

Broadly surveys major issues surrounding the causes and nature of, and solutions to, the problem of crime and delinquency in the United States. (4 units)

91. Lower-Division Seminar in Sociology

Seminar for first-year students and sophomores on selected issues in sociology. May be repeated once for credit if topic changes. Prerequisite: By permission of the instructor and sociology chair only. (4 units)

Upper-Division Courses: Theory, Methods, and Capstone

117. Sociology's Analytical Frameworks and Conceptual Approaches

Considers sociology as an integrated and coherent discipline by reviewing the development of different analytical frameworks which, when considered together, convey much of the conceptual power and rich history of the discipline. Required of all sociology minors. Does not fulfill the SOCI 119 requirement for the major. (5 units)

118. Qualitative Methods

Provides students with an understanding of qualitative methods for social research by focusing on (1) classical and contemporary sociological works employing qualitative methods, and (2) a selection of qualitative methods and techniques in sociology. Students gain hands-on experience by producing a series of qualitative research projects. Prerequisite: SOCI 35. (5 units)

119. Sociological Theory

Provides a critical overview of the origins, purpose, and contentious insights of contemporary sociological perspectives stressing the role of theory in the scientific method. Required of all majors and minors. (5 units)

120. Survey Research and Statistical Analysis

Applies quantitative research designs and statistics to examine sociologically relevant research questions empirically, with attention to the scientific reasoning behind quantitative methodology. Statistical analyses conducted using a statistical package such as SPSS. Prerequisites: SOCI 1, 35. (5 units)

121. Research Capstone

In this course, students will have an opportunity, under the direct supervision of a faculty member, to design and implement a research project bringing together theoretical and research perspectives to support a research question. This course is open to sociology majors and graduating seniors only. Prerequisites: SOCI 1, 35, 118, 119, and 120. (5 units)

122. Applied Capstone

Demonstrates the application of sociological research and insights to the challenges of modern business, human service, and public sector organizations. Practice components bring students into contact with people who are incorporating sociology to improve the functioning of their organizations and to inform policymaking. Sociology majors only. Prerequisites: SOCI 1, 35, 118, 119, and 120. (5 units)

Upper-Division Courses: Professional Development in Sociology

195. Silicon Valley Seminar

Provides sociology seniors, who have successfully completed SOCI 118, 119, 120 121 or 122, the opportunity to improve the professional quality of their research capstone papers for possible inclusion in the department's journal and conference presentations. Prerequisites: SOCI 118, SOCI 119, SOCI 120, SOCI 121 or SOCI 122 and recommendation of faculty. (5 units)

198. Internship

Presents an opportunity for students with senior standing to reflect on their sociological insights gained in human service/community, government, or business organizations. Prior to enrolling in this course, students must have completed an internship placement approved by the faculty internship coordinator and requiring a minimum of 40 hours of work. Students working 40--60 hours enroll for 2 units, those working 61--100 hours enroll for 4 units, and those working more than 100 hours enroll for 5 units. Prerequisite: SOCI 35. (2, 4, or 5 units)

Upper-Division Electives

109. Sociology of Education

Introduces students to the main issues in the sociology of education, including the role of individuals, different types of schools and organizations, community, and policy. Students will analyze their own educational trajectories and understand the experiences of others by engaging in a community-based learning placement and reflecting on their observations and by analyzing data from schools and neighborhoods. The education system in the United States will be the main focus, with some opportunities for cross-cultural analysis. This course requires that students meet all the qualifications for enrolling in and completing an Arrupe placement. (5 units)

125. Honors Thesis

Ordinarily requires an overall GPA of 3.3, a GPA of 3.5 in the major, completion of SOCI 121, and approval of a thesis proposal defining a topic, outlining a theoretically driven research design, and having a timetable for conducting various stages of the research. May be taken only with special permission of the sociology chair. (5 units)

127. Interpersonal Relations and Group Dynamics

Explores the structure and social processes of socialization in small and large groups. Concepts such as power and prestige, leadership, communication networks, collaboration and conflict, game theory, and distributive justice are examined. (5 units)

127A. Philosophical and Sociological Approaches to Contemporary Moral Issues

This course examines western philosophical and sociological approaches to morality and social issues. Students analyze professional ethics and dilemmas, compare philosophical and sociological theories of morality, and then apply these theories to social issues related to economic, gender, racial, and sexual inequality. Students practice being "public sociologists" by enlisting knowledge and research to encourage individual, societal, and political decisions that are ethical and justice-oriented. A background in philosophical ethics helps public sociologists consider their own moral development as well as the salient issues at stake when considering potential solutions to controversial social problems. Thus, being a public sociologist means taking a stand on complex ethical issues by having a foundation in both philosophical and sociological moral methodology. (5 units)

128. Religion, Science, and Technology

In this course, students learn religion, science, and technology from a social scientific perspective. Social scientific theory and data about human behavior and societies will enable us to make more well-informed decisions about our civic and professional lives. In this course, students will develop an understanding of how the social sciences produce knowledge in distinctive ways and gain experiences in assessing theory and evidence with a specific focus on the intersection between religion, science, and technology. (5 units)

130. Social Entrepreneurship: Leading Change

This interdisciplinary course examines social entrepreneurship and innovation in the context of global and local social issues. Essential skills, such as creativity, critical and ethical thinking, reflection, transformative communication, leadership, empathy, and teamwork, are enhanced. Students participate in a human-centered design thinking skills training, innovate a solution to a social or environmental problem, and create a business model canvas and case study of the innovation for the final project. (5 units)

SOCI 131 - Sociology of Gender

Gender is a central organizing principle in social relations, giving rise to institutional and social practices that distinguish between men and women on the basis of apparent difference and inequality. This course develops the sociological analysis of gender systems in contemporary American society. In this course, we will critically examine the multiple ways that gender (and connections between gender, race, and sexuality) structures the social world in which we live, and the way that race and sexuality interact with gender.

132. Inequality and the American Dream

This course examines how inequality has emerged and is sustained in American society, and how it has contributed to the creation of a social hierarchy---that is, the process of social stratification. We will specifically examine this phenomena through the lenses of economic class, which is the root of social stratification theory, as well as gender and race. You will gain tools to critically examine the historical and contemporary operation of social inequality broadly defined and how it relates to the American dream. (5 units)

133. Politics and Society in Developing Societies

Explores social order and political change in developing nations. Content includes the relationship between economic and social development and the emergence of democratic, authoritarian, or revolutionary regimes in Africa, Asia, and Latin America. Emphasis is on ways in which the international system influences development through investigation of theories of interdependence, dependency, and globalization. (5 units)

134. Globalization and Inequality

Encompasses overview of globalization as a long-term historical process. Focus on the impact in the developing world; on people moving from the developing to the developed world; the displacement of some and new opportunities for others during different periods of globalization; and the long-term implications of privilege and marginality that globalization has produced. Examination of case material based on Latin American, African, and Asian historical experiences; exploration of theoretical models of high rates of poverty in the developing world; and practical steps to reduce marginalization on a global scale. (5 units)

135. Women and Social Change in Latin America

Examines the relationship between gender, political participation, national development, and the process of social change in Latin America. With an emphasis on selected case studies such as Mexico, Cuba, Guatemala, Bolivia, and El Salvador, the contributions of women to social justice is situated in the context of transnational relations. Also listed as WGST 128. (5 units)

136. Sociology of Sexualities

This course examines sexuality and the various theoretical and methodological approaches that have been used in sociological studies of sexuality, including those that guide sexuality-related analyses of identities, practices, and behaviors; power and politics; sexual interaction and social relations (at the micro and macro levels); morality and

social control; and intersectionality. Such explorations include examining the history of sexuality in the West, and social and academic debates on sexuality, including the types of evidence used to support various theoretical and/or political conclusions that impact particular groups of people differently. (5 units).

137. Global Development and Social Change

Examines how conflicts and significant social, economic, and political trends and issues in contemporary United States society and in the world contribute to social change and global migration. . The course discusses contemporary sociological concepts, principles, theories, and applications for understanding population movements as they search for social justice around the world. (5 units)

138. India, China, and the United States

Using India, China, and the United States as case studies, students will understand the historical and current trends in global population growth, as well as the critical social, cultural, economic, and environmental factors that impact and are impacted by population change. They will also critically learn about the methods used to derive demographic data that are available to educate and aid in the process of informed decision-making. (5 units)

139. Sports and Society: Controversies and Issues

This course introduces the sociological study of sports in society by considering the following questions: 1) How do culture and values influence sports, 2) How do sports influence culture and values, and 3) What is the relationship between sports and the media, politics, economics, race, social class, sexual orientation, and other critical variables sociologists use to understand society. This course will also include discussion of student questions related to sports and society, which will be integrated throughout the course. The course is thus interested *in* social change *in* sports as well as social change *through* sports. (5 units)

140. Urban Sociology

Involves critical inquiry into urban sociology and theoretical and practical exposure to urban issues. Explores unresolved paradoxes in how we understand urban life and the role of structural and cultural conditions in creating or adding to urban problems such as marginalization, gentrification, displacement, crime, housing, and the social organization of urban America. (5 units)

145. Popular Culture in the Era of Mass Imprisonment

In this class students will examine how popular culture in the era of mass imprisonment (approximately 1970-present) has socialized, reflected, and resisted the discourses central to driving and legitimizing the expansion of carceral control. We will discuss how particular tropes and narratives about crime and justice have been used to justify increasing police budgets and legal powers, as well as magnify restrictions and penalties against criminalized communities. Students will explore the ways that these stories and images have been represented in various forms of media (particularly film and television), and learn to connect these representations to the politics of carceral expansion prevalent at the time. Throughout this course we will discuss how storytelling, evolving technology, and cultural/artistic movements have been essential for convincing the public to see criminal threats as real and restrictive social control as necessary; at the same time, these have also been key for artists and organizers seeking to challenge the logic of law-and-order politics, reflect the experiences of those most impacted by these politics, or defend their communities from carceral state violence. (5 units)

148. Diversity Issues in Contemporary American Organizations

Offers a serious exploration of both the ethical and practical challenges posed by the diversity of stakeholder interests in organizations. Critical reflection on the implications of client-centered approaches to organizational activity for people working in organizations, and also for structure, culture, communication, and process in those organizations. Requires a community-based learning placement working alongside and/or in the service of persons who are marginalized in the local community. (5 units)

149. Tech, Innovation, and Culture

Examines the impact the organization of business and social culture has on the development of science/technology and the transforming effects of rapid scientific and technological innovations on our economies and societies. (5 units)

150. Immigrant Business in the United States

Immigrant businesses represent a growing sector within the United States economy and contribute to social, political, and cultural changes in the United States. Examines the development and significance of immigrant business owners and the communities clusters within which these businesses are located including Silicon Valley. Also listed as ETHN 170. (5 units)

152. Inequality in the Economy and Workplace

This course examines socioeconomic, racial, and gender disparities in the economy and workplace, how these differences have developed, the impacts of socialization, and the changing nature of labor markets, work, and family dynamics. We will explore fundamental social theories and research methods used by sociologists to examine social structures; policies and practices; mobility and opportunity; wealth and wage gaps; family dynamics; and labor unions. Also listed as WGST 181. (5 units)

153. Race, Class, and Gender in the United States

Examines the sociological nature of the intersectionality of race/ethnicity, social class, and gender by focusing on the interrelationships among social institutions, power relationships, and cultural patterns. May also focus on the impact of popular culture on the social construction of social identities. Also listed as ETHN 151 and WGST 115. (5 units)

157. Sociology of Family

Examines how family forms have changed over time in the United States, including the macro causes and consequences of different family structures and role expectations. Patterns and dynamics of dating, family formation, child-rearing, divorce, and extended family support systems are also covered. Also listed as WGST 182. (5 units)

158. Deviance and Social Control

Examines noncriminal violations of social norms from a variety of sociological perspectives. Topics typically include eating disorders, relationship abuse, child abuse, sexual harassment, substance abuse, and homosexuality. Theoretical emphasis on classical and contemporary critical theory, including feminist, critical race, and queer perspectives. (5 units)

159. Crime and Punishment

Examines criminal behavior on the aggregate level, and its effects in the United States and other societies. Topics typically include sexual assault and domestic violence, homicide, global terrorism, corporate, and political crime. Theoretical emphasis on classical and contemporary critical and social justice perspectives. (5 units)

160. Law and Society

Surveys classical and contemporary sociological theories of law and society. Topics typically include the social construction of law; law and capitalism; law and social solidarity; gender, race, and class inequality and the law; and private/public divisions and the law. (5 units)

161. The Criminal Justice Systems

Examines criminal justice systems in the United States and other countries from a comparative perspective. Topics typically include law enforcement, the courts, corrections (prisons and probation), and juvenile criminal justice systems. Theoretical emphasis on classical and contemporary critical and social justice perspectives. (5 units)

162. Gender and Justice

Includes topics relevant to gender and justice related to criminology and criminal justice systems, with a particular emphasis on the experiences of women and justice. Also listed as WGST 188. (5 units)

163. Leisure and Work in the 21st Century

Examines the ideological and institutional characteristics of modern industrial society and some of its basic problems, such as alienation, affluence and work motivation models, primary group influences, and leadership behavior. The course also covers how new technologies and flexible work schedules impact family relations and personal leisure.(5 units)

164. Social Movements

Involves analytical study of collective behavior principles and typology of crowds, mass behavior, and public demonstrations. The course also studies how new social movements manipulate the application of resource mobilization and representation strategies, framing, and discourse analysis to mobilize bias.. (5 units)

165. Human Services

Provides an introduction to the field of human services. Topics include the connections between societal understanding of social problems, programs, and policies; work and management issues in public and nonprofit human service agencies; human services in a multicultural context; and opportunities to learn through community-based placements serving marginalized communities and from human service professionals. (5 units)

168. Democracy, Populism, Authoritarianism

Involves analysis of power relations in the United States and examination of different dimensions of power and popular participation. Particular emphasis is on the development of state-society relations, legitimation, strategies of resistance, and civil society. (5 units)

172. Management of Health Care Organizations

Explores the sociological and practical issues of operations, financing, and management in organizations providing services for people with health problems (organizations such as nursing homes and hospitals) or people with infirmities (organizations such as senior care centers and assisted living facilities). Also listed as PHSC 172. (5 units)

175. Race and Inequality

Examines the racial/ethnic inequality that African, Asian, Hispanic, and Native Americans and other groups experience in contemporary United States society. This course covers theories of race and ethnicity, examines empirical research on a range of topics (poverty, social class, assimilation, identity, segregation, stereotyping), and

explores the meaning and consequences for racial/ethnic inequality in the future. Also listed as ETHN 167. (5 units)

176. Caring for the Greatest Generation

A survey of public policy issues particularly affecting the elderly. Includes consideration of the legal aspects of death and dying, involuntary commitment, guardianship and conservatorship, age discrimination, public benefit programs, and nursing homes. (5 units)

180. Immigrant Communities

Explores the impact of immigration to the United States, particularly the effect of the immigration reform law of 1965 that resulted in large increases in immigration to the United States, particularly from Latin America and Asia. This wave of immigrants and their U.S.--born children has significantly changed the fabric of American society. Examines case studies of immigrants and the second generation from Cuba, Mexico, Nicaragua, Vietnam, and Haiti using comparative sociological perspectives and theories of community formation . Also listed as ETHN 171. (5 units)

190. Advanced Seminars in Sociology

Seminars for juniors and seniors in which selected issues in sociology or current problems of social relevance are investigated in depth. Like in any seminar, students who enroll in the course are expected to actively contribute to the examination of the topics at hand. May be repeated once for credit if topic changes. (5 units)

194. Peer Educators

Peer educators in sociology work closely with a faculty member to help students in a course understand course material, think more deeply about course material, benefit from collaborative learning, feel less anxious about testing situations, and/or to help students enjoy learning. Enrollment is by permission of the instructor. (1 or 2 units)

199. Directed Reading/Directed Research

Involves intensive reading in areas not emphasized by the department. Independent research on specific topics not fully covered in departmental courses. May be repeated once for credit, under certain circumstances and with the approval of the sociology chair. Written departmental approval necessary in the quarter prior to registration. (5 units)

Department of Theatre and Dance

Professors: Aldo L. Billingslea (Department Chair, William J. Rewak Professor), Barbara M. Fraser, Barbara A. Murray

Associate Professors: Jerald R. Enos, Kimberly M. Hill, David J. Popalisky

Assistant Professor: Karina Gutiérrez, Leticia Ridley

Senior Lecturers: Derek Duarte, Kristin Kusanovich

Lecturers: Jeffrey Bracco, Karyn Connell, Pauline Locsin-Kanter, Patt Ness, Brian Thorstenson

Emertitus: David Sword

The Department of Theatre and Dance celebrates the creativity of the human spirit, offering a well-rounded education that leads to a bachelor of arts degree in Theatre Arts with emphasis in either theatre or dance. The department also offers minors in theatre, dance, theatre design and technology and musical theatre (an interdisciplinary minor offered in collaboration with the Department of Music). The program emphasizes academic rigor, artistic discipline, and creative expression. All students work closely with faculty and staff mentors. Majors fulfill all requirements set forth by the Undergraduate Core Curriculum, the College of Arts and Sciences, and the Department of Theatre and Dance.

Theatre and dance are distinct but related areas of emphasis. While each has its own set of disciplinary standards and academic requirements, students in each emphasis share some common courses (e.g., Introduction to Performance Collaboration, Defining the Performing Artist, etc.)

The theatre emphasis offers coordinated courses in acting, design, theatre history, dramatic literature, technical production, directing, and playwriting. Students with this emphasis will have a broad foundation in theatrical practice and may choose to focus their study in any of the aforementioned areas. The dance emphasis offers coordinated classes in modern/contemporary dance, choreography, dance history, and provides additional training in ballet, jazz, hip-hop, and ethnic dance forms. Majors in either emphasis will complete their program with a senior project that demonstrates their proficiency in a chosen area.

All students are encouraged to be creative in taking responsibility for their undergraduate education, working with advisors and mentors to plan programs that marry courses in their focus areas to other disciplines. Since courses in theatre and dance provide students with invaluable experience in collaboration, critical thinking, organizational management, and effective communication skills, they may profitably combine a major in theatre arts with a major (or minor) in almost any other discipline---especially English, music, communication, art, psychology, the sciences, or business.

A degree in theatre arts prepares students for a variety of career options. Some students pursue graduate study in specialized focus areas so as to become professional theatre or dance artists and teachers. Others pursue careers in professional theatre or dance companies immediately after graduation. Still others have created their own theatre or dance companies or have ventured into the world of film, television, arts administration, and education. Many have used their performing arts experience to pursue careers in law, medicine, business, and marketing and development.

The performance season, sponsored by the department, includes four faculty-directed plays and two dance concerts, in addition to student-directed plays and dance recitals. Participation in these productions is open to all members of the University community---students, faculty, and staff. Guest artists regularly direct, design, choreograph, and/or perform in productions with SCU students.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and College of Arts and Sciences requirements for the bachelor of arts degree, students majoring in theatre arts must complete the following departmental requirements:

Emphasis in Theatre

- THTR 8, 9, 10 and 30
- One course from THTR 31, 32, 33
- One course from DANC 40, 43, 46
- THTR 41A, 42B
- One course from THTR 112, 113, 119, 161, 165, 167
- DANC 159 or 189
- THTR 185
- Three approved 5-unit upper-division theatre or dance electives
- 4 units of THTR 39/139
- Senior Project may be fulfilled by one of the following courses: THTR 192, 193, 195, 196, 197 (*see description below)

Emphasis in Dance

- THTR 9, 10, and 30
- One course each in ballet and jazz (one at the Intermediate level)
- DANC 48
- DANC 49
- DANC 67
- DANC 143 and 146\ Two courses from DANC 140, 141, 142, 145, 147, 148
- DANC 162 or 166
- DANC 159 or 189
- 4 units of THTR 39/139
- Senior Project may be fulfilled by one of the following courses: DANC 192 or 193 (*see description below)

*Senior Project: The Senior Project provides majors with the opportunity to demonstrate their progress in meeting the department learning objectives. In this capstone course, students will prepare and present a final project in an area of their choosing (e.g., acting, design, directing, playwriting, history, literature, dance choreography, performance etc.). The Senior Project, demonstrating both effective leadership and collaboration, must include each of the following elements: public presentation, reflection on process (through journaling, etc.), assessment of progress in achieving department learning goals, and a culminating oral presentation. Short readings followed by discussions with peer groups and faculty in sophomore and junior years will guide students with choosing and successfully completing the Senior Project.

Requirements for the Minors

Students must fulfill the following requirements for a minor in theatre, dance, or theatre design and technology:

Minor in Theatre

- THTR 10, 8 or 24, 30
- One course from THTR 41A or 42B
- Four 5-unit upper-division theatre and dance electives
- THTR 39/139

Minor in Dance

- THTR 10
- One course each in ballet and jazz (one at the Intermediate level)
- DANC 48
- DANC 49
- DANC 143 and 146
- One course from DANC 140, 141, 142, 145, 147, 148
- One 5-unit upper-division theatre and dance elective
- THTR 39/139

Minor in Theatre Design and Technology*

- THTR 10, 30
- One course from THTR 31, 32, 33, or 36
- 4 units of THTR 39/139, or THTR 38 and 2 units of THTR 39/139 with a makeup production element
- Three or more courses from THTR 130, 131, 132, 133, 134, 136, 137, 138

*A separate minor in Theatre Design and Technology is not available to Theatre Arts majors.

Lower-Division Courses: Theatre

1A. and 2A. Critical Thinking and Writing I & II

A two-course themed sequence featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situations. The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Themes address a variety of contemporary topics. Successful completion of CTW I (THTR 1A) is a prerequisite for CTW II (THTR 2A). (4 units each quarter)

7. Improv

Designed for majors and nonmajors, Improv seeks to expand the participant's capability for spontaneity, flexibility of thought, creativity, communication, and teamwork through the use of theatre games and specifically structured improvisation exercises. No previous acting experience is necessary for this course. Every level of performer or non-performer will have something to contribute and learn from this experience. Topics such as the impact of status on relationships, nonverbal communication, staying positive, building on ideas offered by others, and developing narratives will be explored throughout this class. (4 units)

8. Acting

Through standard theatre games, exercises, monologues, and scenes, students will explore, via Stanislavski's "method of physical action," basic principles of the acting craft. (4 units)

9. Defining the Performing Artist

Being in tune as a performing artist means being aware of the connection between body, mind, and spirit. Topics include discussion of professional résumés, head shots, auditions, and career choices. Also, the implications of being a performing artist, body image and awareness, self-esteem, lifestyle/health choices, nutrition and diet, and stress management strategies. (4 units)

10. Introduction to Performance Collaboration

This class introduces basic acting (text, concept analysis) and dance concepts (dynamics, rhythm, shape) to explore creativity and performance with an emphasis on the collaborative process. The class culminates with a student-devised original work. (4 units)

11A. and 12A. Cultures and Ideas I & II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address creativity and the use of space, the performing arts as reflections and constructions of culture, and other topics. Successful completion of C&I I (THTR 11A) is a prerequisite for C&I II (THTR 12A). (4 units each quarter)

21. Voice I: Voice, Speech, and Presentation Skills

Using physical exercises, breath work, speech, and resonance exercises, students will expand their knowledge of the mechanics of speech and increase their vocal potential and health onstage or in any public speaking environment. Though not required of majors, it is HIGHLY recommended for all majors to take this class. Priority given to theatre arts majors/minors. (4 units)

24. Intermediate Acting

Foundation of the acting curriculum; improv, open scenes, monologues, and scenes are used to explore and acquire a comprehensive process by which to create and sustain a truthful, imaginative, and physical character on stage. Stanislavski's "method of physical action" and Uta Hagen's "10 Questions" are explored. Application of the concepts of "objective, actions, and qualities of action" are applied to scripted material. Students rehearse and perform scenes from American playwrights. Priority given to theatre arts majors, then to minors. Designed to follow THTR 10. Prerequisites: THTR 8 or permission of instructor. (4 units)

28. Theatre to Go

The development and production of a 40- to 45-minute play from various genres. Topics may include children's theatre, Shakespeare, social justice, and documentary theatre. Plays will be taken out into the community for performance. Projects may be extended into a second quarter, in which case students may re-enroll for additional units. (2--4 units)

29. Rehearsal and Performance

Active participation in the preparation and performance of departmental productions as actors, assistants to the director, dancers, and choreographers. Individual design/technical assignments. May be repeated for a total of 8 units. Prerequisite: Approval of director of production. (2 units)

30. Introduction to Design

Explores the role of design as a part of the production process. Includes a study of the elements and principles of design as they apply to scenic, lighting, and costume design. Also included: design development and the role of each designer in the production. (4 units)

31. Introduction to Production

Overview of the organization, concepts, terminology, and skills involved in technical theatre. Hands-on work in the scene shop. (4 units)

32. Costume Construction

Introduction to making costumes: fabric/textile studies, sewing techniques, dyeing and ornamentation, and costume crafts. (4 units)

33. Stage Lighting

Principles and practice. Color, instrumentation, basic electricity, and electronics. Elementary design theory and practice. (4 units)

36. Scene Painting

Introduction into the styles, techniques, and application of scenic art as it relates to the theatre. This includes color theory, light and shadow, and the interpreting of a painter's elevation and/or scenic research for the stage. Projects include wood graining, stone, marble, and foliage. Enrollment in the upper division of Scene Painting (THTR 136) is based on completion of the lower division or skill level of the student. The advanced level will deal with historical Trompe L'oeil and Grisaille techniques of painting when painting architectural reliefs, fabric/drapery, and ornamentation. Offered in alternate years. (4 units)

38. Makeup for Stage

Basic principles of makeup for the stage. Youth, old age, and special problems. (2 units)

39. Production Workshop

Training in development of technical skills for stage production. Directed work in scenery and costume construction, lighting, sound, and stage management. May be repeated for a total of 8 units. Not applicable to paid work hours or to laboratory hours connected with stagecraft courses. (2 units)

41A. Critical Perspectives in Performance A

Explores the dynamic relationships among theatrical space, acting styles, dramatic texts, and audience reception. This course will engage these perspectives with a special focus on performing faith, staging power, and dramatizing identity. (4 units)

42B. Critical Perspectives in Performance B

Explores the dynamic relationships among theatrical space, acting styles, dramatic texts, and audience reception. This course will engage these perspectives with a special focus on staging spectacle, characterizing style, and playing on the global stage. (4 units)

44. Modern American Theatre History: Censorship, Arts Funding, and Theatre Unions

Relationship between the theatre arts and society. Through the study of significant cultural history as well as theatre literature, this course tackles important social justice issues involving censorship, arts funding, theatre unions, and the shaping of American values. (4 units)

60. The Drama in Ethics, The Ethics in Drama

An examination of philosophical ethics both in theory and in the dramatic portrayal of characters struggling with particular ethical problems. Also an exercise in writing original dialogue for characters contending with ethical decisions and in acting dramatic dialogue taken from published plays and student scene writing. Students' attention and efforts will be directed not only to the cognitive, but also to the affective and bodily dimensions of ethical decision-making in particular circumstances. This course is intended to be a melding of philosophical reflection and inquiry with theatrical artistic expression in order to better understand what it means to be a virtuous person who lives a good life in an ambiguous world.

65. Drama of Diversity

Addresses issues of race, ethnicity, class, gender, and sexuality through the lens of American theatre by several groups outside of the dominant culture including, but not limited to, works from the African-American, Asian-American, Chicana/o, Native American, and lesbian, gay, bisexual, and transgender (LGBT) perspectives. Also listed as ETHN 65. (4 units)

66. People's Theatre

Understanding and appreciation of a form of theatre called People's Theatre, a type of theatre and a process of creating a play based on interviewing marginalized people to gain perspective on social justice issues that are of concern to them. Students will have a hands-on experience of creating a short people's theatre piece and having it performed as a reading in front of an audience. (4 units)

68. Special Topics: Playwrights Workshop

Workshop focuses on the development of a script or performance piece centered on a particular chosen theme. May include research, interviews, improv, and script development. (1--4 units)

74. Devised Theater: Points of Departure

Point of Departure: A place to begin, established in order to set a course. A hybrid class, part reading, discussing, and viewing, part on our feet exploration. We'll look at Theater ensembles who start with the blank page. We'll study the variety of ways they fill in the blanks. By the end we'll find another beginning, a departure point, for next year's creation of a new play. (4 units)

75. Devised Theater Workshop

Starting with the departure point from the previous years Devised Theater: Points of Departure, the class will create an original devised theater piece. The piece will go into rehearsal and be performed the following quarter. (4 units)

80. Musical Theatre Production Workshop

Gives students the opportunity to perform in a musical theatre production workshop that covers the study of songs and scenes from a wide variety of musicals. The class presents an original musical review at the end of the quarter. Offered in alternate years. Prerequisites for majors and minors: THTR 8 or 10 or 24, MUSC 34 or 3 quarters of private voice instruction, DANC 40 or 46. (4 units)

Upper-Division Courses: Theatre

109. Incarnating the Word: Theology and Theatre

Despite the often anxious relationship between Christianity and the performing arts, Jesuit education has long emphasized the importance of performance in forming integral human beings conscious of their place in the universe and competent to assume their roles on the stage of the world *ad maiorem Dei gloriam*. This interdisciplinary course aims at reverencing this educational tradition by exploring the dynamic relationship between fundamental theology and theatrical performance. By reading and considering theological texts alongside plays from a variety of historical periods, students will develop a deeper understanding and appreciation of theology as theatrical and theatre as theological. Also listed as TESP 52. (5 units)

111. British Drama

Also listed as ENGL 149. For course description see ENGL 149. (5 units)

112. Special Topics: Theatre and Performance

In-depth exploration of specific genres, periods, playwrights, or themes. Also listed as ENGL 166. (5 units)

113. Seminar: Theatre and Performance

In-depth exploration of a specific genre, period, playwright, or theme. Also listed as ENGL 166. (5 units)

116. Shakespeare's Tragedies

Also listed as ENGL 151A. For course description see ENGL 151A. (5 units)

117. Shakespeare's Comedies

Also listed as ENGL 151B. For course description see ENGL 151B. (5 units)

118. Shakespeare Studies

Also listed as ENGL 151C. For course description see ENGL 151C. (5 units)

119. Shakespeare's Plays in Performance

An exploration of a selection of Shakespeare's plays in performance with particular attention to an important topic chosen for focus and specified in the course description subtitle---for example, Shakespeare and Gender, Intercultural Shakespeare, Shakespeare in Production, Shakespeare and Justice, Shakespeare and Film, Shakespeare and the Contemporary World. May be taken more than once when topics differ. (5 units)

120. Acting Styles I: Shakespeare

Techniques for performing the works of William Shakespeare and other Elizabethan playwrights. Learn scansion and perform sonnets, monologues, and scenes from plays. Prerequisites: THTR 8 or 10 and 24, or permission of instructor. (5 units)

122. Acting Styles II: Acting for the Camera

Specific techniques of acting in commercials, television, industrials, and film. Perform scenes in front of the camera to achieve understanding of the differences and similarities of acting in this media and theatre. Prerequisites: THTR 8 or 10 and 24, or permission of instructor. (5 units)

123. Acting Styles III: Musical Theatre

Study of the techniques of acting in this special genre including phrasing, interpretation of lyrics, and auditioning. Prerequisites: THTR 8 or 10 and 24, MUSC 34 or 3 quarters of private voice instruction, or permission of instructor. (5 units)

124. Acting Styles IV: Scene Study with Dialects

Building on the skill sets obtained in THTR 10 and 24, students will continue to deepen the application of their acting and vocal techniques in the study of texts that require a region-specific sound. Students will learn to research and reproduce at least four major dialects used on the stage and screen. Combined with vocal flexibility work, students will apply their dialect research to at least four different monologues or scenes. Prerequisites: THTR 8 or 10, 21 and 24, or permission of instructor. (5 units)

125. Acting Styles V: Special Topics

A scene study course that may include auditioning, specific playwrights, or styles---Chekhov, Ibsen, Greek, Absurdist, Brecht, Meisner, or other styles depending on departmental needs or instructor expertise. Prerequisites: THTR 8 or 10 and 24, or permission of instructor. (5 units)

128. Theatre to Go

For course description see THTR 28. (2--5 units)

129. Rehearsal and Performance

For course description see THTR 29. (2 units)

130. Technical Design

The process of taking scenery from designer drawings to actual set pieces. Transformation of scene designs to carpenter drawings, standard building methods, stage machinery solutions, and budget-regulated design options. Offered in alternate years. (5 units)

131. Sound Design

Principles of the use of sound in theatre production. Emphasis on practical applications and equipment use. Digital audio and playback automation. Offered in alternate years. Prerequisite: THTR 30 or permission of instructor. (5 units)

132. Lighting Design

Application of lighting skills to production design. Offered in alternate years. Prerequisite: THTR 33 or permission of instructor. (5 units)

133. Scene Design

Application of graphic skills to scenic design. Styles, scene painting technique, set decor. Offered in alternate years. Prerequisite: THTR 30 or permission of instructor. (5 units)

134. Costume Design

Principles of costume design for the stage. Application of design elements to convey character and production concepts. Period research, style, and rendering techniques. Offered in alternate years. Prerequisite: THTR 30 or permission of instructor. (5 units)

136. Scene Painting

For course description see THTR 36. (5 units)

137. Pattern Drafting and Draping

Drafting and draping techniques for a basic bodice, skirt, sleeve, and collars, and techniques for developing variations. Emphasis on drafting period garments. Offered in alternate years. Prerequisite: THTR 32 or permission of instructor. (5 units)

138. Production Management

Designed to acquaint students with the complexities of managing productions from the audition process to final performance. Directing, lighting, scenic production, sound, cueing, budgets, and personnel management are aspects that will be touched upon in class. Offered in alternate years. (5 units)

139. Production Workshop

For course description see THTR 39. (2 units)

151. Fashion, Politics, and Issues of Gender

Historical exploration of fashion not merely as a matter of personal taste, but as a sight for examining the interconnections among power, politics, gender, and ethnicity. The course will consider the role of fashion in constructing gender and ethnic identities, social and political structures, and fomenting revolution. Also listed as WGST 183. (5 units)

161. American Theatre from the Black Perspective

An exploration of the contributions black artists have made to enrich the American theatre as playwrights, actors, designers, and directors. Also listed as ENGL 129 and ETHN 136. (5 units)

163. Theatre of Dissent: Social Movements, Migration, and Revolution in the Americas

This course explores artistic reactions to political dissent in the United States and Latin America through an intersectional, praxis-based, and feminist approach to Performance Studies. To this end, students will analyze works of cultural representation such as dramatic literature, theatre/performance, poetry, and aesthetic methodologies,

alongside relevant scholarly writing.. (5 units)

165. History of American Musical Theatre

A cultural look at musical theatre as an American art form, which has its roots in vaudeville, burlesque, and minstrel shows. Offered in alternate years. (5 units)

167. Performing Identities: Staging Gender, Race, and Class

Because of the transporting and sometimes even transforming spaces they create in society, the performing arts prove particularly useful in examining enactments of human identity. Performing Identities will consider how fundamental aspects of "American" self-understanding are reflected, magnified, fractured, and constructed in and through the performing arts. The course will consider gender, race, and sexuality as performance and in performance. Paying particular attention to the ways in which these prominent categories cross paths on a variety of formal and informal stages, we will explore the role of the performing arts in defending human dignity and promoting a more just society. Also listed as WGST 139. (5 units)

168. Special Topics: Playwrights Workshop

For course description see THTR 68. (1--5 units)

170. Playwriting

Critical analysis of dramatic structure for the playwright. Scenarios, character studies, writing of original plays. Also listed as ENGL 179W. (5 units)

171. Advanced Playwriting

Continuation of THTR 170. Also listed as ENGL 179. (5 units)

172. Literature and Performance

Adapting literature (poems, novels, short stories, diaries, etc.) for the stage, and writing complete scripts for performance and production. Theories of both narrative and dramatic structures. Also listed as ENGL 163. (5 units)

173. Screenwriting

Also listed as ENGL 173. For course description see ENGL 173. (5 units)

174. Devised Theater: Points of Departure

For course description see THTR 74. (5 units)

175. Devised Theater Workshop

For course description see THTR 75. (5 units)

180. Musical Theatre Production Workshop

For course description see THTR 80. (5 units)

181. Classical Tragedy

Also listed as CLAS 181. For course description see CLAS 181. (5 units)

181A. Ancient and Modern Laughter

Also listed as CLAS 180. For course description see CLAS 180. (5 units)

185. Dramaturgy

Play analysis in the context of theatrical genres and historic period cultures. Also listed as ENGL 167. (5 units)

186. Stage Directing

Basic course in the problems, techniques, and theory of directing plays for the live theatre. Prerequisites: THTR 10 and 185. (5 units)

190. New Playwrights Festival

In this workshop course, we will engage with the process of moving a play from "the page to the stage." Students will first engage with a series of generative and analytic dramaturgical exercises. Then, working with student actors and directors in a collaborative rehearsal period, students will interact with their play in motion, gaining information of further entry into the work. The class culminates in a festival of staged readings. Prerequisites: THTR 170 and 171 or permission of instructor. (5 units)

192. Senior Project: Performance

Showcases performance in theatre. May be fulfilled through performance in a department production with the required journal, reflection and evaluation of process and project in light of department learning goals. May also be satisfied through a collaboratively produced performance piece following the same guidelines. Prerequisite: Must be registered with a faculty advisor. (2--5 units)

193. Senior Project: Playwriting

Project in playwriting. An original one act or full length play. Successful completion includes: workshop of the play in the New Playwrights Festival class, a staged reading of the play during the festival, and written and oral reflection and evaluation of the process and project. Prerequisites: THTR 170 or THTR 172, THTR 171, and approval of Playwriting faculty. (5 units)

194. Peer Educator in Theatre

Students will assist instructors in theatre classes. Prerequisite: Mandatory training workshop. (1--2 units)

195. Senior Project: Design/Technical

Students serve as designers for sets, costumes, lights, or sound, or as technical directors for a departmental production. Prerequisite: Approval of design faculty. (5 units)

196. Senior Project: Directing

Project in directing. A short play, fully staged. Prerequisites: THTR 8 or 24, 30, 41A, 42B, 185, 186, and permission of the head of the directing program; successful completion of stage crew assignments that include run crew for two departmental productions, and stage manager for a one-act play or departmental play. (5 units)

197. Senior Thesis

A senior thesis in history/literature/dramaturgy. Written for the advisor in consultation with other committee members. Upon completion of the thesis, an oral defense will take place before a selected committee. Prerequisite: Faculty approval. (5 units)

198. Practicum

Reserved for projects with recognized institutions outside the University. Prerequisite: Written proposal must be approved by instructor and department chair one week prior to registration. (1--5 units)

199. Independent Study/Directed Reading/Directed Research

Two areas of directed study: creative projects in directing, choreography, technical production, design, playwriting, administration, or directed reading and/or research. Prerequisite: Written proposal must be approved by the instructor and department chair one week prior to registration. (2--5 units)

Lower-Division Courses: Dance

Note: All dance technique classes may be repeated once for credit with permission of the instructor.

4. The Physics of Dance

Explores the connection between the art of dance and the science of motion with both lecture/discussion sessions and movement laboratories. Topics include mass, force, equilibrium, acceleration, energy, momentum, torque, rotation, and angular momentum. Movement laboratory will combine personal experience of movement with scientific measurements and analysis, in other words: "dance it"---"measure it." This is a lab science course, not a dance technique course. Also listed as PHYS 4. (4 units)

29. Rehearsal and Performance

Active participation in the preparation and performance of departmental productions as actors, assistants to the director, dancers, and choreographers. Individual design/technical assignments. May be repeated for a total of 8 units. Prerequisite: Approval of director of production. (2 units)

37. Hip Hop-Modern/Contemporary Dance Fusion

Introductory course that fuses and draws on hip hop street dance style and expressive modern/contemporary dance with no previous training required. The course introduces the body to strong isolated movement and coordination while building flexibility, strength, and alignment. Emphasis on floor work and building dance combinations performed to hip-hop music and contemporary sounds. (2 units)

38. Movement for Athletes

Focuses on flexibility, agility, body awareness, and strength building. Class exercises will draw from Pilates' core strengthening mat work, introductory ballet barre, and center work to enhance balance and coordination. (2 units)

39. Hip-Hop

Introductory course to street dance style performed to hip-hop music. Introduces the body to strong isolated movement, coordination, and dance combinations that will include floor work. (2 units)

40. Beginning Jazz Dance

Introductory course in jazz dance with no previous training required. Introduces body isolation, rhythmic awareness, movement coordination, and jazz styles through performance of dance combinations in the styles of theatre jazz, hip-hop, and lyrical dance. (2 units)

41. Beginning Intermediate Jazz Dance

Continuation of jazz fundamentals introduced in DANC 40 with emphasis on learning and retaining longer combinations through more challenging dance technique offered in styles of theatre jazz, hip-hop, and lyrical dance. (2 units)

42. Intermediate Jazz Dance

Continued study of jazz dance at an intermediate level with emphasis on technique, flexibility, balance, control, muscle tone, and retaining long combinations in a variety of jazz styles. This course will prepare the dancer for continuation into the advanced level of jazz. Students choreograph final projects. (4 units)

43. Beginning Ballet

Introductory course in ballet with no previous experience necessary. Develops individual strength, flexibility, and coordination through classical ballet technique. Includes barre and floor combinations. (2 units)

44. Beginning Intermediate Ballet

Continuation of ballet fundamentals introduced in DANC 43 with emphasis on discipline, coordination, and developing practical performing skills in classical ballet technique. Includes barre and floor combinations. (2 units)

45. Intermediate Ballet

Continued study of ballet at intermediate level, encouraging technical and performing proficiency. Focus on correct alignment and developing artistic expression. Includes barre exercises and intermediate-level floor combinations. (4 units)

46. Beginning Modern/Contemporary Dance

Introductory course in modern/contemporary dance with no previous training required. Introduces the expressive potential of dance through modern/contemporary dance technique. Emphasis on flexibility, strength, and alignment practiced through standing and floor exercises. Movement improvisation explores qualities of motion. (2 units)

47. Beginning Intermediate Modern/Contemporary Dance

Continuation of modern/contemporary dance fundamentals introduced in DANC 46 with emphasis on technique, flexibility, coordination, and creativity. (2 units)

48. Intermediate Modern/Contemporary Dance

Continued study of modern/contemporary dance at an intermediate level. Emphasis on release techniques, rhythmic precision, and spatial principles through extended combinations and movement improvisation. (4 units)

49. Dance Composition

Traditional approaches to compositional problems of form and design, time and rhythm, and energy flow and force in dance as an art form. (4 units)

50. Beginning Tap

Introductory course in tap dance with no previous training required. Develops better coordination, rhythm, and timing. Strengthens the feet and legs. Basic tap terminology and steps. (2 units)

51. Beginning Intermediate Tap

Continuation of tap fundamentals introduced in DANC 50. Increasing rhythm and coordination through intermediate level steps and technique. Learn tap steps and apply them to the art of performance. (2 units)

52. Afro-Haitian Dance

Introductory course in Afro-Haitian dance with no previous training required. Basic technique class that introduces the subtleties of the dance, proper body placement, and the rhythmic structure between the dance and the music. Offered in alternate years. (2 units)

54. Mexican Folklórico Dance

Introductory course in Mexican folklórico dance with no previous training required. Course introduces steps and moves from various regional forms of dance from Mexico including Azteca, Quebradita, Danzón, and Salsa Mexican style; plus a very structured form of exercise for footwork called "tecnica" drills to enable the dancer to pick up more intricate and challenging material. Offered in alternate years. (2 units)

55. Musical Theatre Dance Styles

Exploration of musical theatre dance styles. Based on theatre jazz technique, consisting of warm-ups, across-the-floor progressions and combinations from musical theatre. This course will introduce the musical theatre performer to auditions through mock audition technique. Offered in alternate years. Prerequisite: DANC 41, or 44, or 47, or permission of instructor. (4 units)

56. Pilates Private Instruction

Pilates is the latest technology for conditioning the human body. Pilates is excellent for building a deep internal strength and an integrated, aligned body for anyone with an active lifestyle, as well as for injury prevention and recovery. One-on-one Pilates instruction using the reformer and another apparatus. Prerequisite: Permission of instructor. (1 unit)

57. Dance to Go

The development and production of creative dances designed for outreach. Focus on improvisation and sharing the art of dance through interactive performance. Touring production. (2--4 units)

58. Pilates Mat Class

Pilates mat classes, based on the pioneering work of Joseph Pilates, are designed to condition the body. Mat classes focus on alignment and breathing. Strengthens the core of the body while freeing up the joints to aid in flexibility, improving posture, and all around quality of life. Prerequisite: Permission of instructor. (2 units)

59. Teaching the Performing Arts

Immersion course in artistic process, practices, principles, pedagogies, and public policy. This course covers the fundamentals of teaching dance, theatre, music, and art to children in public and private settings with a focus on marginalized communities, and is important preparation for any student considering teaching at any point in his/her career. Note: This course requires participation in community-based learning (CBL) experiences off campus. (4 units)

61. Anima Collective: Retreat, Process & Performance

Anima Collective is a student-directed, faculty mentored exploration of spirituality, as revealed through the performing arts. Students begin this process in retreat, dedicating time throughout fall quarter for reflection and discovery through their collective creative work. The Anima Collective experience culminates in an early winter quarter performance. Prerequisite: Auditions are held the preceding spring quarter. (2 units)

62. African-American Dance History

Exploration of African-American dance~~'s~~ artists' contribution to U.S. culture from slavery through the present. How minstrel stereotypes, jazz dance sources, black concert dance, and hip-hop reflect racial and social realities in America. Offered in alternate years. (4 units)

66. Women in Dance History

Introduction to significant European and American women dance artists from the 1830s to the present with a focus on their achievements as dancers, choreographers, critics, and scholars within their social context. Views dance through feminist theoretical perspectives to address issues of power, agency, and personal expression in ballet, modern, jazz, and ethnic dance forms. Offered in alternate years. Also listed as WGST 62. (4 units)

67. Dance History

Survey of Western concert dance that explores the Italian and French origins of ballet through the 20th-century emergence of modern and jazz dance, and culminates with the new directions of postmodern dance late in that century. Investigates the key contributing artists, significant developments, and overall growth of dance as a performing art integrated into the changing society to which it belongs. (4 units)

68. Cultures on the Move: Theatre and Dance as Dialogue of Transition

Explores the historical circumstances of migration to the United States by populations and cultures from West Africa and China as well as the Cherokee nation within the United States. Focuses on how performance traditions, especially dance, functioned to process the inevitable conflicts, struggles, and ultimate transformations into blended cultures. Considers the legacy and current vitality of these cultural migrations in the present. (4 units)

69. Walk Across California

This course will create learning experiences that draw upon interactions with the diverse California human and natural environments by walking across California from San Francisco to Yosemite National Park immediately following spring quarter. Both written and aesthetic reflections through various art forms will enhance students' understanding of human and environmental sustainability and social injustices in contemporary society. The class will nurture a "sense of wonder" and focus on sustainability, environmental justice, and social activism addressed through scheduled talks with community members including farmers, activists, teachers, park rangers, artists, shop owners, and Native Americans. (4 units)

Upper-Division Courses: Dance

129. Rehearsal and Performance

For course description see DANC 29. (2 units)

138. Movement for Athletes

For course description see DANC 38. (2 units)

140. Intermediate Advanced Ballet

Advanced level study of classical ballet with focus on American and European styles. Includes ballet barre exercises, center adagio, and allegro combinations at intermediate/advanced level. (5 units)

141. Advanced Ballet

Continuation of DANC 140. (5 units)

142. Intermediate Advanced Jazz Dance

Builds from an assumed intermediate level of jazz dance technique. Emphasis on personal style and performance techniques in advanced jazz dance combinations. This course prepares the dancer for expectations in the professional industry. (5 units)

143. Choreography

Emphasis on the creative process, dynamics, phrasing, and thematic development through choreographing and performing an original group dance. Exploration of aesthetic and stylistic approaches to choreography. Prerequisite: DANC 49 or equivalent. (5 units)

145. Advanced Jazz Dance

Continuation of DANC 142. Emphasis on fluency of the various styles of dance on a pre-professional level. Designed for the more serious dancer. Will have the opportunity to meet and network with industry professionals. (5 units)

146. Intermediate Advanced Modern/Contemporary Dance

Intermediate/advanced level study of modern/contemporary dance technique. Emphasis on release principles, breath control, phrasing, clarity of line, and movement qualities. Improvisation and extended combinations develop performance commitment. (5 units)

147. Advanced Modern/Contemporary Dance

Continuation of DANC 146. Emphasis, through improvisation and combinations, on the temporal component of dance: rhythm, tempo, time signatures, and polyrhythms. (5 units)

148. Advanced Modern/Contemporary Dance II

Continuation of DANC 146 and DANC 147. Focus on modern/contemporary dance styles: contemporary, classical, eclectic, and pedestrian. Emphasis on developing a clear, personal performance style and movement analysis skills. (5 units)

149. Dance Outreach

A performance of original creative student work both on and off campus as a representative of the department. Certain outreach venues will be coordinated with the Arrupe Center. Prerequisite: Permission of instructor. (2--5 units)

155. Musical Theatre Dance Styles

For course description see DANC 55. (5 units)

156. Pilates Private Instruction

For course description see DANC 56. (1 unit)

157. Dance to Go

For course description see DANC 57. (2--5 units)

158. Pilates Mat Class

For course description see DANC 58. (2 units)

159. Teaching the Performing Arts

For course description see DANC 59. (5 units)

161. Anima Collective: Retreat, Process & Performance

For course description see DANC 61. (2 units)

162. African-American Dance History

For course description see DANC 62. (5 units)

166. Women in Dance History

For course description see DANC 66. (5 units)

169. Walk Across California

For course description see DANC 69. (5 units)

189. Social Justice and the Arts

Explores the dynamics of theatre and dance in the context of social justice in local, national, and international settings. The course will host visiting guest artists and include off-campus experiences. This is a research and discovery opportunity. May be repeated once for credit with permission of instructor. Note: This course requires participation in community-based learning (CBL) experiences off campus. (5 units)

192. Senior Project: Performance

Showcases performance in dance. May be fulfilled through performance in *Images*, the department production, with the required journal, reflection and evaluation of process and project in light of department learning goals. Prerequisite: Must be supervised by a faculty choreographer. (5 units)

193. Senior Project: Dance

A recital for theatre arts majors with dance emphasis, showcasing their choreographic and performance abilities. Prerequisites: DANC 49 and 143, and approval of dance faculty; successful completion of stage crew assignments that include stage manager for a senior dance recital or another department production. (5 units)

194. Peer Educator in Dance

Students will assist instructors in dance classes. Prerequisite: Mandatory training workshop. (1--2 units)

198. Dance Practicum

Reserved for projects/internships with recognized institutions outside of the University. Prerequisite: Written proposal must be approved by the instructor and the department chair one week prior to registration. (1--5 units)

199. Independent Study

Various areas of directed study: creative projects in choreography, teaching assistants, focused participation in a special project, or directed reading and/or research in dance history. Prerequisite: Written proposal must be approved by the instructor and department chair one week prior to registration. (2--5 units)

Private Instruction

The College of Arts and Sciences offers applied instruction in music composition, improvisation, conducting, musical theatre vocal training, and instrumental studies. Please contact the Department of Theatre and Dance for further information on specific areas of interest.

Note: Applied lessons are available to music majors and minors, theatre arts majors and minors, musical theatre minors, and students enrolled in departmental ensembles. Students may enroll in one-hour (1 unit), 45-minute (0.75 units), or 30-minute (0.5 units) lessons. A full description of the private instruction protocols is available on the Department of Music website. Nine private lessons are given each quarter. All students taking lessons are required to participate in an end-of-quarter jury hearing. Private lessons may be repeated for credit.

Department of Women's and Gender Studies

Professors: Laura L. Ellingson (Patrick A. Donohoe, S.J., Professor)

Associate Professors: Linda Garber, Sharmila Lodhia (Department Chair)

Assistant Professor: CiAuna Heard

The Department of Women's and Gender Studies brings together scholars and scholarship on women and gender, areas that have come to occupy an increasingly important place in a number of disciplines in the last quarter century. Areas of inquiry include the participation of women in social and cultural production; the construction of gender and its role as a constitutive element of social, political, economic, and legal structures; feminist theory; and the development of ideas about femininities, masculinities, and sexualities. Gender is examined as it intersects with class, sexuality, ethnicity, disability, age, nationality, and the like. The Department of Women's and Gender Studies provides an integrated, interdisciplinary approach to understanding the social and cultural constructions of gender that shape the experiences of everyone. The curriculum offers a solid foundation in women's and gender studies, facilitating graduate study and careers involving gender justice concerns, and preparing students for leadership roles in diverse workplaces and communities. The Department of Women's and Gender Studies offers a major and minor.

Requirements for the Major

In addition to fulfilling University Core Curriculum, students with a major in Women's and Gender Studies must complete the following requirements:

Thirteen courses:

- One Principles of WGST course or sequence:
  - WGST 1A and 2A
  - WGST 11A and 12A
  - WGST 50
  - WGST 51
  - WGST 57/HIST 84
  -
  - WGST 112/ETHN 154
  - WGST 114/ETHN 157
  - WGST 115/SOCI 153/ETHN 151
- Four required upper-division courses:
  - WGST 101 (Feminist Theory) (advised in the junior year)
  - WGST 102/COMM 111G (Feminist Methods) (advised in the junior year)
  - WGST 105 (Advanced Seminar) or WGST 105A (Body Politics)
  - WGST 190 (Capstone) (senior year)
- Three-course concentration in one of three areas: Cultural Politics of Representation; Power, Rights, and Society; or Sexualities, Body Politics, and Social Structures

- Five electives

Requirements for the Minor

Students must fulfill the following requirements for a minor in Women's and Gender Studies:

Six courses, at least three of which must be upper division:

- One Principles of WGST course or sequence:
  - WGST 1A and 2A
  - WGST 11A and 12A
  - WGST 50
  - WGST 51
  - WGST 59/ETHN 59
  - WGST 57/HIST 84
  - WGST 112/ETHN 154
  - WGST 114/ETHN 157
  - WGST 115/SOCI 153/ETHN 151
  - WGST 169/HIST 115S - Gender, Race and Citizenship in the Modern World
  - WGST 172/HIST 135 - Gender, Race, and Class in 20th Century
- One of the following:
  - WGST 101 (Feminist Theory) (advised in the junior year)
  - WGST 102/COMM 111G (Feminist Methods) (advised in the junior year)
- All minors must complete:
  - WGST 190 (Capstone) (senior year) or WGST 105
- Three electives

Lower-Division Courses

1A. and 2A. Critical Thinking & Writing I and II

A two-course sequence, focusing on a major theme, featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situation. The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Successful completion of CTW I (WGST 1A) is a prerequisite for CTW 11 (WGST 2A). (4 units each quarter)

11A. and 12A. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Courses may address how gender intersects with other systems of power and inequality including: sexuality, race,

ethnicity, culture, class, and nation. Topics include, but are not limited to, perspectives on representation, citizenship and rights, bodies and sexuality, and science and technology. Successful completion of C&I I (WGST 11A) is a prerequisite for C&I II (WGST 12A). (4 units each quarter)

50. Introduction to Women's and Gender Studies

Examines gender in the lives of women and men, using an interdisciplinary approach to analyze the effects of societal institutions and processes. Particular attention is paid to the development and dynamics of gender inequality; intersections of gender, race, class, and sexuality; and the social construction of gender. (4 units)

51. Introduction to LGBTQ Studies

Covers a variety of topics focusing on the areas of history, media, politics, literature and the arts, emphasizing the diverse nature of lesbian, gay, bisexual, transgender, queer (LGBTQ) communities and issues. Course materials address sexual identity as it intersects with gender, class, race, ethnicity, disability, and nation. (4 units)

76. Violence Against Women

Interdisciplinary study of U.S--based women in the context of the institutionalization of violence and its impact across civic life. Areas of violence research such as campus, domestic, sexual assault, harassment, and stalking will be addressed in the context of the intersections of race, class, gender, and sexuality. (4 units)

Upper-Division Courses: Women's and Gender Studies

101. Feminist Theory

Examines historical and contemporary feminist theories with the goal of understanding the multiplicity of feminist frameworks for thinking about sex, gender, and oppression. Prerequisite: Sophomore standing or permission by WGST department chair. (5 units)

102. Feminist Methods

Also listed as COMM 111G. For course description see COMM 111G. (5 units)

103. Topics in Women's and Gender Studies

Explores a variety of current issues in women's and gender studies. (5 units)

104. Beauty, Culture, and Society in a Global Age

Explores dominant standards of beauty across diverse cultures and societies. Beginning with an analysis of the historical origins of the display of raced and gender bodies, this course will identify linkages between beauty and ideas about racial superiority, eugenics, hygiene, and the logics and instrumentalities of colonialism. After situating the analysis of bodies and beauty within a historical context, subsequent units will examine contemporary issues such as beauty contests, colorism, the hair trade, plastic surgery, and the beauty industrial complex. Readings and assignments will highlight the lived impact of hegemonic beauty ideals on women in diverse regional contexts. (5 units)

105. Advanced Seminar

This advanced seminar in women's and gender studies may be taken more than once with a different topic. Prerequisites: WGST principles course and declared major/minor; or WGST principles course and declared pathway in Gender, Sexuality, and the Body, or in Gender, Globalization, and Empire; or permission of instructor. (5 units)

105A. Body Politics

This course uses feminist theory to explore cultural and individual experiences of embodiment and biotechnology. Students will examine biopolitical discourse and its relationship both to individual lived bodies and biotechnologies that make possible particular bodily configurations. Topics include scientific and cultural studies of birth control devices, assisted reproductive technologies (e.g., in vitro fertilization), weight loss surgery, adaptive technologies for people with disabilities, and hormonal and surgical treatments for transgender people. Also listed as COMM 119A. (5 units)

106. Advanced Writing in Women's and Gender Studies

Researching and writing on topics in intersectional gender and sexuality studies, with an emphasis on revising for various contexts and audiences. (5 units)

107. Gender, Technology, and Society

Examines how social categories such as gender, race, class, and sexuality are shaped by technology and in turn, shape the development of new technologies. Topics may include, among others: feminist technology studies, the digital divide, social media, reproductive technologies, and gaming. (5 units)

109. Building Social Justice

An intersectional feminist examination of community, the built environment, and housing as social justice issues, this class will include hands-on building as well as interaction with related community organizations. No experience necessary. (5 units)

116. Visions of Abolition

Abolition has a deep and rich history that originates in slavery abolition and connects to contemporary demands to abolish the prison industrial complex, policing, and ICE (U.S. Immigration and Customs Enforcement). But calls for abolition are as much about envisioning new worlds as they are about ending various oppressive and unjust institutions. "Abolition," as Ruth Wilson Gilmore puts it, "is about presence, not absence." In this course, we will survey different visions of abolition, paying particular attention to clarifying and evaluating the moral arguments made by abolitionists. What does it mean, exactly, to call for the abolition of an institution rather than for reforms? What are the justifications for and critiques of these radical re-imaginings of our socio-political structures? We will also investigate the intersection of abolitionist issues with race, nationality, class, gender, sexual orientation, and disability, among other dimensions of identity. Finally, we will examine ethical theories of abolition democracy and transformative justice: two notions that abolitionists employ when thinking through how to build life-affirming institutions and community-based accountability processes in place of carceral systems. (5 units)

118. Gender and Law in the U.S.

This course will explore how gender influences legal doctrine and how legal doctrine affects women and shapes societal understandings of gender. Considering how the law regulates gender through an intersectional lens, the course will highlight principles such as equality, privacy and equal protection as well as exploring contemporary law and policy issues such as employment discrimination, sexual harassment, gendered violence, and reproductive justice. Also listed as POLI 171. (5 units)

135. Film, Gender, and Globalization

This course draws on richly contextualized studies of gender, kinship, and modernity to expand student understanding of Asian, African and/or Latin American cultures.Students enrolled in this course will have the opportunity to delve into the complex relationship between cultural and national ideas about gender, sexuality, and the enterprise of family and nation making in an increasingly globalized landscape.(5 units)

189. Sex, Law, and Social Justice

This course examines contemporary issues in gender justice through a transnational lens. The course will begin with a critical investigation of the dominant narratives that frequently underlie mainstream advocacy interventions; problematizing terms such as \'victim\', \'oppressor\', 'savior,' and \'rescue,\' and highlighting the moral and ethical assumptions that often underlie these interventions. After establishing a framework in transnational feminisms, postcolonial legal studies, and critical race theory, subsequent units will examine topics including the raced and gendered histories of humanitarianism/human rights, gender and national security, gendered violence, and reproductive justice. Readings will be drawn from materials which explore the legal, visual, and discursive elements of a range of social justice movements. (5 units)

190. Senior Capstone

Seminar focused on critical questions within the interdisciplinary field of women's and gender studies. Course will consider connections between the field and feminist politics/activism in the larger community. Prerequisites: Senior standing, declared WGST major or minor, and either WGST 101, WGST 102, or permission of instructor. (5 units)

198. Internship

Directed internship in local organizations addressing gender and/or sexuality issues. Open to qualified WGST majors and minors with permission of instructor. (1--5 units)

199. Directed Reading/Research

Independent projects undertaken by upper-division students with a faculty sponsor. To receive credit, the student must submit a formal written proposal and have it approved by the sponsoring faculty member and the program director. Written proposal must be submitted before the end of the previous quarter and must meet University requirements for independent study credit. (1--5 units)

Anthropology Courses

120. Middle East: Gender and Sexuality

Also listed as ANTH 187. For course description see ANTH 187.

144. Women, Gender, and Sexuality

Also listed as ANTH 170. For course description see ANTH 170.

155. Family, Kin, and Culture

Also listed as ANTH 157. For course description see ANTH 157.

Art and Art History Courses

156. Women's Work: American Women in the Visual Arts

Also listed as ARTH 143. For course description see ARTH 143.

Classics Courses

133. Love and Relationships in Classical Antiquity

Also listed as CLAS 141 and PHIL 141D. For course description see CLAS 141.

157. Gender in Antiquity

Also listed as CLAS 185. For course description see CLAS 185.

Communication Courses

102. Feminist Methods

Also listed as COMM 111G. For course description see COMM 111G.

105A. Body Politics

Also listed as COMM 119A. For course description see COMM 119A.

117. Special Topics in Film

Topics for this course vary, with the examination of different film genres and different critical methods, including fantasy, magical realism, science fiction, the gothic, cyberpunk, horror, romance, superhero, and so on. Course may be repeated for credit as topics vary. Prerequisite: COMM 2 or consent of the instructor. (5 units) Cross listed with COMM 188A

140. Gender, Health, and Sexuality

Also listed as COMM 106A. For course description see COMM 106A.

143. Special Topic- Comm, Gender: Gender & Race on TV

This discussion-based course explores the production and reproduction of messages about gender and race and their intersections with sexuality and class. As we read gender and communication studies texts and critically watch popular television series, we will examine stories, images, and scripts that circulate around us and play a role in determining social hierarchies and access to resources. Through written assignments and class discussion, students will learn to use tools and build skills to think critically about the media we consume and the narratives about gender and race that we encounter through TV Cross Listed with COMM 118A (5 units)

160. Vocation and Gender: Seeking Meaning in Work and Life

Also listed as COMM 101A. For course description see COMM 101A.

161. Communication and Gender

Also listed as COMM 108A. For course description see COMM 108A.

Dance Courses

62. Women in Dance History

Also listed as DANC 66. For course description see DANC 66.

162. Women in Dance History

Also listed as DANC 166. For course description see DANC 66.

Economic Courses

121. Gender Issues in the Developing World

Also listed as ECON 135. For course description see ECON 135.

English Courses

14. Introduction to African-American Literature and Gender

Introduction to African-American literatures. Also listed as ENGL 35G and ETHN 35. Note: ENGL 35 only cross-lists with WGST 14 if it is offered as 35G, which indicates a gender studies focus. For course description see ETHN 35. (4 units)

15. Literature by Women Writers of Color

Also listed as ENGL 69. For course description see ENGL 69.

16. Multicultural Literature of the United States

Short stories, film, autobiography, and poetry from many cultural communities in the United States. Also listed as ENGL 39G. Note: ENGL 39 only cross-lists with WGST 16 when it is offered as 39G, which indicates a gender studies focus. (4 units)

34. U.S. LGBTQ Literature

Also listed as ENGL 67. For course description see ENGL 67.

56. Literature and Women

Also listed as ENGL 68. For course description see ENGL 68.

110. Native American Women Writers

Study of selected works in Native American literature. Course may focus on particular authors, particular tribal or regional literatures, genres, or topics. Also listed as ENGL 137G. Note: ENGL 137 only cross-lists with WGST 110 when it is offered as 137G, which indicates a gender studies focus. (5 units)

122. LGBTQ Studies: Global Perspectives

Also listed as ENGL 153. For course description see ENGL 153.

129. Global Literatures

Also listed as ENGL 156 For course description see ENGL 156.

134. Film, Gender, and Sexuality

Also listed as ENGL 122. For course description see ENGL 122.

134AW. Film, Gender, and Sexuality

Also listed as ENGL 122AW. For course description see ENGL 122AW.

136. LGBTQ Studies: U.S. Perspectives

Also listed as ENGL 152. For course description see ENGL 152.

141A. 18th-Century Women's British Literature

Also listed as ENGL 144G. For course description see ENGL 144G

163. Feminist Literary and Cultural Theory

Also listed as ENGL 125. For course description see ENGL 125.

164. 19th-Century American Literature

Studies of selected American works from the 19th century. Also listed as ENGL 132G. Note: ENGL 132 only cross lists with WGST 164 when it is offered as 132G, which indicates a gender studies focus. (5 units)

165. Women and Gender in American Literature

May focus on periods, movements, themes, or issues. Also listed as ENGL 139G. Note: ENGL 139 only cross-lists with WGST 165 when it is offered as 139G, which indicates a gender studies focus. (5 units)

166. Women, Literature, and Theory

Also listed as ENGL 169A. For course description see ENGL 169A.

167PW. Women Writers and Literature

This version of Women and Literature will examine the ways variously positioned women have used writing to accomplish individual, interpersonal, professional, and civic goals in their lives and communities. Course may be repeated for credit by permission of department chair. Also listed as ENGL 168PW . (5 units)

Ethnic Studies Courses

14. Introduction to African-American Literature

Also listed as ETHN 35 and ENGL 35. For course description see ETHN 35.

16. Multicultural Literatures of the United States

Also listed as ETHN 70. For course description see ETHN 70.

59. Feminist Approach to Disability Studies

This course explores the social construction of dis/ability by taking a critical, intersectional, and feminist approach to disability studies. Through course readings, online responses to readings, select film screenings, and in class discussion we\'ll fully examine the \'social model\' and radical models of dis/ability that approach the study of dis/abled bodies (and minds) through ever-shifting historical, socio-cultural, and political formations. Cross-listed with ETHN 59. (4 Units)

111. Asian-American Women

Also listed as ETHN 141. For course description see ETHN 141.

112. Women of Color in the United States

Also listed as ETHN 154. For course description see ETHN 154.

114. Race, Gender, Class, and the College Experience

Also listed as ETHN 157. For course description see ETHN 157.

115. Race, Class, and Gender in the United States

Also listed as ETHN 151 and SOCI 153. For course description see SOCI 153.

168. Gender/Sex/Social Movt 20th US

Also listed as HIST 119 and ETHN 169. For course description see ETHN 169.

History Courses

57. Women in American Society

Also listed as HIST 84. For course description see HIST 84.

108. Genocide and Gender in the 20th Century

Also listed as HIST 102S. For course description see HIST 102S

124. Sex and Gender in the Age of High Imperialism

Also listed as HIST 116S. For course description see HIST 116S.

125. Women in Political Revolutions

Also listed as HIST 143S. For course description see HIST 143S.

126. Gender and Sexuality in East Asia

Also listed as HIST 150. For course description see HIST 150.

127. Gender and Rights in the Modern Era

Also listed as HIST 138S. For course description see HIST 138S.

137. History of Sexuality

Also listed as HIST 133. For course description see HIST 133.

138. Gays and Lesbians in United States History

Also listed as HIST 177. For course description see HIST 177.

140A. Global History of Sexually Transmitted Diseases

This course will survey the impact of sexually transmitted infections in a variety of national contexts, from the early modern period to recent times. The focus is mainly upon the history of classic venereal diseases such as syphilis and gonorrhea as well as more recently HIV/AIDS. How have medical debates about sexual contagion both influenced and been influenced by cultural conventions of blame, stigma, and moral judgment? Do representations of STDs provide a window into how a society organizes gendered expectations and constructs an image of deviant sexuality? How have responses to the problem of STDs changed over time? Can we examine these changes to better understand broader cultural adjustments to issues as diverse as prostitution and promiscuity, medical treatment and prophylaxis, and the politics of feminism, gay rights, and patients rights. Cross Listed with HIST 124 (5 units)

168. Gender, Sexuality & Social Movements in the 20th U.S.

In this course we will explore how race, gender and sexuality have shaped and been shaped by a century of social and political movements in the United States. We will move chronologically, exploring major movements and themes each week, beginning with a discussion of the uses of gender in historical analysis and ending with an exploration of current social movements. In between, we will read primary and secondary sources that illuminate the various, often contradictory, ways that ideas about race, gender and sexuality have influenced major social and political movements that continue to shape our world today. Cross Listed with HIST 119. (5 units)

169. Revolution in Sex, Race, and Rights

Also listed as HIST 115S. For course description see HIST 115S.

172. Gender and National Identity in 20th-Century Eastern and Western Europe

Also listed as HIST 136. For course description see HIST 136.

173. United States Women Since 1900

Also listed as HIST 181. For course description see HIST 181.

Modern Languages and Literature Courses

123. Sub-Saharan African/Caribbean Women Writers

Also listed as FREN 113. For course description see FREN 113.

175. French and Francophone French Novels and Films: Culture, Gender, and Social Classes

Also listed as FREN 174. For course description see FREN 174.

176. Women in French Literature: Authors and Characters

Also listed as FREN 182. For course description see FREN 182.

177. 20th- and 21st-Century French Women Writers

Also listed as FREN 183. For course description see FREN 183.

179. Women in German Literature: Authors and Characters

Also listed as GERM 182. For course description see GERM 182.

185. 20th-Century Italian Women Writers

Also listed as ITAL 182. For course description see ITAL 182.

Philosophy Courses

58. Ethics and Gender

Also listed as PHIL 23 For course description see PHIL 23.

119. Feminist Political Theory

Also listed as PHIL 129. For course description see PHIL 129.

133. Love and Relationships in Classical Antiquity

Also listed as CLAS 141 and PHIL 141D. For course description see CLAS 141.

184. Feminism and Ethics

Also listed as PHIL 120. For course description see PHIL 120.

Political Science Courses

118. Women and Law (this topic only)

Also listed as POLI 171. For course description see WGST 118.

180. Women and Politics

Also listed as POLI 154. For course description see POLI 154.

Public Health Courses

32. Women's Health

Also listed at PHSC 11. For course description see PHSC 11.

33. Human Sexuality

Also listed as PHSC 28. For course description see PHSC 28.

131. Race, Class, Gender, and Public Health

Also listed as PHSC 125. For course description see PHSC 125.

187. Structural Racism: Race, Power and Resistance in the United States

This seminar addresses systems of structural racism as they condition possibilities and threats to the health and well-being of publics in the United States. Structural racism is understood as 'the accumulation and incorporation of long-standing racialized practices into social and economic structures.' These patterns of racial discrimination work alongside gendered systems of heteronormativity to reinforce white supremacy and the inequitable distribution of social and economic resources, influencing multiple pathways to health and well-being. Through in-depth, discussion-based engagement with case studies of structural racism in interconnected systems of education, health, criminal justice, the law, policing, housing and employment, the seminar considers the critical role of anti-Black racism and white supremacy in entrenching racial inequality and harm at the systems level. Students will design projects to apply scholarship to critical anti-racist praxis. Also listed as PHSC 187. Enrollment by permission of instructor (2 units)

Religious Studies Courses

21. Women in the Hebrew Bible

Also listed as SCTR 28. For course description see SCTR 28.

44. Sex and Spirituality in Latinx Theologies

Also listed as TESP 59. For course description see TESP 59.

46. Gender in Early Christianity

Also listed as SCTR 26. For course description see SCTR 26.

47. Biblical Women and Power

Also listed as SCTR 39. For course description see SCTR 39.

48. Women in Christian Tradition

Also listed as TESP 79. For course description see TESP 79.

142. Women and Buddhism from a U.S. Standpoint

Also listed as RSOC 109. For course description see RSOC 109.

145. Gender and Judaism

Also listed as RSOC 168. For course description see RSOC 168.

146. Religion, Gender, and Globalization

Also listed as RSOC 170. For course description see RSOC 170.

147. Postcolonial Perspectives on the New Testament

Also listed as SCTR 158. For course description see SCTR 158.

148. Gender and Sex in Biblical Interpretations

Also listed as SCTR 165. For course description see SCTR 165.

149. Feminist Theologies

Also listed as TESP 131. For course description see TESP 131.

151. Women's Theologies from the Margins

Also listed as TESP 175. For course description see TESP 175.

152. Mexican Popular Catholicism and Gender

Also listed as ETHN 129 and RSOC 139. For course description see ETHN 129 or RSOC 139.

153. The Bible and Empire

Also listed as SCTR 157. For course description see SCTR 157.

Sociology Courses

115. Race, Class, and Gender in the United States

Also listed as SOCI 153. For course description see SOCI 153.

128. Women and Social Change in Latin America

Also listed as SOCI 135. For course description see SOCI 135.

132. Sociology of Gender

Gender is a central organizing principle in social relations giving rise to institutional and social practices that distinguish between men and women on the basis of apparent difference and inequality. This course develops the sociological analysis of gender systems in contemporary American society. In this course, we will critically examine the multiple ways that gender structures the social world in which we live, and the way that race and sexuality interact

with gender. We will highlight social practices at multiple levels of analysis, including biological and socialization processes at the individual level. Next, we will explore how gender shapes the interactions between and among women and men, creating and recreating gender. We will then use this multilevel framework to examine the workings of gender in the American workplace and as individuals balance work and family obligations. Finally, we will conclude by considering the possibilities of a degendered or less-gendered society. The central goal throughout the course is to understand how gender roles and attitudes shape social structure, and how gender inequalities are maintained in everyday social situations. Also listed as SOCI 131.(5 Units)

181. Women and Men in the Workplace

Also listed as SOCI 152. For course description see SOCI 152w.

182. Sociology of Family

Also listed as SOCI 157. For course description see SOCI 157.

188. Gender and Justice

Also listed as SOCI 162. For course description see SOCI 162.

Theatre Courses

139. Gender and Performance

Also listed as THTR 167. For course description see THTR 167.

183. Fashion, Politics, and Issues of Gender

Also listed as THTR 151. For course description see THTR 151.

Arabic, Islamic, and Middle Eastern Studies

Director: David Skinner

The interdisciplinary minor in Arabic, Islamic, and Middle Eastern Studies (AIMES) provides an introduction to the various cultures, peoples, and religions---Muslim, Jewish, and Christian, in addition to other faith traditions---of the Middle East, as well as the diverse forms of Islamic practice and local religious customs in Muslim societies throughout the world. This program also encourages the study of diaspora and immigrant communities where Islamic and Middle Eastern populations constitute a religious or ethnic minority.

Students enrolled in this minor have the opportunity to sample a variety of methodologies and academic disciplines---including anthropology, art history, literary criticism, history, political science, and religious studies---that address the Middle East in particular and the Islamic world at large.

The AIMES interdisciplinary minor is ideal for students who want to develop the intellectual resources for thoughtful and informed engagement with current issues in the Middle East and the Islamic world. AIMES is also well suited for students considering work with overseas aid organizations, government and military service, international business, or graduate programs in international studies.

Requirements for the Minor

Students must complete a total of nine courses---six culture courses and three Arabic language courses---for a minor in AIMES. Details concerning these requirements are as follows:

Culture Courses

Students must take a total of six culture courses relating to AIMES (two lower-level and four upper-level) from at least three different departments. No more than two courses may be counted for AIMES credit from the department in which a student majors. A maximum of three courses for AIMES credit may be taken from any one department.

Arabic Language

Three quarters of Arabic are required. Students with prior knowledge of a relevant language may take a test that certifies that they have fulfilled this requirement.

Senior Project

In lieu of one of the six required courses in Middle Eastern and Islamic cultures, students may elect to do an independent study/reading course on a project in consultation with a member of the AIMES Faculty Advisory Council. This project may entail fieldwork with local Islamic and diaspora Middle Eastern communities in the Bay Area.

Students enrolled in the AIMES minor are strongly encouraged to participate in SCU-approved study abroad programs that pertain to Arabic, Islamic, and Middle Eastern studies. Before enrolling in any such program, students should check with the director and faculty members of the AIMES minor as well as the Global Engagement Office.

Anthropology Courses

ANTH 156. Anthropology of Muslim Peoples and Practices

ANTH 187. Middle East: Gender and Sexuality

ANTH 188. Middle East: Culture and Change

Art History Courses

ARTH 24. From Damascus to Dubai: A Survey of the Visual Culture of the Middle East

ARTH 121. Venice and the Other in the Renaissance

ARTH 164. Islamic Art, 600--1350 CE

Ethnic Studies Courses

ETHN 80. Introduction to the Study of Muslim and Arab Americans in the United States

History Courses

HIST 120. The Crusades: Christian and Muslim Perpectives

HIST 144S. Islam in Africa

Modern Languages and Literatures Courses

ARAB 1. Elementary Arabic I

ARAB 2. Elementary Arabic II

ARAB 3. Elementary Arabic III

ARAB 21. Intermediate Arabic I

ARAB 22. Intermediate Arabic II

ARAB 23. Intermediate Arabic III

ARAB 50. Intermediate Arabic Conversation

ARAB 137. Arabic Language, Culture and Identity

ARAB 171. Reading the Quran

ARAB 185: Arab American Experience

ARAB 199. Directed Reading

FREN 114. Literatures and Cultures of the Maghreb

FREN 173. Immigration, Race, and Identity in Contemporary France

Political Science Courses

POLI 139. Religion and Politics in the Developing World

POLI 142. Politics in the Middle East

Religious Studies Courses

RSOC 7. South and Southeast Asian Religious Traditions

RSOC 67. Film and Judaism

RSOC 81. Islam

RSOC 126. Sufi Islam and Christian Mysticism

RSOC 174. Jewish Philosophy: Athens and Jerusalem

RSOC 182. Shia Islam in the Contemporary World

RSOC 190. Islam: Reformation and Modernity

SCTR 19. Religions of the Book

SCTR 48. Racializing Jesus

TESP 88. Hope and Prophetic Politics

Asian Studies

Director: Gregory P. Corning

The Asian Studies minor is designed to provide an introduction to the cultures and languages of Asia. Courses in several disciplines enable students to sample different dimensions of Asian cultures as well as focus on a specific area of interest. Students are strongly urged to spend a summer or quarter in one of the University-approved study abroad programs in Asia.

Requirements for the Minor

Students must complete the following requirements for a minor in Asian studies:

Culture Courses

- Two lower-division courses and four upper-division courses (maximum of two upper-division courses from a student's major and three in any one department) selected from the list of approved courses
- Culture courses include approved offerings in disciplines including art history, communication, history, philosophy, political science, and religious studies

Language Courses

- Completion of the third course of the first-year, college-level sequence in an Asian language (Japanese and Chinese are offered) or demonstration of an equivalent level of proficiency by passing a language proficiency examination supervised by the Department of Modern Languages and Literatures
- Non-native speakers of English may satisfy this requirement by presenting professionally recognized documentation of proficiency in an Asian language

Upper-Division Courses: Asian Studies

ASIA 199. Directed Reading/Directed Research

Note: In addition to the courses listed below, many departments offer occasional special topics, directed reading, and seminar courses on Asian studies topics. Students should consult with the program director to determine the applicability of these courses, as well as study abroad courses, to the minor.

Art History Courses

ARTH 11A. Cultures & Ideas I (China on the Silk Roads I)

ARTH 12A. Cultures & Ideas II (China on the Silk Roads II)

ARTH 26. Art! Making China Modern

ARTH 66. Fabricating Nature in East Asia

ARTH 81. Modern Indian Art

ARTH 166. From Emaki to Manga

ARTH 181. Animated Spaces: The Hindu Temple and its Global Forms

Communication Courses

COMM 189A. Communication, Identity, and Globalization in Asia

History Courses

HIST 11A. Cultures & Ideas I (Across the Pacific I)

HIST 12A. Cultures & Ideas II (Across the Pacific II)

HIST 55. Southeast Asia

HIST 92. Modern East Asia

HIST 146A. Medieval and Early Modern Japan

HIST 146B. Modern Japan in the World

HIST 147A. Wonders of Ancient China

HIST 147B. Modern China

HIST 150. Gender and Sexuality in East Asia

HIST 151. Imperialism in East Asia

HIST 152. History of Christianity in China

HIST 159. Special Topics in Asian History

HIST 197. Senior Project

HIST 199. Directed Reading/Directed Research

Modern Language and Literatures Courses

CHIN 1--3. Elementary Chinese I, II, III

CHIN 21--23. Intermediate Chinese I, II, III

CHIN 100--102. Advanced Chinese I, II, III

NEW CHIN 125. Language of Love and Affection in Sinophone Films

CHIN 127. Chinese History and Culture

CHIN 137. Modern Chinese Culture

CHIN 197. Special Topics

CHIN 198. Directed Study

CHIN 199. Directed Reading

JAPN 1--3. Elementary Japanese I, II, III

JAPN 21--23. Intermediate Japanese I, II, III

JAPN 100--102. Advanced Japanese I, II, III

NEW JAPN 103. Japanese Culinary Culture

JAPN 113--115. Readings in Japanese I, II, III

JAPN 137. Japanese Culture

JAPN 198. Directed Study

JAPN 199. Directed Reading

Philosophy Courses

PHIL 11A. Cultures & Ideas I (Beauty, Truth, and Goodness I)

PHIL 12A. Cultures & Ideas II (Beauty, Truth, and Goodness II)

NEW PHIL 21B. Introduction to Ethics in Chinese Philosophy

PHIL 174. Uncertainty, Conflict, and Self-Development: Chinese Perspectives

PHIL 175. Chinese Philosophy

PHIL 176. Buddhist Philosophy

PHIL 177. Indian Philosophy

Political Science Courses

POLI 122. Asia-Pacific International Relations

POLI 199. Directed Reading

Religious Studies Courses

RSOC 7. South and Southeast Asian Religious Traditions

RSOC 10. Asian Religious Traditions

RSOC 11. Asian Christianity

RSOC 85. Hinduism

RSOC 86. Buddhism

RSOC 87. Buddhism and Film

RSOC 88. Chinese Religions

RSOC 106. Zen in Theory and Practice

RSOC 115. Tibetan Buddhism: A Cultural History

RSOC 130. East Asian Buddhism

RSOC 199. Directed Reading and Research

NEW TESP 194. Interreligious Studies

Biotechnology

Director: David Hess

Biotechnology is revolutionizing the practice of medicine and agriculture and is having an impact on fields as diverse as human reproduction, forensics, manufacturing, and pollution control. The minor in biotechnology is designed for students interested in gaining insight into the scientific background of biotechnology, exploring its potential for the future, and obtaining practical experience in laboratory techniques used in biotechnology research and its applications. This course of study is most useful for students contemplating careers in the biotechnology industry and students who plan to pursue advanced degrees in related areas such as molecular biology, cell biology, or biochemistry. The minor will be most easily completed by students majoring in biology, public health science, or chemistry and biochemistry; other majors should consult with their advisors and begin the course of study as early as possible in order to complete the requirements in a timely manner. Twelve courses are required for the minor, at least seven of which must have laboratory components.

In addition to coursework, students are required to complete a research internship at a biotechnology company, a research institute, or an academic laboratory focusing on an area relevant to biotechnology (i.e., cell biology, molecular biology, biochemistry, genetics, microbiology, or genomics). Internships must be approved in advance by the director. The minimum length of the internship is 10 weeks of full-time work or 400 hours total time if done on a part-time basis. Students must prepare a written report on the project upon completion to be evaluated by the director.

Requirements for the Minor

Students must complete the following requirements for a minor in biotechnology:

Scientific Foundations of Biotechnology

- BIOL 1A, 1B, 1C, 175
- CHEM 11, 12, 31, 32, 33

Ethical Issues

- BIOL 171

Advanced Laboratory Skills

- BIOL 176, 177, 191, or CHEM 143

Contemporary Topics in Biotechnology and Related Fields

- BIOL 189

One Elective Course

- BIOL 110, 113, 116, 172, 174, or CHEM 141

Note: BIOL 171 and BIOL 189 are a linked pair of courses and must be taken in the same quarter. Additionally, if BIOL 171 or 189 is not offered during the academic year, any SCU course focused on medical ethics may be used as a replacement, with the consent of the director of biotechnology.

Catholic Studies

Director: Robert W. Scholla, S.J.

The minor in Catholic studies, open to students from all departments, is an interdisciplinary program for the study of the intellectual tradition of the Catholic faith. The minor is designed for intensive study of Catholicism as a faith embedded in many cultures and for the critical retrieval of the Catholic intellectual tradition through dialogue with contemporary thought under the rubrics of a variety of academic disciplines. Catholic studies minors are assigned a faculty mentor who guides them through the program. In conjunction with the Ignatian Center for Jesuit Education, the Catholic Studies program sponsors intellectual, cultural, social, and religious opportunities for both students and faculty.

Requirements for the Minor

Students must complete the following requirements for a minor in Catholic studies:

Foundational Courses

- Two courses in Catholic theology from offerings in the Department of Religious Studies
- One approved course from the Cultures & Ideas Series (or equivalent)

Faith and Culture Courses

- One course that explores Catholicism role in world history
- One course that explores Catholicism contributions in the arts or in literature
- One specialized course in philosophy or an upper-division course in theology
- Two approved elective courses in the study of Catholic societies or cultures

Colloquium Course:

ASCI 150: "Catholic 101"

At any point during their undergraduate studies, students may participate in an interdisciplinary introductory colloquium. This colloquium meets one quarter each year for discussion on a range of relevant topics pertinent to the Catholic intellectual tradition and Catholic imagination. While this course is open to all Santa Clara students, first priority is given to Catholic Studies minors. (2 units)

Gerontology Certificate Program

Director: Patricia M. Simone

Gerontology is the study of the aging process and adults over 65. Majors from any field may enhance their credentials and their ability to work with this population through the Gerontology Certificate Program. Students examine influences of the roles and quality of life of aged adults as well as physical and psychological aspects of aging. Courses investigate perceptions about aging and aged adults in various societies and how the experiences of older people differ according to culture, ethnicity, class, and gender. Students complete a practicum that gives them experience working with aged adults. Completion of the Gerontology Certificate Program is noted on a student's transcript and with a certificate acknowledging their achievement.

Requirements for the Certificate

Students must complete the following requirements to receive a certificate in gerontology:

- One lower-division course from the following: SOCI 1 (Principles of Sociology), ANTH 3 (Introduction to Social and Cultural Anthropology), PSYC 1 or PSYC 2 (General Psychology I or II), or PHSC 21 (Health and Aging)
- Four upper-division courses from the following (one must be ANTH 172 or PSYC 196): ANTH 172 (Anthropology of Aging), PSYC 196 (Psychology of Aging), PSYC 117 (Health Psychology), PSYC 119 (Psychology of Death, Dying, and Loss), SOCI 172 (Management of Healthcare Organizations), SOCI 138 (Populations of India, China, and the United States), SOCI 148 (Stakeholder Diversity in Contemporary American Organizations), TESP 157 (Ethics in the Health Professions), or any gerontology-related course with approval of the director
- A gerontology-related practicum approved by the director (typically completed during your senior year)

International Studies

Director: Susan Popko

The **International Studies Minor** https://www.scu.edu/globalengagement/about/international-studies-minor/ enables students to study global issues or problems, or focus on a geographic area---Africa, Europe or Latin America - through an interdisciplinary lens. The International Studies Minor provides a framework for adding a global dimension to a major, or provides preparation for a career working with diverse, intercultural teams. The minor consists of: four Foundation Courses; three Emphasis Courses; plus a Capstone. Students have the opportunity to customize their interests through either the *Global Thematic Emphasis,* or *Area Studies Emphasis*.

Requirements for the Minor

For the minor in international studies, students must complete:

- Four Foundation courses, and
- Three Global Thematic or Area Studies Emphasis courses, and
- A Capstone course

Foundation courses

Choose two social science courses below, one of which must be from courses indicated with an \"*\", and two upper-division modern language courses in a language related to the chosen Global Thematic or Area Studies emphasis, or the equivalent, as demonstrated through placement examination through the Modern Languages Department (MODL)

Two social science courses below, one of which must be from courses indicated with an \"*\":

- *ANTH 3 Introduction to Cultural Anthropology**
- ANTH 50 World Geography*
- ANTH 156 Anthropology of Muslim Peoples and Practices
- ANTH 159 Globalization and Cultural Change
- COMM 2 Media in a Global World
- *COMM 107A Intercultural Communication**
- COMM 162B Visual Cultural Communication
- ECON 3 International Economics, Development & Growth
- ECON 181 International Trade
- ECON 182 International Finance and Open Economy Macroeconomics
- *POLI 2 Introduction to Comparative Politics**
- *POLI 25 Introduction to International Relations**
- POLI 121 Politics of the Global Economy
- POLI 132 Transnational Political Movements
- *SOC 133 Politics and Society in Developing Societies**

- *SOC 134 Globalization and Inequality**
- *SOCI 137 Global Development and Social Change*

The Global Thematic Emphasis (GTE)

Choose three courses, at least two of which must be upper division, and no more than one course which may be in the student's academic major. The (GTE) offers students the opportunity to focus on an international issue or problem that transcends a single nation or geographic area. In the GTE, students may choose a topic such as:

- Poverty and development
- Global health
- International law and human rights
- Global sustainability and climate change
- Peace and conflict resolution
- Cross-cultural communication
- International social justice in the arts
- Community arts in a global context
- Technology and globalization
- The global dimensions of natural and physical sciences
- Diplomacy
- Gender and society
- International women's rights

> **Examples of GTE courses, in addition to Foundation courses above:**

- ANTH 4 Vanished Peoples and Lost Civilizations
- ANTH 160 The Global Coast
- ANTH 180 Study of Selected Cultures
- COMM 2 Media in a Global World
- COMM 105A Multicultural Folktales and Storytelling
- ENGL 154 Environmental Literature
- ENGL 153 LBGTQ Studies: Global Perspectives
- PHSC 103 Advanced Global Health

OR

The Area Studies Emphasis (ASE)

Choose three courses, at least two of which must be upper division and no more than one of which may be in the student's academic major. The ASE allows students to focus on a selected geographic area; Africa, Europe, or Latin America. The ASE offers an interdisciplinary introduction to the cultures, languages, politics, and global challenges facing the region. The Area Studies emphasis with a focus on Africa also includes study of the African diaspora and related issues of slavery, colonialism, and globalization. Courses for area studies in

- **AFRICA:** ECON 134, 135; ENGL 35, 130, ENVS 149; ANTH 50; 157, 164, 165, 166; FREN 111, 112, 113, 114; HIST 12A, 91, 104, 140, 141, 141, 142, 1442, 149, 157, 193S; POLI 146; RSOC 19, 46, 81, 170, 191; SOCI 133, 135; TESP 184
- **EUROPE:** ARTH 11A; CLAS 19; ENGL 150; FREN 108, 110, 111, 112, 117, 120, 130, 140, 150, 160, 161, 170, 171, 173 , 170, 171, 172, 173, 175, 183, 184, 185, GERM 110, 111, 112, 113, 115, 130, 140, 141, 150, 151, 160, 174, 183; INTL 110; ITAL 12A, 110, 111, 113, 120, 121, 125, 180, 182, 183; MUSC 139; PHIL 123; 133, 137, 145; POLI 118, 119, 119L, 132, 134, 144, 145; 149; SPAN 125, 150, 151, 175;
- **LATIN AMERICA:** ANTH 184, 185; ECON 130, ENGL 36, 136; HIST 64, 85, 161, 162, 163, 164S, 166, 169, 196S; POLI 136, 137, 140, 196; SOCI 133, 135; SPAN 22, 112, 113, 130, 131, 132, 135, 137, 139, 140, 141, 145, 147, 148, 149, 156; TESP 59

AND

Capstone Course

A minimum of 20 contact hours in a class, academic internship, or community-based learning experience abroad. The course must include academic oversight and assessment. This requirement may be fulfilled by a minimum of one quarter study abroad related to the chosen Area Studies or Global Thematic emphasis. Students should communicate with the Associate Provost for International Programs to request approval for alternative capstone courses.

Latin American Studies

Director: Alberto Ribas-Casasayas, Department of Modern Languages and Literatures

Through the study of cultures, societies, and history of the Latin American region and Latin diaspora, the interdisciplinary minor in Latin American Studies (LAS) helps students develop:

- global competence
- cross-cultural awareness and communication
- appreciation of social diversity and inclusion
- understanding of the connections between Latin America and Latin American immigrant communities in the United States and other parts of the world.

These skills will be of service in careers in business, government and public service, international marketing, law, and nonprofit organizations. It also serves as a substantial foundation for graduate studies in disciplines such as Anthropology, History, Political Science, and Sociology, as well as any cultural or interdisciplinary studies with a focus on Latin America and other regional studies.

The minor requires demonstrated competence in one language spoken in Latin America, two foundational courses that offer an overall view of the region, and completion of more focused optional courses dealing with specific countries or themes.

Requirements for the Minor

To qualify for the minor, students must meet a language requirement and complete seven courses in the field of Latin American Studies. At least four of those must be upper-division courses. Courses must be chosen from at least three different departments.

Substantial credit from study abroad will be considered for course credit by the LAS director. An immersion experience relevant to Latin America, when complemented with significant written work upon the student's return, may also be considered for credit.

Language Requirement

Successful completion of an upper-division SPAN course, level 100 or above; or equivalent Spanish or Portuguese language proficiency demonstrated by passing an examination given by the Department of Modern Languages and Literatures; or successful completion of one upper-division course in Latin American literature and culture taught in Spanish.

Note: Any upper-division SPAN course taught in Spanish may be used to meet the language requirement, but only courses dealing with Latin America count towards the 7-course requirement.

Foundational Course I

The first group of foundational courses serves as an introduction to the Latin American region before the contemporary period. To meet this requirement, students must take one course dealing with Latin America as a region, focusing on any defined period or topic between the Precolumbian Era and late 19th century.

Some recent offerings include:

- ANTH 185. Peoples of Latin America
- ANTH 186. Mesoamerican Prehistory

- HIST 166. Latin America: Empires
- ARTH 11. Art of Contact: New Worlds.
- ARTH 25. Indigenous Visions.

Foundational Course II

The second foundational requirement serves as an introduction to Latin American culture and civilization focusing on the formation of Latin American nation-states in the 19th century and the forces shaping Latin American nations in the 20th and 21st centuries. A course dealing with Latin America as a region, in a period from the wars of independence to present, will meet this requirement.

Some recent offerings include: :

- HIST 95. Modern Latin America
- SPAN 137. Latin American Cultures and Civilizations
- SPAN 146. Latin America through the Documentary Lens
- SPAN 147. Cinema, Politics, and Society in Latin America

Students may take more than one Foundational I or II course. These shall go towards fulfilling the elective requirement.

In very specific circumstances, a course may be approved for either F-I or F-II, but under no circumstance may it be used to fulfill both requirements.

Latin American Electives. Four elective courses. Below is a partial list of courses recently taught at SCU that may be used to fulfill this requirement. Note the list may not be complete. Any course of instruction dealing in its entirety or substantially with a Latin American country or the region as a whole may count towards fulfilling a Latin American elective requirement. A course that has been used to fulfill a foundational requirement cannot be used to meet an elective requirement.

Anthropology Courses

ANTH 146: Anthropological Perspectives on Colonial California

ANTH 184. Religion and Culture in Latin America

ANTH 185. Peoples of Latin America

ANTH 186. Mesoamerican Prehistory

Art History Courses

ARTH 11. Art of Contact: New Worlds.

ARTH 25. Indigenous Visions.

ARTH 152. Arts of Ancient Mexico: From Olmec to Aztec

English Courses

ENGL 56. Global Literatures* (*when focusing on Latin America)

ENGL 156H. Global Literatures* (*when focusing on Latin America)

Environmental Studies Courses

ENVS 141. Environmental Biology in the Tropics

ENVS 144. Natural History of Baja California

ENVS 146. Agriculture, Environment, and Development: Latin America

History Courses

HIST 95. Introduction to the History of Modern Latin America .

HIST 112 The Haitian Revolution in a Global Context.HIST 161. Modern Mexico

HIST 162. Argentina

HIST 166. Latin America: Empires

HIST 169. Special Topics in Latin American History

HIST 196S. Seminar in Latin American History

Modern Languages and Literatures Courses

SPAN 112 / SPAN 112EN. Mexican Culture

SPAN 113. The Revolution in Mexican Culture

SPAN 114. Culture and Society of the U.S.-Mexico Border

SPAN 132 - Hispanic Voices for Social Change

SPAN 135. Colloquium: Latin American Literature and Culture

SPAN 136. Contemporary Latin American Short Story

SPAN 137. Latin American Cultures and Civilizations

SPAN 139. Haunted Literature: Ghosts and the Talking Dead in Latin American Narrative

SPAN 142. Narconarratives

SPAN 143. The Detective Short Story

SPAN 146. Latin America through the Documentary Lens

SPAN 147. Cinema, Politics, and Society in Latin America

Political Science Courses

POLI 136. Politics in Central America and the Caribbean

POLI 137. Politics in South America

POLI 147. Politics of Mexico Japan

Public Health Course

PHSC 170. Public Health in El Salvador

Religious Studies Courses

RSOC 33. Maya Spirituality

RSOC 91. Native Spiritual Traditions

RSOC 136. Religion in Latin America

RSOC 139. Mexican Popular Catholicism and Gender

TESP 60. Hispanic Popular Religion

TESP 65. U.S. Hispanic Theology

TESP 109. Hispanic Spirituality: Guadalupe

TESP 165. Romero and the Salvadoran Martyrs

Sociology Courses

SOCI 134 Globalization and Inequality

SOCI 135. Women and Social Change in Latin America

SOCI 137 Global Development and Social Change* (*when focusing on Latin America)

In lieu of one of the electives, juniors and seniors can design an independent study with the approval of the director of Latin American Studies and the supervision of an affiliated faculty member.

Latin American Diaspora Elective

Students are required to complete one course focusing on Latin communities outside of Latin America. Below is a list of recently offered courses at Santa Clara. This requirement can also be fulfilled with a seminar/senior thesis course or an independent study course, with the approval of the program director and the supervision of affiliated Faculty.

ENGL 36. Introduction to Latino/a Literature

ENGL 136. LatinX Literature and Cultural Studies

ENGL 137. Native American Literature

ETHN 20. Introduction to Chicana/o/x and Latina/o/x Studies

ETHN 112. Indigenous/Native Peoples of the United States and Mexico

ETHN 120. Immigration to the United States

ETHN 121. Chicana/o/x Families and Gender Roles

ETHN 122. Chicana/o/x Communities in the United States

ETHN 125. Latinas/os/xs in the United States

ETHN 126. Latina/o/x Immigrant Detention and Incorporation in the Age of Terrorism

ETHN 165. Community-Based Research Methods

ETHN 186: Seminar - Contemporary Latina/o/x Immigration Issues

RSOC 12. Latinos and Lived Religion in the United States

RSOC 139. Mexican Popular Catholicism and Gender

SOCI 150. Immigrant Entrepreneurship in the United States

SOCI 180. Immigrant Communities

SPAN 176. Spanish in the U.S.

TESP 59 / WGST 44 / ETHN 25: Sex and Spirit in LatinX Theology

TESP 60. Hispanic Popular Religion

TESP 65. U.S. Hispanic Theology

TESP 114: LatinX Pentecostal Christianity

THTR 14. Chicana/o and Native American Theatre

Final notes

Students are strongly encouraged to focus on Latin American/ Latino peoples and cultures for the experiential learning requirement in the new Core Curriculum. Students are encouraged to participate in a study abroad program in Latin America, as courses abroad may be credited towards minor requirements. Students should meet with the director of the Latin American Studies program before enrolling in Latin American study abroad programs.

Medieval and Renaissance Studies

Director: Jacquelyn Hendricks

The minor in Medieval and Renaissance studies offers students from all departments a cross-disciplinary and interdisciplinary program of study in the Middle Ages and Renaissance. These periods lay on the edge of modernity, when the distinctive characteristics of the contemporary world began to form and when major new connections were made between Europe and Africa, the Middle East, East Asia, and the Americas. Study of these periods from many different points of view affords an opportunity to gain valuable perspectives on the ways that Medieval and Renaissance people, events, and institutions helped to shape the modern world. Completion of the minor is noted on the student's transcript, and students receive a certificate acknowledging their accomplishment.

Requirements for the Minor

Students must complete the following requirements for a minor in Medieval and Renaissance studies:

- Seven courses selected from three different departments with a maximum of three lower-division courses.
- One of the upper-division courses must require an interdisciplinary research paper based on source materials and secondary works dealing with a topic rooted in the Medieval and/or Renaissance periods. The research paper requirement may be fulfilled by enrolling in MRST 199 under the supervision of an affiliated faculty member and the program director.
- The study of French, German, Greek, Italian, Latin, and/or Spanish is strongly recommended but not required. Students should consult with the program director to determine the cluster of courses best suited to their personal interests and preparation.

Medieval and Renaissance Studies Courses

199. Independent Study

Directed reading and research in source materials and secondary works dealing with selected problems rooted in the Medieval and/or Renaissance periods, culminating in an interdisciplinary paper. Prerequisite: Permission of program director and instructor. (2--5 units)

Note: In addition to the courses listed below, certain sections of Cultures & Ideas 11A and 12A may be applied to the minor. Many departments offer occasional special topics, directed reading/directed research, and seminar courses on Medieval and Renaissance topics. Students should consult with the program director to determine the applicability of these to the minor, as well as courses taken at other institutions or while studying abroad.

Anthropology Courses

ANTH 146. Anthropological Perspectives on Colonial California

Art History Courses

ARTH 22. Art in the Age of Exploration: Introduction to Early Modern Europe

ARTH 110. Early Christian and Byzantine Art

ARTH 114. Early Medieval Art

ARTH 120. Keeping up with the Medici: Fame and Family in Renaissance Florence

ARTH 121. Venice and the Other in the Renaissance

ARTH 122. Papal Rome: Power, Intrigue, and the Arts

ARTH 128. The Glories of Baroque Rome: Caravaggio, Artemesia, and Bernini

ARTH 164. Islamic Art, 600-1350 CE

Classics Courses

CLAS 135. Medieval Latin

English Courses

ENGL 41. Introduction to British Literature I

ENGL 54. Shakespeare

ENGL 141. Medieval Literature

ENGL 143. Renaissance Literature

ENGL 149. British Drama

ENGL 151A, B, and C. Studies in Shakespeare

ENGL 190. Senior Seminar (on Medieval and Renaissance topics)

History Courses

HIST 11A. Civilization and the City

HIST 91. Africa in World History

HIST 104. World History until 1492

HIST 117. State and Church in the Middle Ages, 1000--1450

HIST 118. Representation, Rights, and Democracy, 1050--1792

HIST 120. The Crusades: Christian and Muslim Perspectives

HIST 126. Conflicts in Medieval Christianity

HIST 127. The World of St. Francis

HIST 146A. Medieval and Early Modern Japan

HIST 147A. Premodern China to 1600

HIST 166. Latin America: Empires

Modern Languages and Literature Courses

FREN 115. Major Works of French Literature I

FREN 120. Moyen Age

FREN 130. Humanism and the Renaissance

ITAL 110. Italian Civilization I

ITAL 120. Survey of Italian Literature I

ITAL 130. Dante, La Divina Commedia I

ITAL 131. Dante, La Divina Commedia II

ITAL 140. Duecento, Trecento

ITAL 150. Quattrocento, Cinquecento (Rinascimento)

SPAN 120. Major Works of Spanish Literature I

SPAN 122. The Spanish Picaresque Novel

SPAN 123. Siglo de Oro Drama

SPAN 130. Survey of Latin American Literature I

SPAN 165. Cervantes: Don Quijote

Music Courses

MUSC 42/142. Concert Choir (Performance)

MUSC 43/143. Chamber Singers (Performance)

MUSC 190. Music of the Middle Ages

MUSC 191. Music of the Renaissance

Philosophy Courses

PHIL 14. History of Western Philosophy: Classical and Medieval

PHIL 124. The Natural Law Tradition

PHIL 125. Aristotle and Aquinas on Justice

PHIL 142. Medieval Philosophy

Religious Studies Courses

SCTR 26. Gender in Early Christianity

TESP 27. Lovesickness in Christian Spirituality

SCTR 65. Early Christianity

TESP 79. Women in Christian Tradition

TESP 82. Witches, Saints, and Heretics: Religious Outsiders

TESP 118. Clare of Assisi and Ignatius of Loyola

TESP 143. Theology and Ethics of Thomas Aquinas

Theatre Courses

THTR 116. Shakespeare's Tragedies

THTR 117. Shakespeare's Comedies

THTR 118. Shakespeare Studies

THTR 120. Acting Styles I: Shakespeare

Women and Gender Studies Courses

WGST 46. Gender in Early Christianity

Musical Theatre

Director: Barbara Murray

The Musical Theatre Minor offers experience and training in music, theatre, and dance, as well as musical theatre history. The objectives of this program include entry-level proficiency for a career in performance, enhancement in teaching, or further training in graduate school; audition techniques; performance of acting, singing, and theatrical dance; and knowledge of the cultural history and various forms of musical theatre. Students may, through repertoire choices decided in consultation with their instructors, focus their vocal work with emphasis on a Broadway or more Opera style.

Requirements for the Minor

All students must complete the following:

- Music Theory: One course each in Music Theory and Aural Skills.\

  > Suggested: MUSC 1 and 1A. Placement tests may be taken to determine if a higher level is appropriate.

- Singing: MUSC 34, and three quarters of on-campus private voice instruction. (Placement test required. If placement test determines a higher level of proficiency, an additional three quarters of on-campus private voice instruction may be substituted for the MUSC 34 requirement.)
- Acting: One of THTR 8, 10, or 24,
- Dance: Four units in Dance Technique (DANC 40-47). DANC 40 and 41 (or higher level depending upon proficiency) recommended for those interested in Broadway.

In addition to the above, students must complete the following:

- THTR 123 Acting Styles: Musical Theatre (prerequisite: THTR 8 or 10 and 24, or permission of Instructor)

AND

- Two of the following: THTR 165, or THTR 80/180, or DANC 55/155, or MUSC 53/153

Pre-Health Sciences

Advisor: Steven L. Fedder

Santa Clara University has an excellent reputation for preparing students for careers in the health sciences. Most incoming students tend to be focused on either allopathic medicine or dentistry, but a much broader spectrum of careers can be equally or more attractive including osteopathic medicine, physical therapy, optometry, pharmacy, physician assistant, nurse practitioner, public health professional, and others. A Santa Clara education provides ample opportunity to acquire the academic foundations in natural science required by medical schools, and its broad liberal arts Core Curriculum also serves to develop the communication, personal interaction, and analytical skills needed both during medical school and in one's subsequent medical practice.

Although Santa Clara does not have a pre-med major, the courses prescribed by the Council of Education of the American Medical Association can be incorporated into several academic majors.

Most medical schools require:

- One year of general chemistry (CHEM 11, 12, and)
- One year of organic chemistry (CHEM 31, 32, and 33)
- One year of biology (BIOL 1A, 1B and 1C)
- One year of physics (PHYS 11, 12, and 13 or PHYS 31, 32, and 33)
- One year of mathematics, typically calculus (MATH 11 and 12), and a statistics course

In addition, many students become more skilled and competitive by enrolling in two or three upper-division science courses, often but not exclusively in biochemistry, genetics, and human physiology, which are helpful in preparing for the Medical College Admission Test (MCAT). The combination of Core Curriculum requirements with the University's focus on community involvement and issues of diversity will prepare students well for the recently revised MCAT 2015, with its greater emphasis on social, economic, and psychological determinants of health. The choice of academic major is much less important than completing the coursework above; however, many pre-health students select a natural science major such as biology, biochemistry, chemistry, neuroscience, or public health science. Students should thoroughly examine the Pre-Health Advising website and should maintain regular contact with the pre-health advisor throughout their undergraduate years for assistance with adjusting to college academic rigor and social life; developing an appreciation of the wide array of available health care careers; achieving a balance between academics, social life, work, health community volunteering, and internships; selecting the relevant entrance examinations; and applying to graduate health science programs.

Pre-Law

Advisors: Mike Dana, Melissa Donegan, Matthew Harrigan, Diana Morlang, Lawrence Nelson, Terri Peretti

Santa Clara University provides a wide range of opportunities for undergraduates to build a strong pre-law foundation. Early in their undergraduate program, pre-law students should consult not only with their major advisor but also with one of the designated pre-law advisors to help determine whether or not a career in law matches their particular interests and strengths. Consultation with a pre-law advisor familiarizes the student with the rigors of law school, the practice of law, the burden of law school debt, and the means to best secure employment as an attorney. Advisors will help formulate a program to prepare students for the complexity of the application process, including preparation for the Law School Admission Test (LSAT). There is no specific major or curriculum required to qualify for law school admission. Successful law school applicants come from a diversity of majors such as anthropology, philosophy, communication, political science, physics, English, history, biology, and economics. However, to successfully prepare for the LSAT, students are advised to select courses that deepen reading comprehension and promote logical reasoning. Law school admissions officers generally recommend undergraduate preparation by selecting courses that demand discipline, analytical ability, research skills, close reading of texts, creativity, verbal skills, and precision in written and oral work. The departments of philosophy and political science offer a pre-law emphasis within the major (in philosophy, it is also available within the minor). Elective courses also provide valuable training and breadth of academic and analytical experience. Some elective courses strengthen specific abilities, while others provide perspective on legal issues and topics. Possible electives include, but are not limited to, the following:

Business Courses

BUSN 85. Business Law

Communication Courses

COMM 20. Public Speaking

COMM 170A. Communication Law

Economics Courses

ECON 126. Economics and Law

English Courses

ENGL 100. Writing in the Public Interest

ENGL 115. Argumentation

Environmental Studies Courses

ENVS 120. Introduction to Environmental Law and Regulation in the United States

ENVS 122. Environmental Politics and Policy

ENVS 124. Water Law and Policy

Ethnic Studies Course

Ethnic Studies. 127 Race and Mass Incarceration

Experiential Learning for Social Justice Courses

ELSJ 50. Law and Social Justice

Philosophy Courses

PHIL 17. Informal Logic

PHIL 30. Ethics and the Law

PHIL 43. Religion and American Law

PHIL 44. Free Speech, Hate Speech, and Civil Discourse

PHIL 45. Civility and Democracy

PHIL 108. Special Topics in Applied Ethics: The Moral and Legal Status of Prenatal Humans

PHIL 117. Bioethics and the Law

PHIL 118. Ethics and Constitutional Law

PHIL 119. Ethics and Criminal Law

PHIL 123. Philosophy of Law

Political Science Courses

POLI 45. Criminal Justice System

POLI 125. International Law

POLI 159. The Constitution and Liberty

POLI 160. The Constitution and Equality

POLI 161. Law and Politics in the United States

POLI 171/WGST. 118 Women and Law

Psychology Courses

PSYC 155. Psychology and Law

Sociology Courses

SOCI 159. Sociology of Crime

SOCI 160. Sociology of Law

SOCI 161. Sociology of Criminal Justice Systems

SOCI 162. Gender and Justice

SOCI 176. Elder Law

Theatre Courses

THTR 8. Acting for Nonmajors

THTR 21. Voice I: Voice, Speech, and Presentation Skills

Gender Studies Courses

Women's and Gender Studies 118. Gender and the Law in the U.S.

Women's and Gender Studies 189. Sex, Law, and Social Justice

Pre-Teaching

Advisor Sarah Hays

Santa Clara University is accredited by the California Commission on Teacher Credentialing to offer professional preparation for prospective elementary school, middle school, and high school teachers. The Department of Education in the School of Education and Counseling Psychology offers graduate programs for the multiple-subject credential for elementary grades and the single-subject credential for secondary grades. Each credential program includes content for teaching English learners that authorizes the credential holder to provide instruction for English language development and specially designed academic instruction in English within the subject area and grade level authorization. Bilingual authorization in Spanish is also available. The teaching credential program at SCU is combined with a Masters of Arts in Teaching (MAT) degree. Students interested in TK--12 teaching should consider completing an interdisciplinary minor in urban education offered through the College of Arts and Sciences.

The Future Teachers Project (FTP), formerly known as the Eastside Future Teachers Project, works with students from traditionally underrepresented groups throughout Silicon Valley and the greater Bay Area, who are interested in becoming teachers. Through innovative outreach and support programs, the goal is to develop leaders who will make an immediate impact on their communities. FTP scholars are generally recruited during high school and once at SCU, are considered for the FTP scholarship, which contributes to undergraduate studies and the credential/MAT program. The FTP is managed through the Child Studies Program in the College of Arts and Sciences.

Preparation for Multiple-Subject Credential

Students interested in a career in elementary or middle school teaching generally earn a bachelor's degree before entering into a post-graduate teacher credential program. Students who would like to teach TK--8 (self-contained classroom) in California are strongly encouraged to select from majors such as psychology, child studies, or sociology within the College of Arts and Sciences, though any undergraduate major is acceptable. The undergraduate program of study, including the Core Curriculum, should encompass the range of subjects taught in grade school and include courses that have field-based learning placements in settings that directly serve school-aged children. The SCU undergraduate Core Curriculum provides a broad education in English, mathematics, science, social science, the arts, and humanities, all of which will be valuable preparation to become an elementary school teacher. Students are recommended to pursue the interdisciplinary minor in urban education to participate in undergraduate pre-teaching coursework. Those requirements can be found in the Interdisciplinary Minors and Other Programs of Study section in this chapter. Students must demonstrate the subject matter competency component for the multiple-subject credential by passing the California Subject Examination for Teachers (CSET) for Multiple Subjects. Students must also demonstrate basic educational skills (see below for additional information on this requirement).

Preparation for Single-Subject Credential

Students interested in a career in secondary school teaching in a particular subject matter area are advised to fulfill the requirements of the academic major of their intended teaching specialization. California teaching credentials are available in the following subject areas: agriculture, art, biological sciences, business, chemistry, English, geosciences, health science, home economics, industrial and technology education, mathematics, music, physical education, physics, general sciences, social science, and world languages other than English. Students must demonstrate specific subject matter competency by passing the CSET in the subject area they desire to teach. Completing an undergraduate major in this subject area is not required but it is highly recommended. An undergraduate interdisciplinary minor in urban education is also recommended. Students must also demonstrate basic educational skills (see below for additional information on this requirement).

Requirements for Multiple-Subject and Single-Subject Credentials

The minimum requirements for the multiple-subject or single-subject teaching credential include:

- A bachelor's degree in a subject area from an accredited institution
- Demonstrated knowledge of the United States Constitution by completion of undergraduate coursework on the provisions and principles of the United States Constitution such as POLI 1 or HIST 96A, -or passage of an approved examination
- Demonstrated basic educational skills by completing one of the following: California Basic Educational Skills Test (CBEST); CSET: Multiple Subjects Plus Writing Skills Examination; CSU Early Assessment Program or the CSU Placement Examinations (English and Mathematics sections); Achieve Qualifying Score on the SAT or ACT; College Board Advanced Placement (AP) Examinations (English and Calculus or Statistics); Basic Skills Examination from a state other than California.
- Completion of an approved program of professional education, including field experience achieved through student teaching or internship
- Completion of a state-approved subject matter preparation program, or passage of the CSET, a subject-area competency examination, in the area one plans to teach
- For multiple-subject credential candidates only: Demonstrated knowledge of the various methods of teaching reading by passing the Reading Instruction Competence Assessment (RICA) examination

School of Education and Counseling Psychology Teaching Credential Program

The multiple-subject or single-subject teaching credential can be completed as part of the Masters of Arts in Teaching and Teaching Credential (MATTC) program. This program requires a fifth year of study following the bachelor's degree and qualifies the student for a preliminary teaching credential. The MATTC program includes graduate coursework in educational foundations, curriculum design, teaching methods, and supervised student teaching. Bilingual authorization in Spanish is also available. Students seeking additional information regarding the MATTC program with a multiple-subject or single-subject teaching credential should contact the Advisor of PreTeaching or the Graduate Admissions Office in the School of Education and Counseling Psychology.

Sustainability

Director: Leslie Gray

The sustainability minor helps students discover the connections and balance among a healthy environment, just societies, and a vibrant economy that meet all people's fundamental needs currently and in the future, especially those of the global poor. Courses explore the environmental, societal, and economic aspects of sustainability, and how to take action to improve sustainability.

Requirements for the Minor

Students must complete a total of eight courses. One foundational course is required, and two courses must be taken from each of the following three dimensions of sustainability: environmental, societal, and economic. In addition, students must complete one action learning course consisting of an approved project, community-based or immersion course. The following courses are approved for each area. No more than **three** courses can come from a student's major.

Foundational course:

ENVS 95. Sustainability 101

Environmental Dimensions Courses

BIOL 5. Endangered Ecosystems L&L

BIOL 6. Oceans L&L

BIOL 134. California Plant Diversity L&L

BIOL 156. General Ecology L&L

BIOL 180. Marine Ecology L&L

CENG 20. Geology

CENG 124. Water Law and Policy (also listed as ENVS 124)

CENG 140. Water Resources Engineering

CENG 143. Environmental Engineering

CENG 144. Environmental Systems Design

CENG 161. Sustainable Water Resources

CHEM 1. Chemistry and the Environment

CHEM 12. General Chemistry 2 L&L

CHEM 12H. General Chemistry 2 L&L Honors

CHEM 101. Bioinorganic Chemistry

ENGR 1. Introduction to Engineering

ENGR 15. Environmental Quality Engineering

ENGR 60. Sustainable Electric Energy

ENVS 5. My Environment

ENVS 21. Introduction to Applied Ecology

ENVS 23. Introduction to Earth Systems L&L

ENVS 80. Energy and the Environment

ENVS 145. Environmental Technology

ENVS 156. General Ecology L&L

ENVS 160. Water Resources L&L

ENVS 166. Climate Change: Past to Future

ENVS 167. Innovation for Climate Justice

MECH 121. Thermodynamics

PHYS 120. Thermal Physics

Societal Dimensions Courses

ANTH 50. World Geography (also listed as ENVS 50)

ANTH 140. Food, Culture, and the Environment

ANTH 154. Environmental Anthropology

ANTH 159. Globalization and Culture Change

COMM 105A. Multicultural Folktales and Storytelling

COMM 120A. Environmental Communication

COMM 128B. Dialogue and Deliberation

ECON 129. Economic Development

ECON 160. The Economics of Poverty and Inequality

ENGL 176. Creative Writing & Social Justice

ENGR 161. Cultures of Innovation

ENGR 272. Energy Public Policy

ENGR 273. Sustainable Energy and Ethics

ENVS 22. Introduction to Environmental Studies

ENVS 128. Sustainable Urban Planning

ENVS 146. Agriculture, Environment, and Development: Latin America

ENVS 155. Environmental and Food Justice

ETHN 156. Environmental Racism, Gender, and Justice

PHIL 29. Ethics and the Environment

PHYS 192. Physics and Society

POLI 123. Global Environmental Politics

RSOC 64. Comparative Religion and Environmentalism

SCTR 111. Bible & Ecology

SOCI 33. Social Problems in the United States

SOCI 132. Social Stratification

SOCI 134. Globalization and Inequality

SOCI 138. Populations of India, China, and the United States

TESP 26. Sustainable Theologies

TESP 33. Theologies of Creation

TESP 84. Spirituality and Sustainability

TESP 152. Faith, Ethics, and Biodiversity

Economic Dimensions Courses

ACTG 140. Government and Nonprofit Accounting

BUSN 70. Contemporary Business Issues

BUSN 150. Feeding the World

BUSN 170. Contemporary Business for Nonmajors

CENG 128. Engineering Economics and Business

ECON 1. Principles of Microeconomics

ECON 101. Resources, Food, and the Environment (also listed as MGMT 173)

ECON 111. Economics of the Environment

ENGR 171A. Product Opportunity Assessment and ENGR 173. Introduction to Business Fundamentals (1 unit each)

ENGR 271. Energy Conservation

MGMT 6. Business Ethics

MGMT 6H. Business Ethics: Honors

MGMT 40. Foundational Knowledge of Managing for Sustainability

MGMT 41. Foundational Skills of Managing for Sustainability

MGMT 80. Global and Cultural Environment of Business

MGMT 168. Managing for Sustainability

MKTG 189. Sustainability Marketing

OMIS 108E. Sustainable Operations Management

PHIL 26. Ethics in Business

Action Learning Courses

BUSN 132. Contemplative Leadership and Sustainability Program (CLASP)

BUSN 151A. Food, Hunger, Poverty, Environment Immersion

ELSJ 135. Research in Social Entrepreneurship

ENGR 25. Sustainability Energy Projects

ENGR 110. Community-Based Engineering Design

ENGR 125. Advanced Sustainable Energy Projects

ENGR 136. Frugal Innovation Projects for Social Benefit

ENVS 191EL. Urban Agriculture Practicum (ELSJ)

ENVS 195. Sustainable Living Undergraduate Research Project (SLURP)

MGMT 42. Leading From Triple Bottom Line

Other classes that may be approved for the Action Learning requirement include a relevant credit-bearing course for which a grade is earned (e.g., internship, study abroad, Washington Semester, research project, senior design project, etc.) or participation in the Global Social Benefit Incubator, Leavey School of Business Global Fellows Program, or sustainability-related study abroad programs.

Urban Education

Director: Dr. Brett Solomon

The interdisciplinary minor in Urban Education provides Santa Clara undergraduate students seeking to become elementary or secondary teachers with the basics in educational theory, urban school observation and reflective experiences, constitutional history of the United States, and the sociological and psychological foundations of education. The Urban Education minor has two distinctive components. First, the minor contains foundational courses necessary for a career in education. Second, the minor focuses on societal problems such as poverty, crime, and prejudice, and how these issues impact today's youth and families. Through the Urban Education minor, students will critically evaluate the modern social challenges facing teachers and policymakers who struggle daily with how to strengthen the educational experience for children. This minor is recommended for students from diverse majors who are interested in careers that involve working directly with children and families from multicultural and multifaceted backgrounds. Only two (2) courses in a student's major can be used to fulfill requirements in the urban education minor.

Requirements for the Minor

Students must complete the following requirements for a minor in Urban Education:

- POLI 1 or HIST 96A or 96B
- PSYC 2
- CHST 106, 138
- PSYC 134
- Two electives from the following list: CHST 104, CHST 111, ENGL 104, ENGL 105, ETHN 157, ETHN 161, HIST 184, PSYC 185, PSYC 172, SOCI 153, SOCI 157, SOCI 175, PHSC 131, HIST 186, ENVS 131

Leavey School of Business

Dean: Ed Grier

Senior Assistant Dean, Undergraduate Business Programs: Jo-Anne Shibles

The Leavey School of Business offers professional business education within the larger context of academic excellence in the Jesuit educational tradition. The school provides undergraduate students with both the technical skills necessary for success in business and the ethical, global, and humanistic perspectives that are hallmarks of a liberal arts education. The undergraduate program strives for a mix of theory and practice and emphasizes both personal and professional development.

Undergraduate Degrees

The Leavey School of Business confers the degree of bachelor of science in commerce with majors in accounting, accounting and information systems, economics, finance, individual studies, management, marketing, and management information systems. The school also offers a minor in business analytics, management information systems, and real estate; and interdisciplinary minors in entrepreneurship, international business, and retail studies.

Requirements for the Bachelor of Science in Commerce

To qualify for the degree of bachelor of science in commerce, students must complete a minimum of 175 quarter-units of credit (of which at least 60 must be in upper-division courses) and satisfy the requirements of the undergraduate Core Curriculum, the Leavey School of Business curriculum, and the departmental major.

The School of Business strictly enforces prerequisites. Having all students come into courses with the same requisite knowledge and skills ensures equity, a common starting point, and is intended to increase the likelihood of student success. Prerequisite requirements must be successfully completed or in progress prior to enrollment in the course that requires the prerequisite.

Undergraduate Core Curriculum

Critical Thinking & Writing

- Critical Thinking & Writing 1 and 2 from list of approved courses

Cultures & Ideas

- Cultures & Ideas 1 and 2 from list of approved courses
- Cultures & Ideas 3 with MGMT 80 when the course is taken on the SCU campus. When MGMT 80 is not taken on the SCU campus, students choose from a list of approved courses.

Second Language

Native English-speaking students fulfill this requirement in one of the following ways:

- Successful completion of the second course of the first-year, college-level sequence in a classical or modern foreign language
- Demonstration of an equivalent level of proficiency by passing a language proficiency examination supervised by the departments of Classics or Modern Languages and Literatures
- Obtaining a minimum score of 4 on the Advanced Placement Examination in a classical or modern foreign language
- International Baccalaureate and International A level exams

Students for whom English is not their native language may satisfy this requirement by submitting a petition to the chair of the Department of Modern Languages and Literatures and the director of the Core Curriculum with professionally recognized documentation of proficiency in a language other than English. Such documentation includes but is not limited to a Test of English as a Foreign Language (TOEFL) examination score of 213 computerized or 550 paper and pencil examination.

Mathematics

Two mathematics courses:

- MATH 30 and 31 or MATH 11 and 12

Most business students take the calculus for business courses: MATH 30 and 31. Students who plan to take additional math should consider taking the calculus and analytic geometry courses: MATH 11 and 12.

MATH 35 and 36 can be used to satisfy this requirement for business majors who have a second major in the life sciences.

Religion, Theology & Culture

- Religion, Theology & Culture 1 from list of approved courses
- Religion, Theology & Culture 2 from list of approved courses
- Religion, Theology & Culture 3 from list of approved courses

Ethics

- One business ethics course: MGMT 6 or PHIL 26

Civic Engagement

- MGMT 162 and MGMT 6 or PHIL 26

Diversity

- One course from list of approved courses

Arts

- One course from list of approved courses

Social Science

- ECON 1

Natural Science (with lab)

- One course from list of approved courses

Science, Technology, and Society

- OMIS 34

Students who are considering a major in accounting should take ACTG 134 to satisfy the Science, Technology, and Society requirement.

Students who declare a major or a minor in management information systems will take OMIS 30 or OMIS 31, which will satisfy the information systems requirement in the business core, and may choose a course to satisfy Science, Technology, and Society from the list of approved courses.

Experiential Learning for Social Justice

- One course from list of approved courses

Advanced Writing

- BUSN 179

Pathways

- At least 16 units (usually four courses) from list of approved courses in one Pathway of the student's choice

Leavey School of Business Core Curriculum: Lower Division

Introduction to Business

Two courses:

- BUSN 70 (to be completed as a first-year student unless you are an internal or external transfer student)
- OMIS 15

Business Law

- BUSN 85

Economics

Three courses:

- ECON 1, 2, and 3

Accounting

Two courses:

- ACTG 11 and 12

Students should take ACTG 11 in the fall or winter quarter of their sophomore year and ACTG 12 in the subsequent winter or spring quarter.

Data Analysis

Two courses:

- OMIS 40 and 41 or OMIS 40 and ECON 41 and 42 (for economics majors)

Information Systems

- OMIS 34

Students who are considering a major in accounting should take ACTG 134 to satisfy the information systems requirement.

Students who declare a major or a minor in management information systems will take OMIS 30 or OMIS 31, which will satisfy the information systems requirement in the business core, and must choose a course to satisfy Science, Technology, and Society from the list of approved courses.

Leavey School of Business Core Curriculum: Upper Division

Common Core of Knowledge

Four courses:

- FNCE 121
- MGMT 160
- MKTG 181
- OMIS 108

Capstone Course

One course (to be taken during the senior year):

- MGMT 162

Minors in the Leavey School of Business

Departmental Minors

The Department of Operations Management and Information Systems offers two minors: business analytics and management information systems. The Department of Economics offers a minor in economics through the College of Arts and Sciences. The Department of Finance offers a minor in real estate. Descriptions of these minors and associated requirements can be found in the respective department sections of this chapter.

Interdisciplinary Minors

The Leavey School of Business administers three interdisciplinary minors open to business students and nonbusiness students: entrepreneurship, international business, and retail studies. Descriptions of these minors and associated requirements can be found in the Interdisciplinary Minors section at the end of this chapter.

Individual Studies Major in the Leavey School of Business

Director: John Ifcher

The Individual Studies (IS) major in the Leavey School of Business has been established to meet the needs of students who wish to design a course of studies with a multidisciplinary perspective. Students who want to pursue an IS major should begin by scheduling a meeting with the faculty director of Undergraduate Business Programs to start the process.

Requirements for the Major

In addition to fulfilling the University undergraduate Core Curriculum and the core requirements for the bachelor of science in commerce in the Leavey School of Business, a student majoring in individual studies must complete the requirements in her or his approved plan of study. To declare the major, the student must submit, and obtain approval of, a Petition for an Individual Studies major in the Leavey School.

Requirements for the Petition and Approval

At the time of application, the student must have:

- Been a full-time student at Santa Clara for at least one year
- A minimum 3.0 overall grade point average

The petition must include:

- A clear description of the proposed program, including its unifying theme(s) and overall learning objectives
- A well-developed argument, supported by appropriate evidence, showing that (1) no existing academic major(s) and/or minor(s) can meet the student's educational objectives, and (2) the proposed major is not merely a combination of existing programs that could feasibly be completed by the student

- A plan of study listing the courses or menus of courses, seminars, internships, etc., that meet the student's educational objectives, which should include a minimum of eight (8) upper-division courses in addition to those required by the undergraduate Core Curriculum and the School of Business Undergraduate Core (IS major courses may also count toward a student's selected Pathway)
- The signed approval of a designated faculty advisor for the IS major, normally a tenured or tenure-track member of the Leavey School of Business

The Petition must be reviewed and approved by the faculty director of Undergraduate Business Programs in the Leavey School of Business, in consultation with faculty in affected departments and programs, if necessary. Reasonable modifications of the above guidelines may be approved by the faculty director.

General Business Courses

70. Contemporary Business Issues

An introduction to the nature, forms, and objectives of the contemporary business firm and its relationship to the modern business environment. Text learning is augmented by classroom discussion, connecting learning points to current events and a comprehensive business simulation. (4 units)

71. Foundations of Leadership

Presents an introduction to specific practices of effective leadership through a series of speakers, directed readings, and reflective writing assignments. (2 units)

72. Business Leadership Skills

Designed to continue learning from BUSN 71 by focusing on leadership skills specific to a business environment. Course integrates group discussion, selected readings, experiential learning, and reflective engagement experiences. (2 units)

85. Business Law

This course provides the student with an overview of the legal system and primary substantive areas of law affecting business transactions including the law of contracts, torts, property, employment, business associations, securities, and white collar crime. Students exercise critical thinking and writing skills through the application of fundamental legal principles in the business context. Prerequisites: BUSN 70 and completion of 45 units, or permission of instructor. (4 units)

132. Contemplative Leadership and Sustainability Program (CLASP)

This course is designed to provide students with opportunities to learn and rehearse contemplative leadership practices and explore the relationship between personal values, business, and sustainability. CLASP introduces students to issues of sustainability in industry, provides face-to-face encounters with professionals and companies/organizations already "doing the work" of sustainability, and immerses students in the region's natural and social environments via daylong weekend excursions. Assignments include keeping a weekly journal, weekly readings, small and large group discussions, writing a short paper, and completing a group project. (2 units)

145. Entrepreneurship Practicum

An opportunity for select students to apply their entrepreneurial skills in emerging companies through a structured placement in a Silicon Valley internship. (2-5 units)

150. Feeding the World

In this course, students examine the global system for the production and distribution of food, assess the ability of the system to satisfy the human demand for food, and evaluate the impact of the system on the natural environment. Students will employ tools from statistics, operations, and economics to describe, analyze, and forecast imbalances between food supply and food demand. Through a term project, students use their new skills to examine the food system in a developing nation experiencing chronic hunger. (5 units)

151A. and B. Food, Hunger, Poverty, Environment Immersion

This course is designed to help students meet their social justice-oriented experiential learning requirements while learning about issues related to food production and consumption, hunger, poverty, and the environment. The course blends short lectures, guided discussions and reflections, and a 12- to 14-day immersion in a selected country interacting with local people of diverse backgrounds for experiential active learning. The goal is to increase students' understanding of the role of business in the developing world and to explore the role of business in alleviating poverty through economic development and the pursuit of social justice. Both quarters are required to participate in the immersion program. (1 unit before immersion, 2 units after immersion)

170. Contemporary Business for Nonmajors

This course is specifically designed for upper-division (junior and senior), non-business majors who are interested in learning about business firms and their relation to both the global and local environment in which they operate. Course will use a business simulation as a key learning method, in addition to lectures and small group discussion. This course is not open to students who have completed BUSN 70. Prerequisite: Must have completed 87.5 units or more. (5 units)

179. Effective Communication in Business

In this pragmatic professional development course, students will learn the following business communication skills: business writing, informal and formal presentations, networking, and personal brand. Students will produce quantitative and qualitative analyses and evaluations and create professional multimedia projects, proposals, and presentations. Students will also develop skills in formal and informal business writing and discourse (briefings, reports, emails, memos, interviews, social media, infographics, etc.). Prerequisites: CTW1 & CTW2. Must have completed at least 60 units. Also listed as MKTG 179. (5 units)

179S. Effective Communication in Business

In this pragmatic professional development course, students will learn the following business communication skills: business writing, informal and formal presentations, networking, and personal brand. Students will produce quantitative and qualitative analyses and evaluations, and create professional multimedia projects, proposals, and presentations. Students will also develop skills in formal and informal business writing and discourse (briefings, reports, emails, memos, interviews, social media, infographics, etc.). Prerequisites: Enrollment restricted to students in the Leavey Scholars Program. CTW1 & CTW2. Must have completed at least 60 units. Also listed as MKTG 179S. (5 units)

180. Advanced Presentation Skills

This is an advanced course designed to develop presentation skills for a variety of business audiences. A central purpose of the class is to cultivate professional presentation skills expected in the global workplace while recognizing how behavior, both informal and formal, can reflect on career development. Prerequisite: BUSN 179. (5 units)

182. Global Experience Practicum

Opportunity for business students to study global business issues in specific countries or regions around the world. The practicum includes selected readings, several special lectures on topics related to the target country or region, and an in-country learning session, typically two weeks after the end of spring quarter. Each practicum is led by a Leavey School of Business faculty member who travels with the students to the country to lead integration sessions, guide discussions, and generally enhance the student's learning experience. (2 units)

183A. B. and C. LSB Community Fellows Seminar

This seminar is completed in tandem with a community organization internship through the LSB Community Fellows program. Participants study the context of economic opportunity in the nonprofit/government sector, reflect on internship experiences, and develop professional skills. This course fulfills the ELSJ University Core requirement. Prerequisite: Must be a Leavey School of Business Community Fellow. (1 unit for each course segment)

188. Field Studies: NPI Small Business Improvement Project

In this two-quarter course, students work directly with a small business in a local, economically disadvantaged neighborhood. Students conduct an analysis of the business owner's goals, develop an action plan, and implement the plan to improve business performance. The purpose of the Neighborhood Prosperity Initiative is to provide a unique learning opportunity for undergraduate business students and to contribute to the economic growth and prosperity of a local neighborhood in a sustainable, ethical, and effective way. This course fulfills the ELSJ University Core requirement. This course requires participation in community-based learning (CBL) experiences off campus. Students must complete two consecutive quarters. (2 units)

189. Low-Income Tax Clinic (LITC): Ethics and Practice of Offers in Compromise (OIC)

This course is designed to develop and refine students\' problem-solving skills and cultivate practical wisdom through the application of legal doctrine and theory to the dynamics of individual client interaction. Students will gain experience in the tax practice and procedure involved in personal income tax collections. The focus of the LITC is to provide students with the skills necessary to exercise professional judgment in the representation of real clients. Throughout the course, students will be expected to critically analyze the facts of their client's case, apply relevant legal theory and doctrine in client interviewing and counseling, communicate effectively, orally and in writing, and exercise professional judgment. Prerequisites: ACTG 11, junior or senior standing, or permission of instructor. (5 units)

190. LSB Peer Advising Practicum

A practicum experience for Leavey School of Business Peer Advisors, which provides the opportunity to learn, apply, and integrate training and experience to provide prescriptive advising for undergraduate business students. Course includes 5 quarterly class meetings plus 1-4 hours per week of direct advising experience. Graded P/NP only. Prerequisite: Must be a Leavey School of Business Peer Advisor. (1 unit)

195A. and B. The Global Fellow Experience

This course is designed for students involved in the Global Fellows program. The introductory course introduces students to the macro issues and challenges faced by the underserved populations of the world and provides a context for evaluating the global costs of injustice. Through the framework of business and organizational operations, students develop the tools to evaluate best practices as applied to living a civic life. Students will be exposed to academic research, guest speakers, interactive exercises, and readings in preparation for their summer fellowship, where the course learning will be applied to a work experience. The reflection course segment is designed for students who spent time during the summer as Global Fellows. The primary goal of the course is to allow each

student to reflect upon their experience and deepen their lessons learned. The secondary goal is to have the Global Fellows share their experience with the SCU community, thus bringing awareness of global issues to a wider audience. In certain cases, the reflection segment course will fulfill the core requirement for ELSJ. Must be a Global Fellows participant. (2 units for each course segment)

196. Leadership Practicum

Opportunity for business students to obtain advanced experience in leading, facilitating, directing, evaluating, and advising within a Leavey School of Business schoolwide or interdisciplinary project, class, or initiative. This practicum generally includes selected readings, reflective engagement activity, personal leadership assessment, and writing assignments. Requires approval of the assistant dean. (1-5 units)

197. Business/Engineering Project Collaboration

This practicum gives business students an opportunity to work with senior-level engineering students on engineering design projects. This is an excellent opportunity for cross-functional learning in a team environment and for business students to practice the activities they learned in previous business school courses. This practicum provides exposure to technology and valuable experience in product development, innovation, and entrepreneurship. The student will perform a business analysis of the project and assist in producing a business plan, which may involve assessing the project for commercialization, defining and characterizing the market, and exploring any intellectual property issues. Must be a Leavey School of Business junior or senior to enroll. (4 units)

198. Internship/Practicum

Opportunity for upper-division students---typically involved with schoolwide or interdisciplinary programs, projects, or initiatives---to work and study in or with for-profit and nonprofit organizations. This practicum generally includes selected readings, a reflective engagement activity, and a written report. Requires approval of the senior assistant dean or associate dean. May be included as fulfilling a requirement for a major only with permission of that department chair. (1-5 units)

Centers, Institutes, and Special Programs

Accelerated Cooperative Education Program

The Accelerated Cooperative Education (ACE) program offers a unique, challenging, and rewarding experience for business students. Participants receive a program of workshops designed to build, strengthen, and enhance their professional development and leadership skills, networking with ACE business partner companies for paid summer internship opportunities, mentoring by senior executives, and fast-track admission to the Santa Clara MBA program. Students are selected into this program through an application process.

Center for Food Innovation and Entrepreneurship

The Center for Food Innovation and Entrepreneurship (CFIE) (formerly Food and Agribusiness Institute) offers undergraduate and graduate courses on topics related to innovation and entrepreneurship in the food industry. At the undergraduate level, CFIE sponsors the Sustainable Food Systems Minor and the Feeding the World Pathway. For students interested in a career in the food industry, CFIE sponsors a graduate MBA Concentration in Food Entrepreneurship. Enrichment programs offer students the opportunity to enhance their educational experience through internships, research fellowships, field trips, and a mentor program. An immersive study course and field experiences organized by CFIE expose students to the rich diversity of the food industry through domestic and international travel. CFIE also hosts events, lectures, food industry research, conferences, and programs for the campus and for the food industry community.

Ciocca Center for Innovation and Entrepreneurship

Ciocca Center for Innovation and Entrepreneurship provides opportunities for students from all disciplines to learn and explore the value of an entrepreneurial mindset. The center is guided by an interdisciplinary Student Advisory Board that includes both graduate and undergraduate students. Through academics, experiential learning programs, competitions, coaching, and mentoring, students can immerse themselves in every aspect of the entrepreneurial experience.

Our hands-on programs include speaker events, business pitch and venture capital competitions, as well as experiential clinics where students and alumni have the chance to interact and work together on real world problems. The Bronco Ventures Idea School, Prep School, and Accelerator provide students the opportunity to learn from industry professionals how to start their own ventures. All of our programs offer students the chance to connect with and learn from other like-minded students, distinguished alumni, and industry professionals.

Global Fellows

Created in 2008 through the Leavey School of Business, the Global Fellows Program is a premier professional fellowship program open to undergraduate sophomores and juniors of all majors. The Global Fellows Program is a nine-month, mixed disciplinary program dedicated to fostering global citizens of competence, conscience, and compassion.

The Global Fellows Program sends up to 30 students to work for a nongovernmental organization (NGO) or business that embodies the ideal of global leadership and reflects the increasing level of globalization in our world. Each organization varies in its methods and values. All provide an exposure to global citizenship through an enhanced understanding of cultural, economic, social, political, and technological factors that underlie social injustice,

marginalization, and privilege. Selected fellows participate in a spring quarter leadership practicum that engages their knowledge of global citizenship and what it means to be a leader in the 21st century. Following spring quarter, fellows head to a developing country for a 6- to 8-week internship with the organization for whom they have been selected. The Global Fellows Program is a unique program, offering a global professional and civic engagement opportunity, comprised of internship, travel, and cultural immersion.

Leavey Scholars Program

The Leavey Scholars Program offers special opportunities for undergraduate business students who have established a record of excellence in their Santa Clara studies. Leavey Scholars are invited to enroll in honors sections of selected business courses that are especially rigorous and academically challenging. Successful completion of the program warrants the designation "Leavey Scholar" on the student's transcript.

Leavey School of Business Community Fellows Program

The Leavey School of Business (LSB) Community Fellows program places business students in paid, yearlong internships in community organizations (e.g., government, nonprofit, or education agencies). Students apply business knowledge and skills to real-world situations in local community organizations. Participation is required in a yearlong academic seminar (BUSN 183) which satisfies the Experiential Learning for Social Justice requirement in the University's Core Curriculum. Students explore issues of economic disparity, community development, and organizational management as well as reflect on the professional development skills and abilities needed to be effective in a variety of business settings.

My Own Business Institute

The My Own Business Institute (MOBI) offers online, self-paced courses on how to start and how to grow a business. MOBI students acquire the knowledge and skills needed to create economic opportunity by launching a new business. MOBI coursework is used by universities, schools, nonprofits, and government agencies all over the world. Certification by MOBI demonstrates expertise and commitment for any kind of career in business. MOBI is designed to help people from any background pursue their dream of owning a business.

Neighborhood Prosperity Initiative

Launched in January 2012, the Leavey School of Business Neighborhood Prosperity Initiative (NPI) provides opportunities for students to work directly with businesses, individuals, and organizations in low-income neighborhoods in Silicon Valley. The goal of NPI is to create economic opportunity in our most challenged neighborhoods while offering a community-based learning experience to our Santa Clara undergraduate students. The primary component of NPI is the Field Studies course (BUSN 188) which satisfies the Experiential Learning for Social Justice requirement in the University's Core Curriculum.

Retail Management Institute

The Retail Management Institute (RMI) is a minor in Retail Studies program, recognized as an academic partner to the retail industry. We have a strong reputation for developing strategic leaders with the advanced skills necessary for success in the new technology-infused world of retail.

RMI provides a platform for deep collaboration and knowledge at the intersection of retail and technology engaging industry and leading academics into the emerging and evolving concepts impacting retail today. The knowledge generated from this collaboration forms the basis of the retail studies curriculum.

The minor in retail studies offered by the Retail Management Institute is an in-depth immersion experience that prepares and provides exposure to its students for a diverse set of roles including e-commerce, digital marketing, digital merchandising, planning and allocation, buying and supply chain management. The program is open to all University undergraduates. Students entering the retail studies minor continue to major in their field of choice and receive their bachelor's degree in that field.

Senior Leadership Academy

The Senior Leadership Academy supports professional development exploration and skill growth by providing undergraduate business seniors the opportunity at in-depth exploration of a career and leadership topic relevant to postgraduate life. Each academy theme varies based upon current topics students will deal with throughout their senior year and postgraduate life. Students are selected through an application process and participate in a two-quarter experience that includes mentoring, directed reading, and guided reflection.

Department of Accounting

Professors: Yongtae Kim (Robert and Barbara McCullough Professor), Susan Parker

Associate Professors: Michael J. Calegari, Haidan Li, Kevin K. Li, Siqi Li (Department Chair), Suzanne M. Luttman, Jane A. Ou, Hyungshin Park

Assistant Professor: Amanda Badger, Matthew Cedergren, Stacey Ritter

The Department of Accounting strives to provide high-quality accounting instruction, conduct research that contributes to the understanding of accounting issues, and provide superior service to students and alumni, the profession, the University, and the business community. In addition to the major in accounting, the Accounting Department and Information Systems & Analytics Department offer a joint major in accounting and information systems.

Requirements for the Majors

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce, students majoring in accounting or accounting and information systems must complete the following departmental requirements:

Major in Accounting

- ACTG 120 or 20*
- ACTG 130, 131, 132, 134, 135, 136, and 138

\Students who declare Accounting majors before December 20, 2019 have the option of taking either ACTG 20 or ACTG 120 to satisfy major requirements. Students who declare Accounting majors after December 20, 2019 need to take ACTG 120 to satisfy major requirements.*

Note: Accounting majors may use ACTG 134 to satisfy both the information systems requirement in the Leavey School of Business curriculum and the Science, Technology & Society requirement in the 2009 University Core.

Major in Accounting and Information Systems

- ACTG 120 or 20*
- ACTG 130, 131, 132, 135, 136, and 138
- OMIS 30
- OMIS 105, 106, and 150 (or ACTG 155)
- One course from OMIS 107, 111, 113, 114, 120, 135, 137

\Students who declare A&IS majors before December 20, 2019 have the option of taking either ACTG 20 or ACTG 120 to satisfy major requirements. Students who declare A&IS majors after December 20, 2019 need to take ACTG 120 to satisfy major requirements.*

Note: Accounting and information systems majors may use OMIS 30 to satisfy the information systems requirement in the Leavey School of Business curriculum. OMIS 150 is cross-listed with ACTG 155. Accounting and information systems majors may enroll in OMIS 150 or ACTG 155.

Lower-Division Courses

5. Personal Financial Planning

Overview of the tools and information necessary for personal business decision making. Includes analysis of financial services, credit and borrowing, taxes, compensation planning, consumer purchases, housing decisions, the time value of money, savings, and investments. (4 units)

11. Introduction to Financial Accounting

An introduction to the language of business, the accounting treatment of business transactions, and the analysis of financial reports. This course shows students how financial analysts use accounting principles to prepare financial statements and how managers, investors, and creditors use balance sheets, income statements, cash flow statements, and financial disclosures to make operating, investing, and financing decisions. Prerequisites: Must be a second-year student and have completed BUSN 70 or 170. Seniors who have not completed BUSN 70 may take this class with department permission on a space-available basis. (4 units)

12. Introduction to Managerial Accounting

Introduction to the role of accounting information in the decision making of business managers. The objective is to investigate the use of business data in typical managerial functions such as product costing, planning, control, and operational decision-making. Prerequisite: ACTG 11. (4 units)

Upper-Division Courses

120. Accounting Data Analysis and Visualization

The course is designed to prepare students with a deeper understanding of both accounting process and the application of accounting knowledge in performing data analysis by leveraging two commonly used tools in data analysis and visualization -- Microsoft Excel and Tableau. Prerequisites: Open to business majors only. ACTG 11 and OMIS 15, and must have 70 completed units or department's permission prior to enrollment. (5 units)

\ACTG 120 will replace ACTG 20 as a required course for students declaring accounting or A&IS majors after December 20, 2019.*

130. Intermediate Financial Accounting I

An in-depth study of the concepts underlying external financial reporting, along with expanded coverage of basic financial statements. Detailed analysis of the measurement and reporting of current assets, operational assets, and investments, including the treatment of related revenues and expenses. Significant attention is given to income statement presentation and revenue recognition. Prerequisites: Open to business majors only. ACTG 12 and ACTG 20 or 120, and must have 96 completed units or department's permission prior to enrollment. (ACTG 20 or 120 may be taken concurrently.) (5 units)

131. Intermediate Financial Accounting II

Intensive analysis of generally accepted accounting principles as applied to accounting for liabilities, stockholders' equity, and the statement of cash flows. Accounting for income taxes, pensions, leases, and the reporting of corporate earnings per share. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 130. (5 units)

132. Advanced Financial Accounting

The main subject is accounting for business combinations, and the consolidation of financial statements of a parent company and its subsidiaries. A broad spectrum of financial reporting issues in the context of consolidated financial statements is examined. The course also covers partnership accounting and other advanced financial accounting topics. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 131. (5 units)

134. Accounting Information Systems

Introduction to procedures by which accounting data is captured, processed, and communicated in computerized information systems. The course describes the ways that accounting information systems are designed, used, and maintained by accounting professionals with an emphasis on implementing accounting cycles and related controls, using key database concepts, and extracting, transforming, and loading data for analytics. Prerequisites: Open to business majors only. ACTG 11 and 12. (ACTG 12 may be taken concurrently.) (5 units)

135. Auditing

Introduction to the basic concepts of auditing. Discussion of applicable regulations, the audit risk model, and client risk assessment. Focus is on an overview of the audit process. Auditors' professional and ethical responsibilities, sampling, and historical cases will also be discussed. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 131. (ACTG 131 may be taken concurrently.) (5 units)

136. Cost Accounting

Analysis of cost accounting with a strategic emphasis. Selected topics include job costing, activity-based costing, variance analysis, joint cost allocations, and the use of relevant cost in business decision making. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 130. (5 units)

138. Tax Planning and Business Decisions

A basic introduction to the tax treatment of transactions and events affecting both individuals and businesses and the conceptual framework underlying taxation. Includes issues of importance for successful tax planning with an emphasis on income and expense recognition, individual taxation, and property transactions. Assumes no prior knowledge of the tax law. Prerequisites: Open to business majors only. ACTG 11 and 12. (ACTG 12 may be taken concurrently.) (5 units)

140. Advanced Topics in Not for Profit Accounting

This course will introduce the complexities and differences in the accounting conventions for not for profit entities. The course will focus on revenue recognition for different revenue streams, reporting standards, split interest agreements, net asset classifications, and endowment accounting. Prerequisites: ACTG 11 or ACTG 11A. (3 units)

144. Accounting Ethics

This course is designed with a particular focus on the roles and ethical responsibilities of the accounting, auditing, and tax professions; ethical behavior by management; and the legal guidelines that address behavior in a business setting. Prerequisites: Open to business majors only. ACTG 11 and 12, and either PHIL 26 or MGMT 6. This course must be taken for a letter grade. (5 units)

150. Financial Fraud: Detection and Investigation

Forensic accounting deals with the application of accounting methods to legal problems, and comprises investigative accounting and litigation support activities. Investigative accounting (usually referred to as fraud accounting) refers to the role of the accountant in determining the existence and extent of asset misappropriation and/or financial statement

fraud. Litigation support activities include those professional services provided by accountants to attorneys in support of civil or criminal litigation. In addition to examining both aspects of forensic accounting, the legal system and the role of the forensic accountant as an expert witness will be discussed. Prerequisites: Open to business majors only. ACTG 131. (ACTG 131 may be taken concurrently.) (5 units)

151. Financial Statement Analysis

Provides a framework for analyzing financial statements and develops skills useful in evaluating company performance, liquidity, solvency, financial forecasts, and valuation in the context of the company's strategy and competitive environment. Prerequisites: Open to business majors only. ACTG 11 and FNCE 121 or 121S. (5 units)

155. Financial Information Systems

Course focuses on computer-based financial information systems that allow finance and accounting professionals to acquire and manage a company's financial system. Topics include the business functions of a financial information system, the technical aspects of the system, and the management issues of implementing such a system. Students will acquire hands-on experience using ERP systems. Students who receive credit for OMIS 150 may not take this course for credit. Also listed as OMIS 150. Prerequisites: OMIS 30 or 31, and OMIS 105. (5 units)

161. Junior Contemporary Business Seminar Series I

A series of seminars covering topics pertinent to those pursuing a professional accounting career. Students are required to attend sessions with the course instructor and attend seminars sponsored by the Department of Accounting. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 12 and ACTG 20 or ACTG 120. (ACTG 20 or 120 may be taken concurrently.) (2 units)

162. Junior Contemporary Business Seminar Series II

A series of seminars covering topics pertinent to those pursuing a professional accounting career. Students are required to attend sessions with the course instructor and attend seminars sponsored by the Department of Accounting. Prerequisites: Open to accounting and accounting and information systems majors only. ACTG 12 and ACTG 20 or 120. (ACTG 20 or 120 may be taken concurrently.) (2 units)

171. Senior Contemporary Business Seminar Series I

A series of seminars covering topics pertinent to those pursuing a professional accounting career. Students are required to attend sessions with the course instructor and attend seminars sponsored by the Department of Accounting. Prerequisites: Open only to senior-declared accounting and accounting and information systems majors. (2 units)

172. Senior Contemporary Business Seminar Series II

A series of seminars covering topics pertinent to those pursuing a professional accounting career. Students are required to attend sessions with the course instructor and attend seminars sponsored by the Department of Accounting. Prerequisites: Open only to senior-declared accounting and accounting and information systems majors. (2 units)

191. Peer Educator in Accounting

Work closely with the department to help students in core accounting classes understand course material, think more deeply about the material, and feel less anxious about testing situations. Prerequisites: Declared accounting or accounting and information systems major and permission of instructor and chair required prior to enrollment. (1 or 2

units)

198. Accounting Internship

Opportunity for upper-division students to work in local accounting or corporate firms. Two written reports and the employer's evaluation of the student's work will be required. This course may be repeated for credit depending on nature of assignment. Prerequisites: Declared accounting or accounting and information systems major and permission of instructor and chair. (2--5 units per quarter, up to a maximum of 10 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Prerequisites: Declared accounting or accounting and information systems major and permission of instructor and chair. (1--5 units)

Department of Economics

Professors Emeriti: Mario L. Belotti, Thomas R. Russell, Thaddeus J. Whalen Jr.

Professors: Alexander J. Field (Michel and Mary Orradre Professor), Kris J. Mitchener (Robert and Susan Finocchio Professor), Helen A. Popper, William A. Sundstrom

Associate Professors: Christian Helmers, John Ifcher, Linda Kamas, Michael Kevane, Serguei Maliar, Thuy Lan Nguyen, Dongsoo Shin (Department Chair)

Assistant Professors: Adrien Bouguen, Vito Cormun, Audrey Guo, Wenxin (Victoria) Xie

Senior Lecturer: Adina Ardelean

Lecturers: James Airola, Shireen AlAzzawi, Patricia Cameron-Loyd, Rita Madarassy, Damian Park

As one of the social sciences, economics studies how the choices we make as individuals---as consumers and producers, as savers and investors, as managers and employees, as citizens and voters---combine to determine how society uses its scarce resources to produce and distribute goods and services. This practical discipline provides insights into important issues such as the determinants of wealth and poverty; unemployment, inflation, international trade, and economic growth; and success and failure in the marketplace. The rigorous, systematic analysis that the study of economics brings to bear on these and other real-world issues provides excellent preparation for careers in both the private and the public sectors, as well as for graduate study in economics, business, public policy, and law. Economics graduates pursue varied careers in business, law, banking and finance, government service, education, and private consulting. Students considering graduate study in economics leading to a master's or doctoral degree are strongly encouraged to meet with their advisor as early as possible to plan an appropriate course of study.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce degree, students majoring in economics must complete the following departmental requirements:

- ECON 41 and 42 (satisfies OMIS 41 requirement in the Leavey School of Business core)
- ECON 113, 114, 115, and 181 or 182
- Three upper-division economics electives, at least two of which must be completed after ECON 113 and 115

Requirements for the Minor

Students with a minor in economics through the College of Arts and Sciences must complete the following requirements:

- ECON 1, 2, 3, 113, and 115
- Two additional upper-division economics courses
- MATH 11 or 30 or 35

Concentration in Data Analysis for Economics

The concentration in Data Analysis for Economics provides a structured course of study for economics majors to develop their skills in econometrics and data analysis and apply them to issues in economics and related areas.

In addition to completing all requirements for the major in economics, students must pass the following courses with a grade of "C" or higher*:

- A. ECON 43
- B. One of the following: ECON 173 or 174
- C. Three of the following: ECON 134, 135, 142, 150, 151, 154, 166, 186, 187, 188; 173 or 174 (if not used to satisfy B above)

*All upper-division courses in the concentration can count as upper-division electives toward the economics major. One (and only one) of the courses in list C may be substituted with: (a) an approved course in another social science or business discipline with a significant data analysis component; or (b) an independent study course with a substantial data analysis component (4 or 5 units). Substitutions must be approved by the Concentration advisor. Currently pre-approved substitutions: CSCI 183, ENVS 117, OMIS 114, or OMIS 150. Non-economics courses will not count as one of the upper-division electives toward the economics major.

Mathematical Economics Concentration

Economics majors desiring a concentration in mathematical economics must complete the following requirements in addition to the regular requirements for the major:

- All of the following courses: MATH 11, 12, 13, 14, 22, 53 (MATH 122 and 123 strongly recommended)
- Three out of the following courses: ECON 170, 171, 172, 173, 174 187, or 188 (these courses also count as electives required for the major)

Note: Students completing the mathematical economics concentration take MATH 11 and 12 instead of MATH 30 and 31.

Lower-Division Courses

1. Principles of Microeconomics

Introduction to microeconomics and its applications to business decisions and public policy. Topics include supply, demand, and the coordinating role of prices in a market economy; the behavior of business firms, including output and pricing decisions; competition and monopoly; government policies and regulations affecting markets. (4 units)

1E. Principles of Microeconomics

Special section of ECON 1 emphasizing environmental applications of economics. Introduction to microeconomics and its applications to business decisions and public policy. Topics include supply, demand, and the coordinating role of prices in a market economy; the behavior of business firms, including output and pricing decisions; competition and monopoly; government policies and regulations affecting markets. (4 units)

2. Principles of Macroeconomics

Determinants of national income and product in the long run and short run; inflation, unemployment, and business cycles; monetary and fiscal policies; and economic growth. Prerequisite: ECON 1. (4 units)

3. International Economics, Development, and Growth

Analysis of international trade theory and policy, balance-of-payments adjustments and exchange-rate regimes, and economic development. Prerequisites: ECON 1 and 2. (4 units)

3H. International Economics, Development, and Growth

Honors section. Analysis of international trade theory and policy, balance-of-payments adjustments and exchange-rate regimes, and economic development. Must be in the University Honors or Leavey Scholars Program, or have permission of instructor. Prerequisites: ECON 1 and 2. (4 units)

41. Data Analysis and Econometrics

Introduction to statistical methods for analyzing economic data. Emphasis on applications of multiple regression and establishing causality in observational data. Prerequisites: a grade of C- or better in ECON 1 and 2; and MATH 11 or 30 or 35; and MATH 8, or MATH 122, or OMIS 40, or AMTH 108, or equivalent. Economics majors only, or by permission of instructor. Must enroll simultaneously in ECON 42. (4 units)

42. Data Analysis Applications

Hands-on course in obtaining and analyzing data using statistical software. Prerequisites: a grade of C- or better in ECON 1 and 2; and MATH 11 or 30 or 35; and MATH 8, or MATH 122, or OMIS 40, or AMTH 108 or equivalent. Economics majors only, or by permission of instructor. Must enroll simultaneously in ECON 41. (2 units)

43. Data Wrangling and Visualization

Data acquisition, manipulation, and visualization using statistical software, with hands-on applications to economics. Prerequisites: grade of C- or better in ECON 41 and 42; or OMIS 30, 40, and 41. (2 units)

Upper-Division Courses

Prerequisites: Unless otherwise noted, a grade of C- or better in ECON 1, 2, and 3 is required for all upper-division economics courses.

101. Resources, Food, and the Environment

Exploration of the relationship among food production, resource use, and the environment. Topics include food innovation, biotechnology, the green revolution, resource depletion, environmental degradation, and food safety. Also listed as MGMT 173. Prerequisite: none. (5 units)

111. Economics of the Environment

Economic analysis of environmental issues and government policies for environmental protection. Applications to important environmental issues, such as global climate change, water and air pollution, hazardous wastes, biodiversity, and endangered species. Prerequisite: a grade of C- or better in ECON 1. (5 units)

113. Intermediate Microeconomics I

Theory of rational individual choice and its applications to decision making, consumer demand, and social welfare; economics of uncertainty and information. Additional prerequisite: a grade of C- or better in MATH 11 or 30 or 35. (5 units)

114. Intermediate Microeconomics II

Theory of the firm; determination of price and quantity by profit-maximizing firms under different market structures; strategic behavior; general equilibrium; market failure and government policies. Additional prerequisite: a grade of C- or better in ECON 113 and MATH 11 or 30 or 35. (5 units)

115. Intermediate Macroeconomics

Macroeconomic analysis, emphasizing modern economic models for explaining output, employment, and inflation in the short and long run. Macroeconomic policymaking, including fiscal and monetary policy. Additional prerequisite: a grade of C- or better in MATH 11 or 30 or 35. (5 units)

120. Economics of the Public Sector

Microeconomic analysis of the role of government in the market economy. Supply of public goods and services, government's role in controlling externalities and regulating private industry, and the economics of the political process. (5 units)

122. Money and Banking

Theoretical, institutional, and historical approach to the study of money and banking, with particular emphasis on the relationship between the monetary and banking system and the rest of the economy. Additional prerequisite: Econ 115, (can be taken concurrently). (5 units)

126. Economics and Law

Economic analysis of law and legal institutions focusing on the common law areas of property, contracts, and torts. (5 units)

129. Economic Development

Causes and consequences of economic growth and poverty in less developed countries; analysis of the role of government policies in economic development. (5 units)

134. African Economic Development

Examination of the economic development of sub-Saharan African countries, with particular emphasis on the relationships between economic growth and their social, political, and economic structures. Additional prerequisite: a grade of C- or better in ECON 41 and 42 or by permission of instructor. (5 units)

135. Gender Issues in the Developing World

Explores the gendered nature of poverty in the developing world, with special focus on sub-Saharan Africa, using applied statistical analysis, and economic theory. Also listed as WGST 121. Additional prerequisite: a grade of C- or better in ECON 41 and 42 or permission of instructor. (5 units)

136. 20th-Century Economic History

The development of the U.S. economy during the 20th century. Topics include the causes and consequences of economic growth, the Great Depression, the rise of government regulation, the changing role of women in the workforce, and the increasing internationalization of markets during the postwar period. Additional prerequisite: a grade of C- or better in ECON 115. (5 units)

137. World Economic History

Development of Western and non-Western economies since the late 19th century. Topics include globalization and economic integration, convergence and divergence in economic growth across countries, international monetary systems, and the impact of alternative policies and institutional regimes on economic performance. Additional prerequisite: a grade of C- or better in ECON 115 or permission of instructor. (5 units)

138. History of Economic Thought

Origins and evolution of economic ideas in their historical and philosophical context. Emphasis on the theories of Adam Smith, David Ricardo, and Karl Marx, as well as the emergence of modern microeconomics and macroeconomics in the 19th and 20th centuries. (5 units)

139. American Economic History

Macroeconomic history of the United States since 1869. Productivity, economic growth, inflation, and recession in the United States from the end of the Civil War to the present. Particular emphasis on the Great Depression and the Great Recession. Additional prerequisite: a grade of C- or better in ECON 115. (5 units)

142. Economics of Sports

Tools of economic analysis applied to sports in pursuit of broader lessons and insights. Topics will include labor market discrimination, cartel theory, cognitive biases, strategy, labor unions, public policy, and profit maximization. The overriding objective is to use the observability of sports to help us understand economic decision-making in non-sports environments. Additional prerequisites: a grade of C- or better in ECON 41, 42, 113, and 114. (5 units)

150. Labor Economics

This course covers topics related to the labor market including theory of labor supply and demand, determination of wages and employment in the labor market, human capital theory, income inequality, unemployment, and labor market discrimination. The course will cover basic institutional background and statistics on each issue, and develop economic models important to the evaluation of each topic. Applications to policy issues including minimum wage, negative income tax, unionization, and unemployment insurance. Emphasis on data analysis and empirical methods applied to the labor market. Additional prerequisites: a grade of C- or better in ECON 41, 42, and 113. (5 units)

151. Economics of Education

This course deals with the important economic issues linked to education and will present an overview of the main theoretical and empirical knowledge available. The topics covered in this course will include: the impact of class size, the role of teachers, the return to education, the role of school choice and of tuition fees in higher education, and the role of early investment in long-term labor outcomes. The course will discuss empirical methodologies used to analyze education systems worldwide. Examples will be taken from both developing and developed countries.

Goals of the course: Introducing students to the available literature on education and the methodology used to analyze education systems worldwide. At the end of the course, students will be acquainted with rigorous quantitative methods used to analyze education and will have been in contact with the most prominent results available in the economics of education. Additional Prerequisite: a C- or better in Econ 41 and 42. (5 units)

154 Economics of Health Care

Health care spending currently accounts for 18% of GDP in the U.S., and is one of the fastest growing areas of public expenditure. The purpose of this course is to familiarize you with the US healthcare system, and introduce you to economic models related to the study of health care provision and payment. The topics covered in this course include demand for health care, health insurance markets, pharmaceutical companies and innovation, and U.S. institutions such as Medicare, Medicaid, and the Affordable Care Act. Additional prerequisites: a grade of C- or better in ECON 41, 42, and 113. (5 units)

156. Real Estate Economics

Economic analysis of real estate markets, including supply of and demand for land and improvements, legal aspects of real estate ownership and transactions, government regulation and taxation of real estate, and real estate markets in urban and regional economies. Additional Prerequisite: a C- or better in Econ 41 and 42, or OMIS 41. (5 units)

160. The Economics of Poverty and Inequality

Examines theories and evidence regarding poverty and economic inequality in the United States. Evaluates alternative public policies aimed at combating poverty. (5 units)

165. Economics and Justice

Study of theories of economic justice with applications to economic issues and policy. Alternative theories to be considered include utilitarian, libertarian, welfare-economic, egalitarian, feminist, and religious moral perspectives. Topics include poverty and income distribution; economic inequality and mobility by class, gender, and race; the role of the government in promoting justice; effects of globalization; and justice under different economic systems. Additional prerequisite: a grade of C- or better in ECON 113. (5 units)

166. Race, Ethnicity, and Gender in the U.S. Economy

Analysis of current and historical differences in economic status by race, ethnicity, and gender; theory and evidence of discrimination; role of government policies. Additional prerequisite: a grade of C- or better in ECON 41 and 42. (5 units)

170. Mathematical Economics: Static Optimization

The standard classical models of microeconomic and macroeconomic theory are generalized and reformulated as mathematical systems. The primary goal of the course is to extract empirically testable propositions that would permit testing model veracity. Linear algebra and the tools of calculus including power series, the implicit function theorem, envelope theorems, and duality are used as the basis of analysis. Additional prerequisites: a grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

171. Mathematical Economics: Dynamic Optimization

The course will discuss the mathematical tools needed to analyze dynamic situations in economics. Applications to optimal decision-making over time with respect to natural resource allocations, manufacturing and storage paths, consumption/investment decisions, and stability of economic systems are discussed. Topics include optimal control, dynamic programming, and calculus of variations. Additional prerequisites: a grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

172. Game Theory

This course introduces game theoretical concepts and tools. Theoretical topics include Nash equilibrium, Sub-game perfection, Bayesian-Nash equilibrium, Harsanyi transformation, commitment, and Perfect Bayesian Equilibrium. Applications to topics such as oligopoly, strategic investment, and agency theory are discussed. Additional prerequisites: a grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 113, or permission of instructor. (5 units)

173. Applied Econometrics

Statistical analysis of cross-section and panel data, with economic applications. Topics include identification of causal effects using panel methods, instrumental variables, and quasi-experimental techniques; models with binary outcomes; sample selection. Hands-on analysis of data using statistical software. Additional prerequisites: a grade of C- or better in MATH 11 or 30 or 35, and MATH 12 or 31 or 36, and ECON 41 and 42, and ECON 113. (5 units)

174. Applied Time Series Analysis

Methods to forecast and interpret hypotheses about time-varying economic variables. Topics include stationary and non-stationary series; characterizing time series in tractable ways; separating regular (trend and seasonal) and irregular parts of a time series; and examining identification and estimation strategies. Synthesize, present, and evaluate time series analysis to assess credibility. Additional prerequisites: a grade of C- or better in ECON 41, 42, and 115. (5 units)

181. International Trade

Analysis of the theories of international trade and strategic interactions; assessment of the empirical patterns of trade; analysis of the political economy of protection, and applications to policies guiding international competition. Additional prerequisite: a grade of C- or better in ECON 113. (5 units)

182. International Finance and Open Economy Macroeconomics

Analysis of the monetary aspects of international economics, including the balance of payments, exchange rates and foreign exchange markets, speculative attacks and currency crises, and the implications of international trade and capital flows for macroeconomic activity and policy. Additional prerequisite: a grade of C- or better in ECON 115. (5 units)

184. The Economics of Intellectual Property

This course provides a helicopter tour of the economics of intellectual property. The objective of the course is to offer students an overview of some of the most topical and relevant (from a business and policy perspective) and interesting (from an academic and general interest perspective) topics surrounding intellectual property. The course covers in particular recent events related to intellectual property, such as the debate on vaccine patents, software patents, “patent wars”, patent litigation involving patent trolls, and standard essential patents. It also introduces students to the economics of other intellectual property rights, including trademarks, copyright, and design rights. The course material varies substantially across topics; it is both theoretical and empirical and cuts across a number of disciplines, most importantly law and economics. Additional prerequisites: a grade of C- or better in ECON 113 and Econ 114. (5 units)

185. Economics of Innovation and Intellectual Property

The economic determinants and consequences of innovation. Topics include research and development, joint ventures, patents and other intellectual property, university-industry and government-industry collaboration, and the relationship between antitrust and other regulatory policies and technological advances. Additional prerequisite: a grade of C- or better in ECON 113 and 114. (5 units)

186. Economics of Digitization

Digitization has dramatically reduced the costs of data storage and transmission. The transformative force of the Internet has, in many areas, fundamentally changed the ways consumers and companies interact. This course explores the impact of different digital technologies on the behavior of markets and market outcomes. It combines tools and insights from a number of fields, including industrial organization, labor economics, the economics of innovation, and applied econometrics. Topics covered include big data, copyright and online piracy, apps markets, online retailers, social media, online gaming, and virtual currencies. Additional prerequisite: a grade of C- or better in ECON 41, 42, 113 and 114. (5 units)

187. Dynamic Macroeconomics

Dynamic macroeconomic models are artificial economies that are designed for doing applied time-series analysis and policy simulation. This course provides an introduction to such models. Topics include a review of analytical and numerical tools for dynamic optimization; quantitative analysis of business cycle using the neoclassical growth theory; monetary policy analysis and projection using new Keynesian models; and other selected topics of economic dynamics. Problem sets include both theoretical and computer exercises. Additional prerequisites: a grade of C- or better in ECON 41, 42, 113, and 115.

188. Advanced Macroeconomics: Theory and Empirics

Designed to provide students with a deeper understanding of macroeconomics and useful rigorous analytical and statistical skills. Topics covered include economic growth, and monetary and fiscal policies in business cycles. Analyze these topics in theoretical models, and validate the theories using actual data with R. Additional prerequisites: a grade of C- or better in ECON 41, 42, and 115. (5 units)

190. Economics Seminar

Seminar on contemporary economic theories and problems. Admission by invitation only. (5 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Independent studies are normally permitted only under special circumstances. Prerequisite: Written proposal must be approved by instructor and chair at least one week prior to registration. (1--5 units)

Department of Finance

Professors: Sanjiv Das (William and Janice Terry Professor), Hoje Jo (Gerald and Bonita A. Wilkinson Professor), Atulya Sarin, Hersh M. Shefrin (Mario L. Belotti Professor), Meir Statman (Glenn Klimek Professor)

Associate Professors: Ye Cai, George Chacko, Robert T. Hendershott (Department Chair), Seoyoung Kim, Carrie Pan (Department Chair), Gustavo Schwenkler

Assistant Professors: Samuel S. Lee, Elyas Fermand

Professors of Practice: Donald Davis, Manish Tewari

Lecturers: Michael Dana, Wendy Ku

Finance is at the center of well-managed businesses, from high technology companies to mutual fund companies. Development of knowledge and managerial skills in the corporate and investment settings are the major goals of the finance program. Graduates with a degree in finance pursue careers as corporate financial officers, traders, investment managers, financial analysts, financial planners, investment bankers, stockbrokers, regulators, and other specialties. Corporate finance officers manage the assets and value of corporations. They examine which new products and investments will be profitable, analyze the most cost-effective ways to produce them, and determine where to get the money needed to fund new ventures. Personal financial planners and stockbrokers help people make wise investments by selecting good stocks and assembling efficient portfolios. Students in finance also learn how to understand and analyze information from capital markets, engage in mergers and acquisitions, and undertake investments in new ventures, real estate, and international markets.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce degree, students majoring in finance must complete the following departmental requirements:

- FNCE 124 and 125
- Four upper-division finance electives*

*Note: FNCE 118, FNCE 127, and FNCE 129 will NOT meet upper-division elective requirements for finance majors, and will not be included in the finance major GPA..

Requirements for the Real Estate Minor

All Santa Clara University students may pursue the real estate minor by fulfilling the following requirements:

- FNCE 118*
- Four courses from the following list:
  - FNCE 127*, FNCE 128, FNCE 129*, FNCE 143, ECON 156, and ENVS 128
- Nonbusiness students also need to take at least three additional courses (prerequisites for finance real estate electives): FNCE 121, ACTG 11, and BUSN 70 or BUSN 170.

*Note: FNCE 118, FNCE 127, and FNCE 129 will NOT meet upper-division elective requirements for finance majors, and will not be included in the finance major GPA.

Upper-Division Courses

115. Quantitative Methods for Finance

The goal of this course is to teach finance majors the most important quantitative tools they will need for the finance curriculum. Students will learn to (1) comprehend important concepts, techniques, and tools used in mathematics and statistics that are relevant for modern finance; (2) understand where these tools are applied in practice; and (3) learn widely-used software to implement these techniques. The course goal is to make sure that all finance majors reach a baseline level of competence in various quantitative methods, and is especially intended for those students who fear math, yet have a desire to come to grips with it. A previous math course (e.g., MATH 31 or the MATH 11 and 12 sequence) is strongly recommended. Prerequisite: FNCE 121 or 121S. (5 units)

116. Mathematical Finance

Introduction to Ito calculus and stochastic differential equations; discrete lattice models; models for the movement of stock and bond prices using Brownian motion and Poisson processes; pricing models for equity and bond options via Black-Scholes and its variants; optimal portfolio allocation. Solution techniques will include Monte Carlo and finite difference methods. Prerequisites: Either FNCE 115 or MATH 122 or AMTH 108. MATH 53 or permission of the instructor is required if FNCE 115 has not been taken. Cross-listed with MATH 125 and AMTH 367. (5 units)

118. Real Estate Principles

A foundational course that provides students with a general overview of real estate and practical applications of the material. The course covers a broad range of topics including the historical and legal basis of regulations and customs that govern real estate today, real estate service industries, real estate market analysis, the principles in real estate transactions, and the unique characteristics of real estate as an investment asset class. The course will lay a solid foundation for students to pursue specific areas in greater depth through more focused courses in the future. This course does not satisfy an upper-division elective for finance majors and is not included when calculating the finance major GPA. Prerequisites: 88+ units (junior/senior standing) or ACTG 11. (5 units)

121. Financial Management

Introduction to the basic concepts of financial risk and return, the valuation of uncertain future cash flows, working capital and fixed asset management, and cost of capital. Topics include time value of money, financial analysis and forecasting, valuing corporate securities (stocks and bonds), capital budgeting, short- and long-term financing, and cash management. Prerequisites: OMIS 40, ACTG 11 and proficiency with spreadsheets. (5 units)

121S. Financial Management

Introduction to the basic concepts of financial risk and return, the valuation of uncertain future cash flows, working capital and fixed asset management, and cost of capital. Topics include time value of money, financial analysis and forecasting, valuing corporate securities (stocks and bonds), capital budgeting, short- and long-term financing, and cash management. Prerequisites: Restricted to students in the Leavey Scholars Program. OMIS 40, ACTG 11, and proficiency with spreadsheets. (5 units)

124. Investments

Introduction to the nature and functions of securities markets and financial instruments. The formulation of investment goals and policies, trading strategies, and portfolio management. Coverage of security analysis and valuation, evaluating portfolio performance, diversification, alternative investments. Prerequisite: FNCE 121 or 121S. (5 units)

125. Corporate Financial Policy

In-depth examination of the interrelationships between corporate investment and financing decisions and their impact on a firm's pattern of cash flows, return, and risk. Special emphasis on the development of analytical techniques and skills for analyzing performance reflected in financial statements. Case studies are used. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

126. Money and Capital Markets

Examines the role and function of financial institutions, financial flows, and interest rate structures in the money and capital markets. Viewed primarily from the perspective of a corporate issuer, explores the mechanisms by which value is created by financial markets, the roles of players in the system, the securities in each market, the flows of information, and the design and incentive features that manage risk in a practical manner. Common themes and concepts will be developed by the exploration of a new market in each class, examining a corporate issuer's funding alternatives, and incorporating current news events. Prerequisites: FNCE 121 or 121S, FNCE 124. (5 units)

127. Introduction to Real Estate Transactions

This course uses real-life investments as a comprehensive means of exploring all phases of the real estate investment life cycle, from identifying potential transactions, examining various valuation methods, conducting due diligence, determining financing alternatives, implementing property management strategies, and analyzing disposition timing. Students will explore various types of real estate investments: multi-family, office, hotel, and ground-up development. This course does not satisfy an upper-division elective for finance majors and is not included when calculating the finance major GPA. Prerequisite: FNCE 121 or 121S, and FNCE 118. (5 unit)

128. Real Estate Finance

Exploration of the real estate market, including investments in residential and commercial real estate by individuals, partnerships, and trusts. Emphasis is on the valuation and cash flow analysis of these projects and an understanding of financing alternatives. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

129. Real Estate Development

Examines the complex and interdisciplinary process of real estate development, including conceptual planning, feasibility studies, financing, legal documentation, and project management. Explores ways that developers mitigate risks throughout the development process. Describes different types of commercial real estate products and the roles of key players in today's real estate profession. Students will also gain exposure to the ethical issues frequently encountered in real estate development. This course does not satisfy an upper-division elective for finance majors and is not included when calculating the finance major GPA. Prerequisites: FNCE 121 or 121S, and FNCE 118. (5 units)

130. Ethics and Finance

Exploration of the ethical dimension of financial markets. Each week focuses on a different job function (investment manager, research analyst, trader, fund manager, corporate controller, bank officer, etc.) and explores the intersection between legal responsibility and ethical action. Topics include fiduciary responsibility, insider trading, moral hazard, agency, predatory lending, and financial market regulations concerning disclosure, price manipulation, suitability, etc. Current news items and regulatory activity will be incorporated in weekly discussions. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

132. Financial Derivatives

Provides an introduction to financial derivative securities, the markets in which they trade, their applications, and valuation frameworks. Securities such as equity calls/puts, forwards/futures, structured products, and fixed income derivatives will be covered. An underlying theme of the course will be valuation using dynamic replication. Applications will cover the use of derivatives in global corporate settings as well as in financial institutions and services. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

134. Fixed Income Securities

Provides an introduction to fixed income by covering the valuation and application of a range of fixed-income securities and credit derivatives. The main objective is to provide a foundation in the basic concepts and mathematics of these securities and their applications, holistically as it pertains to a means to (1) formulate investment strategies, (2) immunize investment portfolios, and (3) hedge attendant risks. Students will be able to describe basic features, pricing, and mathematics (duration and convexity) of fixed-income securities, model risk and return in fixed-income securities, describe basic similarities and differences in the deaures and bond mathematics for plain-vanilla versus more complex fixed-income securities, and describe and price basic credit derivatives and structured credit products. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

135. Applied Portfolio Management

Designed to provide a highly rigorous and analytic framework for applied work in investments and portfolio management. Students who master the course material will acquire the analytical tools and financial theory necessary to make rational investment decisions and understand the paradigms by which investment portfolios are managed. The coursework involves an analysis of contemporary theories and techniques in portfolio management available to professional portfolio managers. Significant literature that emphasizes the role of the modern portfolio manager in achieving diversification and client investment goals is reviewed and evaluated. Prerequisites: FNCE 121 or 121S, FNCE 124, and OMIS 41. (5 units)

141. New Venture Finance

Describes the financing environment for young companies and studies how the private equity market functions. Students will learn how investment funds are structured, investment contracts are written, and understand the economics of different private equity models work. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

143. Entrepreneurial Finance

Covers topics that are directly relevant to entrepreneurs, defined broadly to include all early employees in addition to founders, who are evaluating, communicating, and implementing new business opportunities. This course focuses on the start-up phase with an emphasis on venture-backed companies. The three main sections of the course are: Types of Businesses (primarily lecture and project-based), Financial Models (primarily project-based), and Investment Terms (primarily lecture-based). Types of Businesses covers the three types of entrepreneurs: lifestyle entrepreneurs, wealth-building entrepreneurs, and innovating entrepreneurs, along economic foundations that distinguish the three types of entrepreneurship. Financial Models covers the creation and uses of financial projection: revenue, costs, and profits/losses. Investment Terms covers the way investments in startup companies are generally structured. In all three sections, we will discuss the human biases that often distort entrepreneurial efforts, along with strategies to recognize and avoid the more costly. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

146. Introduction to Risk Management

Introduction to financial risk management through its major components: credit, market, operational, legal, and reputational. Also addresses technology tools to manage risk and the role data governance and environmental policy play in risk management. Students who master the material will acquire an understanding of the major areas of risk

exposure that all organizations, both public and private, face in operating in today's complex global marketplace. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

148. Risk Management and Insurance

Survey of general principles of risk management. Risk management uses many tools to avoid, reduce, or offset the financial penalty of risks. The course will cover types of insurance, financial instruments used to "insure" a portfolio, credit default swaps, etc. The course will address the risk management function across the firm. The role of the chief financial officer (CFO) or vice president of finance as the risk management officer will be examined. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

149. Financial Institutions and Services

Analyzes the management of financial institutions and the role of financial services and institutions in the financing/restructuring of industry and government, and facilitating saving and investment. Topics such as asset/liability management, regulatory constraints, liquidity and credit risk considerations, financing and securitization, and off-balance sheet activities are discussed. Macro issues such as financial system stability, information flows, and regulatory capital are also covered. Ethical issues faced by financial industry professionals are considered. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

151. International Finance

Examination of the functioning of the international monetary system, foreign exchange markets, and the financial problems of business firms operating internationally. Topics covered include hedging exchange rates and interest rates, international investment and financing, financial markets, banking, and financial management. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

170. Business Valuation

Practical valuation tools for valuing a company and its securities. Valuation techniques covered include discounted cash-flow analysis, estimated cost of capital (cost of equity, cost of debt, and weighted average cost of capital), market multiples, free-cash flow, and pro-forma models. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

172. Corporate Treasury Management

Provides a comprehensive review of the corporate treasury function, including payment systems, cash forecasting, working capital metrics and management, capital structure decisions and capital markets, long-term and capital investments, risk management (primarily foreign exchange and interest rate risk), clearing and settlements, and treasury systems, and the regulatory and legal environment for corporate treasurers and CFOs. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

174. Mergers and Acquisitions

A study of corporate governance and corporate restructurings. Emphasis on how corporate ownership, control, and organizational structures affect firm value. Other topics may include valuing merger candidates, agency theory, and takeover regulation. This course generally places a heavy emphasis on case projects and/or class presentations. Prerequisites: FNCE 121 or 121S, and FNCE 124. (5 units)

180. Financial Planning & Analysis

This course focuses on the main skills associated with financial planning and analysis (FP&A). FP&A involves the budgeting, forecasting, and analytical processes that support an organization\'s financial health and business strategy. Through simulation exercises, students learn how to implement FP&A by using a set of techniques associated with open book management (OBM), an approach to business based on the idea that a firm's financial statements should be viewed as an open book within the organization, with corporate decisions being based on value maximizing principles. Prerequisites: FNCE 121 or 121S, FNCE 124, and FNCE 125.

186. Applying Financial Models to Financial Data

This course introduces students to various financial databases, accessing data from these databases, and analyzing data using quantitative techniques. Students will explore Bloomberg, Compustat, CRSP, Mergent/Investext, EDGAR, and other online sources such as Yahoo Finance. Downloaded data will be managed in Excel and analyzed using a variety of features that Excel offers, especially its Data Analysis Toolpak, as well as other analytical software. Course assignments focus on current financial events, as students access and analyze data to answer questions related to these events. Prerequisites: FNCE 121 or 121S, FNCE 124, and FNCE 125 (or permission of instructor). (5 units)

191. Peer Educators in Finance

Peer educators in Finance work closely with a faculty member to help students in a course understand course material, think more deeply about course material, benefit from collaborative learning, feel less anxious about testing situations, and/or to help students enjoy learning. Enrollment is by permission of the instructor. (1 or 2 units)

197. Investment Banking Fundamentals

Provides an overview of the Investment Banking industry, reviews the various transaction types and the capital markets, and teaches students the fundamental technical skills and analyses used by Investment Bankers in practice. Uses case studies, lectures, and discussions to teach the key technical and non-technical concepts necessary to succeed in the Investment Banking industry or any career involving corporate, valuation, and transaction analysis. Must be taken after or concurrently with ACTG 11. (5 units)

198. Internship

Opportunity for selected upper-division students to work in companies and nonprofit organizations. Prerequisites: Finance major, junior or senior standing, successful completion of FNCE 121 or FNCE 121S, and permission of instructor and chair required one week prior to registration. Anything less than 5 units will not count toward major requirements. (1--5 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Independent studies are normally permitted only under special circumstances. Prerequisites: Declared finance major, junior or senior standing and a written proposal must be approved by instructor and chair one week prior to registration. (1--5 units)

Department of Management and Entrepreneurship

Professors Emeriti: David F. Caldwell, Dennis J. Moberg, James L. Koch, Don C. Dodson (Distinguished Service Professor of Management)

Professors: Gregory Baker (Naumes Family Professor), Tammy L. Madsen (Keck Foundation Chair), Barry Z. Posner (Michael Accolti, S.J., Professorship of Leadership and Department Chair), Michael A. Santoro, Manuel G. Velasquez (Charles J. Dirksen Professor of Business Ethics)

Associate Professor: Jennifer L. Woolley

Assistant Professors: Vikram R. Bhargava, Andy El-Zayaty, Hooria Jazaieri, Keyvan Kashkooli, Shaohua Lu, Kelly Patterson, Esther Sackett, Zhe (Adele) Xing, Jo-Ellen (Pozner) Zeitlin

Senior Lecturer: Nydai MacGregor

Lecturers: Francine Gordon, Xiaoying (Fiona) Ji, Long Le, Sandy (Kristin) Piderit

Adjunct Lecturers: Phyllis Brock, Jack Caffrey, Sylvia Flatt, Tim Harris, Laura Jacobus, Christina Johnson

The curriculum of the Department of Management and Entrepreneurship emphasizes rigorous analysis and managerial application. Courses are offered in organizational behavior, human resource management, team dynamics, leadership, sustainability, and negotiations.. Additional courses in strategic management, business ethics, entrepreneurship, new venture creation, and international management provide a general management perspective. Management majors are those who want to develop balanced general management skills and/or prepare for project management careers. Students in other majors who aspire to supervisory and leadership positions will find several of the department electives useful.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce degree, students majoring in management must complete the following departmental requirements:

- MGMT 174
- Four courses selected from MGMT 164, 165, 166, 169, 170, 171, 172, 173, 176, 177, 178, 180, 181, 197, 198, 198E and 199

Lower-Division Courses

6. Business Ethics

A normative inquiry into the ethical issues that arise in business and how they should be managed. Attention is given to current moral issues in business and ethical theories or ethical frameworks, and their implications for these issues, and to the managerial implications. Topics may include truth in advertising, corporate social responsibility, stakeholder theory, sustainability, affirmative action, government regulation of business, quality of work-life, environmental and resource issues, and ethical codes of conduct. Students who take PHIL 26 may not take this course for credit. (4 units)

6H. Business Ethics

Honors section. A normative inquiry into the ethical issues that arise in business and how they should be managed. Attention is given to current moral issues in business, and ethical theories or ethical frameworks, and their implications for these issues, and to the managerial implications. Topics may include truth in advertising, corporate social responsibility, stakeholder theory, sustainability, affirmative action, government regulation of business, quality of work-life, environmental and resource issues, and ethical codes of conduct. Students who take PHIL 26 may not take this course for credit. Prerequisite:Enrollment restricted to students in the University Honors or Leavey Scholars programs. (4 units)

40. Foundational Knowledge of Managing for Sustainability

This course examines the foundational knowledge required of individuals who seek to effectively manage organizations that meet the triple bottom line: social, economic, and environmental sustainability. Students will learn the concepts critical for understanding sustainability from biological, economic, and social perspectives. Students will learn how to justify the pursuit of sustainable business practices, illustrate the role of businesses in building a just and equitable future, and demonstrate how systems thinking helps to illustrate the interdependent nature of our world. (2 units)

41. Foundational Skills of Managing for Sustainability

The main focus of this course is to share the core skills found to be necessary for professionals who work to successfully advance sustainability in organizations and communities. Students will learn how to assess an organization's sustainability practices and make appropriate strategy recommendations. Students will be able to illustrate the role of businesses in building a just and equitable future, as well as articulate how change agents can inspire action at multiple levels to build a more sustainable world. (2 units)

42. Leading from the Triple Bottom Line

This course provides an opportunity for students to apply the theoretical skills they have learned in previous classes to a real-world organization, or "client", and gain valuable business skills they can apply to future internships or full-time roles. Students will learn foundational principles of sustainable business and explore the challenges of leadership to advance social and environmental objectives within the context of an actual business or organization. The course counts toward credit in the Design Thinking, Paradigm Shift and Sustainability pathways. (4 units)

50. Professional Development Skills and Strategies Seminar

This one-unit seminar is an introduction to the foundational professional development skills necessary to plan and implement internship and career search strategies. By the end of the seminar students will create a career action plan for launching an internship search and building their lifelong network. Prerequisite: Must be a Leavey School of Business major and sophomore standing. (1 unit)

80. Global and Cultural Environment of Business

An examination of the basic conceptual vocabulary and theories regarding the economic, political, and social influences on international business today. Topics may include international trade, financial systems, political institutions, cultural factors, corporate structure, and market entry. Students who take this class may not receive credit for MGMT 80L taken in the Santa Clara London Program, or any equivalent course taken in a study abroad program. Prerequisites: BUSN 70 or 170, and ECON 3. (4 units)

Upper-Division Courses

160. Management of Organizations

Introduction to organization theory and practice with an emphasis on organizational behavior, inclusive of the contexts of the individual, the group, and the organization as a whole. Prerequisite: Students must have completed 60 units. (5 units)

160S. Management of Organizations

Introduction to organization theory and practice with an emphasis on organizational behavior, inclusive of the contexts of the individual, the group, and the organization as a whole. Prerequisites: Open only to students in the Leavey Scholars Program. Students must have completed 60 units. (5 units)

162. Strategic Analysis---The Business Capstone

Focuses on the processes by which managers position their businesses or assets to maximize long-term value creation and value capture in the face of uncertainty, rapid change, and competition. Covers various frameworks for analyzing an industry's structure and a firm's competitive position, and for developing a coherent and viable firm strategy. Requires students to integrate and extend the knowledge and skills that they have developed throughout their coursework (e.g., marketing, finance, economics, organizational behavior, ethics, information systems, statistical analysis, operations management, accounting, etc.) into a "total" business perspective. Prerequisites: ECON 41 and 42 or OMIS 41; FNCE 121 or 121S; MGMT 80, 160, or 160S; MKTG 181 or 181S; and senior standing. (5 units)

162S. Strategic Analysis---The Business Capstone

Focuses on the processes by which managers position their businesses or assets to maximize long-term value creation and value capture s in the face of uncertainty, rapid change, and competition. Covers various frameworks for analyzing an industry's structure and a firm's competitive position and for developing a coherent and viablee firm strategy. Requires students to integrate and extend the knowledge and skills that they have developed throughout their coursework (e.g., marketing, finance, economics, organizational behavior, ethics, information systems, statistical analysis, operations management, accounting, etc.) into a "total" business perspective. Enrollment restricted to students in the Leavey Scholars Program. Prerequisites: ECON 41 and 42 or OMIS 41; FNCE 121 or 121S; MGMT 80, 160, or 160S; MKTG 181 or 181S; senior standing; and a minimum 3.5 cumulative GPA. (5 units)

164. Introduction to Entrepreneurship

The course looks at the practice of business innovation and entrepreneurship with an emphasis on how entrepreneurs identify opportunities, evaluate resources, build organizations, and understand the phenomena of entrepreneurship. MGMT 164 is an introductory course intended to provide a foundation regarding the role of entrepreneurship, discussing ideas about entrepreneurship, and entrepreneurs in society and the economy.Prerequisites: ACTG 11 and MKTG 181. (5 units)

165. Building a Business

Mgmt 165 integrates many of the concepts, tools and practices of entrepreneurship. This course is a systematic and practical study of business creation and evaluation for new ventures and entrepreneurial projects. Students will learn to assess and shape venture ideas, convert these ideas into viable businesses, and present these businesses to external stakeholders. Topics include new venture execution plans, alternatives and trade-offs in financing, feasibility, resource acquisition, venture growth and harvesting. The course includes discussion of cases, lectures, and presentations by guest lecturers who have played a role in starting new enterprises. The course builds on foundation concepts from the Introductory Entrepreneurship course. It is designed for students seriously considering launching a new venture in a variety of contexts, and for students planning to work in an early stage venture. Prerequisite: MGMT 164. (5 units)

166. Human Resource Management

Comprehensive review of the role and functions of human resource management departments in business organizations, with particular emphasis on selection and placement, training and development, and compensation systems. Prerequisite: MGMT 160 or 160S, or permission of instructor. (5 units)

167. Venture Capitalist Essentials

This course provides insight into the thought processes of Venture Capitalists. It will cover all aspects of deal flow including sourcing opportunities, performing due diligence, determining valuation and constructing term sheets. While inspired as a way to prepare students for the Venture Capital Investment Competition (held in the Winter quarter), it offers an introduction to the VC world for students interested in becoming investors as well as those hoping to obtain VC funds as entrepreneurs. (2 units)

169. Business and Public Policy

The impact of public policy on business and how businesses adapt to and influence public policies. Includes ideology, corporate social responsibility, government regulations, and business political activity. Lectures/discussions; case analyses. (5 units)

170. International Management

Today's business managers are challenged to set strategy, develop organizations, lead people, and control performance in a local context. They also need to understand and lead within a complex global context. This course is designed to help students: 1) develop an understanding of multinational management; 2) recognize the challenges and opportunities presented by global markets; 3) implement a global strategy by means of organizational design, human resources management and leadership development. Prerequisite: MGMT 80. MGMT 160 or 160S recommended. (5 units)

171. Managerial Communication

Interpersonal and small-group communication. Negotiating behavior. Oral and written communication. Integrates theory and skill-building through reading, case analysis, and practice. Prerequisite: MGMT 160 or 160S, or permission of instructor. (5 units)

172. Social Entrepreneurship

This course focuses on emerging models of enterprise at the interface of the public, private, and nonprofit sectors. It examines theories of change and the dynamics of social innovation and develops both conceptual and practical tools for creating high performance organizations that are capable of addressing seemingly intractable problems in a financially sustainable manner. Analysis of exemplary social business ventures will illustrate how the discipline of business planning can contribute to the development of social ventures that are economically viable at scale. Students will apply this knowledge to the writing and analysis of a case on---and/or service learning for---an actual social business. Prerequisite: students must have completed 87.5 units or permission of instructor. (5 units)

173. Resources, Food, and the Environment

Exploration of relationship among food production, resource use, and the environment. Topics include food innovation, biotechnology, the green revolution, resource depletion, environmental degradation, and food safety. Also listed as ECON 101. (5 units)

174. Social Psychology of Leadership

A conceptual framework for understanding leadership and opportunities for developing leadership skills. This interactive course requires personal reflection into leadership experiences. Prerequisite: students must have completed 87.5 units or permission of instructor. (5 units)

176. Sustainable Food Systems

In this course, you will study the existing food system, issues of food access, justice and sovereignty as well as opportunities to use technology and innovation to create a more just and sustainable food system. We will examine how food policy and lobbying affect food production and consumption and the role of food policy in food insecurity, health risks tied to food, and climate change. The first third of the class focuses on agricultural production, food policy, and issues of access and affordability. The second third analyzes the role of food production in climate change, supply chains and opportunities for creating more sustainable, traceable and transparent supply chains. In the final third of the course, we will discuss opportunities for disruptive innovation in the agricultural technology and food technology fields as an agent of change. (5 units)

177. Globalization and the Cultures of Innovation and Entrepreneurship

This course introduces students to the skills, practices and processes for understanding and managing innovation and entrepreneurship activities that span cultures throughout the world. These culture challenges include development of an entrepreneurial mindset and adoption of new organizational forms (e.g., open innovation, crowdsourcing). (5 units)

178. Business and Human Rights

More and more companies are adopting human rights policies, conducting human rights due diligence, reporting on their human rights performance, and employing teams of human rights experts. Through interactive exercises, debates, case studies, and role- play, this course will provide you with the knowledge, skills and tools to identify and address a company’ s human rights risks and to leverage the power of business to advance human rights around the world. (5 units)

180. Negotiation Skills in Business

We negotiate every day, both at work and in our personal lives. The overall goal of this course is to create a learning community where we can all improve our understanding of both the art and the science of negotiation. By learning about the research-based theories of negotiation, students will gain analytic skills in understanding negotiation principles. In preparing for the role plays assigned, students will practice selecting appropriate negotiation strategies for different contexts. By practicing negotiation in a number of different behavioral simulations, and reflecting critically on simulation outcomes, students will gain practical skills in influencing others to secure productive agreements through negotiation. Prerequisite: MGMT 160 or 160S, may be taken concurrently with instructor permission. (5 units)

181. Conscientious Capitalism

The foundation of Conscientious Capitalism is: "To lead others, I will first learn to lead myself." The course is designed to inspire and teach students the role of purpose, virtue, intentionality, tenacity, and accountability in their leadership journey. The course uses three distinct but related activities to achieve this goal. Nationally renowned business, military, and civic leaders share the experiences and challenges that shaped them, their careers, and major decisions. The goal of having iconic leaders share with honesty and vulnerability is to inspire students to do the same in the course and their lives. Harvard Business School cases give students the opportunity to learn from the most critical business and policy decisions of our times. Putting students in the role of decision-maker challenges them to understand the complexity of decision making and leadership, and begins to train them for their careers post SCU. Leadership Development Teams (LDTs) are small, mentored groups. The goal is for students to explore and share

their authentic selves and develop the courage to live as their authentic selves in their careers and lives. Note: We seek evidence of a student's ambition to make an impact and the hunger and maturity to pursue the journey of self-awareness, authenticity, and courageous action. (5 units)

197. Special Topics in Management

Offered occasionally to introduce new topics not covered by existing electives. Topics generally reflect the research interests of the faculty teaching the course. Prerequisite: MGMT 160 or 160S. (5 units)

198. Internship/Practicum

Opportunity for students to apply managerial knowledge and skills as well as leadership skills through their internship in local organizations. Prerequisites: MGMT 160 or 160S and MGMT174 (can be taken concurrently) and two courses from the following list: MGMT 166, 169, 170, 171, 172, 173, 176, 177, 178, 180. Students must have completed 60 units and have the approval of the undergraduate committee one week prior to registration. (1--5 units)

198E. Entrepreneurship Internship

This course brings together your academic studies with real-world start-up experience. As such, the class is comprised of two parts: an on-site internship, and an academic segment. The internship must be at least 10 hours per week, 80 for the quarter, starting by the first week of class. During the internship, you will help a Silicon Valley entrepreneurship develop and build a new venture. Here, you will observe a new venture during its formative years. The academic component entails the application of your business studies to a genuine new firm setting. You will examine and analyze your internship experiences with your academic learning. The ultimate product of this class is an in-depth case study of the firm and its founders.Prerequisites: MGMT 164 and must have a declared entrepreneurship minor. MGMT 165 may be taken concurrently. (5 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Prerequisites: MGMT 160 or 160S, and a written proposal must be approved by instructor and chair one week prior to registration. (1-5 units)

Department of Marketing

Professors Emeriti: Karen F. A. Fox, Edward McQuarrie, Dale D. Achabal

Professors: Albert V. Bruno (William T. Cleary Professor), Kirthi Kalyanam (L.J. Skaggs Distinguished Professor), Shelby H. McIntyre

Associate Professors: Xiaojing Dong, Desmond Lo (Department Chair), J. Michael Munson, Kumar Sarangee, Savannah Wei Shi, Yuchi Zhang

Assistant Professors: Rebecca Chae, Peng Liu, Rafay Siddiqui

Professors of Practice: Charles Byers, Juan Montermoso

Lecturers: Gail Kirby, Sean O'Keefe

Marketing operates at the cutting edge of a well-managed organization. Development of students' decision-making and managerial skills are the major objectives of the Department of Marketing program, with special emphasis in innovation, high technology, retailing, and digital marketing. Marketing links a business to its markets and customers and acts as the eyes and the ears for a firm, helping managers to identify emerging market opportunities and anticipating customer needs and wants. It is also the firm's voice, handling communications with customers and deciding on advertising, sales, and social media messages. Finally, strategic marketing addresses competitive threats and opportunities, guiding a firm's efforts to deliver superior value. Because customer analysis and competitive advantage are so crucial to business success, a degree in marketing provides a solid foundation for a general management career leading to executive responsibilities. It can also provide the basis for a more focused career in such areas as advertising, retailing, sales, brand management, and market research.

Requirements for the Major

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce degree, students majoring in marketing must complete the following departmental requirements:

- MKTG 182 and 183 (recommended to be completed in junior year, prior to electives)
- After completion of MKTG 182 and 183, three elective courses in an area of marketing must be completed.

The following emphases have been created to inform students of recommended classes to take should they want to explore an emphasis area.

The emphasis areas: (a) Business and Technology and (b) Consumer and Channel. Alternatively, an individually designed emphasis with three elective courses may be completed.

Business and Technology Marketing Emphasis (Select three courses)

- MKTG 185, 187 (strongly recommended)
- MKTG 175, 177, 186, 189, 190, 191 (recommended)

Consumer and Channel Marketing Emphasis (Select three courses)

- MKTG 165, 175, 186 (strongly recommended)
- MKTG 187, 189, 190, 191 (recommended)

Individually Designed Marketing Emphasis

- Three courses selected with the student's marketing faculty advisor, typically from MKTG 165, 175, 178, 185, 186, 187, and 189

Note: An emphasis will not appear on a student's transcript.

The MKTG 198 internship elective should be designed to augment the student's career goals. However, MKTG 198 cannot be substituted for an elective course in the major.

MKTG 179 and BUSN 179 are cross-listed and are required for all majors.

All courses listed below are considered electives and count toward meeting all marketing elective requirements, regardless of the area of interest.

Upper-Division Courses

165. Customer-Centric Retailing

The design and management of store, catalog, and Internet-based retail channels. Topics include how retailers create value for the producer and the end user, the financial and marketing strategies that underlie retailing formats, target marketing decisions, merchandise management, how retail price promotions work, managing customer service, and the execution of retail marketing decisions. Mini cases, video cases, an applied project, and guest speakers from industry will be utilized to provide practical illustration of various concepts and stimulate class discussion. Prerequisites: ACTG 11 and MKTG 181 or 181S. (5 units)

168. and 169. Advanced Retail Seminars

In-depth examination of a number of topics critical to future executive roles in a retailing environment. Topics include consumer trends, multichannel retail models, analysis of high-performance retailers, building information-centric organizations, category management, arts and science in merchandising decisions, data-driven sales promotion, and supply chain management. Prerequisites: MKTG 165, 181, or 181S, and declared retail studies minor. MKTG 168 must be taken prior to 169. (5 units)

175. Internet Marketing and E-commerce

This course introduces the fundamentals of internet marketing and e-commerce and provides students with hands-on experience in developing and evaluating effective digital strategies. Topics include: history of internet marketing and e-commerce, key elements of e-business models, and how to build and evaluate websites, display ads, search engine marketing, email marketing, mobile marketing, and social media marketing. Project required. Prerequisite: MKTG 181 or 181S. (5 units)

177. Social Media Marketing

This experiential course examines the role of social media in business and brand strategy, digital advertising, and overall marketing mix. The class introduces students to the current social media landscape, explores the strategic implications of social media as part of the overall marketing mix, explores the role of social media in message development and implementation, and evaluates which social platforms are the best fit for an organization's strategic business and marketing goals. Topics include social media objectives and strategies, an overview of platforms, current social media trends and their implications, developing social media as an integral part of the marketing mix. Prerequisites: MKTG 181 or 181S. (5 units)

178. Marketing Across Cultures

Success in global markets requires developing marketing programs that are sensitive to cultural differences. This course emphasizes the cultural factors that drive consumption behavior in international markets. A socio-cultural perspective is applied to traditional marketing concepts to develop programs to successfully address international markets. Mechanisms for participating in foreign markets such as exports, licensing, and joint ventures are evaluated. Ethical marketing issues in international contexts are explored. Students who take this class may not receive credit for MKTG 178L taken in the Santa Clara London Program, or any equivalent course taken in a study abroad program. Prerequisites: MKTG 181 or 181S and MGMT 80. (5 units)

179. Effective Communication in Business

In this pragmatic professional development course, students will learn the following business communication skills: business writing, informal and formal presentations, networking, and personal brand. Students will produce quantitative and qualitative analyses and evaluations and create professional multimedia projects, proposals, and presentations. Students will also develop skills in formal and informal business writing and discourse (briefings, reports, emails, memos, interviews, social media, infographics, etc.). Prerequisites: CTW1 & CTW2. Must have completed at least 60 units. Also listed as BUSN 179. (5 units)

179S. Effective Communication in Business

In this pragmatic professional development course, students will learn the following business communication skills: business writing, informal and formal presentations, networking, and personal brand. Students will produce quantitative and qualitative analyses and evaluations and create professional multimedia projects, proposals, and presentations. Students will also develop skills in formal and informal business writing and discourse (briefings, reports, emails, memos, interviews, social media, infographics, etc.).Prerequisites: Enrollment restricted to students in the Leavey Scholars Program. CTW1 & CTW2. Must have completed at least 60 units. Also listed as BUSN 179S. (5 units)

181. Principles of Marketing

Introduction to the fundamental principles of contemporary marketing. Covers the role of marketing in society, marketing strategy and planning, segmentation, product policy, pricing decisions, promotion, and distribution. The course stresses topical examples. Emphasizes application of basic principles, information sourcing, analytical thinking, and communication skills. Prerequisite: Must have 60 units or greater, or permission of instructor. (5 units)

181S. Principles of Marketing

Introduction to the fundamental principles of contemporary marketing. Covers the role of marketing in society, marketing strategy and planning, segmentation, product policy, pricing decisions, promotion, and distribution. Stresses topical examples. Emphasizes application of basic principles, information sourcing, analytical thinking, and communication skills. Prerequisite: Enrollment restricted to students in the Leavey Scholars Program. Must have 60 units or greater, or permission of instructor. (5 units)

182. Analysis for Marketing Decisions

An analytical approach toward understanding consumers and markets to support profitable marketing decisions in such areas as market segmentation, new product development, positioning, and promotions. The focus is on frameworks for structuring marketing problems, and techniques for using data to improve marketing decisions. Cases and projects are emphasized. Prerequisites: OMIS 41 or ECON 42 and MKTG 181 or 181S. (5 units)

183. Customer Behavior

How consumers process information and make buying decisions. Investigation of influence factors, such as attitudes, personality, culture, motivation, perception, and reference groups on consumer decision making. Decision-making processes of industrial buyers in business-to-business markets are also studied and compared to those of individuals in consumer markets. Particular emphasis on understanding the decision-making process (both consumer and industrial) and its application to the development of sound marketing strategy. An applied project, videos, and mini-cases are used to illustrate the practical application of various concepts. Prerequisites: OMIS 41 or ECON 42 and MKTG 181 or 181S or permission of instructor. (5 units)

185. Sales Management

This course puts the student in the role of being a prospective sales or marketing manager. The objective is to provide students with user-level knowledge of sales concepts and management methodologies necessary to effectively perform and manage the sales function. The format of the course enables the student to apply these concepts to selling both consumer high-tech and industrial products and services. Project required. Prerequisite: MKTG 181 or 181S. (5 units)

186. Integrated Marketing Communications

Integration of the marketing mix, brand message, and media is essential to successfully meeting corporate objectives. The course arms students with an understanding of new media plus the skills to plan, develop, execute, coordinate, and measure integrated marketing communications (IMC) programs. Personal attributes, demeanor, and business ethics are addressed in preparation for moving from the classroom to the boardroom. Interaction with business practitioners, industry-experienced instruction, and a service/learning project for an actual company are integral to the course. Prerequisite: MKTG 181 or 181S. (5 units)

187. Innovation and New Product Marketing

Focuses on both quantitative and qualitative techniques associated with identifying, researching, and analyzing new product opportunities. Exposes students to important tools for designing, testing, and introducing profitable new products and services. Prerequisite: MKTG 181 or 181S. (5 units)

189. Sustainability Marketing

The course is designed to explore the relationship between sustainability and marketing, especially for students interested in business and society and the environmental concerns that affect marketing managers. Key areas include understanding the economic foundation of sustainability marketing and its place in contemporary society, sustainability marketing standards and strategies, and global and ethical considerations. Prerequisite: MKTG 181 or 181S. (5 units)

190. Brand and Content Marketing

Brand & Content Marketing examines the components of brand and brand strategy and how they inform content marketing principles, strategies, function, form and style of an integrated physical and online portfolio of paid, owned, shared and earned (POSE) media. The course will examine the written, verbal and visual frameworks, formats and styles required to execute an integrated message strategy across multiple media platforms. Students will demonstrate their comprehension by completing a number of tactical executions against real-life project and marketing objectives. Prerequisite: MKTG 181 or 181S. (5 units)

191. Customer Experience Management

This course provides strategic, operational, and analytical aspects of customer experience management. Customer experience management is a core marketing strategy that integrates internal processes and external networks to create and deliver exceptional value to customers. The course covers customer acquisition, journey, retention and development, loyalty, and the associated tools and technology that create superior customer experiences. Prerequisite: MKTG 181 or 181S. (5 units)

197. Special Topics in Marketing

Occasional current and interdisciplinary courses offered on a one-time or infrequent basis or cross-listed with offerings in other departments. Consult quarterly schedule of classes for description. Prerequisites: MKTG 181 or 181S and declared marketing major. (5 units)

198. Internship

Opportunity for upper-division students to work in local firms and complete a supervised academic project in that setting. Prerequisites: Declared marketing major, MKTG 181 or 181S, 182, and permission of faculty coordinator. (1--3 units)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty sponsor. Independent studies are normally permitted only under special circumstances. Prerequisite: Written proposal must be approved by instructor and chair at least two weeks prior to registration. (1--5 units)

Information Systems & Analytics

Professors: Narendra Agrawal (Benjamin and Mae Swig Professor), Gangshu Cai (Department Co-Chair), Manoochehr Ghiassi, Steven Nahmias, S. Andrew Starbird, Andy A. Tsay

Emeritus Professor: Stephen A. Smith

Associate Professors: Ram Bala, Tao Li , Haibing Lu (Department Co-Chair), David K. Zimbra, Sami Najafi-Asadolahi

Assistant Professors: Michele Samorani, Mohammad Amin Morid, Sunghun Chung, Yaqiong Wang, Xiaoyan Liu

Lecturers: Graeme Warren, Homi Fatemi, Sumana Sur, Rick Schaffzin

Undergraduate study in the Department of Information Systems and Analytics (ISA) explores the use of computer information systems and analytical decision-making methods in organizations. Essential to the conduct of business, these skills equip the department's majors and minors to design, implement, and evaluate systems central to an organization's success.

In addition to the major in management information systems (MIS), the department offers an MIS minor for nonbusiness and non-MIS majors, the interdepartmental major of accounting and information systems (AIS), and the minor in business analytics for business students.

The department's majors and minors may pursue a variety of careers after graduation, including management consulting, systems administration, technical sales and marketing, operations management, and roles as business analysts in public, private, service, and nonprofit sectors. Past graduates have also gone on to various master's degree or doctoral programs, as well as law school.

Requirements for the Majors

In addition to fulfilling undergraduate Core Curriculum and Leavey School of Business requirements for the bachelor of science in commerce degree, students majoring in management information systems or in accounting and information systems must complete the following departmental requirements:

Major in management information systems (MIS)

- OMIS 30
- OMIS 105, 106, and 107
- Three courses from OMIS 111, 113, 114, 116, 117, 118, 120, 135, 137, 150

Major in accounting and information systems (AIS)

- ACTG 120, 130, 131, 132, 135, 136, and 138
- OMIS 30
- OMIS 105, 106, and 150 (or ACTG 155); students must register for ACTG 155 to take the CPA exam
- One course from OMIS 107, 111, 113, 114, 120, 135, 137

Accounting and information systems majors may use either OMIS 30 to satisfy the information systems requirement in the Leavey School of Business curriculum. OMIS 150 is cross-listed with ACTG 155. Accounting and information systems majors may enroll in OMIS 150 or ACTG 155.

Requirements for the Management Information Systems Minor

Non-business majors and non-MIS majors in the Leavey School of Business may pursue the MIS minor, enabling them to apply a deeper understanding of technology to their major.

The MIS minor has the following requirements:

- OMIS 30
- OMIS 105
- Three courses from OMIS 106, 107, 111, 113, 114, 116, 117, 118, 120, 135, 137, 150

Nonbusiness students minoring in MIS must also complete the following requirements:

- One course in mathematics from MATH 11 or 30
- One course in statistics and data analysis from OMIS 40, MATH 8, MATH 122, PSYC 40, COMM 110
- Three courses in business from BUSN 70, MGMT 160, MGMT 161, MKTG 181, FNCE 121, OMIS 108 or OMIS 108E

Requirements for the Business Analytics Minor

The Business Analytics minor currently is only open to business students. The minor has the following requirements:

- OMIS 30, 105, 109, 114, and 115
- One elective from OMIS 113, OMIS 118, ACTG 134, ACTG 155, ECON 173, ECON 174, FNCE 146, FNCE 148, and MKTG 182

Note: A course cannot be double-dipped in multiple programs. For example, if OMIS 113 is taken as an elective for BA minor, it cannot count towards MIS major.

Lower-Division Courses

15. Introduction to Spreadsheets

Using spreadsheets to analyze business data and present the findings in tables, charts, and graphs. Topics covered will include spreadsheet formulas, functions, pivot tables, and pivot charts. Students will also learn how to retrieve data from sources such as text files, relational databases, and servers. Students may not take both OMIS 15 and 17 for credit. Students must have less than 87.5 units completed. (2 units)

30. Introduction to Programming with Python

Fundamental methodologies and approaches to computer programming, with emphasis on problem solving, top-down program design, and thinking like a programmer. Students will learn basic structures of computer programming; analyze real business problems from a computer programmer perspective; and program, test, and debug well-structured programs. Focuses on essential aspects of writing software that include good design, modularity, efficiency, documentation, clarity, portability, and style. Students will obtain hands-on programming skills through several programming assignments. This course is the basis for business application development in database design and systems programming courses. Students who receive credit for CSCI 10 (formerly MATH 10), COEN 6, COEN 11, or OMIS 31 may not take this course for credit. (4 units)

34. Science, Information Technology, Business, and Society

Examines the complex relationship among science, information technology, business, and society. Investigates major breakthroughs in information technology, how they were influenced by business needs, and how they affect business and society. Explores social and cultural values in business science and technology, and economic challenges posed by rapid business information technology. Also examines the workings of major components of information technology used in business today. (4 units)

40. Statistics and Data Analysis I

First course in a two-course sequence. Students learn to summarize and describe sets of data using numerical and graphical methods; to quantitatively express the probability of events and utilize probability rules; to employ probability distributions to describe the probabilities associated with discrete and continuous random variables, and to compute means and variances; to evaluate sample data collection plans for quantitative and qualitative data; and to construct interval estimates for the population mean. Students analyze real-world data using spreadsheet software. Prerequisites: MATH 11 or 30, and OMIS 15 or 17. (4 units)

41. Statistics and Data Analysis II

Second course in a two-course sequence. Students learn to construct confidence intervals and test hypotheses about means, proportions, and variances for one and two populations; to formulate and test hypotheses about multinomial data; to construct both simple and multiple regression models, evaluate model quality and predict the value of dependent variables using regression. Students analyze real-world data using spreadsheet software. Prerequisites: OMIS 15 or 17, and OMIS 40. (4 units)

43. Data Wrangling and Visualization

Cross-listed with ECON 43. Prerequisites: MATH 30 and OMIS 40 (2 units)

Upper-Division Courses

105. Database Management Systems

This course presents issues related to databases and database management systems (DBMS). Students will acquire technical and managerial skills in planning, analysis, design, implementation, and maintenance of databases. Hands-on training in relational database design, normalization, SQL, and database implementation will be provided. Use of DBMS software is required. Emphasis is placed on the issues of managing a database environment. Prerequisite: OMIS 30. (5 units)

106. Systems Analysis and Design

This course presents methodologies and approaches to the analysis and design of computer-based information systems for business applications. Topics include the systems development lifecycle, development methodologies, requirements determination, use case analysis, process modeling, systems architecture, program, and interface design, systems implementation, and organizational transition. Application of the studied methodologies and techniques to a systems analysis and design project is required. Prerequisite: OMIS 30. (5 units)

107. Systems Programming

Discussion of the fundamental concepts of systems programming. Major focus on the overall structure and capabilities of modern operating systems (LINUX/UNIX, Windows, etc.) and how to use operating system facilities to manipulate files and processes. Also covers shells and scripting programming concepts for performing system-level programming assignments on dedicated computer systems. Development of several software assignments utilizing systems programming concepts is required. Prerequisite: OMIS 30. (5 units)

108. Operations Management

Survey of analysis and design methods for business systems that produce and deliver goods and services. Topics chosen from the following: process analysis, sales forecasting, production planning and scheduling, inventory management, material requirements planning, quality control, lean manufacturing, and supply chain management. Prerequisite: OMIS 41 or ECON 41 and 42. This section is equivalent to OMIS 108E. (5 units)

108E. Sustainable Operations Management

This version of OMIS 108 emphasizes applications to sustainable business practices. Prerequisite: OMIS 41 or ECON 41 and 42. This section is equivalent to OMIS 108. (5 units)

108S. Operations Management

Enrollment in this version of OMIS 108 is restricted to students in the Leavey Scholars Program. Prerequisite: OMIS 41 or ECON 41 and 42. (5 units)

109. Prescriptive Analytics

Mathematical methods for solving decision problems encountered in business situations. Emphasis on problem formulation and application of spreadsheet-based algorithms for solution. Linear models and linear programming. Sensitivity analysis. Network models. Integer and nonlinear programming. Decision analysis and value of information. Dynamic analysis and the principle of optimality. Prerequisite: OMIS 41 or ECON 41 and 42. (5 units)

111. Computer Communications Systems

Designed to provide the information systems professional with a basic literacy in communication technologies driving the digital economy. Basics of data and telecommunications, LANs, WANs, broadband, analog and digital communications, Internet architecture and concepts, wireless including cellular and WLANs, and market and regulatory issues are covered. Emphasis on being able to assess the business impact of networking technologies. Prerequisite: OMIS 30. (5 units)

113. Data Warehousing and Business Intelligence

This course examines a broad collection of software tools and analytical applications that allow enterprises to analyze data maintained in data warehouses and operational databases for business intelligence. Topics include data storage and data integration architecture, enterprise analytics, and business intelligence tools and presentations. Students will acquire hands-on experience in building business intelligence applications. Prerequisites: OMIS 30, and OMIS 105. (5 units)

114. Data Science with Python

The objective of this course is to teach the analytical mindset and programming skills relevant to data science. Students will learn the principal tools for data science in Python, including the Jupyter (IPython) Notebook, Pandas, Seaborn, and Scikit-learn. Students will learn skills that cover the various phases of exploratory data analysis:

importing data, cleaning and transforming data, algorithmic thinking, grouping and aggregation, visualization, time series, statistical modeling/prediction and communication of results. The course will utilize data from a wide range of sources and will culminate with a final project and presentation. Prerequisite: OMIS 30. (5 units)

115. Predictive Analytics

This course aims to teach conceptual foundations of predictive analytics and practical data analytics skills in order to perform out-of-sample predictions on real-world data. The course (1) introduces multiple data structures (e.g., time series, cross-sectional) that are frequently used in several different business contexts, (2) demonstrates predictive model construction techniques on different data structures, and (3) focuses on improving out-of-sample predictive performance. Topics include time series analysis and forecasting, regression models, classification and prediction models, text mining and analytics, and social network analysis. Prerequisite: OMIS 114. (5 units)

116. Applied Machine Learning

This course examines applications of machine learning using Apache Spark and Python. Topics include supervised and unsupervised machine learning algorithms such as regression, decision trees, support vector machines, clustering, and dimensionality reduction. Students will develop and run Spark jobs using Python and have hands-on experience on cases such as developing predictive models, generating recommendations with Collaborative Filtering, analyzing unstructured data with text mining, etc. Prerequisite: OMIS 30 and OMIS 114 (5 units)

117. Software Development Project

Integration of system and programming concepts to develop a comprehensive software system. Also presents an overview of software development methodology. Prerequisite: OMIS 30. (5 units)

118. Social Media Analytics

User generated content on social media platforms has increased dramatically. This includes rich data about various user communities, their interests, interactions and requirements. To understand, analyze and extract knowledge from social media data, this course employs a multidisciplinary approach that combines graph analysis, natural language processing, and machine learning. This approach is applied on real world data of social media platforms like Twitter, Facebook and Yelp for different applications such as sentiment analysis, topic modeling and user interaction mining. Students will have hands-on experience by developing all applications in Python throughout the course. Prerequisite: OMIS 114 and 116. (5 units)

120. Web Programming

The course will focus on the design and development of Web-based applications using a number of currently popular tools and strategies, and also explore the use of databases as data repositories for Web applications. Core technologies including HTML, CSS, JavaScript, PHP, MySQL, and AJAX will be emphasized. Prerequisites: OMIS 30, and 105. (5 units)

135. Enterprise Resource Planning Systems

Enterprise Resource Planning (ERP) systems are the foundation of modern business processes. Study of business process integration, ERP technology, and ERP implementation. Students will have the opportunity to work with ERP software from SAP. Includes a team project and case studies. Prerequisite: OMIS 105 or COEN 178. (5 units)

137. Object-Oriented Programming

Introduction to object-oriented design methodology. Discussion of different programming paradigms, concepts of data abstraction, inheritance, and encapsulation. Topics include an overview of Java programming language, classes and objects, data abstraction, inheritance, I/O packages, exceptions, threads, and GUI. Development of several programming assignments using Java is required. Prerequisite: OMIS 30. (5 units)

145. Competitive Quality

Slogans like "Quality is Job 1"; "When it absolutely, positively has to be there overnight"; and "The Dependability People" leave little doubt as to the importance of quality in commercial competition. This course explores how quality contributes to competitiveness. The course starts by defining quality and introducing methods for measuring quality. The course investigates variation in quality and its effect on firm performance, and studies methods for monitoring and controlling quality including quality control charts and sampling inspection. Finally, in light of new developments in operations theory and in technology for tracking and monitoring products, the course also tackles strategic supply chain issues associated with quality. Case studies and field trips are used to bolster student understanding. Prerequisites: ECON 1 and OMIS 108/108E/108S. (5 units)

150. Financial Information Systems

Course focuses on computer-based financial information systems that allow finance and accounting professionals to acquire and manage a company's financial system. Topics include the business functions of a financial information system, the technical aspects of the system, and the management issues of implementing such a system. Students will acquire hands-on experience using ERP systems. Students who receive credit for ACTG 155 may not take this course for credit. Also listed as ACTG 155. Prerequisites: OMIS 30, and OMIS 105. (5 units)

198. Internship

Opportunity for selected upper-division students to work in local businesses or government units. Requires a faculty advisor and should be fairly well structured. Note: A student cannot use a collection of internship courses to satisfy the upper-division course requirement for any of the OMIS department's major or minor programs. Prerequisites: Upper-division standing and approval of the undergraduate committee one week prior to registration. Written proposal must be approved by instructor and chair one week prior to registration. (1 unit)

199. Directed Reading/Directed Research

Independent projects undertaken by upper-division students with a faculty advisor. Note: A student cannot use a collection of directed reading/directed research courses to satisfy the upper-division course requirement for any of the OMIS department's major or minor programs. Prerequisites: Upper-division standing and approval of the undergraduate committee one week prior to registration. Written proposal must be approved by instructor and chair one week prior to registration. (1--5 units)

Entrepreneurship

Director: Keyvan Kashkooli

The entrepreneurship minor provides students who may be interested in either developing a business or working in a startup company the chance to explore that career option and acquire the skills that can help them to be successful. Students completing the minor should develop an understanding of the venture creation process including how to generate and develop a new business concept, apply analytical tools to identify and evaluate entrepreneurial opportunities, create and evaluate a business plan, and analyze different funding sources for a new venture. A critical element of the program is an internship working with an emerging for-profit or social benefit organization.

The entrepreneurship minor is open to all students via an application process through the Management and Entrepreneurship Department. F-1 international students are advised to consult with International Students and Scholars in the Global Engagement Office prior to applying to ensure they are able to meet the government immigration requirements for academic internships due to the internship requirement. Accepted business school students can begin the minor after they have earned 60 units. For students outside the business school, prerequisites for the core courses should ideally be completed in the sophomore year.

Requirements for the Minor

MGMT 164. Introduction to Entrepreneurship

MGMT 165. Building a New Business

MGMT 198E. Internship in Entrepreneurship*

And two courses from the following list:

BUSN 197. Business/Engineering Project Collaboration

ECON 129. Economic Development

ECON 185. Economics of Innovation and Intellectual Property

ENVS 145. Environmental Technology

ENVS 148. Solar Revolution

FNCE 141. New Venture Finance

FNCE 143. Entrepreneurial Finance

FNCE 170. Business Valuation

MECH 144. Smart Product Design (co-requisite: MECH 144L lab)

MGMT 172. Social Entrepreneurship or HRNS 120A. Entrepreneurship for Social Justice

MGMT 175. Managing Family Businesses

MGMT 177/ENGR 161 Cultures of Innovation

MKTG 175. Internet Marketing

MKTG 177. Social Media Marketing

MKTG 182. Marketing Analysis

MKTG 187. Innovation and New Product Marketing

PHSC 157: Social Innovation in Public Health

SOCI 150. Immigrant Businesses in the United States

SOCI 172. Management of Health Care Organizations

*The internship must run concurrent with the course, and students cannot use past experiences toward credit in this course.

International Business

Director: Long Le

The minor in international business is designed to educate students in a broad range of management and business skills in a global context. The program includes coursework in language, social science, and international business, and is open to all undergraduate students. The minor provides students with an understanding of the social, economic, and political context of international business, the language communication skills, and the business skills to be effective managers in a global marketplace. Students are encouraged to participate in a study abroad program or internship to complement this minor.

Requirements for the Minor

Students must complete the following requirements for a minor in international business:

Foreign Language

- One course from ARAB 23, CHIN 23, FREN 100, GERM 100, ITAL 100, JAPN 23, SPAN 23
- Students who feel that they already have the required level of language competency must demonstrate such by completing one of the above courses (or a more advanced 100 or 101 level course). Other languages do not qualify.

Business Fundamentals

- BUSN 70 (or BUSN 170); ACTG 11; ECON 1, 2, 3; and MGMT 80
- One course from MGMT 6, PHIL 26

World Geography or Social Science in a Global Context (Cultures & Ideas 3)

- Two approved Cultures & Ideas 3 courses in anthropology, history, political science, or sociology; or two courses listed below, or a combination for a total of two courses in both groupings: ENVS 50; ECON 129, 134, 138; HIST 105; POLI 50, 119, 121, 122, 136, 137, 140, 142, 144, 146; PSYC 162; SOCI 138
- Other eligible selected comparative politics courses may be approved by the director of the international business minor program
- Note that some courses may require prerequisites.

International Business

- Two upper-division courses from FNCE 151; MGMT 170; MKTG 178; ECON 181, 182
- Note that some courses may require prerequisites and may be offered only once per year.

Recommended (but not required)

- Completion of advanced language courses
- Participation in study abroad programs; approved equivalent courses taken abroad may fulfill requirements of the minor
- Internship related to an international business career
- Additional coursework in economic development, modern history, and politics of selected world regions

Retail Studies Minor

Executive Director: Kirthi Kalyanam Ph.D

The Retail Management Institute (RMI) is a recognized academic partner of the retail industry with a 40-year history. We have a strong reputation for developing strategic leaders with the advanced skills necessary for success in the new technology infused world of retail.

RMI provides a platform for deep collaboration between industry and leading academics into the emerging and evolving concepts impacting retail today. The knowledge generated from this collaboration forms the basis of our curriculum.

The minor in retail studies offered by RMI is an in-depth immersion experience that prepares students for a diverse set of roles including e-commerce, buying, merchandising, planning and allocation, digital marketing, and supply chain management. Open to all University undergraduates, students entering the retail studies program continue to major in their field of interest and receive their bachelor's degree in that field.

Business majors get an opportunity to discover an exciting industry in which to build their passions. For many business majors, broad business theories develop deeper meaning as they are applied specifically and in an integrative manner to the retail industry. Retailing is at the forefront of trends in digital and mobile marketing and social media. This provides a fertile ground for arts and science students to leverage their unique background.

Comprised of a set of core required courses, the minor in retail studies includes foundational retailing classes in the spring quarter of junior year and a two-quarter class designed around the Art & Science of Merchandising and Retail Innovation in the fall and winter quarters of senior year. The core classes cover topics such as digital marketing, branding, product development, category management, business analytics, supply chain management, e-commerce, and pricing and promotion analysis and digital merchandising.

One of the valuable and unique aspects of the retail studies minor is participation in an internship during the summer after junior year. This immersive experience gives students insight into the retail industry and potential career options. Non-business majors are encouraged to apply for admission to the program during their first or second year to allow time to integrate their course of study in retailing with the requirements in their major field. Business students who have completed the lower-division requirements **can enter the program no later than November of their junior year**. Students are admitted into the minor at the discretion of the executive director based on multiple criteria including a minimum GPA of 3.3, proven analytical skills, the ability to blend analytical and creative thinking and previous exposure to retail.

Requirements for the Retail Studies Minor

Students must complete the following requirements for a minor in retail studies:

Communication

COMM 20 or

BUSN 179

Computer Concepts

OMIS 15

Data Analysis

OMIS 40 or

PSYC 40 or

MATH 8/123 or

AMTH 108 or

COMM 110

Technology/Information Systems

COMM 12 or

OMIS 34 or

ACTG 134 or

SOCI 49/149

Microeconomics

ECON 1

Organization and Management

MGMT 160

Principles of Marketing

MKTG 181

Multi-Channel Retailing*

MKTG 165

Internship

BUSN 198R

Fall Senior Seminar

MKTG 168

Winter Senior Seminar

MKTG 169

*Pre-requisites:

BUSN 70 and

ACTG 11 and

MKTG 181

Sustainable Food Systems

Directors: Gregory Baker and Erika French-Arnold

The Sustainable Food Systems minor provides students with the opportunity to explore the intersection of global food systems and sustainability. Courses address the cultural aspects of food, food policies, nutrition and public health, social justice, sustainability, and opportunities for creating new innovation and change within the food system. Seven courses are required to complete the minor. Two courses must be selected from each of three dimensions: cultural/societal, sustainable development, and innovation and change. A seventh course must be selected from a list of experiential learning courses. Only three courses from a student's major will count towards the Sustainable Food Systems minor. The minor will prepare students for future careers in food industry management, food entrepreneurship, food policy, public health, and nutrition.

Requirements for the Minor

Dimensions, Courses, and Requirements

Two courses must be taken from each of the following three dimensions, Cultural/Societal, Sustainable Development, and Innovation and Change. One course must be chosen from the Experiential Learning Dimension. Four of the seven courses must be upper division. No more than three courses can come from a student's major. Courses marked with an asterisk (*) must receive prior approval from the program director, which will be determined based on the relevance of the course topic, research project, or fellowship. Students should check for any prerequisites before selecting a course to fulfill a requirement for the minor.

Cultural/Societal Dimension (two courses)

ANTH 5 Popular Culture and Bioanthropology

ANTH 50/ENVS 50/POLI 50 World Geography

ANTH 140/ENVS 136 Food, Culture, and the Environment

BIOL 105/PHSC 105 Human Nutrition and Metabolism

BIOL 106/PHSC 124 Health Consequences of a Western Lifestyle

ENVS 79 Environmental Thought

ENVS 185 Garbology

ITAL 101 Italian Food Culture

SOCI 12A Cultures & Ideas II: The Human Condition

SOCI 132 Inequality and the American Dream

Sustainable Development Dimension (two courses)

ANTH 133 Human Nutrition and Culture

ANTH 138 The Biology of Poverty

ENVS 132 Agroecology L&L

BUSN 150 Feeding the World

CENG 124/ENVS 124 Water Law and Policy

ECON 135 Gender Issues in the Developing World

ENVS 22 Introduction to Environmental Studies

ENVS 146 Agriculture, Environment, and Development: Latin America

ENVS 147 International Environment and Development

ENVS 149 African Environment and Development

PHSC 1 Introduction to Public Health

POLI 123 Global Environmental Politics

Innovation and Change Dimension (two courses)

ANTH 137 Evolutionary Medicine

BIOL 18* Exploring Biotechnology L&L

ECON 101/MGMT 173 Resources, Food and the Environment

ECON 134 African Economic Development

ENGR 161/MGMT 177 Cultures of Innovation

ENVS 155 Environmental and Food Justice

MGMT 40 Foundational Knowledge of Managing for Sustainability

MGMT 42 Managing from the Triple Bottom Line

MGMT 172 Social Entrepreneurship

MKTG 187 Innovation and New Product Marketing

SOCI 60/130 Introduction to Social Entrepreneurship

Experiential Learning Dimension

Students must choose one course from the following list. Additional courses may be approved as satisfying the Experiential Learning Dimension providing 1) the course is a credit-bearing course related to sustainable food systems; and 2) a grade is earned for the course. Some examples include, a food-focused internship or research project, a senior design project, or a food-related study abroad course. Global Social Benefit Fellows, Global Fellows, and students participating in an immersion with a food-emphasis may use these programs/ courses to meet the minor's experiential requirement with prior approval.

BUSN 132* CLASP (Contemplative Leadership and Sustainability Program)

BUSN 151 A&B Food, Hunger, Poverty and Environment Immersion

BUSN 188* Field Studies: NPI Small Business Improvement Project

BUSN 195* A&B The Global Fellow Experience

ELSJ 134/135* Participation in the GSBF: Global Social Benefit Fellowship

ENVS 95* Sustainability 101

ENVS 191 Urban Agriculture Practicum

ENVS 195* SLURP (Sustainable Living Undergraduate Research Project)

School of Engineering

Dean: Elaine Scott

Associate Dean for Undergraduate Studies: Ruth E. Davis

Associate Dean for Graduate Studies: Sally Wood

Associate Dean for Research and Interdisciplinary Programs and Initiatives: Christopher Kitts

Associate Deans for Mission, Culture, and Inclusion: Silvia Figueira and Aleksander Zecevic

Director of Undergraduate Programs in Engineering: Shane Wibeto

The mission of the School of Engineering is to prepare diverse students for professional excellence, responsible citizenship, and service to society. The engineering school does this through:

- Distinctive academic programs that are designed to produce engineers who approach their profession with competence, conscience, and compassion.
- Broadly educated faculty, who model and encourage the notion of lifelong learning.
- Scholarly activities that create new knowledge and advance the state of the art of technology.
- Interactions with professional societies and companies in Silicon Valley and beyond.
- Service activities that benefit our diverse constituencies and humanity in general.

All courses offered through the School of Engineering are taught under tenets set forth in the Engineering Honor Code. The Engineering Honor Code is a longstanding Santa Clara tradition instituted at the request of students. The code states: "All students taking courses in the School of Engineering agree, individually and collectively, that they will not give or receive unpermitted aid in examinations or other coursework that is to be used by the instructor as the basis of grading." Students and teachers cooperate and share responsibilities under the code. Teachers are responsible for making clear what aid is permissible and for using procedures that minimize temptations to violate the code. Students are responsible for behaving honorably, for actively ensuring that others uphold the code, and for being responsive to violations.

Undergraduate Degrees

The School of Engineering confers the degree of bachelor of science with majors in bioengineering, civil engineering, computer science and engineering, web design and engineering, electrical engineering, electrical and computer engineering, general engineering, and mechanical engineering. The specialized bachelor of science programs in civil engineering, computer science and engineering, electrical engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org, and the bachelor of science program in computer science and engineering is also accredited by the Computing Accreditation Commission of ABET, http://www.abet.org . The bachelor of science programs in bioengineering, electrical and computer engineering, general engineering, and web design and engineering are not yet accredited by ABET. The engineering school offers minors in engineering, computer science and engineering, construction management, electrical engineering, electrical and computer engineering, aerospace engineering, and mechanical engineering as well as two interdisciplinary minors, one in bioengineering and one in technical innovation, design thinking, and the entrepreneurial mindset. All of the undergraduate engineering programs require students to complete extensive course sequences in mathematics and natural science as well as engineering.

Success in completing these critical course sequences is highly dependent upon having the necessary technical background at each stage. Accordingly, prerequisites for all engineering courses are strictly enforced.

Requirements for the Bachelor of Science

To qualify for the degree of bachelor of science in the School of Engineering, students must complete the minimum number of units specified for the particular major and satisfy the requirements of the undergraduate Core Curriculum and the major. It is possible that one course can satisfy more than one of the core requirements for engineering students.

Undergraduate Core Curriculum

Critical Thinking & Writing

- One two-course sequence in composition: CTW 1 and 2

Advanced Writing

- ENGL 181

Religion, Theology & Culture 1, 2, and 3

- Three courses approved to satisfy the core requirements

Cultures & Ideas 1 and 2

- One course sequence from the approved list of Cultures & Ideas course sequences

Cultures & Ideas 3

- One course from the approved list

Mathematics and Natural Science

- Course requirements are specified in the respective major requirements

Second Language

- Recommended proficiency in one foreign language; requirement is satisfied by two years of high school study in a foreign language

Social Science

- One course from the approved list

Civic Engagement

The civic engagement requirement may be met by one of two options:

- One course from the approved list
- A combination of ENGR 1 and a senior design project

Ethics

- One course in general or applied ethics from the approved list

Diversity

- One course from the approved list

Arts

The arts requirement may be met by one of two options:

- One course from the approved list
- A combination of ENGL 181 and a senior design project

Science, Technology & Society

The Science, Technology & Society requirement may be met by one of two options:

- One course from the approved list (which includes ENGR 1)
- A combination of ENGL 181 and a senior design project

Experiential Learning for Social Justice

- One course (or activity) approved to satisfy experiential learning

Pathways

- Three courses with a common theme approved for a declared Pathway; materials submitted from two of these courses and a Pathway Essay following the requirements specified in the Core Curriculum.

Minors in the School of Engineering

Minor in Aerospace Engineering

The Department of Mechanical Engineering offers a minor in aerospace engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the Mechanical Engineering section of this chapter.

Minor in Bioengineering

The Department of Bioengineering offers an interdisciplinary minor in bioengineering designed for students who are science majors in the College of Arts and Sciences, students completing prerequisites for medical school, and engineering majors. Requirements for this minor are outlined in the Bioengineering section of this chapter.

Minor in Computer Science and Engineering

The Department of Computer Science and Engineering offers a minor in computer science and engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the Computer Science and Engineering section of this chapter.

Minor in Construction Management

The Civil, Environmental, and Sustainable Engineering Department offers a Construction Management minor open to all undergraduate students. Requirements for the minor are described in the Civil, Environmental, and Sustainable Engineering section of this chapter.

Minor in Electrical Engineering

The Department of Electrical and Computer Engineering offers a minor in electrical engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the Electrical and Computer Engineering section of this chapter.

Minor in Electrical and Computer Engineering

The Department of Electrical and Computer Engineering offers a minor in electrical and computer engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the Electrical and Computer Engineering section of this chapter.

Minor in Engineering

The School of Engineering offers a minor in general engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the General Engineering section of this chapter.

Minor in Technical Innovation, Design Thinking, and the Entrepreneurial Mindset

The School of Engineering offers a minor in technical innovation, design thinking, and the entrepreneurial mindset open to engineering and non-engineering majors. Requirements for the minor are outlined in the General Engineering section of this chapter.

Minor in Mechanical Engineering

The Department of Mechanical Engineering offers a minor in mechanical engineering open to engineering and non-engineering majors. Requirements for the minor are outlined in the Mechanical Engineering section of this chapter.

Centers, Institutes, and Special Programs

Center for Nanostructures

The Center for Nanostructures uses state-of-the-art equipment to educate students and to advance the field of nanoscale science and technology. The mission of the center is to conduct, promote, and nurture nanoscale science and technology, interdisciplinary research, and education activities at the University, and to position the University as a national center of innovation in nanoscience education and nanostructures research. Ongoing research projects include On-Chip Interconnect Modeling, Carbon Nanotubes/Nanofibers, and Electrical/Biological System Interfaces. Faculty, graduate students, and undergraduate students utilize the center for research projects.

Combined Bachelor of Science and Master of Science

Bachelor of science degree programs offered by the Departments of: Bioengineering; Civil, Environmental and Sustainable Engineering; Computer Science and Engineering; Electrical and Computer Engineering; and Mechanical Engineering can be combined with any master of science degree offered by the School of Engineering. Requirements for the combined degree programs are outlined in the appropriate departmental sections of this chapter.

Cooperative Education Program

The Cooperative Education Program integrates classroom work with practical experience by providing alternate or parallel periods of college education with periods of training in industry or government. The objective of the program is to provide students the opportunity to enhance their academic knowledge, to further their professional development, and to learn how to work effectively as individual contributors and group members. The industrial training is related to the student's field of study and often is diversified to afford a wide range of experience. To qualify for the program, undergraduate students must have completed at least 90 quarter units and have a grade point average of 2.5 or higher. Credits earned in the program may be used to meet undergraduate degree requirements.

Frugal Innovation Hub

Sponsored by the School of Engineering, the Frugal Innovation Hub (FIH) offers an interdisciplinary platform for the design and implementation of innovative technology for social benefit by fostering collaboration between students and faculty from universities worldwide, multinational corporations, social enterprises, nonprofits, and foundations. Through undergraduate and graduate courses, innovation projects, and immersion experiences, SCU students have the opportunity to develop technologies, products, and solutions to address real-world human needs in underserved markets domestically and internationally. Focus areas include clean energy, global public health, mobile technologies, sustainable livelihood development, and clean water.

The Grand Challenge Scholars Program

The SCU Grand Challenge Scholars Program combines opportunities to engage, understand and help address the grand challenges facing society, while inspiring innovative ideas and designs that will help people around the world achieve a higher standard of living and quality of life. Through completion of the five components of the program, students will have the opportunity to engage in research relating to their selected grand challenge, explore interdisciplinary coursework, gain an international perspective, engage in entrepreneurship, and give back to the

community through service learning. SCU Engineering students who complete the program will achieve the distinction of Grand Challenge Scholar, endorsed by both SCU and the National Academy of Engineering (NAE), and will be uniquely prepared to collaborate and succeed in a transdisciplinary and global environment.

Department of Applied Mathematics

Senior Lecturer: Stephen A. Chiappari (Department Chair)

Lecturer: Aaron Melman

The Department of Applied Mathematics offers only graduate degree programs and operates in a service mode at the undergraduate level. Undergraduate courses offered by the department have been designed to bridge mathematical theory and engineering applications.

Upper-Division Courses

106. Differential Equations

Explicit solution techniques for first order differential equations and higher order linear differential equations. Use of numerical and Laplace transform methods. Only one of MATH 22 and AMTH 106 may be taken for credit. Prerequisite: MATH 13. (4 units)

108. Probability and Statistics

Definitions of probability, sets, sample spaces, conditional and total probability, random variables, distributions, functions of random variables, sampling, estimation of parameters, testing hypotheses. Prerequisite: MATH 14. (4 units)

112. Risk Analysis in Civil Engineering

Set theory and probability, random variables, conditional and total probability, functions of random variables, probabilistic models for engineering analysis, statistical inference, hypothesis testing. Prerequisites: MATH 14 and at least junior standing. (4 units)

118. Numerical Methods

Numerical solution of algebraic and transcendental equations, numerical differentiation and integration, and solution of ordinary differential equations. Solution of representative problems on the digital computer. Prerequisites: AMTH 106 or MATH 22, and one of the following: MECH 45; COEN 11, 44, 45; CSCI 10. (4 units)

120. Engineering Mathematics

Review of ordinary differential equations (ODEs) and Laplace transform, vector calculus, linear algebra, orthogonal functions and Fourier series, partial differential equations (PDEs), and introduction to numerical solutions of ODEs. Also listed as MECH 120. Prerequisite: AMTH 106. (4 units)

194. Peer Educator in Applied Mathematics

Peer educators in applied mathematics work closely with a faculty member to help students understand course material, think more deeply about course material, benefit from collaborative learning, feel less anxious about testing situations, and enjoy learning. Prerequisite: Enrollment by permission of the instructor. (2 units)

Department of Bioengineering

Professor: Yuling Yan

Associate Professors: Prashanth Asuri, Unyoung (Ashley) Kim, Biao (Bill) Lu, Zhiwen (Jonathan) Zhang (Department Chair)

Assistant Professor: Ismail Emre Araci

Lecturers: Maryam Mobed-Miremadi, Emily Park

Bioengineering is the fastest-growing segment of engineering today and holds the promise of improving the lives of all people in very direct and diverse ways. Bioengineering focuses on the application of biological, chemical, electrical, mechanical, and other engineering principles to understand, modify, or control biological systems, and educates students to solve problems at the interface of engineering and the life sciences.

The major in bioengineering is designed to prepare students for careers in the medical device, biotechnology and biopharmaceutical industries, graduate study in bioengineering, or entry into medical school.

The bioengineering (or biomedical engineering) minor is primarily designed for those students who are interested in the field but are majoring in other disciplines, particularly science majors, students completing prerequisites for medical school as part of their undergraduate degree, or engineering majors.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in bioengineering must complete a minimum of 191 units and the following requirements (together with associated labs):

English

- ENGL 181

Bioethics

- One course from BIOE 180, BIOL 171, ENGR 19, PHIL 7, PHIL 117 or TESP 157

Natural Science

Biomolecular track:

- BIOL 1A; BIOE 21, 22, 32; CHEM 11, 12, 31, 32; PHYS 31, 32, 33

Medical-device track:

- BIOE 21, 22, 32; CHEM 11, 12, 31; PHYS 31, 32, 33

Pre-med track:

- BIOL 1A, 1B, 1C*; CHEM 11, 12, 31, 32, 33, 50; PHYS 31, 32, 33

  * Replaceable with BIOE 22

Mathematics

- MATH 11, 12, 13, 14; AMTH 106, BIOE 120 (or AMTH 108)

Engineering

- ENGR 1, ELEN 50
- BIOE 10, 23, 45

Biomolecular track:

- BIOE 153, 162, 163, 172, 175, 176

Medical-device track:

- MECH 10
- BIOE 153, 154, 155, 161, 162, 171, 174

Pre-med track:

- BIOE 153, (154 or 155), 162, (161 or 163), 171, 172

Senior Design Project

- BIOE 194, 195, 196

Technical Elective (TE) Requirements

Biomolecular track (16 units minimum):

- Of the required minimum of 16 TE units, at least 8 units must be upper-division BIOE courses.
- Recommended courses: BIOE 100^1^, 108, 130, 140, 141, 154, 155, 157, 161, 167, 168, 171, 173, 174, 177A&B, 178, 179, 180, 185, 186, 187, 190, (188/189, 198, 199)^2^; BIOL 110, 113, 114, 122, 172, 174, 178, 179; CHEM 33, 111, 141, 142, 150, 151; PHYS 171

Medical-device track (15 units minimum):

- Of the required minimum of 15 TE units, at least 8 units must be upper-division BIOE courses.
- Recommended courses: BIOE 100^1^, 106, 107, 108, 130, 140, 141, 157, 163, 167, 168, 172, 173, 175, 176, 177A&B, 178, 179, 180, 185, 186, 187, 190, (188/189, 198, 199)^2^; AMTH 118; COEN 140; CSCI 183, 184; ELEN 115, 116, 130, 156, 160; MECH 143 (cross-listed as COEN 123 and ELEN 123), 151; PHYS 171

Pre-med track (10 units minimum):

- Of the required minimum of 10 TE units, at least 4 units must be upper-division BIOE courses.
- Recommended courses: BIOE 100^1^, 107, 108, 130, 140, 141, (154 or 155)^3^, 157, (161 or 163)^3^, 167, 168, 173, 174, 175, 176, 177A&B, 178, 179, 180, 185, 186, 187, 190, (188/189, 198, 199)^2^; BIOL 110, 113, 114, 122, 172, 174, 178, 179; CHEM 111, 141, 142, 150, 151; PHYS 171

Notes:

1. BIOE 100 can only be taken up to three times.
2. Maximum of 6 units combined for co-ops, internships, and supervised independent research. Non-BIOE units will not be credited.
3. The course not selected as a required course may count as a TE.

Requirements for the Minor

Students must complete the following requirements (together with associated labs) for a minor in bioengineering:

Bioethics

- One course from BIOE 180, BIOL 171, ENGR 19, PHIL 7, PHIL 117 or TESP 157

Natural Science

- BIOL 1A, 1B, 1C (or BIOE 21, 22)
- CHEM 11, 12, 31
- PHYS 31, 32, 33 (or PHYS 11, 12, 13)

Mathematics

- MATH 11, 12, 13, 14

Engineering

- BIOE 10
- ELEN 50 or PHYS 70
- BIOE 45 or COEN 44

Two courses from the following: BIOE 153, 154, 155, 161, 163, 172, 174, 175, 176

Combined Bachelor of Science and Master of Science Program

The Department of Bioengineering offers a combined degree program leading to a bachelor of science and a master of science. Under the combined degree program, an undergraduate student begins taking courses required for a master\'s degree before completing the requirements for a bachelor\'s degree and typically completes the requirements for a master of science in bioengineering within a year of completing the bachelor\'s degree.

Undergraduate students admitted to the combined degree program are required to enroll in the program between February of their junior year and December of their senior year. Students in this program will receive their bachelor\'s degree after satisfying the standard undergraduate degree requirements. To earn a master\'s degree, students must fulfill all requirements for the degree, including the completion of 46 units of coursework beyond that applied to the bachelor\'s degree. The program of studies for the master\'s degree may include up to 20 units taken while enrolled as an undergraduate student; however, no individual course can be used to satisfy requirements for both the bachelor\'s degree and master\'s degree.

Bioengineering Laboratories

The Anatomy & Physiology Laboratory provides a full range of activities to study human anatomy and organ function. Through computational modeling, organ dissection, and design projects, students will develop essential skills in conceiving and implementing engineering solutions to medical problems.

The Bioimaging/Image and Signal Analysis Laboratory carries out basic and translational research on voice. Current research in the laboratory includes the development of imaging modalities to study laryngeal dynamics and function, and novel approaches for image/biosignal-based analysis and assessment of voice pathologies. The lab also supports the development of new detection and analytical methods using optical probes for applications in high-contrast fluorescence imaging in cells and tissues.

The Biological Micro/Nanosystems Laboratory supports research and teaching activities in the broad areas of microfluidics/biosensing. Utilizing microfluidic technologies, spectroscopy, and microfabrication techniques, we develop innovative microfluidic platforms for applications in basic biology, diagnostics, and cellular engineering.

The Biomaterials Engineering Laboratory focuses on the use of hydrogels to develop in vitro platforms that explore the role of in vivo like microenvironmental cues on controlling protein structure and function and regulating cell fate. The lab also supports the design and characterization of biomaterial nanocomposites for applications in tissue engineering.

The Biomolecular Engineering Laboratory conducts "bioengineering towards therapy." The idea is to engineer novel materials (particularly proteins and peptides) and devices and apply them to study basic biological and medical questions that ultimately lead to drug discovery and disease diagnosis.

The Biophotonics & Bioimaging Laboratory supports research and teaching on portable imaging systems for wearable/implantable biosensors as well as on optical coherence tomography (OCT) probes for stereotactic neurosurgery. The time lapse fluorescence microscopy setup is used for measuring enzyme activity and single cell protein expression at the single molecular level.

The Biosignals Laboratory provides a full range of measurement and analysis capabilities including electrocardiography (ECG), electroencephalography (EEG), and electromyography (EMG) measurement system, vocal signal recording, and analysis software.

The Micro-devices & Microfluidics Laboratory focuses on the fabrication and testing of microfluidic devices for biomedical research and teaching. The soft-lithography room is equipped with necessary instruments (e.g., mixer, spinner, plasma cleaner) to build micro-devices using a wide variety of materials and processes. Multiple microfluidic test setups (i.e., computer controlled solenoid valves and microscopes) allow several tests to be run simultaneously.

The Tissue Engineering Laboratory supports research and teaching activities related to mammalian cell and tissue culture. Activities include but are not limited to 2D and 3D mammalian cell culture, investigation of the role of biophysical cues on cancer cell migration and response to drugs, and genetic manipulation of mammalian cells.

Lower-Division Courses: Bioengineering

10. Introduction to Bioengineering

An introduction to the central topics of bioengineering, including the application of engineering methods and science to problems in biology and medicine, and the integration of engineering and biology. Current issues and opportunities in the field will be discussed. Course may include lectures, class discussions, guest lectures, field trips, short lab exercises, and team projects. (4 units)

21. Introduction to Physiology

This course will cover five anatomical systems and how the structure of the human body relates to and defines its function in maintaining homeostasis. This course will introduce cytology, histology, and also focus on diseases related to the skeletal, nervous, sensory, muscular, endocrine, and reproductive systems. (4 units)

22. Introduction to Cell and Molecular Bioengineering

The aim of this course is to introduce students to fundamental concepts in cell and molecular biology. Topics covered in the course will include cellular structure and function, biological molecules, molecular mechanism of cellular function, cell proliferation and signaling. This course will also emphasize the importance of applications of genetic engineering in human health and diseases. Course will include lectures, peer reviewed papers, class discussion, short lab exercises, and team projects. Prerequisite: BIOE 21 or BIOL 1B. Corequisite: BIOE 22L. (4 units)

22L. Introduction to Cell and Molecular Bioengineering Laboratory

Laboratory for BIOE 22. Corequisite: BIOE 22. (1 unit)

23. Introduction to Bio-Devices

This course covers the fundamentals of electronic circuits, with particular emphasis on connecting biosensors to analog-to-digital inputs of computers. This lab-based course introduces measuring, modeling, and designing electronic circuits. Prerequisites: MATH 14 and ELEN 50. Corequisite: BIOE 22L. (4 units)

23L. Introduction to Bio-Devices Laboratory

Laboratory for BIOE 23. Corequisite: BIOE 23. (1 unit)

32. Introduction to Biochemical Engineering

Survey of basic principles of biochemistry and molecular biology, emphasizing on understanding the chemistry and physics of bio-macromolecules---DNA/RNA, protein/peptide, carbohydrates, lipids in living systems as well as in the prospects of bioengineering---biomolecular, biomaterials, and biodevice engineering. Prerequisite: CHEM 31. (4 units)

NEW 32L. Introduction to Biochemical Engineering Laboratory

Laboratory for BIOE 32. Corequisite: BIOE 32. (1 unit)

45. Computer Programming in MATLAB and Python

Computer programming in MATLAB and Python including but not limited to elementary mathematical operations, matrix manipulation, file I/O, 2D and 3D plotting, function definition and invocation, anonymous functions, user controlled input and output, Logical functions, branching and selection structures, repetition structures (loops), iterative solutions, top-down design, matrix algebra, data types, IEEE double precision format floating points, numerical overflow and underflow, data structures, binary searching and sorting, symbolic algebra, numerical techniques, simple graphical user interfaces, and applications to engineering problems. Prerequisite: MATH 13. Corequisite: BIOE 45L. (4 units)

45L. Computer Programming in MATLAB and Python Laboratory

Laboratory for BIOE 45. Corequisite: BIOE 45. (1 unit)

Upper-Division Courses: Bioengineering

100. Bioengineering Research Seminar

A series of one-hour seminars will be presented by guest professors and researchers on their particular research topics in bioengineering or related fields. Students are required to attend four to five seminars and submit a one-page report summarizing the presentation for each seminar. May be repeated for credit up to three times. P/NP grading. Also listed as BIOE 200. (1 unit)

106. Design Control for Medical Devices

This course will cover the principles behind design control. All of the essential elements required in the regulated medical device environment will be covered from design planning, inputs and outputs to verification, validation, risk management, and design transfer. A problem-based learning approach will be utilized so that students will develop proficiency to apply the principles. Knowledge will be acquired through lectures, class activities, industry guest lectures and field trips. Also listed as BIOE 206. (4 units)

107. Medical Device Product Development

The purpose of this course is to provide background information and knowledge to start or enhance a career in medical device product development. Discusses medical device examples, product development processes, regulation, industry information, and intellectual property. Also listed as BIOE 307 and EMGT 307. (2 units)

108. Biomedical Devices: Role of Polymers

This course is designed to highlight the role that polymers play in the design and fabrication of various medical devices ranging from simple intravenous drip systems to complex cardiac defibrillator implants and transcatheter heart valves. Topics include polymer basics, biocompatibility, biodegradation, and other tangentially related topics such as regulatory body approvals and intellectual property. Also listed as BIOE 208. Prerequisites: BIOE 10. (2 units)

109. Translational Development for Emerging Biomedical Devices

This course exposes the student to ongoing case-based interventional cardiology diagnostic and therapeutic biomedical device and clinical translational problems, where real-world bioengineering innovative solutions are being envisioned and at times successfully being applied by startup teams of bioengineers and medical professionals. Bioengineering device design concepts and clinical translational development considerations are analyzed and case-based team project reports are assigned for final grading. Prerequisites: BIOE 10 and BIOE 21, BIOE 108 or BIOE 153 preferred. (4 units)

120. Experimental Methods in Bioengineering

This course will cover the principles of data representation, analysis, and experimental designs in bioreactors, biomaterials, and medical devices. Topics include error analyses, modeling, normality testing, hypothesis testing. Special emphasis will be placed on the interpretation of data from high-throughput assays used in "omics"/tissue engineering. Prerequisite: MATH 14. (4 units)

130. Immune System for Engineers

This course will discuss two significant aspects of human immune systems in bioengineering: 1) Complex hurdles associated with the body's immune systems for biomaterials, biodevice, and implants; and 2) profound opportunities with engineered therapeutics. Also listed as BIOE 230. (4 units)

NEW 131. Cancer Immunotherapy

This course aims to provide the scientific and clinical background necessary to understand cancer immunotherapy\'s fundamental topics and analyze its strengths and limitations. Emphasis will be on checkpoint blockades, CAR-T and other cell therapy, and cancer vaccines. These topics and the latest developments will be discussed through lectures and journal club presentations. Also listed as BIOE 320. (2 units)

140. Biomaterials Engineering and Characterization

This course will cover the fundamental principles of soft biomaterials characterization in terms of mechanical and rheological properties related to biocompatibility. Areas of focus in the lab included study and fabrication of implantable hydrogels for eukaryotic cell immobilization in scaffold and microscapsules, cytotoxicity measurements in the engineered micro-environment and nutrient diffusion visualized by fluorescence microscopy. Prerequisite: CHEM 12. Also listed as BIOE 240. (2 units)

NEW 140L. Biomaterials Engineering and Characterization Laboratory

Laboratory for BIOE 140. Corequisite: BIOE 140. (1 unit)

NEW 141. Biomaterials Engineering and Characterization II: Hard Materials

This course will cover materials characterization methods, phase equilibria and processing of first and second generation hard biomaterials with emphasis on bioceramics and metals. Instruction will be complemented by software-enabled simulation of prototyping into a device followed by mechanical and image analysis of defects. Prerequisite: CHEM 12. Also listed as BIOE 241. (2 units)

NEW 141L. Biomaterials Engineering and Characterization II: Hard Materials Laboratory

Laboratory for BIOE 141. Corequisite: BIOE 141. (1 unit)

153. Biomaterials Science

Basic principles of material properties, biomaterials categories, biomaterials engineering concepts and selected applications and practical aspects are taught in this class. This course is a foundation for an entry level medical device engineer or bioengineering advanced degree Prerequisite: CHEM 12. (4 units)

154. Introduction to Biomechanics

Engineering mechanics and applications in the analysis of human body movement, function, and injury. Review of issues related to designing devices for use in, or around, the human body including safety and biocompatibility. Prerequisites: BIOE 10, PHYS 33. (4 units)

155. Biological Transport Phenomena

The transport of mass, momentum, and energy are critical to the function of living systems and the design of medical devices. This course develops and applies scaling laws and the methods of continuum mechanics to biological transport phenomena over a range of length and time scales. Also listed as BIOE 215. Prerequisites: BIOE 10, PHYS 33, AMTH 106. (4 units)

157. Introduction to Biofuel Engineering

This course will cover the basic principles used to classify and evaluate biofuels in terms of thermodynamic and economic efficiencies as well as environmental impact for resource recovery. Special emphases will be placed on emerging applications namely microbial fuel cell technology and photo-bioreactors. Also listed as BIOE 257/ENGR 257. Prerequisites: BIOE 21 (or BIOL 1B), CHEM 12, PHYS 33. (2 units)

161. Bioinstrumentation

Transducers and biosensors from traditional to nanotechnology; bioelectronics and measurement system design; interface between biological system and instrumentation; data analysis; clinical safety. Laboratory component will include traditional clinical measurements and design and test of a measurement system with appropriate transducers. Also listed as BIOE 211. Prerequisites: BIOE 10, BIOE 21 (or BIOL 1B), ELEN 50. Corequisite: BIOE 161L. (4 units)

161L. Bioinstrumentation Laboratory

Laboratory for BIOE 161. Also listed as BIOE 211L. Corequisite: BIOE 161. (1 unit)

162. Signals and Systems for Bioengineers

Origin and characteristics of bioelectric, bio-optical, and bioacoustic signals generated from biological systems. Behavior and response of biological systems to stimulation. Acquisition and interpretation of signals. Signal processing methods include FFT spectral analysis and time-frequency analysis. Laboratory component will include modeling of signal generation and analysis of signals such as electrocardiogram (ECG), electromyogram (EMG), and vocal sound pressure waveforms. Also listed as BIOE 212. Prerequisites: BIOE 10, BIOE 45, ELEN 50, AMTH 106. Corequisite: BIOE 162L. (4 units)

162L. Signals and Systems for Bioengineers Laboratory

Laboratory for BIOE 162. Also listed as BIOE 212L. Corequisite: BIOE 162. (1 unit)

163. Bio-Device Engineering

This course will instruct students with the fundamental principles of bio-device design, fabrication and biocompatibility, and let students experiment with state-of-the-art bio-devices. Students will gain the hands-on experience with these bio-instruments which are also used in the field. Emphasis is given to the cutting-edge applications in biomedical diagnostics and pharmaceutical drug discovery and development, particularly detection and monitoring interaction, and activity of biomolecules, such as enzymes, receptors, antibody, nucleic acids, and bioanalytes. Prerequisites: BIOE 22 (or BIOL 1C) and CHEM 31. Corequisite: BIOE 163L. (4 units)

163L. Bio-Device Engineering Laboratory

Laboratory for BIOE 163. Corequisite: BIOE 163. (1 unit)

167. Introduction to Medical Imaging

This course will cover basics of technical aspects and clinical applications of medical imaging. Practicing radiologists will introduce the students to the history of radiology and medical imaging, as well as specific modalities such as X-ray, CT, MR, ultrasound, nuclear medicine, and interventional radiology. A brief discussion of applications of information technology to radiology is also included. Also listed as BIOE 267. (2 units)

168. Biophotonics and Bioimaging

This course focuses on the interactions of light with biological matter and includes topics on the absorption of light by biomolecules, cells, and tissues, and the emission of light from these molecules via fluorescence and phosphorescence. The course will cover the application of biophotonics in cell biology, biotechnology, and biomedical imaging. Also listed as BIOE 268. Prerequisites: BIOE 22 (or BIOL 1C) and CHEM 31, PHYS 33. Corequisite: BIOE 168L. (2 units)

168L. Biophotonics and Bioimaging Laboratory

The lab will provide the hands-on experience for basic imaging and microscopy techniques as well as advanced techniques such as fiber optics and optical coherence tomography. Some of the experiments that will be conducted are: measuring the focal length of lenses and imaging using a single lens and a lens system, determining the magnification of optical systems (e.g., of a microscope), interference in young's double slit and in Michelson configuration, diffraction, polarization and polarization rotation. Also listed as BIOE 268L. Corequisite: BIOE 168. (1 unit)

171. Physiology and Anatomy for Engineers

Examines the structure and function of the human body and the mechanisms for maintaining homeostasis. The course will provide a molecular-level understanding of human anatomy and physiology in select organ systems. The course will include lectures, class discussions, case studies, computer simulations, field trips, lab exercises, and team projects. Prerequisite: BIOE 21 (or BIOL 1B). Corequisite: BIOE 171L. (4 units)

171L. Physiology and Anatomy for Engineers Laboratory

Laboratory for BIOE 171. Corequisite: BIOE 171. (1 unit)

172. Introduction to Tissue Engineering

Introduces the basic principles underlying the design and engineering of functional biological substitutes to restore tissue function. Cell sourcing, manipulation of cell fate, biomaterial properties and cell-material interactions, and specific biochemical and biophysical cues presented by the extracellular matrix will be discussed, as well as the current status and future possibilities in the development of biological substitutes for various tissue types. Prerequisite: BIOE 22 (or BIOL 1C). (4 units)

173. Advanced Topics in Tissue Engineering

Overview of the progress achieved in developing tools, technologies, and strategies for tissue engineering-based therapies for a variety of human diseases and disorders. Lectures will be complemented by a series of student-led discussion sessions and student team projects. Also listed as BIOE 273. Prerequisite: BIOE 172, or consent of the instructor. (2 units)

174. Microfabrication and Microfluidics for Bioengineering Applications

Microfluidics uses principles from a broad range of disciplines including fluid mechanics, material science and optics for miniaturization, and automation of biochemical applications. This course will introduce the basic physical and engineering concepts which have practical importance in microfluidics and will allow better understanding of molecule and cell manipulation in the micro-domain. The course aims to introduce students to the state-of-art applications of various microfluidic techniques (e.g., mLSI, droplet and paper-based), in biological and biomedical research through lectures and discussion of current literature. Prerequisites: BIOE 10, BIOE 21 (or BIOL 1B), PHYS 33. Corequisite: BIOE 174L. (4 units)

174L. Microfabrication and Microfluidics for Bioengineering Applications Laboratory

Multilayer soft-lithography will be taught and integrated microfluidic chips will be built. Basic pressure driven microfluidic chip tests will be performed. A team design project that stresses interdisciplinary communication and problem solving is required in this course. Corequisite: BIOE 174. (1 unit)

175. Biomolecular and Cellular Engineering I

This course will focus on solving problems encountered in the design and manufacturing of biopharmaceutical products, including antibiotics, antibodies, protein drugs, and molecular biosensors, with particular emphasis on the principle and application of protein engineering and reprogramming cellular metabolic networks. Prerequisites: BIOE 22 (or BIOL 1C) and CHEM 31, or equivalent knowledge and by instructor's permission. BIOE 153 is recommended. Corequisite: BIOE 175L. (4 units)

175L. Biomolecular and Cellular Engineering I Laboratory

Laboratory for BIOE 175. Corequisite: BIOE 175. (1 unit)

176. Biomolecular and Cellular Engineering II

This course will focus on the principle of designing, manufacturing synthetic materials and their biomedical and pharmaceutical applications. Emphasis of this class will be given to chemically synthetic materials such as polymers, and inorganic and organic compounds. Also listed as BIOE 226. Prerequisites: BIOE 22 (or BIOL 1C) and CHEM 31, or equivalent knowledge and by instructor's permission. BIOE 171 and 175 are recommended. (4 units)

176L. Biomolecular and Cellular Engineering II Laboratory

Laboratory for BIOE 176. Corequisite: BIOE 176. (1 unit)

177A. Machine Learning and Applications in Biomedical Engineering

This course covers fundamental methods that form the core of modern machine learning (ML)/deep learning (DL). Supervised and unsupervised learning techniques, and neural networks will be introduced. Selected biomedical applications will be presented. A second course of this series (BIOE 177B) will introduce programming in Python and include building ML projects with TensorFlow. Prerequisite: MATH 14. (2 units)

177B. Machine Learning and Algorithm Implementation

This course will introduce programming in Python and focus on building machine learning projects with TensorFlow, Keras, and NumPy. Prerequisite: BIOE 177A. (2 units)

179. Introduction to Neural Engineering

This course provides a foundation in the neural principles underlying existing and upcoming neurotechnologies. The goal is to understand the design criteria necessary for engineering interventions in neural structure and function with application to neurological diseases, disorders, and injuries. Topics include brain imaging and stimulation, neural implants, nanotechnologies, stem cell and tissue engineering. This course includes lectures, literature critiques, and design projects. Also listed as BIOE 275. Prerequisites: BIOE 21 (or BIOL 1B). BIOE 171 recommended. (2 units)

180. Clinical Trials: Design, Analysis and Ethical Issues

This course will cover the principles behind the logistics of design and analysis of clinical trials from statistical and ethical perspectives. Topics include methods used for quantification of treatment effect(s) and associated bias interpretation, crossover designs used in randomized clinical trials, and clinical equipoise. Also listed as BIOE 380. Prerequisites: BIOE 10, BIOE 120 (or AMTH 108), or with consent of the instructor. (4 units)

185. Physiology and Disease Biology

This course will provide a molecular-level understanding of physiology and disease biology, an overview of gastrointestinal diseases, and an introduction to medical devices used in diagnosis and treatment, as well as challenges in this field. This course will include lectures, class discussions, case studies, and team projects. Also listed as BIOE 285. Prerequisite: BIOE 21 (or BIOL 1B). BIOE 171 recommended. (2 units)

186. Introduction to Biotechnology

This course is designed to introduce basic and practical biotechniques to students with minimum training and background in biomolecular engineering. The basic principles and concepts of modern biotechniques will be illustrated and highlighted by studying real cases in lectures. Also listed as BIOE 286. Prerequisite: BIOE 22 or BIOL 1C. (2 units)

187. Biotechnology II

The course is designed to discuss practical applications of recombinant DNA technologies, data science, and other modern technologies in the biotechnology industry beyond pharmaceutical development. Specific topics include microbial, industrial, agricultural, environmental biotechnologies, and forensic science. The technical principles and concepts will be highlighted by reviewing real-world cases in lectures. The course will also discuss critical issues such as ethics, regulations, market, and business. Also listed as BIOE 288. (2 units)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the work assignment includes preparation of a summary report on co-op activities. P/NP grading. Prerequisites: junior status and cumulative GPA ≥ 2.75. (2 units)

189. Work Experience and Co-op Technical Report

Credit is given for a technical report on a specific activity, such as a design or research activity, after completing a co-op work assignment. Letter grades will be based on the content and quality of the report. May be taken more than once. Prerequisites: BIOE 188, junior status, cumulative GPA ≥ 2.75, and approval of department co-op advisor. (2 units)

190. Biotechnology III - Drug Development Process

This course is designed to discuss an overview of the modern pharmaceutical development process, from drug discovery and development, manufacturing, and the regulatory approval process. Specific topics will include current concepts of drug discovery, advanced drug screening methods, preclinical studies and requirements, and the four major phases of clinical development. There will be an emphasis on product development and manufacturing processes for biologics, such as monoclonal antibody-based drugs. Also listed as BIOE 290. (2 units)

194. Design Project I

Specification of an engineering project, selected with the mutual agreement of the student and the project advisor. Complete initial design with sufficient detail to estimate the effectiveness of the project. Initial draft of the project report. Prerequisite: senior standing. (2 units)

195. Design Project II

Continued design and construction of the project, system, or device. Second draft of the project report. Prerequisite: BIOE 194. (2 units)

196. Design Project III

Continued design and construction of the project, system, or device. Final project report. Prerequisite: BIOE 195. (2 units)

198. Internship

Directed internship in local bioengineering and biotech companies or research in off-campus programs under the guidance of research scientists or faculty advisors. Required to submit a professional research report. Open to upper-division students. (Variable units)

199. Supervised Independent Research

By arrangement. Faculty advisor required. (1--4 units)

Department of Civil, Environmental and Sustainable Engineering

Professor Emeritus: E. John Finnemore

Associate Professor Emeritus: Steven C. Chiesa

Professors: Aria Amirbahman, Ed Maurer (Robert W. Peters Professor and Department Chair), Reynaud Serrette, Sukhmander Singh (Wilmot J. Nicholson Family Professor)

Associate Professors: Rong He, Hisham Said

Senior Lecturer: Tonya Nilsson

Lecturers: Tracy Abbott, Laura Doyle

Civil engineers are responsible for planning, designing, building, maintaining, and rehabilitating the complex interrelated technological, social, and environmental dimension of the infrastructure systems on which modern society relies. To meet these challenges, the Department of Civil, Environmental and Sustainable Engineering offers a well-balanced undergraduate program that develops graduates capable of solving complex problems with fixed and often limited resources. The application of state-of-the-art skills, a sound understanding of engineering principles, concepts of sustainability and resilience in design, the ability to communicate and articulate ideas, and preparation for lifelong learning are some of the key areas of focus in the civil, environmental and sustainable engineering curriculum. At the completion of the undergraduate program, graduates are well equipped to enter the practice or pursue advanced studies in any of the civil engineering disciplines. The department provides students with the necessary guidance to develop their full potential within the context of their own personal experiences, the expectations of the profession, and societal needs. Our graduates become civil engineers with primary responsibility for planning, designing, constructing, operating, and maintaining infrastructure critical to public welfare, safety, and the expectations of daily life---including buildings, transportation systems, airports, irrigation systems, water supplies, supply systems, and environmental protection facilities.

The Department of Civil, Environmental and Sustainable Engineering works with its advisory board and other key constituencies to produce the program's educational objectives shown below. Specifically, the department has committed itself to providing a program that produces graduates who, within five years of graduation, are:

- Capable of designing, building, maintaining, or improving civil infrastructure systems in the context of environmental, economic, and societal requirements
- Serving the community as ethical and responsible professionals
- Engaging in lifelong learning for professional growth

Requirements for the Major in Civil Engineering

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree in Civil Engineering, students must complete a minimum of 195 units and the following department requirements:

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14

- AMTH 106 (or MATH 22) and AMTH 112 (or AMTH 108)
- CHEM 11 or CHEM 11T
- PHYS 31, 32, 33
- CENG 20, 20L

Engineering

- ENGR 1, 1L
- ELEN 49 (or ELEN 50, 50L)
- CENG 7, 7L, 10, 10L, 15, 41, 44A, 44AL, 44B, 115, 115L, 121A, 121AL, 121B, 125, 125L, 128, 132, 140, 140L, 141, 141L, 143, 143L, 145, 148, 148L, 192A, 192B, 192C, 193, 194, and either 160 or 182

Electives

- Four technical electives from those listed below, with at least two design-focused electives and at least one analysis-focused elective:
  - Design-focused electives: CENG 119, 133, 134, 135 & 135L, 136, 137, 138, 142, 144 & 144L, 146, 147, 150
  - Analysis-focused electives: CENG 118, 122, 123 & 123L, 124, 139, 149, 151, 160, 161, 162, 163, 182, 184, 186, 187
- One free elective (4 units)

The technical electives should be selected in consultation with an academic advisor to satisfy the requirements of the general civil, environmental and sustainable engineering program or one of the approved emphasis area programs in civil engineering. The program requires that students take either CENG 160 or CENG 182; whichever course is not taken to satisfy this requirement may be taken as a technical elective.

Combined Bachelor of Science and Master of Science Program

The Department of Civil, Environmental and Sustainable Engineering offers a combined degree program leading to a bachelor of science and a master of science. Under the combined degree program, an undergraduate student begins taking courses required for a master's degree before completing the requirements for a bachelor's degree and typically completes the requirements for a master of science in civil engineering within a year of completing the bachelor's degree.

Undergraduate students admitted to the combined degree program are required to enroll in the program between February of their junior year and December of their senior year. Students in this program will receive their bachelor's degree after satisfying the standard undergraduate degree requirements. To earn a master's degree, students must fulfill all requirements for the degree, including the completion of 46 units of coursework beyond that applied to the bachelor's degree. The program of studies for the master's degree may include up to 20 units taken while enrolled as an undergraduate student; however, no individual course can be used to satisfy requirements for both the bachelor's degree and master's degree.

Requirements for the Minor in Construction Management

All undergraduates are eligible to apply for the Construction Management minor. Students intending to earn this minor must seek advice from the Civil, Environmental, and Sustainable Engineering (CESE) Department. Students must take all the required courses, and 6 units from the list of elective courses. The required and elective courses should

add up to at least 22 units. Students may "double-dip" up to 14 units of coursework to concurrently satisfy a Major degree or university core requirements.

Required Courses

- CENG 7, 7L, 45, 45L, 118, 185, and 186

> *Mechanical engineering students can satisfy the CENG 7 & 7L requirement with MECH 10 & 10L.*
>
> *Civil engineering majors can satisfy the CENG 45 & 45L requirement with CENG 115 & 115L.*

Elective Courses

- CENG 119, 182, 183, 184, 187, 188, 189, FNCE 118, FNCE 129, ENVS 128

Civil, Environmental and Sustainable Engineering Laboratories

The Concrete Testing Laboratory contains facilities for mixing, casting, curing, and testing concrete cylinders and constructing reinforced-concrete test specimens.

The Environmental Laboratory is equipped with instrumentation needed for basic chemical and biological characterization of water, wastewater, and air samples as well as several pilot-scale treatment systems.

The Geology Laboratory is equipped with extensive rock and mineral samples as well as topographic, geologic, and soil maps.

The Hydraulics Laboratory is shared with the Department of Mechanical Engineering and contains fluid flow and pumping demonstration equipment and a tilting flume that can be fitted with various open-channel fixtures.

The Simulation and Design Laboratory maintains Windows-based personal computers (PCs) that are used in course assignments and design projects. Commercial software packages in all the major areas of civil engineering are available on the systems with user documentation available to students.

The Soil Mechanics Laboratory contains equipment for testing soils in shear, consolidation, and compaction; equipment for other physical and chemical tests; field testing and sampling equipment; and a complete cyclic triaxial testing system with computer controls used for both research and instructional purposes.

The offsite Structural Laboratory Annex is a high-bay test facility equipped with a closed-loop hydraulic system, modern data acquisition and control systems, and extensive instrumentation capability. The Annex has the ability to test unique building components that incorporate walls/frames and floor systems with heights up to 8.0 meters.

The Structures and Materials Testing Laboratory is equipped with three universal testing machines and a high-bay structural test system. These machines/systems are used for testing a variety of construction materials and assemblies under quasi-static and pseudo-dynamic loading. Complementing this equipment are a series of digital and analog instruments, and high-speed data acquisition and control systems.

The Surveying Laboratory has a wide variety of equipment, including automatic levels, digital theodolites, total stations, and GPS-based surveying instruments available for instructional purposes.

Lower-Division Courses

7. Graphic Communication

Introduction to technical drawing including isometric and multiview drawings, use of sectional views and dimensioning, understanding blueprints and scales. Corequisite: CENG 7L. (3 units)

7L. Graphic Communication Laboratory

Freehand drawing, manual and computer-aided drafting of physical models, construction of models from drawings. Corequisite: CENG 7. (1 unit)

10. Surveying

The use and care of survey instruments. Principles of topographic mapping, linear measurements, leveling, traverses, curves, boundary, and public surveys. Corequisite: CENG 10L. (3 units)

10L. Surveying Laboratory

Field work using common surveying instrumentation and equipment. Corequisite: CENG 10. (1 unit)

15. Computer Applications in Civil Engineering

Solution techniques for civil engineering problems using common software and programming languages. Introduction to matrix analysis, graphical and numerical solution methods, regression analysis, and linear optimization using spreadsheets, basic programming, and math analysis programs. Students must complete a paper and presentation on a topic developed with analytical tools used in the course. (3 units)

20. Geology

Development and formation of geologic materials. Significance of structure, landform, erosion, deposition. Stream and shoreline processes. Surface water. Corequisite: CENG 20L. (3 units)

20L. Geology Laboratory

Identification, examination, and characterization of rock specimens. Corequisite: CENG 20. (1 unit)

41. Mechanics I: Statics

Resolution and composition of force systems and equilibrium of force systems acting on structures and mechanisms. Distributed forces. Friction. Moments of inertia. Prerequisite: PHYS 31. (4 units)

43. Mechanics II: Strength of Materials

Analysis of stresses and strains in machines and structural members. Fundamental study of the behavior and response of statically determinate and indeterminate structural members subjected to axial, torsional, flexural, shear, and combined stresses. Introduction to the stability of columns. Prerequisite: CENG 41. Corequisite: CENG 43L. (4 units)

43L. Mechanics II: Strength of Materials Laboratory

Testing of structural elements subjected to axial tension and compression loads, bending, torsion, and combined loading. Analysis of test data and laboratory report writing. Corequisite: CENG 43. (1 unit)

44A. Strength of Materials I

Stress-strain relationships for structural elements subjected to axial, torsional, flexural, shear, and combined loading. Fundamental study of the behavior and response of deformable, statically determinate structural systems. Stress and strain transformations and analysis using Mohr's circle. Prerequisite: CENG 41. Corequisite: CENG 44AL. (3 units)

44AL. Strength of Materials I Lab

Testing of structural elements subjected to axial tension and compression loads, bending, torsion, and combined loading. Analysis of test data and laboratory report writing. Corequisite: CENG 44A. (1 unit)

44B. Strength of Materials II

Continuation of topics covered in CENG 44A. Shear flow and shear center. Indeterminate systems. Introduction to plastic behavior and column stability. Prerequisite: CENG 44A. (2 units)

45. Construction Materials

Exploration of the various materials used and applied in the building construction process. The characteristics, specifications, and applications of basic construction materials such as soil, concrete, wood, steel, and bituminous products. Includes presentation, discussion, and analysis of conventional and non-conventional construction materials along with their sustainability implications. Civil Engineering students can not enroll in this course and should enroll in CENG 115. (2 units)

45L. Construction Materials Laboratory

Laboratory testing and processing of steel, concrete, wood, and other non-conventional civil engineering construction materials. Corequisite: CENG 45. (1 unit)

Upper-Division Courses

115. Civil Engineering Materials

Review of the structure and properties, production processes, and experimental methods used for determining key properties of common civil engineering materials with a focus on steel, concrete, and wood. Non-conventional building materials and their applications are studied along with sustainability implications of any material choice. Prerequisites: CHEM 11 or equivalent and CENG 44A. Corequisite: CENG 115L. (4 units)

115L. Civil Engineering Materials Laboratory

Laboratory testing of steel, concrete, wood, and other non-conventional civil engineering construction materials. Corequisite: CENG 115. (1 unit)

118. Introduction to Construction Management

Introduction to construction roles and responsibilities, construction project phases, building systems, bidding and cost estimating, building trades and subcontractors, construction methods, and safety and quality management. Also listed as CENG 218. Prerequisite: Junior standing. (3 units)

119. Design for Sustainable Construction

Design strategies for sustainable commercial and residential construction. Use of LEED criteria for assessing sustainable construction. Team-based project planning, design, and construction. Economic evaluation of sustainable technologies. Prefabrication. Overall project management. Also listed as CENG 219. Prerequisite: junior standing. (3 units)

121A. Geotechnical Engineering

Origin, development, and properties of soils. Classification of soils and applications of engineering mechanics to soils as an engineering material. Water in soils. Soil-testing methods. Compaction, stabilization, consolidation, shear strength, and slope stability. Prerequisites: CENG 20 and 44A. Corequisite: CENG 121AL. (3 units)

121AL. Geotechnical Engineering Laboratory

Application of soil testing methods. Corequisite: CENG 121A. (1 unit)

121B. Geotechnical Engineering Design I

Theory and basic factors related to earth pressure, slope stability, and foundations. Prerequisite: CENG 121A. (2 units)

NEW: 122. Air Pollution

The study of generation of common air pollutants, their transport, effects, and state-of-the-art air pollution control strategies. Also listed as CENG 252. Prerequisite: CENG 143 or consent of the instructor. (3 units)

123. Pollutant Fate and Transport

Study of reaction energetics, kinetics, interphase mass transfer, and partitioning as they relate to pollutant transformation in the environment. Application to surface waters and groundwater. Also listed as CENG 253. Prerequisites: CHEM 11 or CHEM 11T or equivalent, CENG 143, AMTH 106, and junior standing, or instructor's consent. Corequisite: CENG 123L. (3 units)

123L. Pollutant Fate and Transport Laboratory

Use of experimentation and computer modeling to analyze problems in chemical kinetics, pollutant transport, and phase partitioning. Also listed as CENG 253L. Corequisite: CENG 123. (1 unit)

124. Water Law and Policy

Introduction to the legal and regulatory concepts related to water. Examines rights, policies, and laws, including issues related to water supply and access (water transfers/water markets, riparian and appropriative doctrines), flood control, water pollution and quality (the Clean Water Act, EPA standards, stream flows for fish), and on-site stormwater management/flood control. A focus on California water law and policy is complemented with some national and international case studies. Also listed as CENG 258 and ENVS 124. (4 units)

125. Municipal Engineering Design

Various aspects of civil engineering as applied in municipal (public works) design practice. Maps and plats; site layout and earthworks; drainage; streets and utilities. Prerequisites: CENG 7 and 10. Corequisite: CENG 125L. (3 units)

125L. Municipal Engineering Design Laboratory

Development of CAD drawings for a design project. Corequisite: CENG 125. (1 unit)

128. Engineering Project Management

Time value of money, economic analysis of engineering projects, rate-of-return analysis, cash-flow analysis, depreciation, project management, planning and capital budgeting, scheduling, preliminary cost estimates, risk analysis, financial analysis. Prerequisite: junior standing. (3 units)

132. Structural Analysis

Distribution of loads in structural systems. Analysis of statically determinate and indeterminate beams, trusses, and frames. Influence lines for beams and trusses. Introduction to structural modeling, and elastic analysis using commercial software programs. Prerequisite: CENG 44A. Corequisite: CENG 44B. (4 units)

133. Wood Design

Design of wood structural systems. Design of sawn and structural composite lumber members for tension, compression, bending, and shear. Introduction to shear wall and diaphragm design. Design of connections. Also listed as CENG 233. Prerequisite: CENG 132. (4 units)

134. Structural Steel Design I

Design of structural steel buildings. Design of steel members for tension, flexure, shear, compression, and combined loading. Design of composite floor beams. Introduction to connection design. Prerequisite: CENG 148. (4 units)

135. Reinforced Concrete Design

Design of one-way slabs, tee beams, and doubly-reinforced beams for flexure and shear; moment coefficient method; deflection estimates; longitudinal bar cutoffs and detailing; biaxial bending and slender columns. Prerequisite: CENG 148. Corequisite: CENG 135L. (4 units)

135L. Reinforced Concrete Laboratory

Experimental tests of reinforced concrete building components; problem solving and review sessions; field trip(s). Corequisite: CENG 135. (1 unit)

136. Advanced Concrete Structures

Confinement, moment-curvature and shear-displacement response; modeling; design and detailing of special moment frames, shear walls, and diaphragms; prestressed concrete beams. Also listed as CENG 236. Prerequisite: CENG 135. (4 units)

137. Earthquake Engineering Design

Introduction to seismic sources, wave propagation, and effects on structures. Spectral representations of demands. Design according to current code provisions and using simplified pushover methods. Also listed as CENG 237. Prerequisite: CENG 148. (4 units)

138. Geotechnical Engineering Design II

Foundation exploration; bearing capacity and settlement analysis; spread foundations; piles and caissons; earth-retaining structures; loads on underground conduits; subsurface construction. Also listed as CENG 238. Prerequisites: CENG 121A and 121B. Corequisite: CENG 138L. (4 units)

138L. Geotechnical Engineering Design Laboratory

Structural design of footings, piles, and retaining walls. Also listed as CENG 238L. Prerequisite: CENG 148. Corequisite: CENG 138. (1 unit)

139. Groundwater Hydrology

Groundwater occurrence, flow principles, flow to wells, and regional flow. Groundwater contamination, management, and modeling. Field methods. Field trips. Also listed as CENG 259. Prerequisite: CENG 141 or permission of instructor. (3 units)

140. Water Resources Engineering

Concepts, analysis, and engineering design related to water resources: hydrologic cycle, evaporation, infiltration, precipitation, snow, flood frequency, water supply, and runoff management. Impacts of development, land use, and climate changes on water supply, and the importance of these changes to society. Prerequisite: CENG 141 or permission of instructor. Corequisite: CENG 140L. (4 units)

140L. Water Resources Engineering Laboratory

Computational exercises for water resources analysis, field trips demonstrating hydrologic monitoring systems and complex regional water management systems. Corequisite: CENG 140. (1 unit)

141. Fluid Mechanics and Hydraulic Engineering

Fundamentals of fluid behavior with an emphasis on water. Covers basic fluid properties, flow classification, and fluid statics including forces on submerged surfaces. Introduces and applies fundamental relationships: conservation of mass, momentum, and energy. Hydraulic applications include flow in pipes and pipe networks, steady flow in open channels, and hydraulic machinery. Prerequisites: CENG 41, PHYS 31. Corequisite: CENG 141L. (4 units)

141L. Fluid Mechanics and Hydraulic Engineering Laboratory

Experiments demonstrating the principles of fluid flow and hydraulics for flow in pipes and in open channels. Use of modern data acquisition and writing of formal lab reports. Corequisite: CENG 141. (1 unit)

142. Water Resources Design

Design of system components for water supply and flood control projects including storage facilities, closed conduits, open channels, well fields, and pumping systems. Also listed as CENG 242. Prerequisites: CENG 141 and CENG 140 (CENG 140 may be taken concurrently) or permission of instructor. (4 units)

143. Environmental Engineering

Water and air quality. Water supply and pollution control; air pollution control. Management of solid wastes. Prerequisites: CHEM 11 or CHEM 11T, MATH 12, and junior standing. Corequisite: CENG 143L. (3 units)

143L. Environmental Engineering Laboratory

Laboratory analysis of aqueous samples and ideal reactor systems. Analysis of non-point pollution prevention strategies. Solid waste characterization. Corequisite: CENG 143. (1 unit)

144. Water and Wastewater Treatment

Design of water and municipal wastewater treatment systems. Topics include unit operations such as flocculation, sedimentation, filtration, biological treatment, nutrient removal, disinfection, and sludge management.. Also listed as CENG 254. Prerequisites: CENG 143 or instructor's consent. Corequisite: CENG 144L. (3 units)

144L. Water and Wastewater Treatment Laboratory

Laboratory experiments to characterize water samples, including BOD and COD measurements. Field trips to local water and wastewater treatment plants. Also listed as CENG 254L. Corequisite: CENG 144. (1 unit)

145. Transportation Engineering Design

Transportation systems analysis. Dynamics and traffic flow. Highway geometric design, traffic control, transportation planning. Transportation policies and economics. Prerequisites: CENG 10 and junior standing. (4 units)

146. Design of Cold-Formed Steel Frame Structures

Introduction to cold-formed steel design and construction. Practical design of members for tension, compression, shear, and torsion. Connection detailing. Lateral force-resisting systems. Also listed as CENG 246. Prerequisite: CENG 132. (4 units)

147. Pavement Design

Paving materials. Geometric and structural design of highways. Urban street layout and details. Layout and design of airport runways. Also listed as CENG 247. Prerequisites: CENG 115, 121A and 121B. (4 units)

148. Structural Systems

Structural requirements for building systems. Design loads, load combinations, and load path. Fire, sound, thermal, and mechanical requirements. An introduction to design of steel and reinforced concrete beams and columns. Prerequisite: CENG 132. Corequisite: CENG 148L. (4 units)

148L. Structural Systems Laboratory

Modeling, analysis, and evaluation of building structures. Structural drawings/schematics. Corequisite: CENG 148. (1 unit)

149. Civil Systems Engineering

Introduction to engineering systems analysis and management technologies and their applications to civil engineering problems such as transportation, assignment, critical path, and maximum flow problems. Topics include linear programming, nonlinear programming, probability, and queuing theory, as well as relevant applications to civil engineering problems. Also listed as CENG 249. Prerequisites: MATH 13 and junior standing. (4 units)

150. Traffic Engineering: Design and Operations

Basic characteristics of motor vehicle traffic flow, highway capacity analysis, traffic control devices, traffic data studies and signal design, and traffic safety. Also listed as CENG 250. Prerequisite: CENG 145. (4 units)

151. Special Topics in Transportation Engineering

Coverage of special topics in transportation engineering including travel demand forecasting, analysis and application, static and dynamic traffic analysis and modeling for short-term and long-term planning and optimization. Also listed as CENG 251. Prerequisite: CENG 145. (4 units)

160. GIS in Water Resources

Introduction to Geographical Information Systems (GIS) technology with applications in watershed analysis, interpolation, site suitability assessment, and spatial analysis of environmental data. Obtaining and processing digital information at different scales for state-wide, watershed, and urban areas and combination of location information with tabular information such as census data. Commercial and open-source software are used. Also listed as CENG 260. Prerequisites: junior standing and experience with Windows directory and file management, or permission of instructor. (3 units)

161. Sustainable Water Resources

Analysis and design of water resource systems, from flood control projects to drinking water supply, as environmental constraints and societal values shift. Quantitative analysis of environmental data is used to detect changes and project future conditions. Includes sustainable and low-impact design techniques, climate change impacts on water, assessing sustainability, life-cycle economics, and current topics. Also listed as CENG 261. Prerequisite: CENG 140 or permission of instructor. (3 units)

162. Computational Water Resources

Use of professional application software to analyze systems for water resources engineering projects. Computational tools include the development of a computer model to translate rainfall into runoff for a river basin, and assess the impacts of climate variability and change on water supply. Also listed as CENG 262. Prerequisites: CENG 140, which may be taken concurrently, or equivalent. (3 units)

163. Solid and Hazardous Waste Management

Characterization of solid waste streams. Overview of collection, transport, processing, and disposal options. Waste stream reduction and resource recovery strategies. Also listed as CENG 263. (4 units)

182. Introduction to Building Information Modeling (BIM)

Parametric design and modeling, BIM-based scheduling and estimating, model checking and validation, 4D visualization, green building design, applications in integrated project delivery and facilities management, interoperability, standardization, and web-based collaboration. Also listed as CENG 282. Prerequisites: CENG 125 and junior standing. (3 units)

183. Building Systems

Introduction to the major systems within a building, including heating, ventilation, air conditioning, electrical, energy, life safety, and plumbing. The engineering, construction, and sustainability aspects of each system will be introduced. Also listed as CENG 283. Prerequisite: Junior standing. (3 units)

184. Construction Project Delivery

Project organization and delivery systems, Project stakeholders authorities and responsibilities, contractual payment schemes, bidding process, preconstruction administration, contracts, payment measurement, change orders, quality management, safety, claims and disputes, risk and liability sharing, project documentation and closeout, lean construction, pull planning, work structuring, lean supply chain, lean project delivery system. Also listed as CENG 284. Prerequisite: Junior standing. (3 units)

185. Cost Estimation

Types of construction cost estimates and their uses. Direct and indirect costs. Cost budgeting and control. Quantity Takeoff. Cost databases and software. Detailed cost estimates of main building systems. Also listed as CENG 285. Prerequisites: CENG 118. (3 units)

186. Construction Planning and Control

Work breakdown structure, work sequencing and logic, activity duration estimates, schedule network representations, critical path method, stochastic scheduling, resources loading, resource allocation, time-cost tradeoffs, and project cash flow analysis. Planning of repetitive tasks, and time-cost control. Use of commercial scheduling software. Group project on construction planning. Also listed as CENG 286. Prerequisite: CENG 118. (3 units)

187. Heavy Construction

Earthmoving with dozers, scrapers, and excavators; hauling, compacting, concrete operations, asphalt paving, work and production plans. Machine power and resistance, piling, cranes, and rigging operations. Also listed as CENG 287. Prerequisite: junior standing. (3 units)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the work assignment includes preparation of a summary report on co-op activities. P/NP grading. May not be taken for graduate credit. (1--2 units)

189. Co-op Technical Report

Technical report on a specific activity such as a design or research project, etc., completed during a co-op assignment. Approval of department advisor required. Letter grade based on content and quality of report. May not be taken for graduate credit. Prerequisite: CENG 188. (2 units)

192A. Civil Engineering Project Development

Introduction to problem-solving methodology for the design of civil engineering systems and components. Selection of Capstone Design Project, definition of problem, and conceptual design. Prerequisite: Junior standing. (1 unit)

192B. Elements of Civil Engineering Practice

Further development of problem-solving methodology; introduction to project management. Applications of engineering techniques and procedures to civil engineering design. Schematic designs, alternatives analysis and cost estimates. Preliminary design of critical components or subsystems of Capstone Design Project. Environmental impact assessment. Prerequisite: CENG 192A. Corequisite: CENG 192C. (2 units)

192C. Professional Development Seminar

Importance of licensing and lifelong learning in the practice of civil engineering. Advanced workshops on topics relevant to Capstone Design Projects. Review of topics covered on the Fundamentals of Engineering (FE) exam. Corequisite: 192B. (1 unit)

193. Detailed Project Design

Investigation of an approved Capstone Design Project. The design process, including problem formulation, analysis, preliminary design, final design, and plans, is completed. Formal presentation of preliminary and final designs. Prerequisite: CENG 192B. (4 units)

194. Design Project Communication

Completion of design project documentation and public presentation of results. Prerequisite: CENG 193. (1 unit)

197. Special Topics in Civil Engineering

Subjects of current interest. May be taken more than once if topics differ. (1--4 units)

198. Internship

Time off campus with an engineering organization. Different aspects of work in the assigned professional office. Oral and written reports. Prerequisites: Senior standing and approval of internship coordinator. (4--5 units)

199. Directed Research

Investigation of an approved engineering problem and preparation of a suitable project report. Conferences with faculty advisor are required. Prerequisite: Junior standing. (1--5 units)

Department of Computer Science and Engineering

Professor Emeritus: Ronald L. Danielson

Professors: Ruth E. Davis , Silvia M. B. Figueira (Dianne McKenna Professor), Nam Ling (Wilmot J. Nicholson Family Professor and Department Chair)

Associate Professors: Ahmed Amer, Darren C. Atkinson, Yi Fang, Yuhong Liu, Weijia Shang

Assistant Professors: Margareta Ackerman, David C. Anastasiu, Sean Choi, Behnam Dezfouli, I-Han Hsiao, Xiang Li, Ying Liu, Zhiqiang Tao

Lecturers: Moe Amouzgar, Rani Mikkilineni, Angela Musurlian

The Department of Computer Science and Engineering offers major programs leading to the bachelor of science in computer science and engineering, or the bachelor of science in Web design and engineering. The computer science and engineering program features a balanced core in which each student studies the engineering aspects of software and hardware as well as the mathematical foundations of computation. Computer science and engineering electives permit students to build on this core with varying emphasis, depending on their interests. The Web design and engineering program combines a technical education in computing with courses in graphic art, communication, and sociology to enable its graduates to understand the engineering infrastructure of the Web, how the Web affects society, and how the ways in which society uses the Web create new demands on technology. Instruction and research in the department's programs are supported by the facilities of the Engineering Design Center and the University's Information Technology Center.

Requirements for the Majors

Bachelor of Science in Computer Science and Engineering

In addition to fulfilling the undergraduate Core Curriculum requirements for a bachelor of science degree in the engineering school, students majoring in computer science and engineering must complete a minimum of 189 units and the following departmental requirements (together with associated labs):

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14
- AMTH 106 (or MATH 22) or an advisor-approved mathematics or natural science elective*
- AMTH 108
- MATH 53 or CSCI 166 or AMTH 118
- CHEM 11 or CHEM 11T or an advisor-approved natural science elective*
- PHYS 31, 32, 33

*Pre-approved replacements for CHEM 11: AP Biology (score of 4 or 5), AP Environmental Science (score of 4 or 5), BIOL 18, 21, 22, CHEM 1, ENVS 21, and PHYS 34; pre-approved substitutions for AMTH 106: CHEM 12, MATH 101--178, or any CHEM 11 replacement (if not used to replace CHEM 11).

Engineering

- ENGR 1
- ELEN 50, 153
- COEN 10 (or demonstrated equivalent programming proficiency)
- COEN 11, 12, 19, 20, 21, 79, 122, 146, 171, 174, 175, 177, 179
- COEN 194 (or ENGR 194), COEN 195 (or ENGR 195), COEN 196 (or ENGR 196)

Computer Science and Engineering Electives

- Three upper-division courses (totaling at least 12 units) selected from COEN 101--180, ELEN 115, 133, and 134 in an emphasis area selected in consultation with an academic advisor

Note: 6 units of COEN 193 or 4 units of COEN 199 may be used as one elective, and at most one upper-division course from another department may be used as an elective with advisor approval.

Educational Enrichment Electives

An educational enrichment experience selected from one of the following options:

- 8 or more units in a study abroad program that does not duplicate other coursework
- 6 or more months of full-time, continuous cooperative education experience with enrollment in COEN 188 and 189
- Admission to one of the department's master's degree programs and completion of at least the first 12 units of that program prior to completion of the undergraduate degree
- Undergraduate research with completion of 6 or more units of COEN 193 (cannot also be used to satisfy a COEN elective)
- 12 or more units selected in consultation with an academic advisor. The courses must be part of a theme or be in the same department, and may not also be used to satisfy Undergraduate Core Curriculum requirements. A minor or second major may be used to complete this option.

Bachelor of Science in Web Design and Engineering

In addition to fulfilling the undergraduate Core Curriculum requirements for a bachelor of science degree in the engineering school, students majoring in Web design and engineering must complete a minimum of 175 units and the following departmental requirements (together with associated labs):

Arts, Humanities, and Social Science

- ENGL 109 and 181
- ARTS 74 or 174, 75 or 175, and 177
- COMM 2 and 30
- SOCI 49 or 149
- ENGR 19 or PHIL 22 (Ethics)

Mathematics and Natural Science

- MATH 11, 12, 13, 14
- AMTH 108

Engineering

- ENGR 1

- COEN 10 (or demonstrated equivalent programming proficiency), 11, 12, or CSCI 10, 60, 61
- COEN 60, 146, 161, 162, 163, 164, 169, 174
- COEN 194 (or ENGR 194), COEN 195 (or ENGR 195), COEN 196 (or ENGR 196)

Educational Enrichment Electives

- Same as for the bachelor of science in computer science and engineering

Requirements for the Minor in Computer Science and Engineering

Students must fulfill the following requirements for a minor:

- COEN 11, COEN 44, or CSCI 60
- COEN 12 or CSCI 61
- COEN 20, 21
- Four courses selected from COEN 79, COEN 101--180, ELEN 115, and ELEN 133
- Work completed to satisfy these requirements must include at least two courses beyond any free electives or other courses required to earn the bachelor's degree in the student's primary major.

Combined Bachelor of Science and Master of Science Program

The Department of Computer Science and Engineering offers a combined degree program leading to the bachelor of science and a master of science open to students pursuing an undergraduate degree at Santa Clara in computer science and engineering, Web design and engineering, or computer science. Under the combined degree program, an undergraduate student begins taking courses required for a master's degree before completing the requirements for the bachelor's degree and typically completes the requirements for a master of science within a year of obtaining the bachelor's degree.

Undergraduate students admitted to the program may begin taking graduate courses no earlier than the fall term of their senior year. Students in this program will receive their bachelor's degree after satisfying the standard undergraduate degree requirements. To earn the master's degree, students must fulfill all the requirements for the degree, including the completion of 46 or more units of coursework beyond that applied to their bachelor's degree.

No course can be used to satisfy requirements for both the bachelor's degree and the master's degree. Completion of 12 or more units of courses in computer science and engineering taken for the master's degree satisfies the Educational Enrichment requirement of the undergraduate program. Some courses required in the master's degree programs may be replaced by free electives due to similar undergraduate coursework.

Computer Science and Engineering Laboratories

The Artificial Intelligence (AI) Laboratory conducts research across diverse facets of AI, including foundational and applied machine learning, and computational creativity, exploring the capabilities of AI systems to be autonomously creative as well as act as co-creative partners.

The Data Science Laboratory is devoted to the extraction of knowledge from data and to the theory, design, and implementation of information systems to manage, retrieve, mine, and utilize data.

The Humanitarian Computing Laboratory focuses on developing applications to empower the underserved and their communities.

The Internet of Things Technologies Research Laboratory focuses on the design and development of (1) systems with sensing and actuation capabilities, (2) energy-efficient and reliable networking protocols, and (3) data analytics, for applications such as healthcare, advanced manufacturing, and smart cities.

The Machine Learning and Computational Genomics Laboratory focuses on algorithmic design for machine learning problems with real-world applications and impact, especially those with unconventional inputs, such as sparse data, sets of multivariate time series, video streams, and genomics and proteomics data.

The Multimedia Coding and Processing Laboratory supports research in image and video coding (compression and decompression) and processing with visual processing and deep learning methods.

The Network Security and Optimization Laboratory focuses on using advanced algorithms and data-driven optimization to solve security related problems in various real-world complex networks.

The Sustainable Systems Laboratory is dedicated to research in systems software and data storage technologies. The projects it supports focus on durable, scalable, and efficient solutions to computing problems, and the application of systems software technologies to broader sustainability problems.

The Trustworthy Computing Laboratory conducts research on ensuring the security and trustworthiness of distributed systems and networks.

The Video and Image Processing Laboratory investigates state-of-the-art machine learning and signal processing techniques for image and video processing and analysis.

For details of faculty research areas, please see https://www.scu.edu/engineering/academic-programs/department-of-computer-engineering/research/.

Lower-Division Courses

10. Introduction to Programming

Overview of computing. Introduction to program design and implementation: problem definition, functional decomposition, and design of algorithm programming in PHP and C: variables, data types, control constructs, arrays, strings, and functions. Program development in the Linux environment: editing, compiling, testing, and debugging. Credit is not allowed for more than one introductory class such as COEN 10, COEN 44, CSCI 10, or OMIS 30. Corequisite: COEN 10L. (4 units)

10L. Introduction to Programming Laboratory

Laboratory for COEN 10. Corequisite: COEN 10. (1 unit)

11. Advanced Programming

The C Language: structure and style. Types, operators, and expressions. Control flow. Functions. Pointers, arrays, and strings. Structures and dynamic memory allocation. I/O and file processing. Special operators. Recursion and threads. The Unix environment. Prerequisites: Previous programming experience and/or a grade of C- or better in an introductory computer programming course such as COEN 10, CSCI 10, or OMIS 30. Corequisite: COEN 11L. (4 units)

11L. Advanced Programming Laboratory

Laboratory for COEN 11. Corequisite: COEN 11. (1 unit)

12. Abstract Data Types and Data Structures

Data abstraction: abstract data types, information hiding, interface specification. Basic data structures: stacks, queues, lists, binary trees, hashing, tables, graphs; implementation of abstract data types in the C language. Internal sorting: review of selection, insertion, and exchange sorts; quicksort, heapsort; recursion. Analysis of run-time behavior of algorithms; Big-O notation. Introduction to classes in C++. Credit not allowed for more than one introductory data structures class, such as COEN 12 or CSCI 61. Prerequisite: a grade of C- or better in either COEN 11 or 44. Corequisite: COEN 12L. Recommended corequisite: COEN 19 or MATH 51. (4 units)

12L. Abstract Data Types and Data Structures Laboratory

Laboratory for COEN 12. Corequisite: COEN 12. (1 unit)

19. Discrete Mathematics

Predicate logic, methods of proof, sets, functions, sequences and summations, modular arithmetic, cardinality, induction, elementary combinatorial analysis, recursion, and relations. Also listed as MATH 51. (4 units)

20. Introduction to Embedded Systems

Introduction to computer organization: CPU, registers, buses, memory, I/O interfaces. Number systems: arithmetic and information representation. Assembly language programming: addressing techniques, arithmetic and logic operations, branching and looping, stack operations, procedure calls, parameter passing, and interrupts. C language programming: pointers, memory management, stack frames, interrupt processing. Prerequisite: A grade of C- or better in COEN 12 or CSCI 61. Corequisite: COEN 20L. (4 units)

20L. Embedded Systems Laboratory

Laboratory for COEN 20. Corequisite: COEN 20. (1 unit)

21. Introduction to Logic Design

Boolean functions and their minimization. Designing combinational circuits, adders, multipliers, multiplexers, decoders. Noise margin, propagation delay. Bussing. Memory elements: latches and flip-flops; timing; registers; counters. Programmable logic, PLD, and FPGA. Use of industry quality CAD tools for schematic capture and HDL in conjunction with FPGAs. Also listed as ELEN 21. Corequisite: COEN 21L. (4 units)

21L. Logic Design Laboratory

Laboratory for COEN 21. Also listed as ELEN 21L. Corequisite: COEN 21. (1 unit)

29. Current Topics in Computer Science and Engineering

Subjects of current interest. May be taken more than once if topics differ. (4 units)

44. Applied Programming in C

Computer programming in C, including input/output, selection structures, loops, iterative solutions, function definition and invocation, macros, pointers, memory allocation, and top-down design. Programming of elementary mathematical operations. Applications to engineering problems. Prerequisite: MATH 13. Corequisite: COEN 44L. (4 units)

44L. Applied Programming in C Laboratory

Laboratory for COEN 44. Corequisite: COEN 44. (1 unit)

60. Introduction to Web Technologies

Overview of the internet and World Wide Web technologies and practices. Introduction to basic markup language, style sheet language, server-side scripting language, and website design. Emerging Web applications. Corequisite: COEN 60L. (4 units)

60L. Introduction to Web Technologies Laboratory

Laboratory for COEN 60. Corequisite: COEN 60. (1 unit)

70. Formal Specification and Advanced Data Structures

Specification, representation, implementation, and validation of data structures; object-oriented design and programming in a strongly typed language with emphasis on reliable reusable software; formal specification of data structures (e.g., graphs, sets, bags, tables, environments, trees, expressions, graphics); informal use of specifications to guide implementation and validation of programs; guidelines and practice in designing for and with reuse. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in either COEN 19 or MATH 51. Corequisite: COEN 70L. (4 units)

70L. Formal Specification and Advanced Data Structures Laboratory

Laboratory for COEN 70. Corequisite: COEN 70. (1 unit)

79. Object-Oriented Programming and Advanced Data Structures

Object-oriented programming concepts; specification, design, and implementation of data structures with emphasis on software reliability and reusability; design and implementation of static and dynamic data structures, such as sequence, vector, list, stack, queue, deque, priority queue, set, multiset, map, multimap, and graphs; software development using inheritance, templates and iterators; memory allocation and performance; Using data structures in real-world applications; time analysis of data structures; informal use of specifications to guide implementation and validation of programs. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in either COEN 19 or MATH 51. Corequisite: COEN 79L. (4 units)

79L. Object-Oriented Programming and Advanced Data Structures Laboratory

Laboratory for COEN 79. Corequisite: COEN 79. (1 unit)

Upper-Division Courses

100. Research Seminar

Introduction to research in computing, covering several research areas. (1 unit)

120. Real-Time Systems

Overview of real-time systems: classification, design issues, and description. Finite state machines and statecharts. Robot programming: odometry and the use of sensors. Real-time programming languages, real-time kernels, and multi-threaded programming. Unified Modeling Language for the design of real-time applications. Performance analysis. Prerequisite: A grade of C- or better in either COEN 12 or CSCI 61. Corequisite: COEN 120L. (4 units)

120L. Real-Time Systems Laboratory

Laboratory for COEN 120. Corequisite: COEN 120. (1 unit)

122. Computer Architecture

Overview of computer systems. Instruction set architecture. Quantitative analysis. Computer arithmetic. CPU datapath design. CPU control design. Pipelining. Data/control hazards. Memory hierarchies and management. Introduction of multiprocessor systems. Hardware description languages. Laboratory project consists of a design of a pipeline. Prerequisites: a grade of C- or better in either COEN 20 or ELEN 33 and in either COEN 21 or ELEN 21. Corequisite: COEN 122L. (4 units)

122L. Computer Architecture Laboratory

Laboratory for COEN 122. Corequisite: COEN 122. (1 unit)

123. Mechatronics

Introduction to behavior, design, and integration of electromechanical components and systems. Review of appropriate electronic components/circuitry, mechanism configurations, and programming constructs. Use and integration of transducers, microcontrollers, and actuators. Also listed as ELEN 123 and MECH 143. Prerequisites: ELEN 50 with a grade of C- or better and COEN 11 or 44. Corequisite: COEN 123L. (4 units)

123L. Mechatronics Laboratory

Laboratory for COEN 123. Corequisite: COEN 123. Also listed as ELEN 123L and MECH 143L. (1 unit)

127. Advanced Logic Design

Contemporary design of finite-state machines as system controllers using FPGA devices. Minimization techniques, performance analysis, and modular system design. HDL simulation and synthesis. Also listed as ELEN 127. Prerequisite: COEN 21 with a grade of C- or better. Corequisites: COEN 127L. (4 units)

127L. Advanced Logic Design Laboratory

Laboratory for COEN 127. Design, construction, and testing of controllers from verbal specs. Use of CAD design tools. Also listed as ELEN 127L. Corequisite: COEN 127. (1 unit)

129. Current Topics in Computer Science and Engineering

Subjects of current interest. May be taken more than once if topics differ. (4 units)

140. Machine Learning and Data Mining

Machine learning as a field has become increasingly pervasive, with applications from the Web (search, advertisements, and recommendation) to national security, from analyzing biochemical interactions to traffic and emissions to astrophysics. This course presents an introduction to machine learning and data mining, the study of computing systems that improve their performance through learning from data. This course is designed to cover the main principles, algorithms, and applications of machine learning and data mining. Prerequisites: a grade of C- or better in AMTH 108, MATH 53, and COEN 12. (4 units)

140L. Machine Learning and Data Mining Laboratory

Laboratory for COEN 140. Corequisite: COEN 140 (1 unit)

143. Internet of Things

Applications and architectures of IoT systems. Embedded and low-power processors. Interfacing digital sensors and actuators. Interrupts and exceptions in a concurrent world. Operating systems for resource-constrained devices. Multitasking and memory allocation. Wireless channel access, low-power wireless, real-time and reliable communication. IP networking, protocol translation and compression. Multi-hop communication. Application layer protocols. Security protocols and architectures. Cloud, edge, and fog computing. Prerequisites: a grade of C- or better in COEN 146 and COEN 177. (4 units)

143L. Internet of Things Laboratory

Laboratory for COEN 143. Corequisite: COEN 143 (1 unit)

145. Introduction to Parallel Computing

How to effectively program parallel computers, from smartphones to large clusters. Types of parallel architectures, routing, data parallel, shared-memory, and message-passing parallel programming, load balancing, evaluation of parallel algorithms, advanced topics. Case studies in real-world data analytics, including parallel algorithms for sparse matrix and graph operations. Hands-on lab on multi-core CPUs and many-core GPUs. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61. Corequisite: COEN 145L. (4 units)

145L. Introduction to Parallel Computing Laboratory

Laboratory for COEN 145. Corequisite: COEN 145. (1 unit)

146. Computer Networks

Data communication: circuit and packet switching, latency and bandwidth, throughput/delay analysis. Application layer: client/server model, socket programming, Web, email, FTP. Transport layer: TCP and UDP, flow control, congestion control, sliding window techniques. Network layer: IP and routing. Data link layer: shared channels, media access control protocols, error detection and correction. Network security. Laboratory consists of projects on software development of network protocols and applications. Prerequisite: a grade of C- or better in either COEN 12 or CSCI 61. Corequisite: COEN 146L. Recommended corequisite or prerequisite: AMTH 108 or MATH 122. (4 units)

146L. Computer Networks Laboratory

Laboratory for COEN 146. Corequisite: COEN 146. (1 unit)

148. Computer Graphics Systems

Interactive graphic systems. Graphics primitives, line and shape generation. Simple transforming and modeling. Efficiency analysis and modular design. Interactive input techniques. Three-dimensional transformations and viewing, hidden surface removal. Color graphics, animation, real-time display considerations. Parametric surface definition and introduction to shaded-surface algorithms. Offered in alternate years. Prerequisites: MATH 53; a grade of C- or better in either COEN 12 or CSCI 61. (4 units)

150. Introduction to Information Security

Security principles; operating system security: process security, file system security, application program security; access control models: DAC, MAC, RBAC, ABAC; Malware: virus, Trojan, worms, rootkits, botnets, adware, spyware; network security attacks and defenses at different layers; web security: attacks on clients and servers; cryptographic basis: symmetric cryptography, public-key cryptography, cryptographic hash functions, digital signature; Application security: database security, email security, social networking security. Prerequisites: A grade of C- or better in COEN 146. Corequisite: COEN 150L (4 units)

150 L. Introduction to Information Security Laboratory

Laboratory for COEN 150. Corequisite: COEN 150. (1 unit)

152. Introduction to Computer Forensics

Procedures for identification, preservation, and extraction of electronic evidence. Auditing and investigation of network and host system intrusions, analysis and documentation of information gathered, and preparation of expert testimonial evidence. Forensic tools and resources for system administrators and information system security officers. Ethics, law, policy, and standards concerning digital evidence. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in COEN 20. Corequisite: COEN 152L. (4 units)

152L. Introduction to Computer Forensics Laboratory

Laboratory for COEN 152. Corequisite: COEN 152. (1 unit)

160. Object-Oriented Analysis, Design, and Programming

Four important aspects of object-oriented application development are covered: fundamental concepts of the OO paradigm, building analysis and design models using UML, implementation using Java, and testing object-oriented systems. Prerequisite: a grade of C- or better in COEN 79 or CSCI 61. Corequisite: COEN 160L. Co-located with COEN 275. (4 units)

160L. Object-Oriented Analysis, Design, and Programming Laboratory

Laboratory for COEN 160. Corequisite: COEN 160. (1 unit)

161. Web Development

Fundamentals of the World Wide Web (WWW) and the technologies that are required to develop Web-based applications. Topics cover HTML5, CSS, JavaScript, PHP, MYSQL and XML. Prerequisite: a grade of C- or better in either COEN 12 or CSCI 61. Corequisite: COEN 161L. (4 units)

161L. Web Development Laboratory

Laboratory for COEN 161. Corequisite: COEN 161. (1 unit)

162. Web Infrastructure

History and overview of World Wide Web technology. Web protocols. Web Navigation. Web caching and load balancing. P2P and Content Delivery Networks. Streaming technologies. Prerequisite: a grade of C- or better in COEN 146. (4 units)

163. Web Usability

Principles of user-centered design. Principles of human computer interaction. Fundamental theories in cognition and human factors: information processing, perception and representation, constructivist and ecological theories, Gestalt laws of perceptual organization. Usability engineering: user research, user profiling, method for evaluating user interface, usability testing. Prototyping in user interface: process, methods of evaluating and testing. Inclusive design in user interface design: accessibility issues, compliance with section 508 of Rehabilitation Act. Prerequisite: A grade of C- or better in either COEN 12 or CSCI 61. Corequisite: COEN 163L. (4 units)

163L. Web Usability Laboratory

Laboratory for COEN 163. Corequisite: COEN 163. (1 unit)

164. Advanced Web Development

Advanced topics in Web Application Development; Development with Web Frameworks, implementing Web services and management of Web security. Prerequisite: a grade of C- or better in COEN 161 or demonstrated knowledge of Web development technology covered in COEN 161. Corequisite: COEN 164L. (4 units)

164L. Advanced Web Development Laboratory

Laboratory for COEN 164. Corequisite: COEN 164. (1 unit)

165. Introduction to 3D Animation & Modeling/Modeling & Control Rigid Body Dynamics

Mathematical and physical principles of motion of rigid bodies, including movement, acceleration, inertia, and collision. Modeling of rigid body dynamics for three-dimensional graphic simulation; controlling the motion of rigid bodies in robotic applications. May be repeated twice for credit. Also listed as ARTS 173. (5 units)

166. Artificial Intelligence

Philosophical foundations of artificial intelligence, problem solving, knowledge and reasoning, neural networks, and other learning methods. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in either COEN 19 or MATH 51. (4 units)

166L. Artificial Intelligence Laboratory

Laboratory for COEN 166. Corequisite: COEN 166. (1 unit)

168. Mobile Application Development

Design and implementation of applications running on a mobile platform such as smartphones and tablets. Programming languages and development tools for mobile SDKs. Writing code for Peripherals-GPS, accelerometer, touchscreen. Optimizing user interface for a small screen. Effective memory management on a constrained device. Embedded graphics. Persistent data storage. Prerequisite: a grade of C- or better in COEN 20 or COEN 79 or equivalent. Corequisite: COEN 168L. Co-located with COEN 268. (4 units)

168L. Mobile Application Development Laboratory

Laboratory for COEN 168. Corequisite: COEN 168. (1 unit)

169. Web Information Management

Theory, design, and implementation of information systems that process, organize, analyze large-scale information on the Web. Search engine technology, recommender systems, cloud computing, social network analysis. Prerequisite: AMTH 108 or MATH 122; COEN 12 or CSCI 61; or permission of the instructor. (4 units)

171. Principles of Design and Implementation of Programming Languages

High-level programming language concepts and constructs. Costs of use and implementation of the constructs. Issues and trade-offs in the design and implementation of programming languages. Critical look at several modern high-level programming languages. Prerequisite: a grade of C- or better in COEN 12 or CSCI 61. (4 units)

172. Structure and Interpretation of Computer Programs

Techniques used to control complexity in the design of large software systems: design of procedural and data abstractions; design of interfaces that enable composition of well-understood program pieces; invention of new, problem-specific languages for describing a design. Prerequisites: COEN 19 or MATH 51; COEN 12 or CSCI 61; or permission of the instructor. (4 units)

172L. Structure and Interpretation of Computer Programs Laboratory

Laboratory for COEN 172. Corequisite: COEN 172. (1 unit)

173. Logic Programming

Application of logic to problem solving and programming; logic as a language for specifications, programs, databases, and queries; separation of logic and control aspects of programs; bottom-up reasoning (forward from assumptions to conclusions) versus top-down reasoning (backward from goals to subgoals) applied to problem solving and programming; nondeterminism, concurrency, and invertibility in logic programs. Programs written and run in Prolog. Prerequisites: COEN 12 or CSCI 61 and COEN 19 or MATH 51. (4 units)

173L. Logic Programming Laboratory

Laboratory for COEN 173. Corequisite: COEN 173. (1 unit)

174. Software Engineering

Software development life cycle. Project teams, documentation, and group dynamics. Software cost estimation. Requirements engineering and design. Data modeling, object modeling, and object-oriented analysis. Object-oriented programming and design. Software testing and quality assurance. Software maintenance. Prerequisite: a grade of C- or better in COEN 12 or CSCI 61. Corequisites: COEN 174L and COEN 194 (or consent of instructor). (4 units)

174L. Software Engineering Laboratory

Laboratory for COEN 174. Corequisite: COEN 174. (1 unit)

175. Introduction to Formal Language Theory and Compiler Construction

Introduction to formal language concepts: regular expressions and context-free grammars. Compiler organization and construction. Lexical analysis and implementation of scanners. Top-down and bottom-up parsing and implementation of top-down parsers. An overview of symbol table arrangement, run-time memory allocation, intermediate forms, optimization, and code generation. Prerequisites: a grade of C- or better in COEN 20 and COEN 79. Corequisite: COEN 175L. (4 units)

175L. Introduction to Formal Language Theory and Compiler Construction Laboratory

Laboratory for COEN 175. Corequisite: COEN 175. (1 unit)

177. Operating Systems

Introduction to computer operating systems. Operating system concepts, computer organization model, storage hierarchy, operating system organization, processes management, interprocess communication and synchronization, memory management and virtual memory, I/O subsystems, and file systems. Design, implementation, and performance issues. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in COEN 20 (or ELEN 120). Corequisite: COEN 177L. (4 units)

177L. Operating Systems Laboratory

Laboratory for COEN 177. Corequisite: COEN 177. (1 unit)

178. Introduction to Database Systems

ER diagrams and the relational data model. Database design techniques based on integrity constraints and normalization. Database security and index structures. SQL and DDL. Transaction processing basics. Prerequisites: a grade of C- or better in COEN 12 or CSCI 61. Corequisite: COEN 178L. (4 units)

178L. Introduction to Database Systems Laboratory

Laboratory for COEN 178. Corequisite: COEN 178. (1 unit)

179. Theory of Algorithms

Introduction to techniques of design and analysis of algorithms: asymptotic notations and running times of recursive algorithms. Design strategies: brute-force, divide and conquer, decrease and conquer, transform and conquer, dynamic programming, greedy technique. Intractability: P and NP, approximation algorithms. Also listed as CSCI 163A. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61 and in either COEN 19 or MATH 51, or equivalents. (5 units)

180. Introduction to Information Storage

Storage hierarchy. Caching. Design of memory and storage devices, with particular emphasis on magnetic disks and storage-class memories. Error detection, correction and avoidance fundamentals. Disk arrays. Storage interfaces and buses. Network attached and distributed storage, interaction of economy and technological innovation. Also listed as ELEN 180. Prerequisites: a grade of C- or better in either COEN 12 or CSCI 61. Recommended prerequisite: COEN 20. (4 units)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the work assignment includes preparation of a summary report on co-op activities. P/NP grading. May not be taken for graduate credit. (2 units)

189. Co-op Technical Report

Credit given for a technical report on a specific activity such as a design or research project, etc., after completing the co-op assignment. Approval of department advisor required. Letter grades based on content and quality of report. May be taken twice. May not be taken for graduate credit. Prerequisite: COEN 188. (2 units)

193. Undergraduate Research

Involves working on a year-long research project with one of the faculty members. Students should register three times in a row for a total of 6 units. Does not substitute for the senior project, which may be a continuation of the research done. Registration requires the faculty member's approval. Students must have junior or senior standing and a minimum GPA of 3.0. (2 units)

194. Design Project I

Specification of an engineering project, selected with the mutual agreement of the student and the project advisor. Complete initial design with sufficient detail to estimate the effectiveness of the project. Initial draft of the project report. (2 units)

195. Design Project II

Continued design and construction of the project, system, or device. Initial draft of project report. Prerequisite: COEN 194. (2 units)

196. Design Project III

Continued design and construction of the project, system, or device. Formal public presentation of results. Final report. Prerequisite: COEN 195. (2 units)

199. Directed Research/Reading

Special problems. By arrangement. (1--5 units)

Department of Electrical and Computer Engineering

Professor Emeritus: Dragoslav D. Siljak

Professors: Timothy J. Healy, Shoba Krishnan (Department Chair), Tokunbo Ogunfunmi, Sarah Kate Wilson, Sally L. Wood (Thomas J. Bannan Professor), Cary Y. Yang, Aleksandar Zecevic

Associate Professor: Mahmudur Rahman

Assistant Professors: Maryam Khanbaghi, Kurt Schab, Fatemeh Tehranipoor, Dat Tran, S.J.

The Electrical and Computer Engineering Department offers major programs leading to the bachelor of science in electrical engineering or the bachelor of science in electrical and computer engineering, as well as required and elective courses for students majoring in other fields.

Electrical and computer engineering includes the broad range of design, construction, and operation of electrical components, circuits, and systems as well as the science and technology of design, construction, and implementation of the software and hardware components of modern computing systems and computer-controlled equipment. This includes sustainable energy and electric power, signal and image processing, embedded systems, control systems, nanotechnology and integrated circuits, antennas, RF and communication systems, and all phases of the transmission of information.

Laboratories are an important part of most undergraduate courses in the electrical and computer engineering program. Use of appropriate laboratory equipment, design tools, and components demonstrates fundamental concepts of the courses and acquaints students with methods and tools they may use after graduation. The department has five teaching laboratories that support courses in electric circuits, electronics, systems, logic design, and RF and communication. In addition, the program has a laboratory dedicated to senior design projects. All laboratories are supported by the facilities of the Engineering Computing Center.

Requirements for the Majors

Major in Electrical Engineering

In addition to fulfilling the undergraduate Core Curriculum for the bachelor of science degree, students majoring in electrical engineering must fulfill the following major requirements and complete a minimum of 190 units. For every required engineering and science course, if an associated laboratory is listed following the course description, then that laboratory is also required to fulfill the major requirements.

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14
- AMTH 106 (or MATH 22) and AMTH 108
- CHEM 11 or 11T
- PHYS 31, 32, 33
- PHYS 34 or MATH 51
- One from CHEM 12, BIOL 1A, PHYS 113 or 121, MATH 53, 105 or 123

Engineering

- ENGR 1
- COEN 10 (or demonstrated equivalent programming proficiency)
- COEN 11, COEN 12
- MECH 121
- ELEN 20, 21, 50, 100, 104, 110, 115, 120, 192, 194, 195, 196

Technical Electives

Five undergraduate ELEN 100-level elective courses. One course must be selected from at least four of the following five areas:

- IC Design: ELEN 116, 117, 151, 152, 153, 156
- Systems: ELEN 118, 130, 133, 134, 160, 161, 167
- RF and Communication: ELEN 105, 141, 142, 144
- Power Systems: ELEN 164, 183, 184
- Digital and Embedded Systems: ELEN 121, 122, 123, 124, 127, 180

Additional electives may be substituted, with the approval of the advisor, including first-year graduate-level electrical engineering coursework.

Professional Development

A professional development experience selected from one of the following options:

- Four or more units in a study abroad program that does not duplicate other coursework
- Cooperative education experience with enrollment in ELEN 188 and ELEN 189
- 2 units in ENGR 110 (Community-Based Engineering Design)
- Preparation for graduate study in electrical engineering with completion of 2 or more additional units of upper-division or graduate-level courses
- Completion of an approved minor or second major in any field of engineering or science
- Completion of 10 or more units in the combined bachelor of science and master of science program
- 2 units of Peer education experience
- 2 units of undergraduate research, ELEN 199

Major in Electrical and Computer Engineering

In addition to fulfilling the undergraduate Core Curriculum for the bachelor of science degree, students majoring in electrical and computer engineering must fulfill the following major requirements and complete a minimum of 190 units. For every required engineering and science course, if an associated laboratory is listed following the course description, then that laboratory is also required to fulfill the major requirements.

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14, 51, 53
- CSCI 163A
- AMTH 106 (or MATH 22) and AMTH 108
- PHYS 31, 32, 33
- One course selected from CHEM 11 or 12, BIOL 1A, PHYS 34, 113 or 121, MATH 105 or 123

Engineering

- ENGR 1
- COEN 10, 11, 12, and 177
- ELEN 20, 21, 50, 100, 115, 120, 121, 122, 133, 142, 192, 194, 195, 196

Technical Electives

Three undergraduate ELEN 100-level elective courses approved by an academic advisor. At least one must be selected from (ELEN 123, 124, 127). With advisor approval at most one may be selected from COEN courses. ELEN 188 and 189 may not be used as technical electives.

Additional electives may be substituted, with the approval of the advisor from first-year graduate-level engineering coursework

Professional Development

A professional development experience selected from one of the following options:

- 4 or more units in a study abroad program that does not duplicate other coursework
- Cooperative education experience with enrollment in ELEN 188 and ELEN 189
- 2 units in ENGR 110 (Community-Based Engineering Design)
- Preparation for graduate study in either electrical and computer engineering or computer science and engineering with completion of 2 or more additional units of upper-division or graduate-level courses
- Completion of an approved minor or second major in any field of engineering or science
- Completion of 10 or more units in the combined bachelor of science and master of science program
- 2 units of Peer education experience
- 2 units of undergraduate research, ELEN 199

Requirements for the Minors

Minor in Electrical Engineering

Students must fulfill the following requirements for a minor in electrical engineering:

- ELEN 21, 21L, 50, 50L, 115, 115L
- Two courses selected from ELEN 100, 104, and 110, including their associated laboratory courses
- Three upper-division ELEN lecture courses (ELEN 100-level courses, excluding ELEN 188, 189, 192, 194, 195, and 196)
- Work completed to satisfy these requirements for the minor must include at least two courses beyond any free electives or other courses required to earn the bachelor's degree in the student's primary major

Minor in Electrical and Computer Engineering

- ELEN 21, 21L, 50, 50L, 120, 120L
- Two courses selected from ELEN 122, 133, and 142, including their associated laboratory courses
- Three additional upper-division Electrical and Computer Engineering lecture courses (ELEN 121, 122, 123, 124, 127, 133, 142, 153, 161)
- Work completed to satisfy these requirements for the minor must include at least two courses beyond any free electives or other courses required to earn the bachelor's degree in the student's primary major

Combined Bachelor of Science and Master of Science Program

The Department of Electrical and Computer Engineering offers a combined degree program leading to the bachelor of science in either major and a master of science in electrical and computer engineering. This program is open to majors with an approved grade point average in electrical and computer engineering, mathematics, and physics courses. Under the combined degree program, an undergraduate student begins taking courses required for a master's degree before completing the requirements for the bachelor's degree and typically completes the requirements for a master of science in electrical and computer engineering within a year of obtaining the bachelor's degree. Undergraduate students interested in the combined degree program are required to apply for the program between February of their junior year and December of their senior year.

Students in this program will receive their bachelor's degree after satisfying the full undergraduate degree requirements. To earn the master's degree, students must fulfill all the requirements for the degree, including the completion of 46 units of coursework beyond that applied to their bachelor's degree. No course can be used to satisfy requirements for both the bachelor's degree and the master's degree. However, completion of 10 or more units of coursework in electrical and computer engineering taken for the master's degree satisfies the professional development requirement of the undergraduate program.

The program of studies for the master's degree may include up to 20 units of electrical and computer engineering upper-division elective coursework excluding ELEN 188 and 189. These undergraduate units can count toward a master's degree only if a grade of "B" or better is earned. Students who do not complete the combined degree program within six years of entering the University will automatically be transferred to the regular master's degree program. Although six years is the maximum timeframe for completing the combined degree, full-time students enrolling in February of their junior year normally complete both degrees within five years.

Electrical and Computer Engineering Laboratories

The Electromagnetics and Communications Laboratory provides a full range of modern RF measurement capabilities up to 22 GHz, including a number of vector network analyzers, spectrum analyzers, and antenna measurement systems. This lab also includes complete production facilities for prototyping printed microwave circuits and antennas. Further, the lab has extensive computer-aided design and simulation capability, including both commercial packages and research-grade in-house solvers. In both research and teaching, connections between physical hardware measurements and computer simulations are stressed.

The Cybersecurity Laboratory provides various research projects in different aspects of cybersecurity including hardware, network, internet of things (IoT), mobile, etc. The Cybersecurity Laboratory supports both graduate and undergraduate student research. This lab has the following facilities for experiments, tests, and data collection and analysis: Oscilloscopes, Logic Analyzers, Thermal Chamber, FPGAs, microcontrollers, hacking tools, and more.

The IC Design and Technology Laboratory is dedicated to teaching and research topics on electronic materials and devices, integrated circuit design, and IC manufacturing technologies. Current research topics include modeling complex electronic devices using variational methodologies, materials and device characterizations, fabrication and experimental studies of photovoltaic devices, emission free smart infrastructure, and optimizing energy infrastructure.

The Complex Systems and Control Laboratory provides an experimental environment for students in the area of control system engineering. The lab includes computer-controlled DC motors. These motors provide students with a range of qualitative and quantitative experiments such as inverted pendulum for learning the utility and versatility of feedback in computer-controlled systems.

The Latimer Energy Laboratory (LEL) supports a very wide range of activities relating to solar energy, more specifically photovoltaics (PV) and management of renewable energy sources, from K-12 outreach through graduate engineering. The laboratory focuses on two major directions: 1) measurement and characterization of different renewable energy sources; and 2) integration of renewable energy into the electric grid. The lab has instrumentation such as pyranometers, VIS-IR spectrometers, metallurgical microscopes, source meters, grid simulator software and related computers.

The Thermal and Electrical Nanoscale Transport (TENT) Laboratory provides teaching and research facilities for modeling, simulation, and characterization of devices and circuits in the nanoscale. Ongoing research topics include silicon heterostructures; thin dielectric;, high-frequency device and circuit parameter extraction; carbon nanostructures used as electrical interconnect and thermal interface materials; and compact modeling of transistors and interconnects for large-scale circuit simulation. This laboratory is located inside NASA Ames Research Center in Moffett Field, California, and was established to conduct, promote, and nurture nanoscale science and technology, interdisciplinary research, and education activities at the University.

The Information Processing and Machine Learning Laboratory supports research in theoretical algorithm development in digital signal processing, adaptive and nonlinear signal processing, machine learning, and deep learning. Application areas include speech, audio, image and video processing for computer vision, communications, biological testing and diagnostics, artificial intelligence (AI), Voice-over-IP networking. The lab supports student research in algorithms and real-time implementations on Graphical Processing Units (GPUs), digital signal processors (DSPs) and field programmable gate arrays (FPGAs). Laboratory equipment includes digital oscilloscopes, video cameras and wireless LAN networking equipment.

The Image and Video Processing Laboratory supports graduate student research on algorithms and implementations for image analysis, computer vision, image reconstruction and super-resolution, and stereo imaging. Laboratory equipment includes cameras for image acquisition and computational resources, including FPGAs and GPUs, for real-time testing.

Lower-Division Courses

20. Emerging Areas in Electrical and Computer Engineering

Introduction to new frontiers in electrical and computer engineering. Hands-on activities and visits to research and production facilities in Silicon Valley companies to learn how the fundamentals of electrical and computer engineering are enabling new emerging technologies. (2 units)t

21. Introduction to Logic Design

Boolean functions and their minimization. Combinational circuits: adders, multipliers, multiplexers, decoders. Sequential logic circuits: latches and flip-flops, registers, counters. Memory. Busing. Programmable logic. Use of industry quality CAD tools for schematic capture and HDL in conjunction with FPGAs. Also listed as COEN 21. Corequisite: ELEN 21L. (4 units)

21L. Logic Design Laboratory

Laboratory for ELEN 21. Also listed as COEN 21L. Corequisite: ELEN 21. (1 unit)

49. Fundamentals of Electricity for Civil Engineers

Transducers. Motors, generators and efficiency. DC and AC circuits. One and three-phase power systems. Sources of electricity. Hydroelectric power, generation, and pumps. Electrical diagrams and schematics. (4 units)

50. Electric Circuits I

Physical basis and mathematical models of circuit components and energy sources. Circuit theorems and methods of analysis are applied to DC and AC circuits. Corequisite: ELEN 50L, PHYS 33. (4 units)

50L. Electric Circuits I Laboratory

Laboratory for ELEN 50. Corequisite: ELEN 50. (1 unit)

Upper-Division Courses

100. Electric Circuits II

Continuation of ELEN 50. Sinusoidal steady state and phasors, transformers, resonance, Laplace analysis, transfer functions. Frequency response analysis. Bode diagrams. Switching circuits. Prerequisite: ELEN 50 with a grade of C- or better, or PHYS 70. Corequisite: ELEN 100L, AMTH 106. (4 units)

100L. Electric Circuits II Laboratory

Laboratory for ELEN 100. Corequisite: ELEN 100. (1 unit)

104. Electromagnetics I

Vector analysis and vector calculus. The laws of Coulomb, Lorentz, Faraday, and Gauss. Dielectric and magnetic materials. Energy in electric and magnetic fields. Capacitance and inductance. Maxwell's equations. Wave equation. Poynting vector. Wave propagation and reflection in transmission lines. Radiation. Prerequisites: PHYS 33 and ELEN 50 with a grade of C- or better. Corequisite: ELEN 104L. (4 units)

104L. Electromagnetics I Laboratory

Laboratory for ELEN 104. Corequisite: ELEN 104. (1 unit)

105. Electromagnetics II

In-depth study of several areas of applied electromagnetics such as transmission lines circuits including microstrip and strip lines, Smith Chart and bounce diagram, magnetic circuits, antennas and antenna arrays. Prerequisite: ELEN 104. Corequisite: ELEN 105L. (4 units)

105L. Electromagnetics II Laboratory

Laboratory for ELEN 105. Corequisite: ELEN 105. (1 unit)

110. Linear Systems

Signals and system modeling. Laplace transform. Transfer function. Convolution. Discrete systems. Frequency analysis. Fourier series and transform. Filtering. State-Space models. Prerequisite: ELEN 100. Corequisite: ELEN 110L. (4 units)

110L. Linear Systems Laboratory

Laboratory for ELEN 110. MATLAB laboratory/problem sessions. Corequisite: ELEN 110. (1 unit)

112. Modern Network Synthesis and Design

Approximation and synthesis of active networks. Filter design using positive and negative feedback biquads. Sensitivity analysis. Fundamentals of passive network synthesis. Design project. Prerequisite: ELEN 110. Corequisite: ELEN 112L. (4 units)

112L. Modern Network Synthesis and Design Laboratory

Laboratory for ELEN 112. Corequisite: ELEN 112. (1 unit)

115. Electronic Circuits I

Study of basic principles of operation, terminal characteristics, and equivalent circuit models for diodes and transistors. Analysis and design of diode circuits, transistor amplifiers, and inverter circuits. Prerequisite: ELEN 50 with a grade of C- or better. Corequisite: ELEN 115L. (4 units)

115L. Electronic Circuits I Laboratory

Laboratory for ELEN 115. Corequisite: ELEN 115. (1 unit)

116. Analog Integrated Circuit Design

Design and analysis of multistage analog amplifiers. Study of differential amplifiers, current mirrors and gain stages. Frequency response of cascaded amplifiers and gain-bandwidth considerations. Concepts of feedback, stability, and frequency compensation. Prerequisite: ELEN 115. Corequisite: ELEN 116L. (4 units)

116L. Analog Integrated Circuit Design Laboratory

Laboratory for ELEN 116. Corequisite: ELEN 116. (1 unit)

117. Advanced Analog Integrated Circuits

Design and analysis of BJT and MOSFET analog ICs. Study of analog circuits such as comparators, sample/hold amplifiers, and switched capacitor circuits. Architecture and design of analog to digital and digital to analog converters. Reference and biasing circuits. Study of noise and distortion in analog ICs. Prerequisite: ELEN 116. Corequisite: ELEN 117L. (4 units)

117L. Advanced Analog Integrated Circuits Laboratory

Laboratory for ELEN 117. Corequisite: ELEN 117. (1 unit)

118. Fundamentals of Computer-Aided Circuit Simulation

Introduction to algorithms and principles used in circuit simulation packages (such as SPICE). Formulation of equations for linear and nonlinear circuits. Detailed study of the three different types of circuit analysis (AC, DC, and transient). Discussion of computational aspects, including sparse matrices, Newton's method, numerical integration, and parallel computing. Applications to electronic circuits, active filters, and CMOS digital circuits. Course includes a number of design projects in which simulation software is written in MATLAB and verified using SPICE. Prerequisites: ELEN 21, with a grade of C- or better; ELEN 100 and 115. Corequisite: ELEN 118L. (4 units)

118L. Fundamentals of Computer-Aided Circuit Simulation Laboratory

Laboratory for ELEN 118. Corequisite: ELEN 118. (1 unit)

119. Current Topics in Electrical and Computer Engineering

Subjects of current interest. May be taken more than once if topics differ. (4 units)

120. Microprocessor System Design

Design and analysis of microprocessor-based systems. ARM architecture and Assembly Language programming. Integration of digital and analog input/output devices. Interrupts and Timers, Bus timing analysis, ADC and DAC, Waveform synthesis, Serial communication, Displays. Embedded computing platforms. Prerequisites: A grade of C- or better in (COEN-21 or ELEN-21 and in COEN-11). Co-requisite: ELEN 120L. (4 units)

120L. Microprocessor System Design Laboratory

Laboratory for ELEN 120. Lab projects based on an embedded computer module to practical applications that reinforce class concepts and provide some opportunities for creative design. Prerequisites : A grade of C- or better in ELEN 21 and COEN 11. Co-requisite: ELEN 120

Co-requisite: ELEN 120. (1 unit)

121. Real-Time Embedded Systems

Computing systems that measure, control, and interact. Real-time principles (multitasking, scheduling, synchronization), interfacing sensors, actuators and peripherals, implementation trade-offs, development environments, embedded software (file systems, drivers, libraries, software re-use, concurrency), buffered communications, Real-time multimedia. Prerequisites: A grade of C- or better in ELEN-120. Co-requisite: ELEN 121L. (4 units)

121L. Real-Time Embedded Systems Laboratory

Laboratory for ELEN 121. Co-requisite: ELEN 121. (1 unit)

122. Computer Architecture

Application of logic design concepts to computer architecture. Computation state machines. Computer instruction definition and formatting, the use of opcodes and operands. Memory, and how it is used to store instructions and data. Instruction execution, control transfer. Application of critical path concepts and pipelining. Hazards. Caches. Hardware support for virtual memory. Prerequisites: A grade of C- or better in either COEN or ELEN 21. Co-requisite: ELEN 122L. (4 units)

122L. Computer Architecture Laboratory

Laboratory for ELEN 122. Co-requisite: ELEN 122. (1 unit)

123. Mechatronics

Introduction to behavior, design, and integration of electromechanical components and systems. Review of appropriate electronic components/circuitry, mechanism configurations, and programming constructs. Use and integration of sensors, microcontrollers, and actuators. Also listed as COEN 123 and MECH 143. Prerequisite: ELEN 50 with a grade of C- or better and COEN 11 or 44. Corequisite: ELEN 123L. (4 units)

123L. Mechatronics Laboratory

Laboratory for ELEN 123. Also listed as COEN 123L and MECH 143L. Corequisite: ELEN 123. (1 unit)

127. Advanced Logic Design

Contemporary design of finite-state machines as system controllers using FPGA devices. Minimization techniques, performance analysis, and modular system design. HDL simulation and synthesis. Also listed as COEN 127. Prerequisite: ELEN 21 with a grade of C- or better. Corequisites: ELEN 127L. (4 units)

127L. Advanced Logic Design Laboratory

Laboratory for ELEN 127. Design, construction, and testing of controllers from verbal specs. Use of CAD design tools. Also listed as COEN 127L. Corequisite: ELEN 127. (1 unit)

130. Control Systems

Applications of control systems in engineering. Principle of feedback. Performance specifications: transient and steady-state response. Stability. Design of control systems by frequency and root locus methods. Computer-controlled systems. State-variable feedback design. Problem sessions. Prerequisite: ELEN 110. Corequisite: ELEN 130L. (4 units)

130L. Control Systems Laboratory

Laboratory for ELEN 130. Corequisite: ELEN 130. (1 unit)

131. Introduction to Robotics

Overview of robotics: control, artificial intelligence, and computer vision. Components and structure of robots. Kinematics and dynamics of robot manipulators. Servo-control design, PID control. Trajectory planning, obstacle avoidance. Sensing and vision. Robot intelligence and task planning. Prerequisite: ELEN 110. Corequisite: ELEN 131L. (4 units)

131L. Introduction to Robotics Laboratory

Laboratory for ELEN 131. Corequisite: ELEN 131. (1 unit)

133. Digital Signal Processing

Discrete signals and systems. Difference equations. Convolution summation. Z-transform, transfer function, system response, stability. Digital filter design and implementation. Frequency domain analysis. Discrete Fourier transform and FFT. Audio, video, and communication applications. Prerequisites: ELEN 110 or both ELEN 50 with a grade of C- or better, and COEN 19. Corequisite: ELEN 133L. (4 units)

133L. Digital Signal Processing Laboratory

Laboratory for ELEN 133. Laboratory for real-time processing. Corequisite: ELEN 133. (1 unit)

134. Applications of Signal Processing

Current applications of signal processing. Topics may vary. Example topics include Speech Coding, Speech Recognition, and Biometrics. Prerequisite: ELEN 133, MATLAB. Corequisite: ELEN 134L. (4 units)

134L. Applications of Signal Processing Laboratory

Laboratory for ELEN 134. Corequisite: ELEN 134. (1 unit)

139. Special Topics in Signals and Systems

Subjects of current interest. May be taken more than once if topics differ. (4 units)

141. Communication Systems

Modulation and demodulation of analog and digital signals. Baseband to passband conversion. Random processes, Signal-to-noise ratios and Bandwidth Considerations Prerequisites: ELEN 110 and AMTH 108. Corequisite: ELEN 141L. (4 units)

141L. Communication Systems Laboratory

Laboratory for ELEN 141. Corequisite: ELEN 141. (1 unit)

142. Communications and Networking

Networking in different media. Effects of the media on data rate. Error detection and correction. Routing algorithms. Collision and retransmission in networks. Prerequisite: AMTH 108 with a grade of C- or better; or its equivalent. Co-requisite: ELEN 142L. (4 units)

142L. Communications and Networking Laboratory

Laboratory for ELEN 142. Corequisite: ELEN 142. (1 unit)

144. Microwave Circuit Analysis and Design

The fundamental characteristics of passive and active electrical components. Parasitics, models, and measurements. Modeling of circuit interconnects . Study of crosstalk in high-speed digital circuits, matching circuits, power dividers and microwave filters. Prerequisite: ELEN 105. Corequisite: ELEN 144L. (4 units)

144L. Microwave Circuit Analysis and Design Laboratory

Laboratory for ELEN 144. Corequisite: ELEN 144. (1 unit)

151. Device Electronics for IC Design

Properties of materials, crystal structure, and band structure of solids. Carrier statistics and transport; p-n junction electrostatics, I-V characteristics, equivalent circuits. Metal-semiconductor contacts, Schottky diodes. MOS field-effect transistors, bipolar junction transistors. This course covers the essential device concepts necessary for analog, digital,

and/or mixed signal circuit design. Credit not allowed for both ELEN 151 and ELEN 267. Prerequisite or corequisite: ELEN 104. Corequisite: ELEN 151L. (4 units)

151L. Device Electronics Laboratory

Laboratory for ELEN 151. Corequisite: ELEN 151. (1 unit)

152. Semiconductor Devices and Technology

Continuation of MOS field-effect transistors, bipolar junction transistors, heterojunctions. Principles of silicon IC fabrication processes. Bulk and epitaxial crystal growth, thermal oxidation, diffusion, ion implantation. Process simulation for basic devices. Prerequisite: ELEN 151. Corequisite: ELEN 152L. Cross-listed as ELEN 276. (4 units)

152L. Semiconductor Devices and Technology Laboratory

Laboratory for ELEN 152. Corequisite: ELEN 152. (1 unit)

153. Digital Integrated Circuit Design

Introduction to VLSI design and methodology. Study of basic principles, material properties, fabrication, operation, terminal characteristics, and equivalent circuit models for CMOS digital integrated circuits. Study of CMOS combinational and sequential integrated circuits and technology scaling. Physical design and layout principles. Interconnect modeling. Semiconductor memories. Use of state-of-the-art CAD tools. Prerequisites: ELEN/COEN 21 and ELEN 50 with a grade of C- or better. Corequisite: ELEN 153L. (4 units)

153L. Digital Integrated Circuit Design Laboratory

Laboratory for ELEN 153. Corequisite: ELEN 153. (1 unit)

156. Introduction to Nanotechnology

Introduction to the field of nanoscience and nanotechnology. Properties of nanomaterials and devices. Nanoelectronics: from silicon and beyond. Measurements of nanosystems. Applications and implications. Laboratory experience is an integral part of the course. Also listed as MECH 156. Prerequisites: PHYS 33 and either PHYS 34 or MECH 15. Corequisite: ELEN 156L. (4 units)

156L. Introduction to Nanotechnology Laboratory

Laboratory for ELEN 156. Also listed as MECH 156L. Corequisite: ELEN 156. (1 unit)

160. Chaos Theory, Metamathematics, and the Limits of Science: An Engineering Perspective on Religion

Limitations of science are examined in the framework of nonlinear system theory and metamathematics. Strange attractors, bifurcations, and chaos are studied in some detail. Additional topics include an introduction to formal systems and an overview of Godel's theorems. The mathematical background developed in the course is used as a basis for exploring the relationship between science, aesthetics, and religion. Particular emphasis is placed on the rationality of faith. Also listed as ELEN 217. Prerequisites: AMTH 106 (or an equivalent course in differential equations), and a basic familiarity with MATLAB. Corequisite: ELEN 160L. (4 units)

160L. Chaos Theory, Metamathematics, and the Limits of Knowledge: A Scientific Perspective on Religion Laboratory

Laboratory for ELEN 160. Corequisite: ELEN 160. (1 unit)

161. Information, Quantum Computing, and Complexity: The Beauty of Nature and the Nature of Beauty

Beauty is examined from an interdisciplinary perspective, taking into account insights from mathematics, physics, engineering, neuroscience, and psychology, as well as philosophy, art history, and theology. Technical topics include information theory, quantum computing, fractal geometry, complex systems, cellular automata, Boolean networks, and set theory. Prerequisite: AMTH 106 (or equivalent). Familiarity with basic concepts in probability theory is expected, as is some experience with MATLAB. Corequisite: ELEN 161L. (4 units)

161L. Information, Quantum Computing, and Complexity: The Beauty of Nature and the Nature of Beauty Laboratory

Laboratory for ELEN 161. Corequisite: ELEN 161. (1 unit)

164. Introduction to Power Electronics

Power and efficiency computations, rectifiers, power devices, DC-to-DC converters, AC-to-DC converters, and DC-to-AC inverters. Prerequisite: ELEN 115. Corequisite: ELEN 164L. (4 units)

164L. Introduction to Power Electronics Laboratory

Laboratory for ELEN 164. Corequisite: ELEN 164. (1 unit)

167. Medical Imaging Systems

Overview of medical imaging systems including sensors and electrical interfaces for data acquisition; mathematical models of the relationship of structural and physiological information to sensor measurements, resolution, and accuracy limits; conversion process from electronic signals to image synthesis. Analysis of the specification and interaction of the functional units of imaging systems and the expected performance. Focus on MRI, CT, and ultrasound. Also listed as BIOE 167, BIOE 267. Prerequisite: BIOE 162 or ELEN 110 or MECH 142. (4 units)

180. Introduction to Information Storage

Storage hierarchy. Design of memory and storage devices, with a particular emphasis on magnetic disks and storage-class memories. Error detection, correction, and avoidance fundamentals. Disk arrays. Storage interfaces and buses. Network attached and distributed storage, interaction of economy, and technological innovation. Also listed as COEN 180. Prerequisites: ELEN 21 or COEN 21, and COEN 20; COEN 122 is recommended. (4 units)

182. Energy Systems Design

Introduction to alternative energy systems with emphasis on those utilizing solar technologies; system analysis including resources, extraction, conversion, efficiency, and end-use; project will design power system for a house off or on grid making best use of renewable energy; system design will include power needs, generation options, storage, back-up power. Prerequisite: ELEN 50. (4 units)

183. Power Systems Analysis

Analysis, design, and optimization of power systems for traditional and renewable power generation. Balanced three phase circuits. Transformers and transmission lines. Prerequisite: ELEN 100 or PHYS 12. Corequisite: ELEN 183L. (4 units)

183L. Power Systems Analysis Laboratory

Laboratory for ELEN 183. Corequisite: ELEN 183. (1 unit)

184. Power System Stability and Control

Examine power system stability and power system control, including load frequency control, economic dispatch, and optimal power flow. Also listed as ELEN 231. Prerequisites: ELEN 183 or equivalent. (4 units)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the assignment includes preparation of a summary report on co-op activities. P/NP grading. May be taken twice. May not be taken for graduate credit. (2 units)

189. Co-op Technical Report

Credit given for a technical report on a specific activity such as a design or research project, etc., after completing the co-op assignment. Letter grades based on content and presentation quality of report. May be taken twice. May not be taken for graduate credit. Prerequisite: ELEN 188. Approval of department co-op advisor required. (2 units)

192. Introduction to Senior Design Project

Junior preparation for senior project. An introduction to project requirements and participation in the coordination of the senior conference. Tentative project selection. (2 units)

194. Design Project I

Specification of an engineering project, selected with the mutual agreement of the student and the project advisor. Complete initial design with sufficient detail of target specification. Incorporation of relevant engineering standards and appropriate realistic constraints. Initial draft of the project report. Corequisite: ENGL 181. (2 units)

195. Design Project II

Implementation, construction, and testing of the project, system, or device. Sustainability analysis. Demonstration of project and formal design review. Prerequisite: ELEN 194. (2 units)

196. Design Project III

Continued design, implementation, and testing of the project, system, or device to improve function and add capability. Reliability analysis. Formal public presentation of results. Final report. Prerequisite: ELEN 195. (1 unit)

199. Directed Research/Reading

Investigation of an approved engineering problem and preparation of a suitable project report. Open to electrical and computer engineering majors only. (1--6 units)

General Engineering Program

Director of General Engineering: Jessica Kuczenski

Lecturers: Jessica Kuczenski, Matthew Gaudet

The School of Engineering, under the leadership of the director of general engineering, offers a major in general engineering, a minor in general engineering, and a minor in technical innovation, design thinking, and the entrepreneurial mindset. The bachelor of science degree in general engineering is designed to provide students a technical degree with concentrations designed to meet the needs of the individual student. Not intended for a student who plans to work as a professional engineer, the general engineering degree allows a student to earn a technical degree while preparing for work or graduate study in fields such as law, medicine, business, or education.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree in engineering, students majoring in engineering must complete the minimum number of units and the specified requirements for their concentration.

Students majoring in engineering must complete a minimum of 189 units and the following requirements:

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14
- AMTH 106 or MATH 22
- AMTH 108 or other approved upper-division mathematics elective
- CHEM 11 or 11T, 11L
- PHYS 31, 31L, 32, 32L, 33, 33L

Engineering

- ENGR 1, 1L
- ENGR 110
- BIOE 10
- CENG 41, 43, 43L
- COEN 10 and 10L (or other approved programming course and lab including COEN 11, CSCI 10, OMIS 30)
- ELEN 21, 21L, 50, 50L, 115, 115L
- MECH 10, 10L, 11, 15, 15L, 121

Design Sequence

- ENGR 193
- ENGR 163 A&B

- ENGR 194, 195, 196

With permission, you may alternatively choose from one of the following options:

- BIOE 194, 195, 196
- CENG 192A, 192B, 192C, 193, 194
- COEN 194, 195, 196
- ELEN 194, 195, 196
- MECH 194, 195, 196

Electives

- 36 upper-division units defining a coherent concentration, selected in consultation with an academic advisor

Requirements for the Minor in General Engineering

Students must fulfill the following requirements for a minor in general engineering:

- One course selected from COEN 10, 11, CSCI 10, OMIS 30, or other approved programming course together with the associated lab
- CENG 41
- ELEN 50, 50L
- MECH 10, 10L, 121
- Two courses selected from BIOE 10, CENG 10, CENG 43, COEN 12, ELEN 21, ELEN 33, ELEN 115, MECH 11, MECH 15, MECH 140, together with associated labs
- A two-course sequence selected from BIOE 153 and BIOE 154, CENG 115 and CENG 118, CENG 121 and CENG 143, COEN 79 and any upper-division COEN course, ELEN 100 and ELEN 110, ELEN 115 and (ELEN 116, 127, or 164), MECH 122 and MECH 132, MECH 123 and MECH 125, together with associated labs

Minor in Technical Innovation, Design Thinking, and the Entrepreneurial Mindset

Program Coordinator: Christopher Kitts

To solve the complex and interdisciplinary technical challenges of the modern world, students must understand the entrepreneurial methods appropriate for harnessing technical innovation in order to create value through new devices, products, systems, processes, services, and ecosystems. This minor addresses this need by providing students with learning experiences that address product innovation, business fundamentals, and entrepreneurial thinking; in doing so, it leverages themes and concepts promoted through movements such as design thinking, lean development, and business modeling. In addition, an experiential learning activity in the context of the entrepreneurial development of a real engineering system is required. Participation in an elective component is also required.

This minor program is suitable for undergraduates in a wide variety of disciplines. It places an emphasis on an understanding of the user and the business environment for the design and implementation of technologies and solutions that are appropriate, affordable, and accessible for consumers in a variety of markets. Students who complete the program will be able to adapt both themselves and the organizations in which they work in a way that will allow them to remain competitive and relevant as global consumer trends continue to evolve.

Requirements for the Minor in Technical Innovation, Design Thinking, and the Entrepreneurial Mindset

The minor includes requirements in the areas of Product Innovation and Prototyping, Business and Commercialization, and Design Thinking and Entrepreneurial Fundamentals. Students are also required to complete an experiential project putting these concepts into practice as well as participation in two elective activities. Multiple options are available for each of these requirements, affording students a great deal of flexibility in completing the minor.

Currently, the Minor offers an optional BioInnovation and Design track to provide students with an opportunity to focus their study of innovation and design/entrepreneurial thinking to medical and health care applications.

Completion of the minor requires satisfying the requirements listed below. Track-specific requirements are noted in each requirement category.

Product Innovation and Prototyping (5 units minimum)

Select one of the following options:

- Option A: MECH 144/L. Smart Product Design (5 units)
- Option B: Complete courses listed below (6 units):
  - ENGR 2. Introduction to Engineering Design and Prototyping (2 units)
  - ENGR 121. BioInnovation I (2 units)
  - ENGR 122. BioInnovation II (2 units)

BioInnovation and Design Track: Must complete Option B.

Business and Commercialization Fundamentals (4 units minimum)

Select one of the following options:

- Option A: BUSN 70. Contemporary Business Issues (4 units) or BUSN 170. Contemporary Business for Nonmajors (5 units)
- Option B: ENGR 173. Introduction to Business Fundamentals (1 unit) plus any three additional 1-unit courses from the approved Business and Commercialization Fundamentals list below:
  - ENGR 152. Regulatory Pathways for Medical Devices and Technologies (1 unit)
  - ENGR 156. Conceptualizing Innovations in Health Care (1 unit)
  - ENGR 164. Financing New Ventures (1 unit)
  - ENGR 167. Go To Market Strategy (1 unit)
  - ENGR 168. Legal Considerations for New Ventures (1 unit)
  - ENGR 174. Financial Statements and Decision Making (1 unit)
  - ENGR 175. Business Model and Plan Development (1 unit)
  - ENGR 176. Introduction to Technical Marketing (1 unit)
  - ENGR 178. Intellectual Property for Engineers (1 unit)

BioInnovation and Design Track: Must complete Option B, including ENGR 152 and ENGR 156.

Design Thinking and Entrepreneurship Fundamentals (4 units minimum)

Select one of the following options:

- Option A: MGMT 164. Introduction to Entrepreneurship (5 units)
- Option B: Four 1-unit courses from the approved Design/Entrepreneurial Thinking list below:
  - ENGR 151. Design Controls for the Medical Device Industry (1 unit)
  - ENGR 153. Risk Management during Medical Device Design and Development (1 unit)
  - ENGR 154. Usability Engineering for Medical Devices (1 unit)
  - ENGR 162. Thinking in Systems (1 unit)
  - ENGR 165. Creativity: The Art of Innovation (1 unit)
  - ENGR 166A/B. Introduction to Design Thinking (1 unit each)
  - ENGR 169. Social Entrepreneurship (1 unit)
  - ENGR 171A/B. Opportunity Recognition I and II (1 unit each)
  - ENGR 172A/B. Applied Entrepreneurship I and II (1 unit each)
  - ENGR 177. Customer Ethnography (1 unit)
  - ENGR 179. Corporate Intrapreneurship (1 unit)

BioInnovation and Design Track: Must complete Option B, including ENGR 151, ENGR 153, and ENGR 154.

Experiential Activity (5 units minimum)

An academically supervised, hands-on engineering activity that includes entrepreneurially oriented tasks relating to the development of an appropriate business/enterprise model for a real engineering product/system.

Select one of the following options:

- Option A: ENGR 163A&B. Engineering and the Entrepreneurial Mindset (total of 1 unit over 2 quarters), performed in conjunction with a senior project course sequence (6--10 units)
- Option B: ENGR 163A&B. Engineering and the Entrepreneurial Mindset (total of 1 unit over 2 quarters), performed in conjunction with ENGR 199. Directed Research (6 units) performed with a hands-on engineering component
- Option C: BUSN 145. Entrepreneurship Practicum (5 units) performed as part of a placement that includes a significant technology focus relating to design/development, approved by the minor program coordinator

BioInnovation and Design Track: May complete any Option. Experiential activity must involve a relevant medical device or health care innovation project approved by minor and track program coordinator(s).

Elective Component

Participation in additional Pathway, course, or co-/extra-curricular activities within the School of Engineering's program in innovation and entrepreneurial thinking. Complete any two of the following program opportunities:

- Option A: Complete the Design Thinking Pathway with an essay theme that specifically emphasizes a topic relating to developing a deep understanding of customer/market needs and opportunities and capitalizing on this to create value through the design of a technical system.
- Option B: Participate in selected co-extracurricular activities approved in advance by the minor program coordinator. These may include experiences such as two significant extra-curricular design challenges, a workshop, a mini-course, etc. (such activities may not have been used for credit in any other course).

- Option C: Complete an independent study project relating to technical entrepreneurship, supervised by a faculty member and approved in advance by the minor program coordinator.
- Option D: Complete an additional 2 units of coursework from approved courses in the Engineering Innovation and Entrepreneurship program (shown below). Courses chosen from this list cannot be doubly used to satisfy the Design Thinking pathway
  - ENGR 19. Ethics in Technology (4 units)
  - ENGR 110. Community-Based Engineering Design (3 units)
  - ENGR 140. Diversity and Innovation in STEM (4 units)
  - ENGR 141. Innovation Theology (4 units)
  - ENGR 145. Innovation, Entrepreneurship, and the Evolution of Silicon Valley (4 units)
  - ENGR 161. Globalization and the Cultures of Innovation and Entrepreneurship (4 units)
  - BUSN 6/6H. Business Ethics (4 units)
  - PHIL 26. Ethics in Business (4 units)

Combined Bachelor of Science and Master of Science Program

General Engineering offers a combined degree program leading to a bachelor of science and a master of science. Under the combined degree program, an undergraduate student begins taking courses required for a master's degree before completing the requirements for a bachelor's degree and typically completes the requirements for a master of science within a year of completing the bachelor's degree.

Undergraduate students admitted to the combined degree program are required to enroll in the program between February of their junior year and December of their senior year. Students in this program will receive their bachelor's degree after satisfying the standard undergraduate degree requirements. To earn a master's degree, students must fulfill all requirements for the degree, including the completion of 46 units of coursework beyond that applied to the bachelor's degree. The program of studies for the master's degree may include up to 20 units taken while enrolled as an undergraduate student; however, no individual course can be used to satisfy requirements for both the bachelor's degree and master's degree.

Lower-Division Courses

1. Introduction to Engineering

This course provides an introduction to engineering, including fundamentals of engineering study, different engineering disciplines, and interdisciplinary aspects of engineering. This course investigates the connection between science, technology, and society, and also illustrates the extent to which engineering impacts the world. The course also exposes students to entrepreneurship, engineering professionalism, the growth mindset, emerging markets, ethics, and civic engagement. ENGR 1 and ENGR 1L together fulfill the Science, Technology & Society core requirement. (1 unit)

1L. Introduction to Engineering Laboratory

The laboratory will provide students with hands-on experience of engineering design and open-ended problem solving. The lab focuses on introducing aspects of the different engineering disciplines and allows students to gain experience with each of the engineering disciplines and reflect on learning gains with teamwork, communication, and engineering skills. Engineering designs will be framed to include the impact of design solutions/technologies on society and will be developed in a team-based environment utilizing visuals, written text, and oral presentation. ENGR 1 and ENGR 1L together fulfill the Science, Technology & Society core requirement. (1 unit)

2. Introduction to Engineering Design and Prototyping

Introduction to prototyping in the engineering design framework. Students will work to design and prototype projects on four major pieces of Maker Lab equipment, which they will be trained to use. Prerequisite: ENGR 1L. (2 units)

15. Environmental Quality Engineering

Behavior of chemicals in the environment. Environmental protection strategies. Environmental impact assessment. Risk analysis and economic considerations. Discussion of local, regional, and global environmental problems, and alternative solutions. For non-engineering majors. Prerequisite: MATH 6 or equivalent. (4 units)

19. Ethics in Technology

Making the case for constructive ethical application of the most powerful technologies of the 21st century. Normative, principle-based ethical analysis of current and emerging technology in arenas including information, energy, biotech/medicine, military science, robotics, and agriculture. ENGR 19 satisfies the Ethics Core requirement. (4 units)

20. Topics in Robotics

Participate in a project-based, hands-on engineering project in a team-based environment. Gain exposure to sensing, actuation, and control techniques and components in the process of developing a robotic system or subsystem. Prerequisite: Instructor permission required. (1 unit)

25. Sustainable Energy Projects

Students learn the fundamentals of sustainable energy in a wide range of fields and carry out projects in these areas. Activities are normally associated with the Latimer Energy Scholars Program. May be repeated for credit. Prerequisite: Instructor permission required. (1--2 units)

60. Sustainable Electric Energy

This course explores the twofold 21st-century challenges of the use and conservation of electric energy, and the sustainable generation of electric energy, primarily through the use of photovoltaic cells. The course includes a study of issues relating to the environment, economics, politics, and societal impact. Although physical and mathematical studies and analyses are a part of the course, no background in these areas is required beyond algebra. ENGR 60 satisfies the Science, Technology & Society Core requirement. (4 units)

85. Special Topics in Engineering

Subjects of current interest. May be taken more than once if topics differ. (1--4 units)

90. Engineering Competition Workshop

Workshop to develop aspects of an engineering school sponsored entry into an external competition (examples include Solar Decathlon and Tiny House). May include design, communication, construction, research, analysis, planning, documentation, fundraising, and other activities. Students will meet together to share information, brainstorm, collaborate, and make decisions, and will also work independently or in small teams in focused areas. (1 unit)

91. Architecture Workshop

Students will explore aspects of architecture with a particular emphasis on design related to an external contest. General topics may include design principles; form and function; space utilization; natural and artificial lighting; BIM and architectural documentation; and texture and color. Special topics may include sustainable building materials, LEED certification process, passive solar design, building integrated photovoltaics, and modular building techniques. (2 units)

98. Independent Study

Independent study of an approved engineering problem and preparation of a suitable project report. (1--4 units)

Upper-Division Courses

110. Community-Based Engineering Design

Student teams are partnered with a local community business or organization and complete a design project from problem identification through final prototype. Course focuses on "hands-on" experience in project management, building cross-disciplinary team skills, and prototyping (training and use of the SCU Maker Lab included). This course is open to students at all levels and all majors (engineering or non-engineering). Come make a real difference in a real community! Satisfies the Civic Engagement Core requirement. (2 units)

111. STEM Outreach in the Community

This course examines challenges surrounding STEM (Science, Technology, Engineering, and Math) education such as funding, diversity, and accessibility. Students develop or enhance STEM curricular materials and explore pedagogical techniques specific to working with youth from marginalized communities. Students taking ENGR111 and ENGR 111L will satisfy the ELSJ Core requirement. Corequisite: ENGR 111L. (2 units)

111L. STEM Outreach in the Community Lab

Students lead engineering-focused STEM activities with K--12 students at a community partner's off-campus site. No specific engineering expertise is required or expected. Corequisite: ENGR 111. (1 unit)

121. BioInnovation I: Opportunity Identification and Concept Generation

First course of the two-course sequence introduces students to health care and medical device technology innovation for advanced and emerging markets. Students work in teams on problem identification and assessment as well as scrutinization of clinical impact, product feasibility, and commercial viability to define the needs and requirements of new technology products to address unmet or poorly met health care needs. Prerequisite: sophomore to senior standing or instructor consent. ENGR 121 and ENGR 122 together satisfy the Science, Technology & Society Core requirement. (2 units)

122. BioInnovation II: Product Development Strategy and Prototyping

Second course of the two-course sequence takes students through the product development stage of medical device innovation process. Students work in teams on the design, development, and prototyping of engineering solutions that satisfy the needs identified in ENGR 121, as well as formulation of strategies to ensure regulatory compliance and commercialization success. ENGR 121 and ENGR 122 together satisfy the Science, Technology & Society Core requirement. Prerequisite: ENGR 121. (2 units)

125. Advanced Sustainable Energy Projects

Students study advanced concepts in sustainable energy and carry out complex projects, typically in a team environment. Activities are normally associated with the Latimer Energy Scholars Program. May be repeated for credit. Prerequisites: ENGR 25 and instructor permission required. (1--2 units)

135. Humanitarian Engineering

Engineering for social benefit. Introduction to the following concepts: humanitarian and frugal innovation, design for empathy, needs assessment, impact evaluation, and social entrepreneurship. (1 unit)

136. Frugal Innovation Projects for Social Benefit

Students explore and apply the 10 core competencies of frugal innovation through case studies applied to mobile applications, low-cost diagnostics, frugal habitat, last-mile distribution and micro entrepreneurship, and learn how to design technologies and business models for social benefit. Student projects focus on real-world implementations with social enterprises in emerging markets. Prerequisite: Junior standing or sophomores with instructor consent. (2 units)

140. Diversity and Innovation in STEM

This course focuses on the intersection of diversity, inclusion, and product or service innovation. Build understanding and skills to work with diverse perspectives and competencies from intersectionalities of race, gender, religion, region, and other dimensions of diversity, and derived from historical American systemic ideologies of individual freedom and success within a hierarchy as an individualistic mindset and of social responsibility with justice for all as a relational mindset in oneself, and in other individuals, organizations, systems, and cultures. Learn entrepreneurship and design thinking prototyping techniques while working in teams on innovation challenges that can change the world. Students will explore user-centered design by developing and applying design processes and strategies in hands-on exercises, design critiques, discussions, lectures, and readings. ENGR 140 satisfies the Diversity Core requirement. (4 units)

141. Innovation Theology: An Introduction

The course equips future innovators with the ability to discern more compelling answers to where innovations and value are needed and why by cultivating confidence in applying theological inquiry to innovation. ENGR 141 satisfies the Religion, Theology & Culture 2 Core requirement. (4 units)

143H. Science, Religion, and the Limits of Knowledge

The limits of scientific knowledge are examined in the framework of nonlinear system theory, metamathematics, and modern physics. The technical background developed in the course is used as a basis for exploring the relationship between science, aesthetics, and religion. Particular emphasis is placed on the rationality of faith, and on controversial questions where the views of scientists and theologians appear to conflict. ENGR 143 satisfies the Religion, Theology & Culture 2 core requirement. Prerequisite: MATH 12 or 31. (4 units)

145. Innovation, Entrepreneurship, and the Evolution of Silicon Valley

This course will explore technological innovation by studying the evolution of technologies and industries in Silicon Valley. We will review the development of fundamental technologies such as vacuum tubes, semiconductors, and biotechnology, and systems such as radar, communications, aerospace, personal computing, the internet, social media and platforms. This approach will help students to understand 1) the defining features of this region and how it has continued to lead in global technology development even as the fundamental technologies have changed, and 2) the complexity of the innovation process and the influence of the public sector, academia, investors, and other entities on innovation and entrepreneurship. (4 units)

151. Design Controls for the Medical Device Industry

Introduces process-based frameworks required in the design and development of biomedical products to ensure that they meet user requirements and safely perform their intended use. Student teams use real-world medical device examples to examine product requirements, and apply agile/lean engineering methods to product verification and validation test planning. Frameworks mastered through this course will give students a practical toolkit of robust methods to ensure product quality and regulatory compliance. Prerequisite: sophomore to senior standing. (1 unit)

152. Regulatory Pathways for Medical Devices and Technologies

Introduces U.S. FDA and European regulatory pathways for medical device and diagnostic products. Students will explore regulatory requirements for devices including software and for drug-device or biologic-device combination products. Examples of FDA-industry collaboration in the advancement of regulatory science will be provided from the emerging fields of personalized medicine and devices using artificial intelligence. Student teams will classify a medical device, assess its U.S. FDA regulatory pathway, and estimate the development program that will be required to gain regulatory approval or clearance. Prerequisite: sophomore to senior standing. (1 unit)

153. Risk Management During Medical Device Design and Development

This course introduces a process-based approach for risk management applied to medical devices. Students will explore different types of risk analysis and their applicability. While the regulatory requirements for risk management are explained, the course focus is to provide students with perspective on the value that an effective, compliant risk management program brings to all stakeholders throughout the product life cycle. Student teams will participate in a simulated medical device development project, and conduct the appropriate risk management activities during the simulation. Prerequisite: sophomore to senior standing. (1 unit)

154. Human Factors and Usability Engineering for Medical Devices

Introduces human factors/usability engineering principles imperative to the evaluation of user interfaces (UI) in medical devices. Students will explore medical device use error case studies to learn how to assess the ways people perceive, interpret, and manipulate devices, as well as how the device receives user input and responds. Student teams will conduct a Usability Engineering Validation Study project, in which a device is assessed using various analytical techniques. Frameworks applied through this course will give students a practical tool kit of robust methods to evaluate product safety and effectiveness. Prerequisite: sophomore to senior standing. (1 unit)

156. Conceptualizing Innovations in Health Care

While the rewards of innovative health care products and services are lucrative, new product development for the health care industry is inherently complex and resource intensive, and often fraught with risks. Using relevant case studies, this course introduces students to the processes and strategies used by health care firms to develop new product innovations that efficiently address user needs and pain points, and thereby enjoy a higher degree of commercialization success. Prerequisite: sophomore to senior standing. (1 unit)

160. Nanotechnology and Society

This course examines the fundamental scientific and technological underpinnings of the important new field of nanotechnology; how both the understanding and the technological capabilities have evolved over the past century; and how nanotechnology proposes new applications that can address social and economic goals. An appreciation of the interaction between these goals and the evolution of the technology will be central to the course. Students will develop critical thinking about the prospects for nanotechnology in order to be able to assess the relevant ethical and social issues, and also the possibility and/or likelihood of the development of specific applications. ENGR 160 satisfies the Science, Technology & Society Core requirement. (4 units)

161. Globalization and the Cultures of Innovation and Entrepreneurship

This course introduces students to the skills, practices, and processes for understanding and managing innovation and entrepreneurship activities that span cultures throughout the world. These cultural challenges include developing a deep understanding of the needs of customers in emerging markets, producing goods and services with global teams, and outsourcing manufacturing operations. ENGR 161 satisfies the Cultures & Ideas 3 Core requirement. (4 units)

162. Thinking in Systems

Systems thinking represents an important tool for analysis and problem-solving, especially when collaborating with others from diverse perspectives, both within and outside of engineering disciplines. The course will introduce students to basic concepts of thinking in systems by providing exposure to and experience with modeling methods from both systems dynamics and general systems theory. (1 unit)

163A. Engineering and the Entrepreneurial Mindset I

This is the first course in a two-course sequence taken in conjunction with a senior capstone course and relates elements of the capstone experience to themes that are fundamental to entrepreneurial thinking. Activities are framed from the point of view of a business model in which explicit elements of an engineering enterprise are defined, such as customer segments, the value proposition, etc. To be immediately followed with ENGR 163B. (0.5 unit)

163B. Engineering and the Entrepreneurial Mindset II

This is the second course in a two-course sequence taken in conjunction with a senior capstone course and relates elements of the capstone experience to themes that are fundamental to entrepreneurial thinking. Activities are framed from the point of view of a business model in which explicit elements of an engineering enterprise are defined, such as customer segments, the value proposition, etc. Taken immediately following ENGR 163A. (0.5 unit)

164. Financing New Ventures

An introduction to the basics of obtaining initial and early-stage financial support for a new entrepreneurial venture. The course reviews financial sources, pitch decks, term sheets, negotiation tactics, and how to create the perfect pitch for obtaining financing. (1 unit)

165. Creativity: The Art of Innovation

Creative confidence is foundational to human-centered design thinking, innovation, and entrepreneurship. In this interdisciplinary course, students strengthen skills in creativity and innovation through empathy gathering, photography, storytelling, improvisation, music, art, and prototyping. (1 unit)

166. Introduction to Design Thinking A

The basic principles of design thinking, especially as applied to the three essentials for innovating success - user desirability, technical feasibility and business/economic viability. Explores techniques relating to themes such as deep customer understanding, creative brainstorming, and active prototyping. These topics are applied in the context of a team-based project conducted through the ENGR 166 A and B course sequence (1 unit).

166. Introduction to Design Thinking B

The basic principles of design thinking, especially as applied to the three essentials for innovating success - user desirability, technical feasibility and business/economic viability. Explores techniques relating to themes such as deep customer understanding, creative brainstorming, and active prototyping. These topics are applied in the context of a team-based project conducted through the ENGR 166 A and B course sequence. Prerequisite: ENGR 166A (1 unit).

167. Go To Market Strategy

This course for engineering undergraduate students reviews essential concepts for new entrepreneurial ventures to include the customer discovery phase, channels of distribution, strategic partners, and monetary metrics. (1 unit)

168. Legal Considerations for New Ventures

This course for engineering undergraduate students identifies legal risks facing new ventures and reviews techniques and approaches on how to reduce these risks while accomplishing business or engineering goals. (1 unit)

169. Social Entrepreneurship

This course examines social entrepreneurship through the intersection of technology and social innovation. Technical considerations include design of total solutions and for affordability and low cost manufacturing; social considerations include developing deep empathy and an understanding of local circumstances particularly for those suffering extreme poverty. (1 unit)

170. Improv for Engineers

Through theatre games, improvisation, warm-up exercises, monologues, and scenes, students will learn the basics of Stanislavski's method of physical actions to learn the basic principles of acting and in the process increase self-confidence and the ability to collaborate. (1 unit)

171A. Product Opportunity Assessment

This course focuses on identifying and assessing opportunities for new products and services. Based on the principles of design thinking, it addresses the identification of problems by reviewing methods for understanding the needs and motivations of the customer. It also reviews the development of a validated and solution-independent need statement. (1 unit)

171B. Product Prototype to Test

This course introduces product prototyping strategies to allow students to test their design concepts with customers with the objective of validating assumptions regarding customer need and desired functionality/features. Prerequisite: ENGR 171A or instructor permission. (1 unit)

172A. Applied Entrepreneurship I

This is the first course in a two-course sequence in which students will explore an emerging technical market and develop specific viable business models to execute within the SCU educational program. Students will explore applications for the selected technology, identify customers/markets, and define a sustainable business model. Preferential admission may be given to students who have taken other courses in the school's innovation and entrepreneurship program. Prerequisites: sophomore standing or above, and instructor permission required. (1 unit)

172B. Applied Entrepreneurship II

This is the second course in a two-course sequence in which students will explore an emerging technical market and develop specific viable business models to execute within the SCU educational program. Students will explore applications for the selected technology, identify customers/markets, and define a sustainable business model. Prerequisites: ENGR 172A and instructor permission. (1 unit)

173. Introduction to Business Fundamentals

This course serves as an introduction to fundamental business topics, to include basic economics, business forms and functions, reading simple financial statements, basic marketing concepts, and management concepts. The course includes participation in an online business simulation. Prerequisite: sophomore to senior standing only. (1 unit)

174. Financial Reporting and Decision-Making

This course develops an understanding of financial statements and how they may be analyzed to assess the performance of an enterprise. The course also reviews capital markets and associated decision making for corporate operation. A business simulation allows students to apply principles of management, operations, marketing, and accounting to a business scenario. Prerequisite: ENGR 173 or instructor permission. (1 unit)

175. Business Model and Plan Development

This course introduces students to the Business Model Canvas as a framework for describing and organizing the operational elements of a functional enterprise, whether it is a commercial or nonprofit entity. Topics include identifying customers and explicitly stating the value proposition, identifying value delivery mechanisms, articulating strategic partnerships, identifying key resources, and describing anticipated cash flow. (1 unit)

176. Marketing Strategy

This course reviews the strategic segmenting/targeting/positioning and practical messaging skills used in product marketing and thought leadership positions, which are core to entrepreneurial technology ventures. Specific topics include an overview of core marketing skill sets, practical examples of successful market segmentation and target selection, best practices for positioning and messaging creation, competitive landscape modeling and developing differentiation, translating customer requirements into effective positioning/messaging, and wholesale market (re-)definition. (1 unit)

178. Intellectual Property for Engineers

This course for engineering undergraduate students provides an overview of United States intellectual property (IP) laws, focused specifically on how those laws impact and apply to engineers. (1 unit)

179. Intrapreneurship

Intrapreneurship is a form of corporate entrepreneurship, and it focuses on the needs of an established organization (unlike a startup) to create an innovative business opportunity within the existing structure of the organization. (1 unit)

180. Marine Operations

Introduction to the design, operation, deployment, piloting, and safety issues involving the use of underwater robots. Prerequisite: Instructor permission required. (1 unit)

181. Advanced Marine Operations

Technical operation, maintenance, and advanced piloting of underwater robots. Crew management. Operational and safety procedures. Prerequisite: Instructor permission required. (1 unit)

185. Special Topics in Engineering

Subjects of current interest. May be taken more than once if topics differ. (1--4 units)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the work assignment includes preparation of a summary report on co-op activities. P/NP grading. May not be taken for graduate credit. (2 units)

189. Co-op Technical Report

Credit given for a technical report on a specific activity such as a design or research project, etc., after completing the co-op assignment. Approval of department advisor required. Letter grades based on content and quality of report. May be taken twice. May not be taken for graduate credit. Prerequisite: COEN 188. (2 units)

193. Introduction to Senior Design Project

Junior preparation for senior project. An introduction to project requirements, team management, and project management. Consideration of career documentation and networking. Tentative project selection. (1 unit)

194. Senior Design Project I

Specification and initial investigation of an engineering project, selected with the mutual agreement of the student and the project advisor. The design process begins, including problem formulation, research, and preliminary design and analysis. Initial draft of the project report with oral presentation. (2 units)

195. Senior Design Project II

Continued design and construction of the project, system, or device. The design process continues, including design analysis, testing, and iteration. Second draft of the project report with oral presentation. (2 units)

196. Senior Design Project III

Completion of design and construction of the project, system or device. Design process concludes with formal communication of project details and specifications. Final project report and formal presentation of results. (2 units)

199. Directed Research/Reading

Investigation of an approved engineering problem and preparation of a suitable project report. Conferences with faculty advisor are required. Prerequisite: Instructor permission required. (1--6 units)

Department of Mechanical Engineering

Professor Emeritus: Terry E. Shoup

Professors: Christopher Kitts, M. Godfrey Mungal

Associate Professors: Mohammad A. Ayoubi, Drazen Fabris, Hohyun Lee, On Shun Pak, Panthea Sepehrband, Michael Taylor

Lecturers: Robert Marks, Gaetano Restivo, Calvin Tszeng, Vlad Ivashyn

Mechanical engineering includes all aspects of design, development, control, and manufacture of mechanical systems and energy conversion systems. Mechanical engineering is essential to the proper design and manufacture of nearly every physical product in our modern world. As such, mechanical engineers are a fundamental resource for most industries, and they work in interdisciplinary environments. Mechanical engineers must have the ability to see both broad perspectives across disciplines and industries, and solve very local and specialized problems. The undergraduate curriculum addresses the education and training of mechanical engineering students and concentrates on two technical areas: (1) design and analysis of thermofluid systems for effective use of energy; and (2) design, analysis, and control of mechanical systems including the use of materials. The Mechanical Engineering educational program develops future engineers with a solid understanding of fundamentals and competence in analyzing engineering systems.

The undergraduate Mechanical Engineering Program will educate students that can:

- Demonstrate their knowledge and depth of understanding of mechanical engineering in engineering practice and principles through professional success or attainment of advanced degrees.
- Design and development components, systems, tests, or services that meet specifications in the context of economic, environmental, and societal requirements.
- Develop engineering solutions based on fundamental principles using modern analysis techniques, testing, and validation.
- Work in a team environment, share their knowledge and expertise, and exercise leadership as appropriate.
- Communicate effectively with colleagues, customers, subordinates, and managers.
- Act ethically and professionally in their careers.
- Continue to learn and grow professionally.

Requirements for the Major

In addition to fulfilling the undergraduate Core Curriculum requirements for the bachelor of science degree, students majoring in mechanical engineering must complete a minimum of 192 units and the following department requirements:

English

- ENGL 181

Mathematics and Natural Science

- MATH 11, 12, 13, 14
- AMTH 106 or MATH 22

- AMTH 118 or MATH 166
- CHEM 11/11L
- PHYS 31, 32, 33
- MECH 15/15L
- MECH 102 (required for students with an average GPA below 3.0 for MATH 13, MATH 14, AMTH 106) or an approved mathematics or natural science elective.

Engineering

- ENGR 1/1L
- CENG 41, 43/43L
- MECH 45/45L
- ELEN 50/50L or PHYS 70
- MECH 10/10L, 11, 101L, 114, 115, 121, 122/122L, 123/123L, 125 or 131, 140, 141/141L, 142/142L, 160/160L, 194, 195, 196

Technical Electives

- 8 units of technical electives from approved upper-division or graduate engineering classes.

Combined Bachelor of Science and Master of Science Program

The Department of Mechanical Engineering offers a combined degree program leading to the bachelor of science and a master of science open to mechanical engineering majors. Under the combined degree program, an undergraduate student begins taking courses required for a master's degree before completing the requirements for the bachelor's degree and can complete the requirements for a master of science in mechanical engineering at the end of the fifth year.

Undergraduate students admitted to the combined degree program may begin taking graduate classes during their senior year. They are required to enroll in the program between February of their junior year and December of their senior year. Students in this program will receive their bachelor's degree after satisfying the standard undergraduate degree requirements. To earn the master of science degree, students must fulfill all the requirements for the degree, including the completion of 46 units of coursework beyond that applied to their bachelor's degree and completion of thesis culminating experience. No course can be used to simultaneously satisfy requirements for both the bachelor's degree and the master's degree.

Requirements for the Minor in Mechanical Engineering

Students must fulfill the following requirements for a minor in mechanical engineering:

Lower-Division Requirements

- MECH 45/45L
- CENG 41
- ELEN 50/50L
- MECH 10/10L

Lower-Division Electives

Choose two courses from the following:

- MECH 11
- MECH 140
- CENG 43/43L
- MECH 15/15L

Upper-Division Requirement

- MECH 121

Technical Sequence

Choose one two-course sequence from the following:

- MECH 122/122L and MECH 123/123L
- MECH 122/122L and MECH 132
- MECH 114 and MECH 115
- MECH 141/141L and MECH 142/142L

Note: Please be aware of the prerequisites for the technical sequence courses; this may influence your choice of lower-division courses.

Requirements for the Minor in Aerospace Engineering

All undergraduates are eligible for the Aerospace Engineering minor. Students intending to earn this minor should seek advice from the Mechanical Engineering Department. Students must fulfill the following requirements for a minor in aerospace engineering:

- Two courses from the Fundamental Courses list
- MECH 145 and one course from the Aerospace Courses list
- At least 4 units from the Elective Courses list

Fundamental Courses

- MECH 140 Dynamics (4 units)
- CENG 43 Materials III: Strength of Materials (4 units)
- MECH 121 Thermodynamics (4 units)
- MECH 122 Fluid Mechanics (4 units)

Aerospace Courses

- MECH 132 Aerodynamics (4 units)
- MECH 153 Aerospace Structures (4 units)
- MECH 155 Astrodynamics (4 units)
- MECH 158 Aerospace Propulsion Systems (4 units)

Elective Courses

- MECH 205/206 Aircraft Flight Dynamics I, II (4 units)
- MECH 220/221 Orbital Mechanics I, II (4 units)
- MECH 313 Aerospace Structures (4 units)
- MECH 371/372 Space Systems Design and Engineering I, II (8 units)
- MECH 431/432 Spacecraft Dynamics I, II (4 units)
- Another course from the Aerospace Courses list (4 units)

Mechanical Engineering Laboratories

Research Laboratories

The Materials Research Laboratory supports interdisciplinary research efforts related to process-structure-property relations in engineering materials. Its principal activities focus on the characterization, quantitative analysis, and modeling of nano- and micro-structural evolution in materials during thermal and mechanical processing.

The Micro Scale Heat Transfer Laboratory (MSHTL) develops state-of-the-art and thermal transport in thin films experimentation in processes such as micro-boiling, spray cooling, and advanced electronic materials. Today, trends indicate that these processes are finding interesting applications on drop-on-demand delivery systems, inkjet technology and fast transient systems.

The Robotic Systems Laboratory is an interdisciplinary laboratory specializing in the design, control, and teleoperation of highly capable robotic systems for scientific discovery, technology validation, and engineering education. Laboratory students develop and operate systems that include spacecraft, underwater robots, aircraft, and land rovers. These projects serve as ideal testbeds for learning and conducting research in mechatronic system design, guidance and navigation, command and control systems, and human-machine interfaces.

Undergraduate Laboratories

The Computer-Aided Manufacturing (CAM) and Prototyping Laboratory consists of two machine shops and a prototyping area. One machine shop is dedicated to student use for University-directed design and research projects. The second is a teaching lab used for undergraduate and graduate instruction. Both are equipped with modern machine tools such as lathes and milling machines. The milling machines all have two-axis computer numerically controlled (CNC) capability. The teaching lab also houses a three-axis CNC vertical machining center (VMC). Commercial CAM software is available to aid programming of the computer controlled equipment. The prototyping area is equipped with a rapid prototyping system that utilizes fused deposition modeling (FDM) to create plastic prototypes from CAD-generated models. Also featured in this area is a LaserCAMM CNC laser cutting system for nonmetallic materials.

The Fluid Dynamics Laboratory contains equipment to illustrate the principles of fluid flow and to familiarize students with hydraulic machines and their instrumentation. The lab also contains a subsonic wind tunnel equipped with a variable frequency axial flow fan to study aerodynamics.

The Instrumentation Laboratory contains seven computer stations equipped with state-of-the-art, PC-based data acquisition hardware and software systems. A variety of transducers and test experiments for making mechanical, thermal, and fluid measurements are part of this lab. Additionally, this lab contains equipment to describe three modes of heat transfer. The temperature measurement of the extended surface system allows students to learn steady state conduction, and the pyrometer enables measurement of emitted power by radiation. The training systems for heat exchanger and refrigeration system are also placed in the lab.

The Materials Laboratory contains equipment for metallography and optical examination of the microstructure of materials as well as instruments for mechanical properties characterization including tension, compression, hardness, and fatigue testing. The Materials Laboratory also has a tube furnace for heat treating at controlled heating rates.

The Vibrations and Control Systems Laboratory is equipped with two flexible test systems. One is capable of single- or multi-DOF modes, free or forced motion, and adjustable damping. The other is an inverted pendulum. Both systems can be controlled by a wide variety of control algorithms and are fully computer connected for data acquisition and control.

Lower-Division Courses

10. Graphical Communication in Design

Introduction to the design process and graphical communications tools used by engineers. Documentation of design through freehand sketching and engineering drawings. Basic descriptive geometry. Computer-aided design as a design tool. Conceptual design projects presented in poster format. Corequisite: MECH 10L. (4 units)

10L. Graphical Communication in Design Laboratory

Laboratory for MECH 10. Corequisite: MECH 10. (1 unit)

11. Materials and Manufacturing Processes

The principles of manufacturing processes as related to materials properties, design, and production. A review of structures, properties, and manufacturing processes for main groups of engineering materials including metals and metallic alloys, polymers, and ceramics. Prerequisite: MECH 15. (4 units)

15. Introduction to Materials Science

Physical basis of the electrical, mechanical, optical, and thermal behavior of solids. Relations between atomic structure and physical properties. Prerequisite: CHEM 11. Corequisite: MECH 15L. (4 units)

15L. Introduction to Materials Science Laboratory

Laboratory for MECH 15. Corequisite: MECH 15. (1 unit)

45. Applied Programming in MATLAB

Computer programming in MATLAB, including: use of the development environment, m-files, and debugging; data structures; flow control, including loops, vectorization, and conditional statements; functions and variable scope; file input and output; plotting and visualization; selected topics in object-oriented programming. Applications to engineering problems including linear algebra and differential equations. Prerequisite: MATH 13. Co-requisite: MECH 45L

45L. Applied Programming in MATLAB Lab

Laboratory for MECH 45. Co-requisite: MECH 45

80. Solar Home Analysis and Design

Students will research technologies and design approaches relevant to solar powered homes. Topics may include capture and use of solar thermal energy, conversion of solar energy to electricity, and passive solar home design. Available and emerging technologies will be investigated, and analysis tools will be used to compare options. Other aspects of house design, such as windows, lighting, and appliance choice will also be examined, as well as architecture and system-level design. Successive offerings will build on the developed knowledge and expertise. Careful documentation will be stressed as well as optimizing the design within constraints. Course may be taken several times. (4 units)

Upper-Division Courses

101L. Machining Laboratory

Practical experience with machine tools such as mills, lathes, band saws, etc. Basic training in safe and proper use of the equipment associated with simple mechanical projects. Laboratory. P/NP grading. Prerequisites: MECH 10 and senior standing. Corequisite: MECH 194. (1 unit)

102. Introduction to Mathematical Methods in Mechanical Engineering

The application of mathematical methods to the solution of practical engineering problems. A review of fundamental mathematical methods and calculus of a single variable, multivariable calculus, ordinary differential equations, numerical methods, and basics of linear algebra. (4 units)

114. Machine Design I

Analysis and design of mechanical systems for safe operation. Stress and deflection analysis. Failure theories for static loading and fatigue failure criteria. Team design projects begun. Formal conceptual design reports required. Prerequisites: MECH 10 and 15 and CENG 43. (4 units)

115. Machine Design II

Continuation of MECH 114. Treatment of basic machine elements (e.g., bolts, springs, gears, bearings). Design and analysis of machine elements for static and fatigue loading. Team design projects completed. Design prototypes and formal final report required. Prerequisite: MECH 114. (4 units)

120. Engineering Mathematics

Review of ordinary differential equations (ODEs) and Laplace transform, vector, calculus, linear algebra, orthogonal functions and Fourier series, partial differential equations (PDEs), and introduction to numerical solution of ODEs. Also listed as AMTH 120. Prerequisite: AMTH 106. (4 units)

121. Thermodynamics I

Definitions of work, heat, and energy. First and second laws of thermodynamics. Properties of pure substances. Application to fixed mass systems and control volumes. Irreversibility and availability. Prerequisite: PHYS 32. (4 units)

122. Fluid Mechanics

Fluid properties and definitions. Fluid statics, forces on submerged surfaces, manometry. Streamlines and conservation flow fields. Euler's and Bernoulli's equations. Mass, momentum, and energy analysis. Laminar and turbulent flows. Losses in pipes and ducts. Dimensional analysis and similitude. External flows. Prerequisite: MECH 121(may be taken concurrently). Corequisite: MECH 122L and MECH 140. (4 units)

122L. Fluid Mechanics Laboratory

Laboratory for MECH 122. Corequisite: MECH 122. (1 unit)

123. Heat Transfer

Introduction to the concepts of conduction, convection, and radiation heat transfer. Application of these concepts to engineering problems. Prerequisites: MECH 121, 122, and AMTH 118 or equivalent. Corequisite: MECH 123L. (4 units)

123L. Heat Transfer Laboratory

Laboratory work to understand the concept of heat transfer. Practical experience with temperature and heat flux measurement. Corequisite: MECH 123. (1 unit)

125. Thermal Systems Design

Analysis, design, and simulation of fluids and thermal engineering systems. Application of optimization techniques, life cycle, and sustainability concepts in these systems. Prerequisite: MECH 123. (4 units)

131. Thermodynamics II

Thermodynamic potential and availability, advanced power and refrigeration cycles, chemical equilibrium, advanced power and refrigeration cycles with non-reacting or reacting air/vapor mixture. Prerequisites: MECH 121. (4 units)

132. Aerodynamics

Fundamentals of aerodynamics. Governing equations (mass, momentum, energy). Inviscid, incompressible flow applied to subsonic air flow: Laplace's equations and flow superposition, Kutta-Joukowski theorem and generation of lift. Incompressible flow over airfoils: Kutta condition, Kelvin circulation theorem. Lifting flow over arbitrary bodies. Incompressible flow over finite wings: downwash and induced drag. Introduction to fundamental principles of viscous flow and discussion of drag components. Prerequisites: MECH 121 and 122. (4 units)

140. Dynamics

Kinematics of particles in rectilinear and curvilinear motion. Kinetics of particles, Newton's second law, energy and momentum methods. Systems of particles. Kinematics and kinetics of plane motion of rigid bodies, energy and momentum methods. Introduction to three-dimensional dynamics of rigid bodies. Prerequisite: CENG 41. Corequisite: AMTH 106. (4 units)

141. Mechanical Vibrations

Fundamentals of vibration, free and forced vibration of (undamped/damped) single degree and two-degree of freedom systems. Vibration under general forcing conditions. Determination of natural frequencies and mode shapes. Prerequisites: MECH 140 and AMTH 106. Corequisite: MECH 141L. (4 units)

141L. Mechanical Vibrations Laboratory

Laboratory for MECH 141. Corequisite: MECH 141. (1 unit)

142. Control Systems, Analysis, and Design

Introduction to system theory, transfer functions, and state space modeling of physical systems. Course topics include stability, analysis and design of PID, Lead/Lag, other forms of controllers in time and frequency domains, root locus, Bode diagrams, state space pole placement, and gain and phase margins. Prerequisite: MECH 141. Corequisite: MECH 142L. (4 units)

142L. Control Systems, Analysis, and Design Laboratory

Laboratory for MECH 142. Corequisite: MECH 142. (1 unit)

143. Mechatronics

Introduction to behavior, design, and integration of electromechanical components and systems. Review of appropriate electronic components/circuitry, mechanism configurations, and programming constructs. Use and integration of transducers, microcontrollers, and actuators. Also listed as ELEN 123 and COEN 123. Prerequisite: MECH 45 and ELEN 50. Corequisite: MECH 143L. (4 units)

143L. Mechatronics Laboratory

Laboratory for MECH 143. Also listed as COEN 123L and ELEN 123L. Corequisite: MECH 143. (1 unit)

144. Smart Product Design

Design of innovative smart electromechanical devices and products. Topics include a review of the basics of mechanical, electrical, and software design and prototyping, and will emphasize the synthesis of functional systems that solve a customer need, that are developed in a team-based environment, and which are informed by the use of methodologies from the fields of systems engineering, concurrent design, and project/business management. Designs will be developed in the context of a cost-constrained business environment, and principles of accounting, marketing, and supply chain are addressed. Societal impacts of technical products and services are reviewed. Enrollment is controlled in order to have a class with students from diverse majors. Offered every other year. Prerequisites: Core Foundation-level natural science and mathematics, or equivalent; instructor permission required. Corequisite: MECH 144L. (4 units)

144L. Smart Product Design Laboratory

Laboratory for MECH 144. Corequisite: MECH 144. (1 unit)

145. Introduction to Aerospace Engineering

Basic design and analysis of atmospheric flight vehicles. Principles of aerodynamics, propulsion, structures and materials, flight dynamics, stability and control, mission analysis, and performance estimation. Introduction to orbital dynamics. Offered every other year. Prerequisites: MECH 122 and 140. Corequisite: MECH 121. (4 units)

146. Mechanism Design

Kinematic analysis and synthesis of planar mechanisms. Graphical synthesis of linkages and cams. Graphical and analytical techniques for the displacement, velocity, and acceleration analysis of mechanisms. Computer-aided design of mechanisms. Three or four individual mechanism design projects. Offered every other year. Prerequisite: MECH 114. (4 units)

151. Finite Element Theory and Applications

Basic introduction to finite elements; direct and variational basis for the governing equations; elements and interpolating functions. Applications to general field problems: elasticity, fluid mechanics, and heat transfer. Extensive use of software packages. Offered every other year. Prerequisites: MECH 45 or equivalent and AMTH 106. (3 units)

151L. Finite Element Theory and Applications Laboratory

Laboratory for MECH 151. Corequisite: MECH 151. (1 unit)

152. Composite Materials

Analysis of composite materials and structures. Calculation of properties and failure of composite laminates. Manufacturing considerations and design of simple composite structures. Knowledge of MATLAB or equivalent programming environment is required. Offered every other year. Prerequisites: MECH 15, CENG 43, and MECH 45. (4 units)

153. Aerospace Structures

This introductory course presents the application of fundamental theories of elasticity and stress analysis to aerospace structures. Course topics include fundamentals of elasticity, virtual work and matrix methods, bending and buckling of thin plates, component load analysis, and airframe loads, torsion shear, and bending of thin-walled sections. Prerequisites: CENG 43 and 43L. (4 units)

155. Astrodynamics

This course provides the foundations of basic gravitation and orbital theory. Topics include Review of particle dynamics, classical orbital elements, basic transformation matrices, ground tracks, Hohmann transfer, coplanar rendezvous, combined change maneuver, and interplanetary flight. Prerequisite: MECH 140. (4 units)

156. Introduction to Nanotechnology

Introduction to the field of nanoscience and nanotechnology. Properties of nanomaterials and devices. Nanoelectronics: from silicon and beyond. Measurements of nanosystems. Applications and implications. Laboratory experience is an integral part of the course. Also listed as ELEN 156. Prerequisites: PHYS 33 and either PHYS 34 or MECH 15. Corequisite: MECH 156L. (4 units)

156L. Introduction to Nanotechnology Laboratory

Laboratory for MECH 156. Corequisite: MECH 156. (1 unit)

158. Aerospace Propulsion Systems

Fundamentals of air breathing and rocket jet propulsion. Gas dynamics fundamentals, review of thermodynamic relation. Basic theory of aircraft gas turbine engines, propulsive efficiency, and application of Brayton cycle to gas turbine engine analysis. Rocket engine nozzle configuration and design. Thrust Equation. Chemical rocket engine fundamentals. Solid versus liquid propellant rockets. Prerequisites: MECH 121 and 122. (4 units)

160. Modern Instrumentation for Engineers

Introduction to engineering instrumentation, sensors, electric circuits, computer data acquisition, hardware and software, sampling theory, statistics, and error analysis. Theory of pressure, temperature, acceleration, and strain measurement. Prerequisites: MECH 123 and 141. Corequisite: MECH 160L. (4 units)

160L. Modern Instrumentation for Engineers Laboratory

Laboratory work spans the disciplines of mechanical engineering: dynamics, controls, fluids, heat transfer, and thermodynamics, with emphasis on report writing. Students will design their own experiment and learn how to set up instrumentation using computer data acquisition hardware and software. Corequisite: MECH 160. (1 unit)

163. Materials Selection and Design

Design considerations in the use of materials; materials selection for optimizing multiple properties; materials failure modes and failure mechanism; materials selection to prevent failure; case studies and discussions on process economics, life-cycle thinking, and eco-design. CES EduPack will be introduced as a materials and processes database and a tool for students to compare, analyze, and select materials and processes. Prerequisites: MECH 11 and CENG 43. (4 units)

179. Satellite Operations Laboratory

This laboratory course reviews the physical principles and control techniques appropriate to communicating with, commanding, and monitoring spacecraft. Students learn to operate real satellite tracking, commanding, and telemetry systems, and to perform spacecraft-specific operations using approved procedures. Given the operational status of the system, students may conduct these operations on orbiting NASA spacecraft and interact with NASA scientists and engineers as part of operations processes. Instructor permission required. (1 unit)

188. Co-op Education

Practical experience in a planned program designed to give students practical work experience related to their academic field of study and career objectives. Satisfactory completion of the assignment includes preparation of a summary report on co-op activities. P/NP grading. May be taken for graduate credit. (2 units)

189. Co-op Technical Report

Credit given for a technical report on a specific activity such as a design or research project after completing the co-op assignment. Approval of the department co-op advisor is required. Letter grades are based on content and presentation quality of report. Prerequisite: MECH 188. (2 units)

191. Mechanical Engineering Project Manufacturing

Laboratory course that provides supervised evening access to the machine shop and/or light fabrication area for qualified mechanical engineering students to work on their University-directed projects. Students wishing to utilize the machine shop or light fabrication during the evening lab/shop hours are required to enroll. Enrollment in any section allows students to attend any/all evening shop hours on a drop-in basis. Staff or faculty will be present during each scheduled meeting to supervise as well as be available for consultation and manufacturing advising. Prerequisites: Students must be qualified for machine shop use through successful completion of MECH 101L and passing grade on the Mechanical Engineering Lab Safety Test. Qualifications for light fabrication area use: successful completion of the Light Fabrication Training Seminar and a passing grade on the Mechanical Engineering Lab Safety Test. P/NP. (1 unit)

194. Advanced Design I: Tools

Design tools basic to all aspects of mechanical engineering, including design methodology, computer-design tools, simulation, engineering economics, and decision making. Senior design projects begun. Prerequisite: MECH 115. Corequisite: MECH 101L. (3 units)

195. Advanced Design II: Implementation

Implementation of design strategy. Detail design and fabrication of senior design projects. Quality control, testing and evaluation, standards and specifications, and human factors. Prerequisite: MECH 194. (4 units)

196. Advanced Design III: Completion and Evaluation

Design projects completed, assembled, tested, evaluated, and judged with opportunities for detailed re-evaluation by the designers. Formal public presentation of results. Final written report required. Prerequisite: MECH 195. (3 units)

198. Independent Study

By arrangement with faculty. (1--5 units)

199. Directed Research/Reading

Investigation of an engineering problem and writing an acceptable report. Meetings with faculty advisor required. Prerequisite: senior standing. (2--4 units)

University Programs

Most undergraduate academic programs at Santa Clara University are administered by the College of Arts and Sciences, the Leavey School of Business, or the School of Engineering. Although Aerospace Studies and Military Science are administered by the College of Arts and Sciences, their programs, which do not lead to a degree but rather to the opportunity for commissioning, are open to all Santa Clara students.

Aerospace Studies

Professor: Lieutenant Colonel Joshua Sullivan (Chair)

Assistant Professors: Captain Ashley Tasso, Captain Marshal Neubauer

Santa Clara University has an agreement with San Jose State University permitting Santa Clara students to enroll in a program leading to a commission as a Second Lieutenant in the United States Air Force (USAF) or United States Space Force (USSF). The Air Force Reserve Officer Training Corps (AFROTC) program offers a high-quality educational experience for college students in Air Force organization, history, officer skills, leadership and management, and national security policy and issues. Classes are offered on the San Jose State University campus.

Integral to the curriculum are mandatory leadership laboratories. These weekly two-hour experiences provide a dynamic environment in which cadets develop leadership and management skills by planning, organizing, directing, and coordinating exercises. Physical fitness is also an important component to the AFROTC training program. Students/cadets are expected to meet twice a week (2 hours) to participate in group physical conditioning.

Lower-Division Courses

AERO 1A. and B. Heritage and Values of the United States Air Force

AERO 1A and 1B is a survey course designed to introduce students to the United States Air Force and encourages participation in the Air Force Reserve Officer Training Corps. Featured topics include an overview of the Reserve Officer Training Corps (ROTC), special programs offered through ROTC, characteristics, mission and organization of the Air Force, brief history of the Air Force, introduction to leadership and leadership-related issues, Air Force Core Values, Air Force officer opportunities, and an introduction to communication studies. Leadership laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1.5 units per quarter)

AERO 2A. and B. Team and Leadership Fundamentals

AERO 2A and 2B focuses on laying the fundamental foundation for understanding both team and leadership building. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The courses will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate. In addition, what the students learned about Air Force Core Values in AERO 1A and 1B will be reinforced through the use of operational examples, and they will complete writing and briefing assignments that must meet Air Force communication skills requirements. Leadership laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1.5 units per quarter)

Upper-Division Courses

AERO 131A. and B. Leading People and Effective Communication

Aero 131A and 131B utilizes a cadet's field training experience to take a more in-depth look at leadership. The course teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills and communication. Cadets have an opportunity to try out these leadership and management techniques in a supervised environment as juniors and seniors. A mandatory leadership laboratory

complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles of this course. One-year course. Prerequisites: AERO 1A, B; AERO 2A, B; or as determined by Aerospace Studies Department Chair. (4.5 units per quarter)

AERO 141A. and B. National Security Affairs/Commissioning Preparation for Active Duty

AERO 141A and 141B examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. The course is designed for college seniors and gives them the foundation to understand their role as military officers in American society and how they are directly tied to our National Security Strategy. It is an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level. The final semester provides information that will prepare the cadets for Active Duty. A mandatory leadership laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles. One-year course. Prerequisite or corequisite: AERO 131A, B. (4.5 units per quarter)

Experiential Learning for Social Justice

Assessment Manager for Undergraduate Studies: Andrea Brewster

The Experiential Learning for Social Justice (ELSJ) component of Santa Clara's Core Curriculum cultivates social justice, civic life, perspective, and civic engagement. To echo the words of Fr. Kolvenbach: ELSJ provides Santa Clara students with opportunities for experiencing the gritty reality of the world, thinking critically about the world, responding to its suffering, and engaging it constructively.

The majority of courses satisfying the Core ELSJ requirement are offered by University academic departments and programs. However, students may also satisfy the requirement through the following courses.

ELSJ 9. ELSJ Milestone: Post-immersion Reflection and Analysis

Enrolled students will participate in a pre-approved Ignatian Center immersion in advance of the course. Coursework will allow students to reflect on the immersion experience and explore what it means to live in solidarity with our local and global community. Students will strengthen their ability to work sensitively and respectfully with communities that are socially, economically, and/or politically marginalized or oppressed. Course assignments include critical reflections and an academic research paper. Enrollment by permission only. Permission must be granted by the assessment manager for Undergraduate Studies in advance of beginning the immersion experience. (1 unit)

ELSJ 22. Solidarity with the Community

This course will explore what it means to live in solidarity with our local and global community. Students will strengthen their ability to work sensitively and respectfully with communities that are socially, economically, and/or politically marginalized or oppressed. Enrolled students will participate in a weekly community-based learning placement through Arrupe Weekly Engagement or a similar program where students are engaged with communities. Note: This course requires participation in community-based learning (CBL) experiences off campus. (2 units)

ELSJ 23. Careers for the Common Good

This course will expose students to social realities and injustices both locally and internationally, providing an understanding of the complex relations between privileged and marginalized groups. Through reflection, self-assessments, course speakers, Career Center resources, and a community-based learning placement, students will be able to articulate their interests and talents and the applications to particular needs in the world. Students will be given the tools and resources to pursue a career direction and make life decisions that are personally meaningful and socially beneficial. This course is appropriate for students in any major. Note: This course requires participation in community-based learning (CBL) experiences off campus. (2 units)

ELSJ 30. Discernment for Justice in the Jesuit Catholic Tradition

This course is offered in conjunction with the winter break Ecuador immersion provided through the Ignatian Center for Jesuit Education. Within the course, students will engage with themes such as the intersection of social justice and the Jesuit Catholic intellectual tradition, the relationship between faith and justice, the value and moral challenge of different economic systems, the preferential option for the poor, and discernment of vocation. This course will facilitate integration of the experience of immersion with lived experience upon return to Santa Clara and beyond. Enrollment by instructor permission only. (2 units)

ELSJ 50. Law and Social Justice

This course provides a theoretical, vocational, and legal doctrinal foundation for students interested in social justice law. The assigned reading offers an opportunity to consider the relationship between law and social justice in several different contexts, including the structure of the legal profession and the delivery of legal services; the efforts to achieve social justice and civil rights through litigation in areas such as work, subsistence, housing, voting, and education; the problem of access to courts and the role of the judiciary; and the role of lawyers working with community movements to affect social change. To ground these theoretical explorations in real-life practice, this course features a community-based learning component, enabling students to interact with real people for whom these issues matter. This course satisfies both the ELSJ requirement and the Civic Engagement requirement, and qualifies as part of the Social Justice Pathway in the University's Core Curriculum. Note: This course requires participation in community-based learning (CBL) experiences off campus. (4 units)

ELSJ 110. Introduction to Participatory Action Research

Introduction to participatory action research as an approach to research in the social sciences where students and community members are engaged in mutual learning including the design of a community-based research project. Will require some class time in the community. Suitable for all majors, no previous experience required. ELSJ 110 does not satisfy the ELSJ Core requirement. Students must successfully complete both ELSJ 110 and 111 to satisfy the ELSJ Core requirement. Graded P/NP. Note: This course requires participation in community-based learning (CBL) experiences off campus. (2 units)

ELSJ 111. Participatory Action Research Experience

Continuation of ELSJ 110. Active participation in a community-based research project including data collection, analysis, and creation of research briefs. Most of the time will be spent working in a local community conducting a research project with community members. This course meets the ELSJ Core requirement. Prerequisite: ELSJ 110. Note: This course requires participation in community-based learning (CBL) experiences off campus. (2 or 5 units)

ELSJ 132. Social Enterprise Practicum

This interdisciplinary course introduces students to action research methodology in preparation of a four-week summer field experience working alongside a social enterprise. Enrollment restricted to those selected for the Miller Center's Social Enterprise Practicum. Does not satisfy Core ELSJ requirement. (2 units)

ELSJ 133. Social Enterprise Research

This course is a continuation of ELSJ 132. Students refine and complete their summer action research project and reflect upon their experience. This course meets the ELSJ Core requirement. Prerequisite: ELSJ 132. (2 units)

ELSJ 134. Seminar in Social Entrepreneurship

Introduces keywords and concepts in social entrepreneurship; business plans and technology strategies used in this field; three economic sectors in which social entrepreneurship has been applied; and tools for reflection upon personal vocation. Prepares students for a summer immersion experience with social entrepreneurs, and for conducting ethnographic research overseas by developing the social and technical skills they will need to work with these enterprises. Does not satisfy Core ELSJ requirement. Enrollment restricted to those selected as Global Social Benefit Fellows. (5 units)

ELSJ 135. Research in Social Entrepreneurship

This course draws upon field experiences as global social benefit fellows to mentor students in reflection on their own personal development as leaders, and in the art and science of research. Weekly seminar will consist of fellows presenting their own research and reflections upon their vocation. Research projects will analyze the social impact of

the entrepreneurs' work and the role technology plays in providing social benefit. Students will reflect upon their experience of engaging with the communities served by social entrepreneurs, and the implications for their own vocation. This course meets the ELSJ Core requirement. Prerequisite: ELSJ 134. (5 units)

ELSJ 198. Applied Ethics Internship: Health Care

This course exposes students to ethical issues in a clinical setting. Students spend five hours per week completing rotations at O'Connor Hospital. In addition, students meet biweekly to discuss health care ethics. Prerequisite: Students must complete the application process and be accepted into the internship program. (5 units)

ELSJ 199. Independent Study: Solidarity with the Community

This course will explore what it means to live in solidarity with our local and global community. Students will strengthen their ability to work sensitively and respectfully with communities that are socially, economically, and/or politically marginalized or oppressed. Enrolled students will participate in a weekly community-based learning placement through Arrupe Weekly Engagement or a similar program where students are engaged with communities. Note: This course requires participation in community-based learning (CBL) experiences off campus. (2 units)

LEAD Scholars Program

Director: Erin Kimura-Walsh

Associate Director of Student Advocacy: Jessica Johns

Assistant Director: Andrea Jackson

Program Coordinator: Alma Llamas

Administrative Associate: Claire Shaw

The LEAD Scholars Program is a program for first-generation college students (i.e., students whose parents did not graduate from a four-year college or university) focused on academic success, student leadership, and community engagement. The LEAD Scholars Program provides academic and vocational development opportunities, holistic advising, peer mentoring, and community building through a variety of courses, programs, and support networks.

1. LEAD Scholars Seminar

This fall course aims to assist LEAD scholars in getting the most out of their University experience by developing the academic strategies and personal self-management skills essential for success at Santa Clara. Seminar discussions and exercises focus on a variety of topics including transitional issues, campus engagement, academic resources, and individual growth and development. Reserved for LEAD scholars only. (2 units)

2. LEAD Scholars Seminar

The winter seminar aims to build upon the leadership development of LEAD scholars and encourages application to campus leadership opportunities. Weekly seminar discussions and exercises focus on a variety of topics, including résumé writing, University involvement opportunities, and identity and diversity exploration, as well as spring quarter course registration meetings. Reserved for LEAD scholars only. (2 units)

10. Difficult Dialogues

Explores contemporary controversies through case studies. Focuses on the meanings of dialogue and academic freedom through small group discussions and exercises. Reserved for LEAD scholars only. (4 units)

16. Exploring Mission-Driven Vocations

In this course, students have the opportunity to explore the various types of professional positions in mission-driven organizations, including nonprofit organizations and benefit corporations, through site visits and guest speakers. Assignments and course content will allow students to reflect upon their own vocational goals, and how to align their passions and strengths to a fulfilling career in mission-driven organization. (2 units)

18. Success in Work and Life

In this class, students will learn about various high impact experiences, and take the steps to engage in them. This will include broadening their network, learning more about their field, applying to internships, exploring research positions and discovering paths to graduate school. Reserved for LEAD scholars only. (2 units)

19. Exploring Vocations in Law

This course will provide an exploration of law school and the law field. Students will gain insight into how to successfully prepare to apply to law school and what their classes and experiences will be like. Students will also study case law, and explore how to think and write like a lawyer. They will also learn about law specializations and the early career experiences of attorneys. Reserved for LEAD scholars only. (2 units)

20. Exploring Healthcare Vocations

This course will explore the wide range of opportunities available in the healthcare field in both the medical and public health sectors. It will also guide students through reflection on their career and educational plans and goals. Students will also develop strategies for accessing vocational and educational opportunities in the field including networking, interviewing skills, resume development, and graduate school exploration. Reserved for LEAD scholars only. (2 units)

21. Exploring Engineering Vocations

This course will explore the wide range of opportunities available in the engineering field. It will also guide students through reflections on their career and educational plans and goals. Students will also develop strategies for accessing vocational and educational opportunities in the field including networking, interviewing skills, resume development, and graduate school exploration. Reserved for LEAD scholars only. (2 units)

22. Exploring Graduate School

This course will provide an exploration of graduate school. Students will gain insight in how to research and successfully apply to graduate school, as well as explore the graduate school experience. Students will be provided with an overview of graduate school options and guided in researching graduate programs in their specific areas of interest. Reserved for LEAD scholars only. (2 units)

100. Advanced Difficult Dialogues

Students explore major local and global issues related to social, environmental, economic, and other problems. Research, presentations, and a project in their disciplines will help them reflect on how they can address these problems through their vocation. Reserved for LEAD scholars only. (5 units)

101. Advanced LEAD Seminar

This seminar aims to support two groups of students: transfer students in their transition to SCU and current students who join LEAD after enrolling at SCU. This course prepares them for leadership and vocation within SCU and beyond. Seminar weekly discussions and exercises will focus on a variety of topics including resume writing, presentations on campus resources, and, for transfer students, transition experiences. Reserved for LEAD scholars only. (2 units)

ENGL 1A. and 2A. Critical Thinking & Writing I and II

A two-course, themed sequence for LEAD scholars, featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situations. The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Themes may address education and identity, science and society, and other topics. Successful completion of CTW I (ENGL 1A) is a prerequisite for CTW II (ENGL 2A). Reserved for LEAD scholars only. (4 units each quarter)

Military Science Program

Professor: (Director) TBD

Senior Military Instructor: Master Sergeant Geoffrey Landon

The Military Science Program offers classes open to all Santa Clara students as well as Stanford University, San Jose State University, and University of California, Santa Cruz, students. The Military Science Program is designed to develop management skills and leadership abilities for successful careers in both the corporate world and the military. Students who complete the ROTC program are eligible for appointment and commissioning as officers in the United States Army.

The military science core curriculum consists of six lower-division classes in the ROTC Basic Course and seven upper-division courses in the ROTC Advanced Course. Cadets may take a summer course (MILS 24) in lieu of the six lower-division courses. The professional military education of ROTC cadets consists of two components: a baccalaureate degree from Santa Clara University (or one of the cross-enrolled universities) and at least one undergraduate course from each of five designated fields of study. Prior to commissioning, cadets must take at least one course in military history.

For those planning on commissioning into the U.S. Army, the curriculum is divided into ROTC Basic Course requirements and ROTC Advanced Course requirements. To proceed to the ROTC Advanced Course classes, students must complete either the six required ROTC Basic Course classes or attend a summer class at Fort Knox, Kentucky. The director of the Military Science Program must approve exceptions to this progression.

ROTC Basic Course Requirements

The ROTC Basic Course, Fundamentals of Leadership and Management, includes the first-year and second-year courses (MILS 11, 12, 13, 21, 22, and 23) designed for beginning students who want to qualify for entry into the ROTC Advanced course and for those students who may want to try military science without obligations. A student can also qualify for entry in the ROTC Advanced Course by completing the summer training camp (MILS 24).

ROTC Advanced Course Requirements

The ROTC Advanced Course, Advanced Leadership and Management, consists of the third-year and fourth-year courses (MILS 131, 132, 133, 134, 141, 142, and 143) open to students who have completed or earned placement credit for the ROTC Basic Course.

Students must complete all courses numbered greater than MILS 130, to include MILS 134, a six-week Cadet Leader Course during the summer, in sequence, unless otherwise approved by the professor of military science. The ROTC Advanced Course qualifies students for commissions as officers in the U.S. Army. Students who do not desire to compete for a commission as an officer in the Army may take these courses for academic credit with approval by the professor of military science.

Leadership Laboratories

Leadership laboratories, held weekly for three hours, are required of all students. Performance during lab periods is reflected in the student's course grade. Labs include activities such as terrain navigation, first aid training, virtual battle simulations, drill and ceremonies, and tactical leader development exercises.

Laboratory and Field Exercises

During each quarter of class work, weekly lab work is required. Two off-campus exercises involving adventure training, leadership training, and survival skills are optional for non-scholarship ROTC Basic Course students. Two off-campus exercises focusing on leadership and military skills are mandatory for ROTC Advanced Course students and contracted students.

Lower-Division Courses

11. Introduction to the Army and Critical Thinking

Introduces students to the personal challenges and competencies that are critical for effective leadership. Students learn how the personal development of life skills such as goal setting, time management, physical fitness, and stress management relate to leadership and officership. Students develop their own personal fitness program under the guidance of an Army master fitness trainer. Two 60-minute classes per week. One one-day weekend field exercise away from the University. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

12. Introduction to the Profession of Arms

An overview of leadership fundamentals such as goal setting, problem solving, listening, critical thinking, stress management, presenting briefs, providing feedback, and using effective writing skills. Students begin to explore leadership dimensions and values. Two 60-minute classes per week. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

13. Foundations of Agile and Adaptive Leadership

An overview of the leadership framework with practical applications in fundamentals such as problem solving, listening, critical thinking, stress management, presenting briefs, and using effective writing skills. Students explore dimensions of leadership, values, attributes, skills, and actions in the context of practical, hands-on, and interactive exercises. Two 60-minute classes per week. One two-day weekend field training exercise away from the University. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

21. Leadership and Decision Making

Explores the dimensions of creative leadership strategies and styles by studying historical cases and engaging in interactive exercises. Students practice aspects of personal motivation and team building within the context of planning, executing, and assessing team exercises. Focus will be on the continued development of the knowledge of leadership values and attributes through an understanding of organizational customs and courtesies. Leadership case studies provide tangible context for learning Individual Creeds and Organizational Ethos. One one-day weekend field exercise away from the University. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

22. Army Doctrine, Team Development, and Decision-Making

Examines the challenges of leadership in complex contemporary operational environments. Dimensions of the cross-cultural challenges of leadership in a constantly changing world and their application to leadership tasks and situations. Case studies stressing the importance of teamwork and tactics in real-world settings. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

23. Leadership In a Changing Environment

Examines the decision-making process and plans/orders that enable small units to complete assigned tasks. Planning techniques used to develop orders and briefing plans and decisions. One two-day weekend field exercise away from the University. Attendance to weekly three-hour leadership lab and one military formal dinner required. (3 units)

24. Cadet Initial Entry Training Course

A four-week summer training camp at Fort Knox, Kentucky. Students receive pay, travel, lodging, and the Army defrays most meal costs. The course environment is rigorous and teaches skills required for success in the Army ROTC Advanced Course. No military obligation is incurred. Students must pass a physical examination (paid for by ROTC). Completion of MILS 24 qualifies a student for entry into the Advanced Course. Candidates can apply for a class seat anytime during the school year. Each Cadet who enters ROTC and contracts will attend this course if he/she has not already attended U.S. Army Basic Training. Open to first-year students and sophomores who have not taken ROTC courses during the regular school year or for ROTC course alignment. P/NP only. (4 units)

35. Special Topics: Foundations of Leadership in a Changing Environment

Examines specific topics dealing with leadership at the lieutenant level or challenges facing senior military leadership in the contemporary operating environment. Prerequisite: Department chair approval. (3 units)

Upper-Division Courses

131. Training Management and the Warfighting Functions

Challenges students to study, practice, and evaluate adaptive leadership skills as they are presented with the demands of the ROTC Cadet Leader Course. Challenging scenarios related to small unit tactical operations are used to develop self-awareness and critical thinking skills. Students receive systematic and specific feedback on their leadership abilities. Two 90-minute classes per week. Weekly three-hour labs. One mandatory one-day field training exercise away from the University. Prerequisites: MILS 11, 12, 13, 21, 22, and 23, or consent of department chair. (4 units)

132. Applied Leadership In Small Unit Operations

Study of intense situational leadership challenges to build student awareness and skills in leading small units. Skills in decision making, persuading, and motivating team members when "under fire" are explored, evaluated, and developed. Two 90-minute classes per week. Weekly three-hour labs. One military formal dinner. Prerequisite: MILS 131 or consent of department chair. (4 units)

133. Applied Leadership In Small Unit Operations II

Practical applications of intense situational leadership challenges that will provide awareness and specific feedback on leadership abilities. Student skills are evaluated using practical applications in decision making, persuading, and motivating team members when "under fire." Aspects of military operations are reviewed as a means of preparing for the ROTC Cadet Leader Course. Two 90-minute classes per week. Weekly three-hour labs. One mandatory two-day field training exercise away from the University. Prerequisite: MILS 132 or consent of department chair. (4 units)

134. Cadet Leader Course

A five-week summer training course conducted at Fort Knox, Kentucky. Only open to (and required of) students who have completed MILS 131, 132, and 133. Students receive pay, travel, and lodging, and the Army defrays most meal costs. The course's environment is highly structured and demanding, stressing leadership at the small-unit level under various challenging circumstances. Although this course is graded on a P/NP basis only, the leadership and skill evaluations at the camp contribute to the subsequent selection process that determines the type of commission and career field of students upon graduation from ROTC and the University. (4 units)

141. The Army Officer

Students develop proficiency in planning, executing, and assessing complex operations; in functioning as a member of a staff; and in providing leadership performance feedback to subordinates. Students are given situational opportunities to assess risk, make ethical decisions, and provide coaching to fellow ROTC students. Students are challenged to instruct younger students. Students identify responsibilities of key staff roles and use situational opportunities to develop subordinates. Two 90-minute seminars per week. Weekly three-hour labs. One mandatory one-day weekend field training exercise away from the University. Prerequisite: MILS 133 or consent of department chair. (4 units)

142. Company Grade Leadership

Explores the dynamics of leadership in the complexity of current military operations. Students examine customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Aspects of interacting with nongovernmental organizations, civilians on the battlefield, and host nation support are examined and evaluated. Two 90-minute seminars per week. Weekly three-hour labs. One military formal dinner. Prerequisite: MILS 141. (4 units)

143. Leadership In a Complex World

Significant emphasis is placed on preparing students for their first unit of assignment and transition to Lieutenant. Case studies, scenarios, and exercises are used to prepare students to face the complex ethical and practical demands of leading as commissioned officers in the U.S. Army. Two 90-minute seminars per week. Weekly three-hour labs. One mandatory two-day weekend field training exercise away from the University. Prerequisite: MILS 142. (4 units)

176. Military History

A survey of the military and diplomatic aspects of American involvement in conflicts from the Anglo-Indian Wars to the present. Two 100-minute classes per week. This course is only offered to ROTC cadets. Regular University students are not allowed to take this course. (3 units)

199. Independent Study

Examine specific issues facing the U.S. Army as a directed study with the department chair only. Topic selected in consultation with the department chair. Issues of diversity in the military will be embedded in the topic. Prerequisites: Approval of the department chair and must have completed all MILS classes. (3 units)

Study Abroad and Global Programs

Santa Clara provides students with opportunities to participate in range of global study programs including: semester or quarter-length study abroad; Global Explorations short-term faculty-led programs; the Global Engagement Innovation Fellowship; the Global Engagement Community Engagement Fellowship; Global Internships; UK Summer Fulbright and Virtual Programs. Programs are available during the fall, winter, and spring may be highly competitive and not all qualified applicants may be approved. Study abroad during the summer is not competitive. Students may study abroad during the summer following their first year, sophomore year, or junior year. Students studying abroad during the fall, winter, or spring terms may do so once during their time as an undergraduate at Santa Clara

Many study abroad programs operate on a semester system with resulting units earned exceeding the usual maximum for courses completed on campus. Academic calendars abroad may differ significantly from the on-campus academic calendar at the University. Because the programs with which Santa Clara University is affiliated vary in length, each program is evaluated to determine the appropriate maximum and minimum units for the program. Approved programs offer students opportunities to integrate with the host culture and foster personal reflection in the context of rigorous study. Programs may allow students to pursue independent research, attend classes with local students, participate in community-based learning, or gain professional experience through academic internships, which, in turn, can serve as a basis for senior capstone projects.

During their first two years at Santa Clara, students build a foundation for the academic work they will pursue abroad. Students are encouraged to work with their academic advisor early to plan for study abroad, and to explore their goals with Study Abroad staff.

Global Engagement values diversity and inclusion and encourages students from all backgrounds to apply for study abroad. In addition, Santa Clara students are strongly encouraged to pursue opportunities in traditionally underrepresented geographic areas of the world. The goal is for student learning in the approved programs to build on and extend the on-campus curriculum. Students from underrepresented academic disciplines such as the sciences, engineering, and fine and performing arts are strongly urged to apply.

Study abroad at Santa Clara University is a privilege, not a right. The application process is competitive and not all qualified applicants may be approved. The selection process is designed to offer study abroad opportunities to students who have thoughtfully selected programs that will significantly advance their academic and professional goals. Students are strongly encouraged to study abroad for a summer, quarter, or semester in a country and academic environment that will enrich their overall college experience and engender responsible participation in a global, multicultural society.

Credit earned during study abroad counts toward graduation requirements either as elective credit or, with appropriate approval, may fulfill major, minor, and Core requirements. Grades are calculated into the Santa Clara University GPA, and all credit and grades appear on the Santa Clara University transcript. The University is committed to offering equal access to study abroad opportunities and therefore extends all available financial aid to students to support study abroad during the fall, winter, and spring. Matriculated students who study abroad while withdrawn from the University, are ineligible for financial aid and scholarships, and financial aid is not available for summer study abroad programs.

The study abroad application process is a two-step process: (1) approval of the application by the Study Abroad Office; then (2) approval of a program-specific application by the study abroad program. In addition, participation is contingent upon satisfactory completion of all program prerequisites and related courses, satisfactory academic progress toward the student's major, and participation in study abroad mandatory pre-departure orientation and re-entry meetings. Normally, students apply for study abroad six months to one year prior to participation. During the selection process, the Study Abroad staff and faculty and staff reviewers from departments across the University review applications.The Office reserves the right to redirect students to alternate programs due to institutional considerations.

To apply for study abroad, students must be admitted to degree status at the University, have declared a major with the Office of the Registrar, and expect to have completed a minimum of 88 quarter units by the start of the academic program abroad. Normally, students participate in study abroad during their junior or senior year, but sophomores with extenuating academic circumstances may request an exception to the eligibility policy. Santa Clara requires a cumulative grade point average of 2.75 for off-campus study; requirements for individual programs may be more rigorous. Successful applicants will meet or exceed Santa Clara's requirements and that of their proposed program. Priority admission may be given to applicants for Santa Clara's own programs, including exchanges. Students must receive approval through the on-campus application process to receive credit for major, minor, or Core requirements completed through study abroad.

Students on academic or disciplinary probation or any form of suspension are not eligible to apply for or participate on any study abroad programs. Students who earn a grade of "D" or "F" in any course in the term preceding their program may become ineligible for off-campus study. Students must clear any outstanding balances with the Bursar's Office in accordance with the Bursar's Office payment schedule to remain eligible for participation. The University does not approve study in countries or areas with a U.S. Department of State (DOS) Travel Advisory Level 3 or 4, see https://www.scu.edu/globalengagement/global-opportunities/health--safety/.

Withdrawn students who study abroad independently may be eligible to receive a maximum of 10 units of elective credit toward graduation requirements, in keeping with the University's policy on transfer credit---the University's transfer credit policy does not allow credit earned while withdrawn from the University to count toward a student's major, minor, or Core requirements. Students should consult the policies governing units taken at other institutions in Chapter 8, Academic and Administrative Policies and Regulations.

For detailed information about individual programs, including eligibility requirements, visit the website at http://www.scu.edu/globalengagement/study-abroad/, or email studyabroad\@scu.edu. Students are urged to attend a Study Abroad 101 session to gain general information and contact a Study Abroad advisor in Global Engagement, located on the first floor of Varsi Hall, for information about the competitive application process.

Current approved study abroad programs are listed on the SCU Study Abroad website at http://www.scu.edu/globalengagement/study-abroad/. Note: Santa Clara University may be obliged to alter or eliminate programs at any time.

Global Explorations

The Study Abroad Office administers short-term, faculty-led programs through our Global Explorations Program. These programs are offered during the summer and typically run for three to four weeks abroad. Subjects vary from year to year based on the faculty teaching, consequently students should consult the website for current and future program offerings.

Summer Sessions

Director: Allyson Morris

The Summer Sessions Office coordinates a comprehensive schedule of undergraduate courses in most of the academic departments from June through August. Summer Sessions invites students to reach their educational goals through the convenience of accelerated courses.

Over 140 summer courses are held on campus and online. Sessions are three, five, and 10 weeks in length. Eight (8) units constitutes full-time status for undergraduate students enrolled in summer courses. Content, prerequisites, and units of summer courses are equivalent to fall, winter, and spring courses.

Academic Regulations

Most of the academic regulations that apply in the fall, winter, and spring quarters also apply to the summer terms. Courses taken during summer sessions are included in the records of matriculated Santa Clara University students for the determination of GPA, class level, honors, probation, and disqualification. Any student who is not permitted to register during fall, winter, or spring quarters (e.g. disqualified, suspension) may not enroll for summer courses at SCU.

Administrative Cancellation of Course Enrollment

The Administrative Cancellation of Course Enrollment policy is not in effect during the summer as it is during the fall, winter, and spring quarters. Students who are officially enrolled in a class and fail to attend the first and any subsequent class meetings will remain enrolled in the class and be responsible for paying all tuition and fees associated with the class. Students are responsible for dropping a course if they are unable to attend due to changes in the class schedule or personal obligations. Non-attendance does NOT relieve a student of the obligation to pay tuition and fees. In addition to paying full tuition and fees, an academic hold will be placed on the student's account to prevent any further registration transactions. Students who do not formally drop a class for which they are officially enrolled will receive an "F" grade for the course(s), and be liable for all tuition and fees incurred during the summer. Students must formally drop a course via eCampus or by submitting a Drop Form to the Enrollment Services Center prior to the published deadlines.

Auditing Courses

Non-SCU and non-degree seeking SCU students may not audit courses. Degree-seeking students may audit one course in addition to the summer sessions course load limit on a space available basis. Students will be charged a course audit fee. Permission to audit must be given by the instructor by the last day to add a class. Students should submit completed audit forms to the Enrollment Services Center by the last day to add a class.

Course Load Limits Policy/Overload Policy

There are NO EXCEPTIONS to the course load policy for summer sessions. Students who register for more than the maximum course load will be administratively withdrawn from the course that creates the overload. Students who add overload units in violation of this policy may not receive credit for the course that causes the policy violation.

The intensive pace of Sessions 1, 2, and 3 require the following restrictions on summer course loads:

Session 1

- Students may not enroll in more than 10 units during this session

Session 2

- Students may not enroll in more than 10 units during this session

Session 3 (A, B, and C):

- Students may not enroll in or attend more than one Session 3 lab science (chemistry or physics) course at a time
- If enrolled in or attending a Session 3 lab science course, students may not be simultaneously enrolled in or attending any Session 1, 2, or 4 course

Course Cancellations

Santa Clara University reserves the right to make changes in the schedules or policies without prior notice or obligation. If a course is canceled, the Summer Sessions Office will immediately send a notification to enrolled students at their \@scu.edu address. Students should check their SCU email daily.

Enrollment and Course Restriction Policy

Students may not sit in classes without formally enrolling. Credit is not given to students who attend class without formally enrolling and paying tuition. Students must be officially registered in classes based on the procedures outlined on the Summer Sessions website and must have paid all tuition and fees by the published deadlines. The instructor's signature on an add form after the add period does not constitute a formal enrollment without tuition payment. Initial registration or class additions will not be accepted beyond the late registration/add period as set forth in the Summer Sessions calendar.

Students who enroll in a course for which they are not eligible are subject to administrative withdrawal from that course. This includes:

- Students who have not satisfied course prerequisites
- Students who have not obtained the instructor's permission as specified in certain courses

Independent Study

Eligible Santa Clara University students may pursue independent study with the approval of a faculty member. Interested students should review the Independent Study section in Chapter 8 of the Undergraduate Bulletin for additional information.

Internships

Interested current Santa Clara University students should inquire with individual departments and programs for information about summer internships.

New Fall Transfer Students

Transfer students who have been accepted at Santa Clara University for the fall quarter should contact the Senior Record and Transcript Analyst in the Office of the Registrar before registering for summer classes.

Incoming First-Year Students

Incoming first-year students may be eligible to enroll in summer sessions. For additional information, please contact the Summer Sessions Office at scusummer\@scu.edu.

University Honors Program

Director: Naomi J. Andrews

The University Honors Program provides small, seminar-style classes that emphasize critical thinking, analytical rigor, effective expression, and interaction among professors and students. Honors classes inspire and enable intellectual risk-taking and lifelong learning and develop globally aware and engaged student leaders for the University community and beyond. The Honors educational experience culminates in a focused, meaningful, and collaborative thesis in senior year.

Honors classes are designed to fit within the curricula of the humanities and natural and social sciences as well as business and engineering. Honors students can major in any undergraduate field offered at Santa Clara University. The University Honors Program welcomes students from diverse geographic, ethnic, and religious backgrounds.

Students who enter the UHP at Level I (first-years) must complete a total of nine Honors-level courses plus a senior thesis. Students who enter the UHP at Level II (second-years) must complete a total of five Honors-level courses plus a thesis. Additional participation requirements and a cumulative 3.3 GPA are also required to maintain UHP status.

Membership in the University Honors Program is a privilege; behavior that is inconsistent with the values and standards of the SCU community compromises your right to belong to UHP. Students in UHP are bound to the Student Conduct Code, and being found in violation of it through the Student Conduct System may result in removal from the program.

Requirements for students who enter at Level I:

- Critical Thinking and Writing I
- Critical Thinking and Writing II
- Cultures and Ideas I
- Cultures and Ideas II
- HNRS 20 (Difficult Dialogues seminar course)
- Either a Core RTC I, 2, or 3 Honors or a Core Ethics Honors course
- Three UHP electives or experiences (see below)
- Senior Honors Thesis (one full academic year)

Requirements for Students who enter at Level II:

- HNRS 20 (Difficult Dialogues seminar course)
- Four UHP electives or experiences (see below)
- Senior Honors Thesis (one full academic year)

UHP Electives:

- Designated Honors courses
- Study abroad or summer study abroad (counts as one elective if over six weeks, 1/2 if under six weeks)
- Extra language course (counts as one elective)
- Contract Honors course (counts as one elective)
- Immersion trip through SCU Ignatian Center (counts as 1/2 elective, can be repeated once)

- UGST 101, Fellowships and Grad School Preparation (counts as 1/2 elective)

Lower-Division Courses

1H. and 2H. Critical Thinking & Writing I and II

A two-course, themed sequence for Honors students, featuring study and practice of academic discourse, with emphasis on critical reading and writing, composing processes, and rhetorical situation (ENGL 1H and 2H, PHIL 1H and 2H, etc.). The second course will feature more advanced study and practice of academic discourse, with additional emphasis on information literacy and skills related to developing and organizing longer and more complex documents. Themes may address cultural comparisons, science and society, and other topics. (4 units each quarter)

11H and 12H. Cultures & Ideas I and II

A two-course sequence focusing on a major theme in human experience and culture over a significant period of time (e.g., ARTH 11H and 12H, HIST 11H and 12H, PHIL 11H and 12H). Four Honors sequences will be offered each year. Courses emphasize either broad global interconnections or the construction of Western culture in its global context. Successful completion of C&I I is a prerequisite for C&I II. (4 units each quarter)

HNRS 20. Difficult Dialogues

This seminar-style course is devoted to the analysis from different perspectives of some issue, text, or problem in the area of a professor's expertise. This course will provide critical thinking skills and an opportunity for students to discuss and debate the toughest questions faced by society today. Honors 20 is required of all Honors students and is open only to Honors students. (4 units)

Upper-Division Courses

UGST 101. Fellowship and Grad School Preparation

Seminar for students interested in preparing for a major fellowship competition (e.g., Fulbright, Rhodes, Knight-Hennessy Schwarzman, Marshall, Mitchell, Truman, Goldwater, Udall, Gaither, NSF), internal SCU grants and programs, and preparation for application to graduate or medical school. Open to all students. (2 units, taught in winter quarter only)

195. Honors Program Thesis

Course credit for thesis or culminating project of the University Honors Program. Enrollment limited to students in the University Honors Program. This course is Pass/No Pass. There are no lectures for this course---thesis milestones turned in through Camino. Interim grades of "N" will be given until thesis is successfully submitted. (1 unit)

Contract Courses

With the agreement of the instructor, an Honors student may get Honors credit for a non-Honors course by adding an enrichment activity or project. The student and the faculty member agree on this added requirement. The goal of the added contract is the student's acquisition of a deeper and richer command of some aspect of the course material. The student may be afforded an opportunity to present the results of the research to the class. Honors Contract

courses may be especially valuable in the student's junior year as a precursor to the senior thesis. Students wishing to establish a contract for Honors credit must turn in the appropriate application to the office by the end of the first week of the quarter in which the course is taken.

Admission of Undergraduate Students

Santa Clara University is a selective admission university that admits new students based on past performance, potential for future academic success, and contribution to the campus community consistent with the mission and Jesuit tradition of the University. Applicants are admitted as full-time, degree-seeking students. Santa Clara does not have a part-time undergraduate program option and does not enroll non-degree students except international non-degree students participating in an approved international partnership. Non-degree international student programs are administered by Global Engagement. See the limited conditions outlined in Chapter 8, Academic and Administrative Policies and Regulations.

Entering first-year and transfer students are admitted for fall and winter terms. Students are admitted for spring term only by special exception with the approval of the dean of admission.

Entering first-year students are admitted to the University and to a specific school and in some cases major based on the preference indicated on their admission application. Students wishing to change schools may apply for a transfer only at the end of their first year of attendance.

Admission of Entering First-Year Students

Admission of applicants to Santa Clara University as entering first-year students is based on their academic record in high school including course rigor, results on standardized tests when submitted, and other criteria outlined below. While Santa Clara University does not have a specific high school grade point average or standardized test score requirement, potential for successful academic performance in the rigorous undergraduate program at Santa Clara is correlated with high academic performance in high school. Santa Clara also bases admission on demonstrated potential for contribution to the campus community consistent with the mission and Jesuit tradition of the University, but only after assessment of academic performance and potential.

Applications for admission as an entering first-year student are evaluated using the following criteria:

- Overall quality of high school courses and appropriately challenging coursework
- Academic performance in high school, including the cumulative grade point average from the first year of high school through the junior year of high school (grades from the first term of the senior year may also be included)
- Results of standardized SAT or ACT tests (optional)
- One teacher evaluation from an 11th or 12th grade core academic class
- Involvement in school and community activities

The basic subject recommendations for admission as an entering first-year students includes:

- History and Social Science: 3 years
- English: 4 years
- Mathematics: 3 years required; 4 years recommended
- Laboratory Science: 2 years required; 3 years recommended
- Language other than English: 2 years required; 3 years recommended; 4 years preferred
- Visual and Performing Arts: 1 year recommended
- College Preparatory Electives: 1 year

Admission to first-year student standing at Santa Clara depends on a continued high level of performance during the remainder of the applicant's senior year in the curriculum provided on the application and upon receipt of a high school diploma. If a significant change occurs in the applicant's academic performance during the senior year, his or her admission status may be reevaluated by the University.

Early Decision I Track

Applicants to the Early Decision I Track must submit complete applications by November 1 of their senior year. Early Decision applicants are notified of the final admission decision by the end of December. Santa Clara's Early Decision I Track is a binding program that requires commitment and confirmation of intent to enroll by those admitted under this program. Financial aid awards will be sent to admitted students who meet deadlines for filing required forms. Deposits must be received by January 7. After admission, all applications for admission to other colleges or universities must be withdrawn. Some Early Decision I applicants who are competitive but not clearly admissible will be deferred and evaluated with other applicants under the Regular Decision Track. Students denied under the Early Decision I Track may not reapply under the Regular Decision Track for the same academic year. Applicants with alumni ties will receive the most consideration for their affiliation with the University during the Early Decision I process.

Early Action Track

Applicants to the Early Action Track must submit their applications by November 1 of their senior year. Early Action applicants are notified of the admissions decision by the end of December. Santa Clara's Early Action Track is nonbinding; consequently, students admitted under the Early Action Track are not required to withdraw other college applications and have until May 1 to confirm enrollment at Santa Clara. Some Early Action applicants who are competitive but not clearly admissible will be deferred and evaluated with other applicants under their choice of Regular Decision Track or Early Decision II Track. Students denied under the Early Action Track may not reapply under the Regular Decision Track for the same academic year.

Early Decision II Track

Applicants to the Early Decision II Track must submit complete applications by January 7 of their senior year. Early Decision II applicants are notified of the final admission decision by mid-February. Santa Clara's Early Decision II Track is a binding program that requires commitment and confirmation of intent to enroll by those admitted under this program. Financial aid awards will be sent to admitted students who meet deadlines for filing required forms. Deposits must be received by March 1. After admission, all applications for admission to other colleges or universities must be withdrawn. Applicants with alumni ties will receive the most consideration for their affiliation with the University during the Early Decision II process.

Regular Decision Track

Applicants to the Regular Decision Track must submit their applications by January 7 of their senior year. Regular Decision applicants are notified of the admission decision by the first week of April and have until May 1 to confirm enrollment at Santa Clara.

Application Procedure

Prospective first-year students must submit the following application materials to be considered for admission to Santa Clara:

- The Common Application
- The Santa Clara supplement to the Common Application
- Application fee
- One teacher evaluation
- The Secondary School Report
- Official high school transcript
- Official or Self-Reported SAT or ACT scores (optional)
- Mid-year Report (Regular Decision applicants)

Admission of Transfer Students

Santa Clara University admits transfer students for fall and winter quarter enrollment, principally at the sophomore and junior levels, based on potential for academic success and contribution to the campus community consistent with the mission and Jesuit tradition of the University. Admission of applicants to Santa Clara University as entering transfer students is based on their academic record at other colleges or universities in conjunction with evaluation of an official high school transcript and other criteria outlined below. While Santa Clara University does not have a specific grade point requirement, potential for successful academic performance in the rigorous undergraduate program at Santa Clara is highly correlated with prior academic performance in challenging courses. Santa Clara also bases admission on demonstrated potential for contribution to the campus community consistent with the mission and Jesuit tradition of the University. Transfer applicants for fall term are notified of the admissions decision on a rolling basis until enrollment capacity has been reached.

Applicants for admission to Santa Clara University as entering transfer students must have completed at least 8 semester or 12 quarter transferable units at an accredited college or university. Applicants with fewer than 8 semester or 12 quarter transferable units at the time of application should follow the application procedure for entering first-year students. Note that if a transfer applicant has not already completed 30 semester or 45 quarter transferable units when the application is submitted, it is optional to submit an official SAT or ACT score report for consideration.

The entire academic history of the applicant is considered in the admission review. Course selection and consistency of performance by the applicant are also considered. Applicants on academic or disciplinary probation or suspension at another institution are not considered for admission.

Recommended Courses for Transfer Students

Applicants for admission to Santa Clara University as entering transfer students enhance their chances for admission by completing as many courses that fulfill the Santa Clara Core Curriculum requirements as possible before transferring. Preference will be given to students who have completed the following courses:

College of Arts and Sciences

- English Composition (2 semesters or 2 quarters)
- College-level Mathematics:
  - 2 semesters or 2 quarters for bachelor of science
  - 1 semester or 1 quarter for bachelor of arts
- Natural Science with a Lab (1 semester or 1 quarter)

Leavey School of Business

- English Composition (2 semesters or 2 quarters)
- Calculus and Analytic Geometry (2 semesters or 2 quarters)
- Accounting (2 semesters or 3 quarters)
- Microeconomics and Macroeconomics (1 semester or 1 quarter each)

School of Engineering

- English Composition (2 semesters or 2 quarters)
- Calculus and Analytic Geometry (2 semesters or 3 quarters)
- Chemistry (1 semester or 1 quarter)
- Physics (2 semesters or 3 quarters)

Transfer Credit

Entering transfer students generally receive credit after admission for courses from other colleges and universities that are similar to courses offered at Santa Clara University.

- Courses from accredited institutions are generally transferable if they are similar in nature to courses listed in the Santa Clara University Undergraduate Bulletin.
- Courses from California community colleges are also generally transferable under the same conditions and if designated as transferable to the University of California.
- Courses from colleges not accredited, trade schools, extension programs, or correspondence programs do not transfer.

Transfer credit is awarded only for courses in which the student earned a grade of "C" or better. Courses taken on a pass/no pass or credit/no credit basis are not eligible for transfer* **(see Note below for Spring 2020 term exceptions)**. Students may transfer a maximum of 58.33 semester or 87.5 quarter units to the College of Arts and Sciences or the Leavey School of Business. The School of Engineering will grant credit for up to one-half of the degree requirements toward the major.

(Note: Spring 2020 Term Exception: Regarding transfer credits for work completed in Spring Term 2020, due to the COVID-19 pandemic, course work receiving a grade of Pass or Credit is transferable. We encourage students continuing on in those subject areas to consult with their departments and advisors to ensure they are adequately prepared for the next level courses.)

Application Procedure

Prospective transfer students must submit the following application materials to be considered for admission to Santa Clara:

- The Common Application for Transfer Admission
- The Santa Clara supplement to the Common Application
- Application fee
- Official transcripts from all colleges and universities attended
- Official high school transcript

- Mid-term report (upon request)

Admission of International Students

Santa Clara University admits international students using the same general criteria for entering first-year and transfer students described in the two preceding sections. There are additional admission requirements for international students that are outlined below. In order to be eligible for enrollment, an international applicant must be accepted as a full-time, degree-seeking student. Non-degree international student programs that are part of an approved international partnership are administered by Global Engagement.

Transcripts

All foreign university-level transcripts must be evaluated through World Education Services (WES). WES is a certified professional credential evaluation service that provides a course by course evaluation and grade point average for course work completed outside of the United States. Secondary school transcripts must be submitted as official documents and a certified English translation of all secondary school documents must be provided at the time of application.

English Proficiency Examinations

International applicants must submit the results of at least one of the following tests when English is not their first language: Test of English as a Foreign Language (TOEFL) exam, Duolingo English Test (DET) or the International English Language Testing System (IELTS) exam. The minimum acceptable TOEFL score is 90 (Internet based) or 575 (paper based). The minimum Duolingo English Test score is 115. The minimum accepted IELTS score is 6.5. College-level English courses cannot be used to satisfy the English Proficiency requirement. Santa Clara University does not accept TOEFL's MyBest test, TOEFL ITP Plus Edition or TOEFL iBT At Home Edition.

Exceptions are granted for the following: Applicants whose native language is English, or attended their entire secondary school career at a school where English was the language of instruction, or achieved a 630 on the Evidence-Based Reading and Writing section of the SAT or 27 on both the ACT Reading and English sections.

Financial Certification and Sponsorship

For the purpose of admission, all international students are required to submit the Santa Clara University Financial Resource Statement and supporting documents. Santa Clara University is need-aware for international students as no need-based financial aid is offered. International first-year students are eligible for merit scholarship consideration.

Santa Clara University is certified to issue the Form I-20 required to apply for an F-1 student visa to study in the United States. To secure a Form I-20, an international student must be admitted and deposited to the University and show adequate proof of ability to meet all academic and personal expenses while in the United States.

Academic and Administrative Policies and Regulations

Student Responsibility

Students are personally responsible for knowing all academic and administrative policies and regulations affecting their program of study and for abiding by all such policies and regulations during their period of enrollment at the University. Students are also personally responsible for reading all related messages (email and other) received from the University and its administrators. Continued enrollment is subject to compliance with the academic and administrative policies and regulations as described herein and otherwise published by the University. Failure to understand the policies and regulations does not relieve a student of the responsibility for adhering to the policies and regulations.

Degree Requirements

Candidates for an undergraduate degree at Santa Clara University must complete all requirements for a bachelor's degree as set forth by the University, their college or school, and academic departments or programs. Failure to understand those requirements does not relieve a student of their responsibility.

The requirements for a bachelor's degree include:

- Completing a minimum number of quarter units as specified below for each degree, no more than half of which may be satisfied with approved transfer credit and/or test credit
- A minimum of 175 quarter units for the bachelor of arts or bachelor of science in the College of Arts and Sciences (a minimum of 193 quarter units for engineering physics majors)
- A minimum of 175 quarter units for the bachelor of science in commerce in the Leavey School of Business
- The minimum number of quarter units specified by the major department for the bachelor of science in the School of Engineering
- Completing a minimum of 60 quarter units of upper-division courses
- Attaining a minimum grade point average of 2.0 for all courses completed at Santa Clara University and for all courses in the academic major and any academic minor
- Meeting the residency requirement of a minimum of 45 units at the Santa Clara campus after achieving junior standing
- Fulfilling the Core Curriculum requirements in effect at the time of initial enrollment
- Fulfilling the requirements for any declared academic majors and minors, including associated college or school requirements
- Submitting a completed Candidacy Petition for the bachelor's degree form according to the deadlines and procedures published by the Office of the Registrar

Academic Majors

Students must complete the requirements for a primary academic major in the College of Arts and Sciences, Leavey School of Business, or the School of Engineering, including the Core Curriculum and college or school requirements, to receive a bachelor's degree. Requirements for academic majors can be found under the departmental listings in the chapters for each respective college or school.

Students must declare their primary academic major by the end of the sophomore year. Students may declare a major at the time of initial matriculation, except in the Leavey School of Business where declaration of a major is normally made during sophomore year. Students who initially matriculate without a declared major must obtain the approval of the department chair of the intended major and submit the online Program Petition form. Students participating in study abroad or domestic public sector study programs must declare a major before participating in the program.

Students may declare a second academic major in addition to their primary major; however, students in the Leavey School of Business may only declare a second major in the College of Arts and Sciences or the School of Engineering. Students who want to declare a second major must obtain the approval of the department chair of the intended major and the college/school for the second major if different from the student's primary major and submit the online Program Petition form. To be awarded a second major, a student must complete all requirements of the

Core Curriculum, college or school, and departmental requirements for that major. Requirements for a second major are as binding as those of a primary major and must be completed before a degree will be awarded. If a student decides to drop a second major, he or she must submit the online Program Petition form.

Academic Minors

Students may declare an academic minor from among the departmental minors offered through the college or schools, the general minor in engineering, or one of the interdisciplinary minors offered by the University. Requirements for the academic minors can be found in the chapters of the respective college or school in this Bulletin.

Students who want to declare an academic minor must obtain the approval of the department chair or program director of the intended minor and submit a Program Petition form to the Enrollment Services Center. Some minors may require an application process and are limited based on space available. To be awarded a minor, a student must complete all requirements of the minor as prescribed. Requirements for a minor are binding and must be completed before a degree will be awarded. If a student decides to drop a minor, he or she must submit the online Program Petition form.

Second Bachelor's Degree

A student may earn a second bachelor's degree at Santa Clara University, but may not duplicate a degree (i.e., bachelor of arts, bachelor of science in a natural science, bachelor of science in a social science, bachelor of science in commerce, bachelor of science in engineering). Students whose first degree is from Santa Clara and who are interested in pursuing a second bachelor's degree concurrently or without interruption must have an academic record showing a strong probability of success and a proposed program of study for the second degree that fulfills the degree requirements in effect at their original date of matriculation. At least half of the units for the second degree must be in addition to those required for the first degree and must be completed through a Santa Clara program. Approval to pursue a second bachelor's degree must be granted by the Dean of Academic Support Services and filed with the Office of the Registrar.

If a student is returning to the University after an absence, they must meet the criteria outlined above, but is subject to the degree requirements in effect at the time of re-entry. Approval from the Dean of Academic Support Services is required to resume studies for a second degree after an absence.

Students whose first degree is from an institution other than Santa Clara must submit a formal application for admission to the Office of Undergraduate Admission. The application must specify that the second degree will not duplicate any other degree. Students admitted for a second bachelor's degree are subject to the degree requirements in effect at the time of admission. At least half the units required for the second bachelor's degree must be earned through a Santa Clara program.

Graduation with Honors

Candidates for a bachelor's degree with a grade point average between 3.500 and 3.699 graduate cum laude (with honors); candidates with a grade point average between 3.700 and 3.899 graduate magna cum laude (with high honors); and candidates with a grade point average of 3.900 or higher graduate summa cum laude (with highest honors). For the purposes of calculating Latin honors, grade point averages are not rounded. Awarding of honors is based on all graded undergraduate courses attempted at Santa Clara University that are counted toward the fulfillment of a student's degree. Honors will not be awarded above those merited by the student's record at Santa Clara. An indication of honors at graduation contained in the commencement program is unofficial. The final determination will be made after a review of all completed undergraduate courses counted toward the degree.

Participation in Commencement

To participate in commencement, candidates for a bachelor's degree must have completed all degree requirements (or must be within the equivalent of one quarter -- no more than 20 units -- see conditions below) and a minimum cumulative grade point average of 2.0 as well as a minimum 2.0 GPA in all courses in their academic major(s) and academic minor(s). Candidates must submit a Pre-Graduation Evaluation form, signed by the student's academic department, to the Office of the Registrar. Candidates whose degrees will not be conferred in spring must clearly demonstrate that all coursework will be completed by the end of fall quarter immediately following June Commencement, must have the endorsement of their department, and must have completed and submitted, in addition to the Pre-Graduation Evaluation form, the Permission to Participate in Commencement form, by the relevant deadlines to the Office of the Registrar.

Academic Program Policies and Regulations

Course Numbering and Course Credits

Lower-division courses are numbered 1 through 99, and upper-division courses are numbered 100 through 199. In the College of Arts and Sciences and the Leavey School of Business, most lower-division courses carry 4 units of academic credit and most upper-division courses carry 5 units of academic credit. In the School of Engineering, unit values for courses vary according to the number of hours in class per week.

Credit Unit Policy

Academic work at Santa Clara University is measured by credit unit. A unit of credit represents that amount of time and effort both within and outside of formal settings that a student devotes to a particular class. At the undergraduate level, one unit of credit represents approximately three hours of work per week per term by the student, including time engaged in class and time committed to class preparation, studying, and assigned projects.

A unit of credit for laboratory courses, independent study, internships, practica, and study abroad is awarded on the same basis as for a lecture course: One unit of credit represents approximately three hours of work per week per term by the student.

At the graduate level, course credit is determined by the college or school and is consistent with practices in the disciplines.

Change of Academic Major

A change of major within the same school or college requires the approval of the relevant department chair or program director. Students wishing to change their academic major within a school must submit the online Program Petition form.

Change of School

Entering first-year students are admitted to the University and to a specific school based on the preference indicated on their admission application. Students wishing to change schools within the University may not apply for such a change until the end of their first year of attendance.

Changes between schools may be limited by the availability of space within the school and the specific academic major. Students wishing to change schools must meet the admittance criteria of the school and complete the application process specified by that school. Upon acceptance by the school, the student must submit a completed Program Petition form to the Enrollment Services Center.

Repetition of Courses

Students may only repeat a course in which they have received a grade of less than "C-." In such cases, the grades of both the original and the repeated course are included in the calculation of the student's grade point average, but units are awarded toward graduation only once for each course passed. Certain courses, such as special topics courses

and performance courses, are repeatable, and students will receive a grade and units for each successful completion. Students should consult the chair of the department in which the course is offered to confirm that a given course may be repeated for credit.

Independent Study

Students may pursue independent study through directed reading, directed research, internships, practica, or cooperative education. To qualify, a student must have demonstrated a sufficient knowledge of the academic discipline involved to make independent study both possible and beneficial. No more than 20 units of independent study may be used to satisfy graduation requirements, and no more than 5 units of independent study may be taken per term. Students must enroll for the term in which the independent study occurs and complete the online Undergraduate Petition for Independent Study.

Directed reading and directed research are limited to upper-division students who undertake a research project or other well-defined study beyond the scope of a regular course under the supervision of a faculty member. Such work should be comparable to that required for courses of equivalent unit value.

Students can obtain practical learning experience through internships, cooperative education, and practica. Internships and cooperative education are approved work experiences in a non-classroom environment in industry, government, or other setting, generally available only to upper-division students. Students who enroll in an internship or cooperative education experience for academic credit must fulfill specified academic requirements in addition to the responsibilities expected by the organization hosting the internship or cooperative education experience. Practica provide practical experience in a discipline-specific field experience or an approved University program activity, such as participation on the school newspaper staff. Practica are generally available only to upper-division students, but some practicum experiences are available to lower-division students who meet specified eligibility criteria.

Students wishing to enroll in an independent study course must initiate the request for independent study with the appropriate faculty member, or with the Career Center for cooperative education experiences. The appropriate form, with the required materials and other approvals, must be submitted to the Drahmann Center for final approval prior to registering for the course.

Challenging Courses

In rare circumstances, students may petition to challenge a course by examination in order to fulfill a course prerequisite or degree requirement. Since most courses at Santa Clara University require laboratory, studio, discussion, and/or group work, which cannot be evaluated by examination, approval to challenge courses will be unusual.

Departments have full discretion to determine which of their courses, if any, may be challenged. To challenge a course, a student must demonstrate mastery of the course content and learning objectives, as well as any additional requirements specified by the department that offers the course being challenged. A successful challenge neither earns units toward graduation nor contributes to the fulfillment of residency requirements.

In order to be eligible to challenge a course, a student must have completed at least one term at Santa Clara, have a cumulative grade point average of at least 3.3, and receive permission of the course instructor and the chair of the department in which the course is offered. Only currently enrolled students are eligible to challenge a course. Students may not attempt to challenge a particular course more than once.

Students wishing to challenge a course must complete a Course Challenge Petition (available from the Office of the Registrar), which provides evidence of circumstances justifying the challenge, and submit the form to the chair of the department in which the course is offered. If approved, the department chair arranges the examination after the

student files the Course Challenge Petition with the Office of the Registrar and pays the applicable fee. The examination will be administered and evaluated by the department that offers the course. If successful, the department chair will notify the Registrar that the requirement has been fulfilled.

Undergraduate Class Attendance Policy

Students are responsible for completing all course requirements as set forth by the instructor. Class attendance expectations and consequences for absences from class are left to the discretion of individual instructors subject to restrictions imposed by law, including, but not limited to, policies associated with the Americans with Disabilities Act Amendment Act (ADAAA) and Title IX of the Education Amendments of 1972 (Title IX) (see below). The instructor's policies will be communicated clearly in writing. Students are accountable for all course assignments, whether or not the assignments were announced during an absence, and for meeting assigned deadlines, even when the deadline falls on the day a student is absent from class. For details on grading, see the Grading Policies and Regulations section in this chapter.

In certain situations involving unavoidable absence, students may be offered the opportunity to make up a missed assignment/activity or to complete an alternative assignment, unless the design of the course offers no opportunity for in-class work to be made up. These include both foreseen and unforeseen documented and verified situations such as:

- Serious personal illness
- Death of immediate family member
- Participation in significant religious observances
- Participation in events or activities as official representatives of Santa Clara University

In cases of unforeseen, unavoidable absence, students should contact the instructor as soon as possible. Under certain circumstances, the Cowell Center or the Office of Student Life may contact the instructor on behalf of the student.

In cases of foreseen absence due to significant religious observances or official representation of the University in events, students should discuss the conflict with the instructor well in advance of the absence in order to determine possible alternate arrangements. Class attendance expectations and consequences for absence are left to the discretion of individual instructors. Instructors may require documentation from the appropriate University personnel regarding the reason for the intended absence.

Title IX: Pregnant and Parenting Students

Santa Clara University is committed to maintaining an equitable learning environment and supporting the academic success of pregnant and parenting students. The University prohibits discrimination based on parental status, pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from related conditions in all of its educational programs and activities pursuant to Title IX of the Education Amendments of 1972. Students may request an accommodation for pregnancy-related conditions or parenting responsibilities by contacting the University's Director of Equal Opportunity and Title IX Coordinator, Loyola Hall, Suite 140, 425 El Camino Real, Santa Clara, CA 95050, bguthrie@scu.edu, (408) 554-3043, http://www.scu.edu/title-ix.

Final Examinations

A final examination, if given in a course, must be given on the date and time scheduled by the Office of the Registrar. If the final examination is a take-home examination, it may not be due before the scheduled final examination time or any later than the last day of the examination period. Similarly, other end-of-quarter assignments (papers, projects, for example) may not be due any later than the last day of the examination period. Exceptions to this policy require approval of the department chair and the relevant academic dean.

Registration Policies and Regulations

Enrollment and Registration for Classes

Students must be officially registered for all classes in accordance with the regulations, procedures, and dates in the quarterly undergraduate Deadlines & Registration booklet. Registration is subject to full payment of tuition, room and board charges, and other fees associated with enrollment. The University reserves the right to deny registration to any student for reasonable cause. A student's eligibility to register for classes is subject to the clearance of any holds on the student's record for academic, financial, student conduct, or other reasons. Santa Clara students may not be concurrently enrolled at another college or university except for extraordinary reasons with the approval of the Dean of Academic Support Services, located in the Drahmann Center.

Students register for classes via University eCampus during the time assigned by the Office of the Registrar. Students who do not complete registration during the initial registration period may do so during the published late registration period for the term. Initial registration for a term or class additions are not accepted after the last day of the late registration period.

During the first week of each fall, winter, and spring term, students may add and drop classes in accordance with the procedures established by the Office of the Registrar. During the first, second, third, and fourth weeks of the term, a student may drop a class without receiving a mark of "W" for the class on their academic record. From the fifth week to the end of the seventh week of the term, a student may drop a class and receive a mark of "W" for the class on their academic record. Students may not drop classes after the last day of the seventh week of the term. Students who do not complete a course and do not drop the class in accordance with the required procedures will receive an appropriate grade in the class.

Students who have not earned 44 units, including transfer and test credit, may be subject to administrative withdrawal from upper-division courses. This restriction does not apply to upper-division courses for which a student has demonstrated sufficient proficiency.

Students may not sit in a class without formally enrolling in the class. Sitting in a class or obtaining an instructor's signature on an add form does not constitute enrollment.

Students who do not attend the first day of a class are subject to administrative cancellation of their enrollment in that class in order to make space available to other students. A student who must miss the first day of a class and wishes to remain in the course should contact the instructor in advance. No student who misses the first day of a class should assume that they have been dropped from the course. Students are responsible for checking the status of their enrollment in all courses prior to the end of the late registration period.

Unit Overload

Students may enroll for no more than 19 units unless they are in the University Honors Programor School of Engineering, their cumulative grade point average at Santa Clara is at least 3.3, or they have upper-division status and obtain approval from the Drahmann Center. One 2-unit course or two 1-unit courses are not counted as overload units. Students who meet the criteria above will not be permitted to register for more than 25 units without approval of the Dean of Academic Support Services. Students may register for courses that result in overload units only during the late registration period. See the website of the Office of the Registrar for registration schedules.

Auditing Courses

Students admitted to degree status at Santa Clara may audit one course in addition to their regular course load in a term. A maximum of three courses may be audited during a student's academic career. Permission to audit a course will be given only at the end of the late registration period and only if space is available in the class. No credit is assigned for an audited course, but the successful completion of an audit will be indicated on a student's transcript by the notation "AUD."

Administrative Cancellation of Course Enrollment

Students who enroll in a course for which they are not eligible are subject to administrative cancellation of their enrollment in that course. Prior to the end of the late registration period, an instructor may notify the University Registrar to drop first-year students who registered in upper-division courses, to drop students who have not satisfied the prerequisites for the course, or to drop students lacking the instructor permission required for certain courses.

Withdrawal from the University

Students who wish to withdraw from the University must do so by the last day of classes, and must complete a withdrawal survey, appropriate forms, and an exit interview in the Drahmann Center. If the formal requirements for withdrawal are met, the student's registration will be canceled without further academic penalty. Students who leave the University during a quarter without withdrawing in accordance with the required procedures will receive an appropriate grade in all courses in which they were registered and are not eligible for a refund of tuition or other fees.

Students who withdraw from the University are responsible for any outstanding financial obligations with the University. Students who used deferred payment plans or student loans during their attendance at the University must clear their financial obligations with the Financial Aid Office and the Bursar's Office. Students who have unpaid bills or other unsettled financial obligations with the University will not be eligible for re-enrollment until they have cleared all such obligations.

Withdrawal for Health Reasons

Students may experience an illness, injury, or psychological condition that significantly impairs their ability to function successfully or safely in their role as students. In these instances, the Policy for Withdrawal for Health Reasons allows time away from the University for treatment and recovery until functioning is restored to a level that will enable the student to return to the University. The purpose of this policy is to set forth the procedures for student withdrawals from the University for reasons of health and/or safety. The University has designated four categories relating to withdrawal. They differ according to who initiates the action, whether it is voluntary or not, and the re-enrollment procedures.

The Vice Provost for Student Life or designee, in consultation with the appropriate mental and medical health professionals and other staff as deemed necessary, is responsible for the implementation of this policy as stated in the Student Handbook.

Re-enrollment at the University

A student who withdrew from the University is eligible to re-enroll without special permission under the following conditions:

- The student left the University in good academic standing
- The student has no outstanding financial obligations with the University

- The student plans to return to the same college or school at the University
- The student is returning within five years of the date of their withdrawal

Students who do not meet the conditions above must seek permission to re-enroll from the Dean of Academic Support Services. Re-enrolling students are subject to degree and curriculum requirements in the Undergraduate Bulletin in effect at the time of re-entry.

Students wishing to re-enroll must notify the Office of the Registrar in writing of their intent to return using the Returning Student form and should consult with a University advisor in the Drahmann Center to review their academic plans. Students on leave who have attended another college or university are permitted to transfer in only a maximum of 10 units of elective credit and are required to forward to the Office of the Registrar an official transcript of all work completed during their absence.

Grading Policies and Regulations

Grading

Grades are assigned by the instructor to reflect the quality of a student's work. The University uses the following grades:

A: Excellent

B: Good

C: Adequate

D: Barely Passing

F: Not Passing

P: Pass

NP: No Pass

The grades A, B, C, and D may be modified by (+) or (-) suffixes, except that the grade of "A" may not be modified by a (+) suffix. Grade point values per unit are assigned as follows:

A = 4.0

A- = 3.7

B+ = 3.3

B = 3.0

B- = 2.7

C+ = 2.3

C = 2.0

C− = 1.7

D+ = 1.3

D = 1.0

D− = 0.7

F = 0

Unit credit, but not grade point credit, is awarded when the grade of "P" is assigned. Unit credit is not awarded when the grade of "NP" is assigned.

The University also uses the following marks for which no unit credit or grade point value is granted:

I: Incomplete

N: Continuing work

NS: No Show

AUD: Audit

W: Withdrawn

Pass/No Pass (P/NP)

A grade of "P" signifies that the quality of work done is equivalent to a letter grade of "C" or higher, while a grade of "NP" denotes work at the level of "C-" or lower. A maximum of six courses taken under the pass/no pass option in which the student receives a mark of "P" can be used to fulfill the unit requirements for graduation.

Some courses are offered only on a pass/no pass basis. If a graded option is not available, a course can satisfy Core, major, and/or minor requirements. The pass/no pass option cannot be requested for a course that satisfies a major, minor or core requirement or a major or minor elective requirement. A student with junior or senior standing and a declared major may choose to take an elective course on a pass/no pass basis. Students may enroll in only one elective course on a pass/no pass basis per quarter. Students may choose the pass/no pass option for a class through the end of the fourth week of classes, but may not change the grading option after that date.

Incomplete (I)

The mark of "I" (incomplete) may be assigned by the instructor when a student does not complete some essential portion of the assigned work in a class because of extraordinary circumstances beyond the student's control. The unfinished work must be completed and given to the course instructor within three weeks of the beginning of classes in the next scheduled term (not the student's next term of enrollment), excluding summer session, unless extraordinary circumstances require an extension. A request for an extension must be submitted in writing by the instructor and approved by the University Registrar within the original three-week period. Extensions shall not be for longer than two academic quarters after the mark of "I" was assigned, excluding summer session. An incomplete that has not been completed within the specified deadline or has not received an approved extension will be converted to a grade of "F."

Continuing Work (N)

The mark of "N" (continuing work) may be assigned by an instructor when course requirements span more than one term. When the course requirements are completed, the instructor assigns a standard grade. A student may not graduate and receive a degree with a mark of "N" on their academic record.

No Show (NS)

The mark of "NS" (no show) may be assigned by an instructor when a student never attends a class and does not drop the class. A mark of "NS" cannot be changed to any other grade or mark after it is assigned by the instructor. A mark of "NS" is included in the student's academic record and appears on the student's transcript, but is not included in the calculation of the student's grade point average. No adjustment in tuition will result from the awarding of a mark of "NS" in a class.

Audit (AUD)

The mark of "AUD" is assigned when a student enrolls in a class on an audit basis. A mark of "AUD" cannot be changed to any other grade.

Withdrawn (W)

The mark of "W" is assigned by the Office of the Registrar when a student completes the formal requirements for dropping a class or withdrawing from the University. A mark of "W" cannot be changed to any other grade or mark. A mark of "W" is included in the student's academic record and appears on the student's transcript, but is not included in the calculation of the student's grade point average.

Grade Point Average

A student's grade point average is determined by multiplying each grade point value by the number of quarter units assigned to the course, adding these grade point units from all courses taken, and dividing this sum by the total number of quarter units for which letter grades were reported. Grade reports are posted at the end of each quarter and indicate both the grade point average earned by the student during the quarter and the cumulative grade point average earned by the student for all courses completed to that point.

Grades earned in courses in SCU-operated or SCU-affiliated study abroad or domestic study programs are included in the calculation of a student's grade point average. Grades earned in courses at other institutions accepted for transfer credit are not included in the calculation of a student's grade point average.

Evaluation of Progress

Grades are available at the end of the term via University eCampus. Faculty members are expected to apprise students of their course progress at reasonable intervals. Some measurements of progress should take place in time to enable students to make reasonable decisions with respect to the fourth-week and seventh-week withdrawal deadlines.

Change of Grade

Only the faculty member responsible for a course may assign grades. All grades become final when they have been assigned and reported to the Office of the Registrar. A faculty member may report a correction of a final grade to the Office of the Registrar only if a clerical or procedural error was made in assigning, transmitting, or recording the original grade. A grade may not be changed as a result of re-evaluation, re-examination, or the submission of additional work after the term ends. Any grade change must have the approval of the department chair and the associate dean of the student's school or college. No grade may be changed after one year.

Student Appeals of Grades

Grades are not negotiable. There should be no questioning of a faculty member's academic judgment on a grade. In registering for a class, students implicitly agree to allow the faculty member to make a qualitative judgment of their command of the subject matter, which will be expressed as a letter grade. Any questioning or appeal of a grade should therefore be limited to procedure, e.g., to computational errors or failures to follow grading policies set forth in the syllabi.

Any system of grade-appeal should protect the rights of faculty members as well as the rights of students. The results of any system of grade-appeal should not be binding upon the faculty member. Any decision to initiate a change of grade should remain the faculty member's. Any procedural complaint regarding a change of grade must be initiated within four weeks of the beginning of the next scheduled term, not including summer sessions.

A student with a complaint must first discuss the matter with the faculty member. If the matter is not resolved at this level, the student may then take the matter to the chairperson of the department involved. The chairperson will discuss the case with the faculty member and may recommend that the faculty member review the grade. Upon the

request of the student, the dean will proceed in similar fashion. Should the student request it, the dean will pass the matter on to the provost.

This process of review gives the chairperson, dean, and provost the right to discuss the matter with the faculty member, and if they think it appropriate, request that the faculty member review the grade. Any recommendations made will not be binding upon the faculty member against whom the complaint is lodged. The decision to change a grade remains with the faculty member.

Academic Standing and Student Classification

Student Classification

The University only admits students to its undergraduate degree programs on a full-time basis. Students who have not been admitted to degree status at the University may register for classes in accordance with the policies and regulations outlined in the section of this chapter covering non-degree students.

The classification of students is determined by the number of quarter units completed with passing grades. Lower-division students are considered first-year if they have completed fewer than 44 units and sophomores when they have completed at least 44 units but fewer than 88 units. Upper-division students are considered juniors when they have completed at least 88 units but fewer than 131 units and seniors when they have completed at least 131 units.

If a student is enrolled for 12 or more units in a given term, they have full-time status for academic purposes. Students enrolled for fewer than 12 units have part-time status for that term and may not qualify for all University activities and benefits, such as eligibility for financial aid, on-campus housing, and intercollegiate athletic competition. Continuing enrollment at the University in part-time status requires approval by the Dean of Academic Support Services.

Academic Standing

To be in good academic standing at the University, a student must normally be enrolled for 12 or more units, must maintain a cumulative grade point average of at least 2.0 based on all courses taken at Santa Clara, and must have completed at least a minimum number of units as specified below. Failure to meet these requirements may result in academic probation or disqualification from future registration at the University.

Students in their last term of enrollment before completing a degree may be classified, for academic standing purposes, as a full-time student when enrolled for less than 12 units.

Academic Probation

Students at Santa Clara are subject to academic probation if their cumulative grade point average is lower than 2.0 based on all courses taken at Santa Clara.

Students are also subject to academic probation if they fail to make satisfactory progress toward their degree as defined below:

- Completing at least 36 quarter units in the previous three quarters of residency

or

- Completing at least 36 quarter units by the end of the third quarter of residency
- Completing at least 76 quarter units by the end of the sixth quarter of residency
- Completing at least 115 quarter units by the end of the ninth quarter of residency
- Completing at least 160 quarter units by the end of the 12th quarter of residency

Academic Disqualification

Students are subject to disqualification from further registration at the University for any of the following reasons:

- Remaining on academic probation for more than two quarters without improvement
- Failing to maintain a cumulative grade point average of at least 2.0

or

- Completing fewer than 30 quarter units by the end of the third quarter of residency
- Completing fewer than 64 quarter units by the end of the sixth quarter of residency
- Completing fewer than 100 quarter units by the end of the ninth quarter of residency
- Completing fewer than 150 quarter units by the end of the 12th quarter of residency

Reinstatement to the University

Reinstatement to the University after disqualification is rarely permitted and requires favorable action by the Dean of Academic Support Services in consultation with the dean of the student's college or school. Requests for reinstatement are made to the Dean of Academic Support Services and must include a description of any activities during the period of disqualification that would indicate that an improved academic performance can be expected in the future. A student generally may not apply for reinstatement within a year of the date of disqualification. The request for reinstatement will be considered only if the student's academic deficiencies can be corrected within a reasonable time.

Academic Credit Evaluation

Santa Clara awards credit based on the Advanced Placement Program, the International Baccalaureate Program, University of Cambridge International Examinations, courses completed at other accredited colleges and universities, and courses completed in University-approved study abroad and domestic study programs using the criteria outlined herein. Students are allowed to transfer in a maximum of one-half of the total quarter units required to graduate in their specific program. Students may not take a SCU course for credit for which they have already received transfer credit. Santa Clara University does not allow students to receive duplicate credit for courses. You can either receive test credit for a course or take the course at SCU, but not both. Credit is not awarded for the College-Level Examination Program (CLEP).

Advanced Placement (AP) Credit

Santa Clara participates in the Advanced Placement Program to recognize college-level academic achievement prior to matriculation and to encourage students to pursue advanced studies in their areas of interest. Credit or placement is determined by the appropriate department based on review of the student's Advanced Placement scores, sometimes in the context of supplemental departmental examinations.

Note: students who are awarded credit for exams taken in Spring 2020 that covered a shortened curriculum and who wish to enroll in the next level course at Santa Clara University should consult with their department and/or advisor to ensure they will not be at a disadvantage in that field of study.

The following chart indicates the subject examination, required scores, and Santa Clara credit granted through the Advanced Placement tests. Courses waived will always satisfy relevant requirements in the major of the department that offers the course. However, only some courses waived will satisfy requirements in the Core Curriculum.

Courses waived by AP test scores, when relevant, may satisfy Second Language, Mathematics, Natural Science, and Social Science requirements in the Core Curriculum. No other undergraduate Core requirement can be satisfied with AP test scores.

Final decisions on academic credit for some AP scores are made individually by the appropriate academic department in consultation with the Office of the Registrar.

Exam	Subject	Required Score	SCU Unit Credit	SCU Equivalent	Core
AP	Art History	4, 5	4	ARTH 21, 22, or 23	No Core Credit
AP	Biology	4, 5	4	Elective Credit*	No Core Credit
AP	Calculus AB	4, 5	8	MATH 11 and elective credit	Mathematics
AP	Calculus BC	3	4	MATH 11	Mathematics
AP	Calculus BC	4, 5	12	MATH 11 & 12 and elective credit	Mathematics
AP	Chemistry	3, 4, 5	5	CHEM 11T	Natural Science
AP	Chinese Language & Culture	4, 5	4	CHIN 21	Second Language
	Comparative				Social

AP	Government & Politics	4, 5	4	POLI 2	Science
AP	Computer Science A	3	5	COEN 10 & 10L	No Core Credit
AP	Computer Science A	4, 5	10 for COEN; 5 for CSCI	COEN 10 & 10L & 11 & 11L (engineering majors only); or CSCI 10	No Core Credit
AP	Computer Science Principles	4, 5	5 for COEN; 4 for CSCI	COEN 10 & 10L (engineering majors only); or CSCI 3	No Core Credit
AP	English Language	4, 5	4	Elective Credit	No Core Credit
AP	English Literature	4, 5	4	Elective Credit	No Core Credit
AP	Environmental Science	4, 5	4	Elective Credit	No Core Credit
AP	European History	4, 5	4	HIST 23	No Core Credit
AP	French Language	4, 5	4	FREN 21	Second Language
AP	German Language	4, 5	4	GERM 21	Second Language
Exam	Subject	Required Score	SCU Unit Credit	SCU Equivalent	Core
AP	Human Geography	4, 5	4	ANTH 50 or ENVS 50	No Core Credit
AP	Italian Language and Culture	4, 5	4	ITAL 21	Second Language
AP	Japanese Language & Culture	4, 5	4	JAPN 21	Second Language
AP	Latin Vergil	4, 5	4	Elective Credit*	No Core Credit
AP	Macroeconomics	4, 5	4	ECON 2	Social Science
AP	Microeconomics	4, 5	4	ECON 1	Social Science
AP	Music: Theory	4, 5	4–8	MUSC 1	No Core Credit
AP	Physics 1	4, 5	5	PHYS 11 or elective credit	No Core Credit
AP	Physics 2	4, 5	5	Elective Credit*	No Core Credit
AP	Physics 1 & Physics 2	4, 5	15	PHYS 11, 12, & 13 or elective credit	Natural Science
AP	Physics B	4, 5	5	PHYS 11 or elective credit	No Core Credit
AP	Physics C:	4, 5	5	PHYS 31	Natural

AP	Mechanics	4, 5	5	PHYS 31	Science
AP	Physics C: Electricity & Magnetism	4	5	Elective Credit	No Core Credit
AP	Physics C: Electricity & Magnetism	5	5	PHYS 33	Natural Science
AP	Psychology	4, 5	4	PSYC 2	Social Science
AP	Spanish Language	4, 5	4	SPAN 21	Second Language
AP	Spanish Literature	4, 5	4	SPAN 22	Second Language
AP	Statistics	4, 5	4	MATH 8 for UARSC & UENGR or OMIS 40 for UBUSN	Mathematics
AP	Studio Art: 2-D Design	4, 5	4	Elective Credit	No Core Credit
AP	Studio Art: 3-D Design	4, 5	4	Elective Credit	No Core Credit
AP	Studio Art: Drawing	4, 5	4	Elective Credit	No Core Credit
AP	U.S. Government & Politics	4, 5	4	POLI 1	No Core Credit
AP	U.S. History	4, 5	4	HIST 96A or 96B	No Core Credit
AP	World History	4, 5	4	Elective Credit*	No Core Credit

*See department chair for evaluation of credit toward major or minor.

International Baccalaureate

Santa Clara University recognizes the International Baccalaureate (IB) Program for admission and advanced placement.

Note: students who are awarded credit for IB coursework taken in Spring 2020 and who wish to enroll in the next level course at Santa Clara University should consult with their department and/or advisor to ensure they will not be at a disadvantage in that field of study.

The following chart indicates the subject examination, required scores, and Santa Clara credit granted through the International Baccalaureate high level (HL) tests. Courses waived will always satisfy relevant requirements in the major of the department that offers the course. However, only some courses waived will satisfy requirements in the Core Curriculum.

Courses waived by IB (HL) scores, when relevant, may satisfy Arts, Second Language, Mathematics, Natural Science, and Social Science requirements in the Core Curriculum. No other undergraduate Core requirement can be satisfied with IB test scores.

Exam	Subject	Required Score	SCU Unit Credit	SCU Equivalent	Core
IB	Biology	6, 7	4	Elective credit	No Core Credit
IB	Business & Management	6, 7	4	Elective credit	No Core Credit
IB	Chemistry	6, 7	5	CHEM 11T	Natural Science
IB	Computer Sciences	6,7	10	COEN 10 & COEN 10L & COEN 11 & 11L (engineering majors only)	No Core Credit
IB	Dance	6,7	4	Elective credit	No Core Credit
IB	Design Tech	6, 7	4	Elective credit	No Core Credit
IB	Economics	6, 7	8	ECON 1 & 2	Social Science
IB	English A1	6, 7	4	Elective credit	No Core Credit
IB	Environmental Systems	6, 7	4	Elective credit*	No Core Credit
IB	Film	6, 7	4	Elective credit*	No Core Credit
IB	Further Mathematics	6, 7	4	Elective credit*	No Core Credit
IB	Geography	6, 7	4	ANTH 50 or ENVS 50	No Core Credit
IB	Global Politics	6, 7	4	POLI 25	No Core Credit
IB	History	6, 7	4	Elective credit	No Core Credit
IB	History of Americas	6, 7	4	Elective credit	No Core Credit
IB	History of Europe	6, 7	4	Elective credit	No Core Credit
IB	History of the Islamic World	6, 7	4	Elective credit	No Core Credit
IB	IT in a Global Society	6, 7	4	OMIS 34	No Core Credit
IB	Language B	6, 7	4	3rd quarter introductory language	Second Language
IB	Mathematics	6, 7	4	Elective credit*	Mathematics
IB	Music	6, 7	4	Elective credit*	No Core Credit
IB	Philosophy	6, 7	4	Elective credit*	No Core Credit

IB	Philosophy	6, 7	4	Elective credit*	No Core Credit
IB	Physics	6, 7	15	PHYS 11 & 12 & 13	Natural Science
IB	Psychology	6, 7	4	Elective credit*	No Core Credit
IB	Social & Cultural Anthropology	6, 7	4	Elective credit*	No Core Credit
IB	Sports, Exercise & Health Science	6, 7	4	BIOL 3	Natural Science
IB	Theatre	6, 7	4	Elective credit*	No Core Credit
IB	Visual Arts	6, 7	4	TRCR 27*	Arts

*See department chair for evaluation of credit toward major or minor.

University of Cambridge International Examinations

Santa Clara University accepts selected University of Cambridge International Advanced (A) Level examinations with letter grades of A (a) or B (b). Advanced Subsidiary (AS) and Ordinary (O) Level examinations are not awarded credit. Final decisions on academic credit for A Level subject examinations are made individually by the appropriate academic department in consultation with the University Registrar. Courses waived will satisfy relevant requirements in the major of the department that offers the course. However, only some courses waived will satisfy requirements in the Core Curriculum.

Transfer Credit and the Core Curriculum

All students must satisfy the following Core requirements at Santa Clara University: Civic Engagement; Science, Technology & Society; Religion, Theology & Culture; Advanced Writing; Experiential Learning for Social Justice; and Pathways. For all other Core requirements, it is possible for students to earn credit by taking Advanced Placement (AP) or International Baccalaureate (IB) courses, or by completing college-level courses prior to enrolling at Santa Clara.

Transfer credit earned from courses completed before enrollment at Santa Clara is governed by two sets of rules: One for students admitted as first-year students and another for transfer students.

Students admitted as first-year students must satisfy Critical Thinking & Writing 1 and 2, Cultures & Ideas 1 and 2, and Religion, Theology & Culture 1, 2, and 3 with courses completed at Santa Clara University.

In contrast, students admitted as transfers are encouraged to complete Critical Thinking & Writing 1 and 2 and Cultures & Ideas 1 and 2 before their first quarter at Santa Clara.

Transfer students who enter the University with fewer than 44 units must take all three Religion, Theology & Culture courses in the required sequence. In addition, students must complete their Critical Thinking & Writing 1 and 2 and Cultures & Ideas 1 and 2 at Santa Clara University if the student does not have transfer credit to fulfill both courses in the sequence. Students matriculating with 44 or more units of transferable college credit, which does not include any AP or IB test credit, must complete two courses from the Religion, Theology & Culture sequence in any order.

Transfer students must declare their Pathways by the end of their third quarter at SCU. Transfer students in the College of Arts and Sciences and Leavey School of Business who matriculate with fewer than 44 units must take four courses (minimum of 16 units) to fulfill the Pathways requirement. Transfer students in the College of Arts and

of 12 units) to fulfill the Pathways requirement. All transfer students in the School of Engineering must take three courses (minimum of 12 units) to fulfill the Pathways requirement. More detailed Pathway guidelines are available on the Pathways website.

Transfer credit earned from courses completed after initial enrollment at Santa Clara may not be used to fulfill Core Curriculum or other requirements. A maximum number of 10 quarter units of free elective transfer credit can be awarded.

Students who transfer to Santa Clara University should consult Chapters 7 and 8 as well as the chapter(s) relevant to their school or college for additional relevant information.

Units Taken at Other Institutions

Credit is awarded for coursework completed at other accredited colleges and universities subject to certain limitations. Courses are generally transferable if they are similar in nature to courses listed in the Santa Clara University Undergraduate Bulletin. Courses from California community colleges are also generally transferable under the same conditions and if designated as transferable to the University of California. Courses of a trade or technical nature do not transfer. Courses from colleges not accredited, trade schools, extension programs, or correspondence programs do not transfer.

Transfer students can receive credit for coursework completed at other colleges and universities prior to matriculation at Santa Clara for no more than half of the total number of quarter units required for the specific Santa Clara degree. After enrolling at Santa Clara, students can receive credit for coursework completed at other colleges and universities for no more than 10 quarter units of free electives, subject to the limitation that no more than half of the total number of quarter units required for a Santa Clara degree can be earned at another institution. Transfer credit earned after initial enrollment at Santa Clara may not be used to fulfill undergraduate Core Curriculum, college or school, department, or program requirements.

Transfer credit for all coursework completed at other colleges and universities requires approval from the Office of the Registrar and the chair of the department offering the equivalent Santa Clara course. The student must have earned a grade of "C" or better in a course for transfer credit to be granted. Courses taken on a pass/no pass or credit/no credit basis are not accepted as transfer credit (Note below, the exception being made to Spring 2020 term course work)**.** Grades for units earned at other institutions are not included in a student's Santa Clara academic history or in the calculation of the Santa Clara grade point average.

(Note: Exception for Spring 2020 term: Regarding transfer credits for work completed in Spring Term 2020, due to the COVID-19 pandemic, course work receiving a grade of Pass or Credit is transferable. We encourage students continuing on in those subject areas to consult with their departments and advisors to ensure they are adequately prepared for the next level courses.)

Study Abroad and Domestic Study Programs

Qualified undergraduate students may apply to study abroad for a quarter, semester, or summer term in a country and academic environment that will enrich their overall college experience, contribute positively to the life of the University, and engender responsible participation in a global, multicultural society.

Units and grades earned through study abroad programs and domestic off-campus study programs that have been approved through regular University processes are included on the Santa Clara University transcript and may be used to fulfill major, minor, and Core requirements with prior approval by the department chair or Core director. Grades earned in approved study abroad and domestic off-campus study programs are included in the calculation of the Santa Clara grade point average. The third-level Core Curriculum requirement in Religion, Theology & Culture cannot be fulfilled with a study abroad course.

earned in approved study abroad and domestic off-campus study programs are included in the calculation of the Santa Clara grade point average. The third-level Core Curriculum requirement in Religion, Theology & Culture cannot be fulfilled with a study abroad course.

Units earned for coursework in study abroad and domestic off-campus study programs not approved by the University through the regular application process are subject to the policies governing transfer credit and may not fulfill major, minor, or Core requirements. See the sections on transfer credit earlier in this chapter and in Chapter 7.

Non-Degree Students

The Santa Clara University undergraduate program is designed primarily for full-time, degree-seeking students. To maintain the University's commitment to its primary undergraduate constituency of degree students, non-degree students are permitted to register in accordance with the following policies subject to space availability in classes.

Santa Clara Alumni

Santa Clara alumni who have been awarded a degree from Santa Clara University may enroll in undergraduate classes on a for-credit basis or may audit undergraduate classes. Alumni may enroll for no more than 10 units per term on a for-credit basis, or they may audit one course per term. They are certified for enrollment by the Office of the Registrar and register for classes during the late registration period of the term.

University Employees

University employees who have been students at another accredited college or university may enroll in undergraduate classes at Santa Clara if they are in good standing and have a cumulative grade point average of "C" or better at their home institution. They may not enroll concurrently at Santa Clara and another college or university. University employees who are not currently admitted to degree status are certified for enrollment by the Office of the Registrar and may audit one course per term.

Students from Other Colleges and Universities

Students from another accredited college or university may enroll in undergraduate classes at Santa Clara if they are in good standing and have a cumulative grade point average of "C" or better at their home institution. They may not be enrolled concurrently at Santa Clara and another college or university. Students from other colleges and universities may enroll for no more than three quarters, not including summer session, and are not eligible to audit classes. Students from other colleges and universities are certified for enrollment by the Office of the Registrar and register for classes during the late registration period of the term.

International Students Participating in SCU Non-Degree Exchange and Visiting Programs

International students participating in Santa Clara's non-degree Exchange and Visiting programs apply through Global Engagement. Applicants are expected to meet all prerequisites and requirements of the specific partnership. Non-degree Exchange/Visiting students may enroll in undergraduate classes at Santa Clara if they are in good standing and have a cumulative grade point average of "C" or better at their home institution and meet all prerequisites required of the exchange agreement. They are not eligible to audit classes.

Young Scholars Program

High school students who meet the applicable eligibility requirements for the Young Scholars Program may enroll in undergraduate summer classes. Young Scholars may enroll for no more than 10 units per summer and are not eligible to audit classes. Young Scholars are certified for enrollment by the Summer Sessions Office and the Office of the Registrar. This program is only offered during the summer.

Academic Integrity

The University is committed to academic excellence and integrity. Santa Clara University Students affirm the following commitment to academic integrity:

> *I am committed to being a person of integrity. I pledge, as a member of the Santa Clara University community, to abide by and uphold the standards of academic integrity contained in the Student Conduct Code.*

Students are expected to do their own work and to cite any sources they use. Academic dishonesty may include but is not limited to plagiarism (i.e., representing the work or ideas of others as one's own without giving proper acknowledgment), cheating (e.g., copying the work of another person, falsifying laboratory data, sabotaging the work of others), and other acts generally understood to be dishonest by faculty or students in an academic context.

A student who is guilty of a dishonest act in an examination, paper, or other work required for a course, or who assists others in such an act, may, at the discretion of the instructor, receive a grade of "F" for the course. In addition, a student found guilty of a dishonest act may be subject to sanctions, up to and including dismissal from the University, as a result of the student judicial process as described in the Student Handbook and the Academic Integrity Protocol. A student who violates copyright laws, including those covering the copying of software programs, or who knowingly alters official academic records from this or any other institution is subject to similar disciplinary action.

Academic Integrity Protocol

Allegations within the Context of a Course

These procedures are intended to protect the integrity of the instructional program and of student academic achievement. Any member of the Santa Clara University community with a suspicion or evidence of academic dishonesty of some kind as described in the Student Conduct Code (e.g., plagiarism, falsification of data, misrepresentation of research, or the use of prohibited materials during an examination, and other acts generally understood to be dishonest by faculty or students in an academic context) may initiate an allegation of student academic dishonesty. The following describes procedures for resolution by due process.

If the allegation arises within the context of a course or academic assignment, its resolution begins with the instructor responsible for that course or assignment, who informs the student of the suspicion. If the instructor judges on the basis of available evidence that an academic violation has occurred, the instructor applies an academic sanction and notifies the student of the reason for the academic sanction. The instructor decides on the severity of the academic sanction (e.g., refusal to accept an assignment, "F" on the particular assignment, or "F" for the entire course). The instructor will report in writing to the department chair and the Office of Student Life what violation of academic integrity has occurred and what academic sanction has been applied. The Office of Student Life will pursue the matter as a violation of the Student Conduct Code through the University judicial process. This process is not intended to limit academic freedom.

Appeal Process for Academic Sanctions

If, after discussion with the instructor concerning the academic sanction applied, the student wants to challenge the instructor's decision, the student will contact the chair of the department in which the course is offered. If the instructor is the department chair, then the appeal is made to the dean of the school or college in which the course is offered or designate, and the dean or designate refers the case to the chair of a closely related department.

The department chair hearing the appeal has the option to convene an ad hoc panel if the complexity of the case warrants doing so. The student suspected of committing academic dishonesty has the right to bring a support person whose only role is to accompany the student to the hearing. The panel will include two full-time faculty members from

the department in which the course was offered, one full-time faculty member from a closely related department, and two students who are trained student judicial board members. Staff in the Office of Student Life will arrange for the participation of the student panel members. The charge of the panel is to study all previously considered and newly developed evidence, review statements of all parties concerned, interview all parties concerned, and make a recommendation to the department chair.

The parties involved have the right to file an objection to the appointment of a particular faculty member or student to the ad hoc panel. This objection must be based upon a belief that the named faculty member or student is unable to conduct an impartial evaluation and therefore will not review the case in an impartial manner. The objection is filed with the chair hearing the appeal who will make a ruling on this objection. If necessary, the chair will then appoint a different faculty member or student.

After reviewing all relevant materials and information, including the recommendation of the ad hoc panel when one is convened, the department chair will consider all evidence available, confer with all parties concerned, inform all parties of the recommendation regarding the alleged violation, and report the recommendation to the student and the Office of Student Life. However, final responsibility for assigning grades remains with the instructor of the course.

Decisions may only be appealed to one level above the instructor. All proceedings are intended to be confidential.

If the student wishes to withdraw from the course, the instructor's approval is required for the withdrawal process. The instructor may refuse to approve of the withdrawal and may assign an appropriate grade.

University Judicial Process

When the Office of Student Life receives the report, the assistant dean will meet with the student to discuss the relevance of the violation to the Student Conduct Code. Whether further judicial sanctions are applied or not, the report of academic dishonesty will remain on file in the Office of Student Life for the remainder of the student's enrollment at Santa Clara University. The student involved has the right to include a statement as part of these files.

If it is ruled that the student committed an academic integrity violation, the Office of Student Life will administer a judicial sanction that would range from a letter of warning to expulsion from the University. The severity of the judicial sanction depends on the severity of the circumstances, including the student's judicial history and previous academic integrity violations.

Allegations Outside a Course

If the allegation involves a situation outside the context of a course, resolution begins with the Office of Student Life. The assistant dean will confer with all parties concerned. After hearing all evidence and conducting further investigation as needed, the assistant dean will either hear the case or refer it to a judicial board in accordance with the University Judicial Process. The outcome of the hearing will be communicated to those involved.

Patent Policy

For information on the University's Patent Policy, see the Office of Research Initiatives website.

Administrative Policies and Regulations

Clery Act

Santa Clara University values the safety and well-being of our students, staff, and faculty, and visitors. The University community can only remain safe and secure through the cooperation of community members. By working together, we all can continue to make SCU a safe and welcoming university. Under the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, Santa Clara University annually collects information about campus crimes and other reportable incidents as defined by the law. This information is made available to assist current and potential students and employees in making informed decisions regarding their attendance or employment at the University. It is the policy of Santa Clara University that the campus community will be informed on a timely basis of all reports of crime and other information affecting the security of our campus and the personal safety of our students, faculty, staff, and guests. For more information about campus safety policies, procedures, and statistics concerning campus crime, please see the Annual Security & Fire Safety Report https://university-operations.scu.edu/campus-safety/clery-act-compliance.

Child Abuse and Neglect Reporting Act (CANRA)

The University strives to safeguard the well-being of all children and encourages all members of the University community who observe, have actual knowledge of, or reasonably suspect child abuse or neglect at a University facility or perpetrated by University personnel to promptly report the concern to appropriate law enforcement, external officials, and university officials.

The Child Abuse Neglect and Reporting Act (CANRA) requires that employers of mandated reporters promote identification and reporting of child abuse or neglect. Mandated Reporters under CANRA are responsible for reporting the incident themselves. They are not required to investigate any known or suspected cases of abuse.

It is the policy of Santa Clara University that all university employees (as well as volunteers and independent contractors) who, in the course of their business or volunteer activity, have reasonable suspicion of child abuse or neglect are required to make a report. This policy applies to all Santa Clara University locations and all University-sponsored or hosted programs, events, and activities, including study abroad programs. Please note that information learned through any confidential communications made to a clergy member subject to the clergy-penitent privilege is not required to be reported. For more information or questions related to this policy, please contact the Office of Equal Opportunity and Title IX https://www.scu.edu/title-ix.

Communication by the University to Undergraduate Students

The University will communicate with undergraduate students through a variety of formats. Information that is sent to undergraduate students from the University via their campus mailbox, local address, or their Santa Clara email address is considered official communication and should be treated as such. Students are asked to check their campus mailbox and their Santa Clara email account on a daily basis, and are responsible for reading and responding to the information they receive from the University. The University urges undergraduate students to use their Santa Clara email address as their primary email; students who will not be checking that address regularly should forward their email to their preferred email account.

Consensual Relations Between Employees and Students

In addition to prohibiting sexual harassment under the Policy on Discrimination, Harassmend Sexual Misconduct, the University prohibits any consensual dating, romantic, or sexual relationship between an employee and a student over whom that employee has any instructional, supervisory, advising, or evaluative responsibility. Such a relationship is fraught with problems, including the potential for exploitation, favoritism, and conflict of interest. The appearance of impropriety or unfairness may also adversely affect the learning and work environment for other students and employees. This policy applies to faculty, staff, and student employees. Employees who violate this policy are subject to sanctions for misconduct under the policies of the Faculty Handbook, Staff Policy Manual, or Student Employment Handbook, as appropriate to their employment status. Employees or students with questions about this policy should contact the Director of Equal Opportunity and Title IX or the Department of Human Resources.

Drug-free Workplace and School Program

It is the goal of Santa Clara University to maintain a drug-free workplace and campus. The unlawful manufacture, distribution, dispensation, possession, and/or use of controlled substances or the unlawful possession, use, or distribution of alcohol is prohibited on the Santa Clara University campus, in the workplace, or as part of any of the University's activities. This includes the unlawful use of controlled substances or alcohol in the workplace even if it does not result in impaired job performance or in unacceptable conduct.

The unlawful presence of any controlled substance or alcohol in the workplace and campus itself is prohibited. The workplace and campus are presumed to include all Santa Clara premises where the activities of the University are conducted.

Violations will result in disciplinary action up to and including termination of employment for faculty and staff or expulsion of students. A disciplinary action may also include the completion of an appropriate rehabilitation program. Violations may also be referred to the appropriate authorities for prosecution.

The program information is distributed on an annual basis to all faculty, staff, and students. New staff employees are given a copy at New Employee Orientation. New faculty employees are given a copy at New Faculty Orientation. The program is reviewed at least biennially by the Office of Student Life and the Department of Human Resources.

Notice of Student Rights under the Family Educational Rights and Privacy Act

The Family Educational Rights and Privacy Act of 1974 (FERPA) is the federal law that protects the confidentiality of the educational records of students maintained by the University and affords students certain rights with respect to those records. A student is any person who attends or has attended a class at the University, which includes courses taken through videoconference, satellite, internet, or other electronic and telecommunication technologies. Students' rights under FERPA include:

The right to inspect and review educational records

Students have the right to inspect and review their education records. Students should submit a written request to the Office of the Registrar that specifies what records the students would like to inspect and review. Within 45 days of receipt of the request, the Office of the Registrar will make arrangements for access and will notify students of the time and place where the records may be reviewed.

The right to seek amendment to educational records

Students have the right to request the amendment of their educational records to ensure that those records are not inaccurate, misleading, or otherwise in violation of students' privacy or other rights. Students who wish to seek an amendment to a record should write the University Registrar, clearly identify the part of the record they want changed, and specify why it should be changed. If the University decides not to amend the record as requested, the University will notify students in writing of the decision and their right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to students when notified of the right to a hearing.

The right to consent to disclosure of educational records

Students have the right to consent to the disclosure of personally identifiable information contained in their educational records. In some instances, the University may disclose personally identifiable information from a student's educational record without the student's consent. One such instance is to a school official who has a legitimate educational interest in the record. A school official is a person employed by the University in an administrative, supervisory, academic, research, or support staff position; a person elected to the Board of Trustees; or a person or entity under contract with the University who has been designated a school official by the University and is performing specific duties for the University that require a legitimate educational interest.

A school official has a legitimate educational interest if the official needs to review any educational records in order to fulfill his or her professional responsibility.

The University is authorized under provisions of FERPA to release directory information without the student's prior consent, unless a student explicitly requests in writing that the University not do so and keep directory information confidential.

Directory information is designated as follows:

- Name
- Address: Campus post office box, local, and permanent addresses (residence hall and room numbers are not disclosed)
- Telephone number
- Email address
- Photograph
- Date and place of birth
- Major field of study
- Classification level/academic standing
- Dates of attendance (defined as academic year or quarter)
- Participation in officially recognized activities and sports
- Weight and height of members of athletic teams
- Degrees (including expected or actual degree date), honors and awards received, and dates
- Most recent educational agency or institution attended

Students may submit a Request to Prevent Disclosure of Directory Information form to the Office of the Registrar, which directs the University not to disclose directory information. Once filed, the nondisclosure remains in effect until the beginning of the next academic year or a shorter period if designated by a student. Graduating students must notify the Office of the Registrar in writing to remove the nondisclosure from their record.

Former or current borrowers of funds from any Title IV student loan program should note carefully that nondisclosure will not prevent the University from releasing information pertinent to employment, enrollment status, current address, and loan account status to a school lender, subsequent holder, guarantee agency, the United States Department of Education, or an authorized agent.

The right to file a complaint with the U.S. Department of Education

Students have the right to file a complaint with the United States Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. Written complaints should be directed to the U.S. Department of Education, Student Privacy Policy Office, 400 Maryland Ave., SW, Washington D.C. 20202-8520.

For further information regarding Santa Clara University's FERPA policy, please refer to http://www.scu.edu/ferpa/scu-ferpa-policy/, or contact the Office of the Registrar.

Notice of Nondiscrimination

Santa Clara University's fundamental principles of academic excellence through diversity and inclusion are central to our Jesuit, Catholic values. These principles and values require us to provide a workplace and educational environment free from discrimination, harassment, and sexual misconduct. In its admission, educational and employment practices, programs, and activities, the University does not discriminate and prohibits discrimination against any individual based on race, ethnicity, nationality, religion, age, gender, gender expression, gender identity, sexual orientation, marital status, registered domestic partner status, veteran or military status, physical or mental disability (including perceived disability), medical condition (including cancer related or genetic characteristics), pregnancy (including childbirth, breastfeeding, and related medical conditions), or any other basis prohibited under applicable federal, state, or local laws.

The Director of Equal Opportunity serves as the University's designated Title IX Coordinator, ADA/504 Coordinator, and Affirmative Action Officer. The Director coordinates and oversees the prompt response, impartial and thorough investigation, and equitable and timely resolution to all instances of discrimination and harassment, sexual harassment, and other forms of sexual misconduct involving students, faculty, and staff. The Director also tracks incidents and trends involving sexual misconduct and serves as the principal contact for government and external inquiries regarding civil rights compliance and Title IX.

For more detailed information regarding policies and procedures related to equal opportunity and nondiscrimination, please review the information included in the Santa Clara University Student Handbook https://www.scu.edu/osl/policies-and-protocols and on the Office of Equal Opportunity and Title IX website https://www.scu.edu/title-ix. Inquiries regarding the University's equal opportunity and nondiscrimination policies should contact:

Belinda Guthrie, Director of Equal Opportunity and Title IX
Santa Clara University | Office of Equal Opportunity and Title IX
500 El Camino Real | Santa Clara, CA 95053
Office Location: Loyola Hall, Suite 140, 425 El Camino Real, Santa Clara, CA 95053
Main Office: 408-551-3043 | Direct Line: 408-554-4113
Email: bguthrie@scu.edu

Web: www.scu.edu/title-ix

Claims of discrimination or other inquiries concerning the application of Title IX of the Education Amendments of 1972 and its implementing regulations may also be directed externally to the Office of the Assistant Secretary of Education within the Office for Civil Rights (OCR) https://www.hhs.gov/ocr/index.html. Inquiries regarding civil rights compliance and employment discrimination may also be made externally to the Equal Employment Opportunity Commission (EEOC) https://www.eeoc.gov and/or the California Department of Fair Employment and Housing (DFEH) https://www.dfeh.ca.gov.

Title IX of the Education Amendments of 1972

The University does not discriminate in its admissions practices except as permitted by law, in its employment practices, or in its educational programs or activities on the basis of sex or gender.

As a recipient of federal financial assistance for education activities, the University is required by Title IX of the Education Amendments of 1972 to ensure that all of its education programs and activities do not discriminate on the basis of sex or gender. Sex includes sex, sex stereotypes, gender identity, gender expression, sexual orientation, and pregnancy or parenting status. Sexual harassment, sexual assault, dating and domestic violence, and stalking are forms of sex discrimination, which are prohibited under Title IX and by University policy. The University also prohibits retaliation against any person opposing discrimination or participating in any discrimination investigation or complaint process internal or external to the institution.

To review the University's complete policy, as well as more detailed information regarding Title IX-related procedures, please see the Office of Equal Opportunity and Title IX website https://www.scu.edu/title-ix.

Americans with Disabilities Act / Section 504 of the Rehabilitation Act of 1973

In both practice and policy, Santa Clara University adheres to the requirements of the Americans with Disabilities Act of 1990, as amended 2008 (ADAAA); Sections 504 and 508 of the Rehabilitation Act of 1973, as amended; and all other federal and state laws and regulations prohibiting discrimination on the basis of disability.

The University is committed to providing individuals with disabilities, including (but not limited to) those with learning disabilities, ADHD, chronic health conditions, traumatic brain injuries, hearing impairments, physical disabilities, psychological disorders, visual impairments, and other health impairments, equal access to the academic courses, programs, activities, services, and employment opportunities, and strives in its policies and practices to provide for the full participation of individuals with disabilities in all aspects of University life.

For information concerning policies and procedures for students with disabilities, see the Office of Accessible Education (OAE) website https://www.scu.edu/oae. Students with disabilities who are registered with the OAE office may be qualified to receive accommodations, auxiliary aids, or services based on supporting documentation. To register with OAE, students should contact the Director of OAE at 408-554-4109 or by email at oae@scu.edu.

Faculty and staff should contact Human Resources to request employee disability-related accommodations, auxiliary aids, or services. For more information, please see the Human Resources website https://www.scu.edu/hr/.

Students, faculty, and staff who have questions or concerns about (1) disagreements or denials regarding requested services, accommodations, or modifications to University practices or requirements; (2) alleged inaccessibility of a University program or activity; (3) alleged harassment or discrimination on the basis of a disability, and (4) any other alleged disability discrimination should contact the Director of Equal Opportunity and Title IX, who has been designated as the University's ADA/504 Coordinator. For more information or questions related to these policies, please contact the Office of Equal Opportunity and Title IX https://www.scu.edu/title-ix.

Student Conduct Code

All members of the University community have a strong responsibility to protect and maintain an academic climate in which the fundamental freedom to learn can be enjoyed by all and where the rights and well-being of all members of the community are protected. To this end, certain basic regulations and policies have been developed to govern the conduct of all students as members of the University community. The Student Handbook is available online at http://www.scu.edu/osl/policies-and-protocols/

Tuition, Fees, and Financial Aid

Financial Responsibility

Students assume responsibility for all costs incurred as a result of enrollment at Santa Clara University. It is the student's responsibility to be aware of their student account balance and financial aid information, and maintain current valid contact information at all times to ensure receipt of all University correspondence in a timely manner. All major correspondences are sent using the University's official gmail account. Students are responsible for checking their Santa Clara gmail for important information and updates.

Financial Terms and Conditions

Students are required to accept the financial terms and conditions outlined by the University in order to continue their enrollment at SCU. Students will be prompted to accept the terms and conditions, on an annual basis, upon their login to eCampus. Students will not have access to their Student Center until they have read and agreed to the information contained on the page(s) prompted. By accepting SCU's financial terms and conditions, students are agreeing to pay and to abide by all policies and procedures as published.

Tuition

The Board of Trustees, upon the recommendation of the President and the Provost, sets the annual academic year tuition rate and the summer sessions tuition rate for the undergraduate program. The full-time quarterly tuition rate for fall, winter, and spring terms is set at one-third of the annual tuition rate. The part-time, per-unit tuition rate for fall, winter, and spring terms is set at one-twelfth of the quarterly tuition rate. The summer sessions tuition rate is set at a percentage of the per-unit tuition rate for the preceding academic year. The Young Scholars tuition rate is set at a percentage of the per-unit tuition rate from the preceding academic year. See http://www.scu.edu/bursar/tuition for details.

Santa Clara University Campus Programs

Students enrolled during the academic year or summer sessions on the Santa Clara University campus are charged tuition based on the standard undergraduate tuition rates approved by the Board of Trustees.

Academic Year

Santa Clara University Degree Students

Students admitted to degree status at Santa Clara University enrolled during the academic year are charged tuition in accordance with the following:

- Students enrolled in 12 or more units in a term are charged the quarterly full-time tuition rate.
- Students enrolled in less than 12 units in a term are charged the per-unit tuition rate for one to 11 units.
- Students admitted to degree status are not charged a separate course audit fee for auditing a course.

Santa Clara University Alumni

Santa Clara University alumni enrolled during the academic year are charged the applicable tuition associated with their enrollment status (i.e., enrollment for credit or auditing).

University Employees

University employees enrolled during the academic year who are admitted to degree status at the University or who are students in good standing at another accredited college or university are charged tuition at the applicable tuition rate associated with their enrollment status (i.e., enrollment for credit or auditing). Employees may be eligible for tuition remission in accordance with Policy 609 (Education Benefits) in the Staff Policy Manual.

Non-Degree Students from Other Colleges and Universities

Students from other colleges and universities enrolled at Santa Clara University during the academic year are charged tuition at the applicable tuition rate associated with their enrollment status (i.e., full-time or part-time status). Students from other colleges and universities are not eligible to audit courses at the University.

Young Scholars

High school students enrolled under the Young Scholars program during the summer are charged tuition at the Young Scholars tuition rate.

Tuition Status and Adjustments

The tuition status of a student is determined as of the end of the late registration period. Students enrolled for 12 or more units at the end of the late registration period are charged the quarterly tuition rate. Students enrolled for fewer than 12 units at the end of the late registration period are charged the per-unit tuition rate.

No adjustment is made to the tuition charges for changes to enrollment after the end of the late registration period unless the student completely withdraws from the University. If a student is enrolled for 12 or more units at the end of the late registration period and subsequently drops below 12 units, no adjustment is made in the tuition charges for that term unless the student completely withdraws from the University within the refund deadlines. If a student is enrolled for fewer than 12 units at the end of the late registration period and subsequently drops a course, no adjustment is made to the tuition charges for that term unless the student completely withdraws from the University within the refund deadlines. See http://www.scu.edu/bursar/refund for details.

Tuition Refunds

Students who completely withdraw from the University are eligible for a refund of tuition charges in accordance with the policies outlined below. No refunds are made for registration fees or course audit fees.

Students who wish to completely withdraw from the University are responsible for meeting with a University advisor in the Drahmann Center, for submitting the applicable withdrawal form with the Office of the Registrar, and for completing all other withdrawal requirements. The effective date used for the determination of any refund of tuition is the date on which notification of withdrawal is received by the Office of the Registrar, not the last date of attendance by the student. Dropping all courses via eCampus nor informing an individual faculty member, an academic or administrative department, or the Dean's Office constitutes an official withdrawal from the University. The official date of withdrawal from the University cannot be backdated prior to the date on which the student submits the applicable withdrawal form or notification to the Office of the Registrar.

Students who completely withdraw from the University during fall, winter, or spring term will receive a tuition refund in accordance with the following:

- Students who completely withdraw from the University by the end of the first week of classes will receive a full refund of tuition for the term, less applicable fees.
- Students who completely withdraw from the University by the end of the second week of classes will receive a 50 percent refund of tuition for the term, less applicable fees.
- Students who completely withdraw from the University by the end of the third week of classes will receive a 25 percent refund of tuition for the term, less applicable fees.

- Students who completely withdraw from the University after the third week of classes will receive no tuition refund for the term.

Students who completely withdraw from the University due to a diagnosed medical or mental health situation are eligible for a tuition refund in accordance with the schedule above.

Tuition insurance http://www.scu.edu/bursar/tuitionprotection/ is charged to the student account of all students enrolled in 12 units or more to cover out of pocket tuition charges for diagnosed medical and mental health related withdrawals that occur after the first week of the term. Students can opt-out of the tuition insurance plan prior to the beginning of the academic quarter. Information on the tuition insurance plan can be found on the Bursar's Office website.

Santa Clara degree students who completely withdraw from the University or who are administratively withdrawn from the University after the third week of the term due to a qualifying hardship may be eligible for an allocation from the student hardship fund for 25 percent of the tuition charges for that term. Qualifying hardships include (1) death, disabling injury, medical emergency, or loss of job of the parent or guardian of a dependent student; (2) loss of job by an independent student; (3) medical or other emergency involving a dependent of an independent student; and (4) deployment for active military duty of a student. The vice provost for student life or designee, in consultation with the Financial Aid Office, will determine qualifying hardships and any allocation from the student hardship fund. Students must submit a request for an allocation from the student hardship fund by the end of the applicable term.

No tuition refunds are made because of curtailment of services resulting from strikes, acts of God, civil insurrection, riots or threats thereof, or other causes beyond the control of the University.

Summer Sessions

Santa Clara University Degree Students

Students admitted to degree status at Santa Clara University enrolled during summer sessions are charged the summer sessions tuition rate.

Santa Clara University Alumni

Santa Clara University alumni enrolled during summer sessions are charged the applicable tuition rate associated with their enrollment status (i.e., enrollment for credit or auditing).

University Employees

University employees enrolled during summer sessions at Santa Clara University who are admitted to degree status at the University or who are students in good standing at another accredited college or university are charged tuition at the applicable tuition rate associated with their enrollment status (i.e., enrollment for credit or auditing). Employees may be eligible for tuition remission in accordance with Policy 609 (Education Benefits) in the Staff Policy Manual.

Non-Degree Students from Other Colleges and Universities

Students from other colleges and universities enrolled at Santa Clara University during summer sessions are charged tuition at the summer sessions tuition rate and the summer sessions application fee. Students from other colleges and universities are not eligible to audit courses at the University. International students enrolling in summer sessions may be subject to additional requirements and limitations. Students should refer to the Global Engagement website for more information: http://www.scu.edu/globalengagement/.

Young Scholars

High school students enrolled under the Young Scholars program are charged tuition and an application fee at the Young Scholars rates.

Tuition Refunds

Students who drop a course(s) during summer sessions are eligible for a refund of tuition charges in accordance with the policies outlined below. No refunds are made for registration fees or course audit fees.

Students who wish to drop a course during summer sessions are responsible for initiating the drop through eCampus or by submitting the applicable form to the Office of the Registrar. The effective date used for the determination of any refund of tuition is the date on which the student submits the intent to drop the course to the Office of the Registrar, not the last date of attendance by the student. The official date of dropping the course cannot be backdated prior to the date on which the student submits the applicable form or notification to the Office of the Registrar.

Students who drop a course during summer sessions will receive a tuition refund in accordance with the following:

- Students who drop a course by the end of the second day of classes will receive a full refund of tuition for the course.
- Students who drop a course by the end of the third day of classes will receive a 50 percent refund of tuition for the course.
- Students who drop a course after the end of the third day of classes will receive no tuition refund for the course.

Students who drop a course due to a diagnosed medical or mental health situation are eligible for a tuition refund in accordance with the schedule above. Enrolling in the tuition insurance plan prior to the beginning of the summer sessions will help cover tuition charges for medically related withdrawals after the second day of classes.

Students who are administratively withdrawn from all courses during summer sessions by the Vice Provost for student life or designee may be eligible for an allocation from the student hardship fund.

No tuition refunds are made because of curtailment of services resulting from strikes, acts of God, civil insurrection, riots or threats thereof, or other causes beyond the control of the University.

Students must submit a request for reconsideration of tuition charges or for an allocation from the student hardship fund not later than 90 days from the end of that term.

Study Abroad, Domestic and Global Programs

Students enrolled in study abroad and domestic study programs during the academic year or summer sessions operated by or affiliated with the University are charged tuition rates approved by the Board of Trustees. Current tuition and fee rates are available online at http://www.scu.edu/bursar/tuition.

Academic Year

Santa Clara University Degree Students

Students admitted to degree status at Santa Clara University enrolled in study abroad and domestic study programs during the academic year are charged the Study Abroad Quarter Cost or the Study Abroad Semester Cost depending on the program.

Non-Degree Students from Other Colleges and Universities

Students from other colleges and universities enrolled in a Santa Clara-operated study abroad program are charged the applicable Santa Clara tuition and fees.

Program Refunds

Tuition and fees refunds for students in study abroad and domestic study programs are governed by the applicable tuition and fees refund schedule and any agreements governing SCU-operated, affiliated, and exchange programs.

Summer Study Abroad

Santa Clara University Degree Students

Students admitted to degree status at Santa Clara University enrolled in study abroad programs during summer are charged Study Abroad Program fees.

Non-Degree Students from Other Colleges and Universities

Students from other colleges and universities enrolled in a Santa Clara-operated study abroad program during summer are charged Study Abroad Program fees and application fee.

Tuition Refunds

Tuition refunds for students in study abroad and domestic study programs are governed by the applicable tuition refund schedule and any agreements governing affiliated and exchange programs.

Room and Board Charges

The Board of Trustees, upon the recommendation of the President and the Vice President for Administration and Finance, sets room and board charges for undergraduate student housing. Rates for specific types of accommodations and meal plans are available from the Housing Office. Students sign a University Housing Contract for a full academic year or, if entering housing mid-year, for the remainder of the academic year. A student who moves from, is evicted from, or otherwise does not reside in a University residence for the full term of their contract will be assessed room and board charges consistent with the terms of the University Housing Contract.

Room and board charges for study abroad and domestic study programs are assessed at the rate established by the University for each program.

Financial Aid

Santa Clara University offers a broad range of financial assistance to undergraduate students administered through the Financial Aid Office. The University realizes that the quality of education offered at Santa Clara requires a serious commitment from the student and his or her family. As a partner in this endeavor, the University makes every effort to offer assistance to deserving students. The University makes financial aid awards to entering students based on an analysis of financial need and other relevant factors consistent with applicable federal, state, and University regulations. Depending on the student's eligibility, a financial aid package may include any combination of grants, scholarships, student employment, and loans.

Santa Clara Scholarships and Grants

Presidential Scholarship at Entry

The Presidential Scholarship at Entry provides a full tuition scholarship to first-year students who demonstrate other qualities identified and emphasized by the President as critical to the University's mission. All Presidential Scholarship at Entry recipients are notified at the time of admission. The scholarship is renewable for 12 consecutive academic quarters, or until degree requirements are met (if sooner). The scholarship must be coordinated with federal, state, and University aid received. Students must maintain satisfactory academic progress as defined by Santa Clara University and a 3.5 cumulative minimum grade point average to retain this scholarship. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Provost Scholarship

The Provost Scholarship provides a half-tuition scholarship to first-year students who have assumed leadership roles in their schools and their communities. All Provost Scholarship recipients are notified at the time of admission. The scholarship is renewable for 12 consecutive academic quarters, or until degree requirements are met (if sooner). The scholarship must be coordinated with federal, state, and University aid received. Students must maintain satisfactory

academic progress as defined by Santa Clara University and a cumulative 3.0 minimum grade point average to retain this scholarship. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Santa Clara University Dean's Scholarship

The Santa Clara University Dean's Scholarship is a merit-based scholarship awarded to first-year students. Award amounts vary depending on the number of recipients and available funds. The scholarship is renewable for 12 consecutive academic quarters, or until degree requirements are met (if sooner). This scholarship must be coordinated with federal, state, and University aid received. The Santa Clara University Dean's Scholarship is a fixed amount and is not indexed to changes in tuition; therefore, the scholarship will not increase annually. Students must maintain satisfactory academic progress as defined by Santa Clara University and a cumulative 3.0 grade point average to retain this scholarship. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Jesuit Ignatian Award

The Jesuit Ignatian Award is offered to academically outstanding students who have graduated from a Jesuit high school. Award amounts vary depending on the number of qualified students and availability of funds. The award is renewable for 12 consecutive academic quarters, or until degree requirements are met (if sooner). The scholarship must be coordinated with federal, state, and University aid received. The Jesuit Ignatian Award is a fixed amount and is not indexed to changes in tuition; therefore, the award will not increase annually. Students must maintain satisfactory academic progress as defined by Santa Clara University and a cumulative 2.0 grade point average to retain this award, and complete the Free Application for Federal Student Aid (FAFSA). Note: This award may not exceed the amount of tuition; part-time attendance may cause a reduction to this award.

Santa Clara University Need-Based Grant

The Santa Clara University Need-based Grant is an award offered to students who demonstrate financial need. Award amounts vary depending on the number of qualified students and the availability of funds. The Santa Clara University Need-based Grant is renewable for 12 consecutive academic quarters, or until degree requirements are met (if sooner). The grant must be coordinated with federal, state, and University aid received. The Santa Clara University Need-based Grant is a fixed amount and is not indexed to changes in tuition; therefore, the grant will not increase annually. Students must maintain satisfactory academic progress as defined by Santa Clara University, a cumulative 2.0 grade point average, and complete the Free Application for Federal Student Aid (FAFSA). Note: This grant may not exceed the amount of tuition; part-time attendance may cause a reduction to this grant.

Santa Clara University Bronco Scholarship The Santa Clara University Bronco Scholarship is a personal recognition award for merit. It is awarded to those select individuals who will improve the characteristics of the entering class by virtue of the degree to which we are able to foster a stronger meritorious spirit of inclusive excellence among our students as measured by geographic, gender, economic, and ethnic diversity of first-year students. Award amounts vary depending on the number of qualified students and availability of funds. The award is renewable for 12 consecutive academic quarters or until degree requirements are met (if sooner). This grant must be coordinated with federal, state, and University aid received. The Santa Clara University Bronco Scholarship is a fixed amount and is not indexed to changes in tuition; therefore, the scholarship will not increase annually. Students must maintain satisfactory academic progress as defined by Santa Clara University and a cumulative 2.0 grade point average to retain this grant. Note: This grant may not exceed the amount of tuition; part-time attendance may cause a reduction to this grant.

Alumni Family Scholar

A limited number of need-based scholarships are awarded each year to children and grandchildren of Santa Clara University undergraduate alumni. Candidates are identified from information contained in the application for admission and decisions are made by the Alumni Family Committee. Criteria include financial need, academic accomplishments, extracurricular activities, and demonstrated leadership ability. Students who are selected to receive a scholarship will

be notified with an award letter from the Financial Aid Office. Award amounts vary depending on the number of qualified students and availability of funds. Students must maintain satisfactory academic progress as defined by Santa Clara University. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Santa Clara University Third-Child Grant

The Santa Clara University Third-Child Grant is awarded to families with three or more dependent children simultaneously enrolled in undergraduate programs at Santa Clara University. A tuition grant of 50 percent will be awarded to the student who is farthest along in his or her studies. To apply, parents must submit a written request along with a copy of their most recent tax return that lists all three Santa Clara students as dependents and complete the Free Application for Federal Student Aid (FAFSA). The grant can be renewable for additional academic years provided that three or more dependent children remain simultaneously enrolled in an undergraduate program, and must be coordinated with federal, state, and University aid received. Students must maintain satisfactory academic progress as defined by Santa Clara University. Note: This grant may not exceed the amount of tuition; part-time attendance may cause a reduction to this grant.

National Merit Scholarship

The National Merit Scholarship Corporation in conjunction with the Financial Aid Office, awards four merit-based scholarships to selected academically talented high school seniors for undergraduate studies at Santa Clara University. Prospective Santa Clara University first-year students who have been selected as National Merit Finalists and who have listed Santa Clara University as their "first-choice" school on the National Merit Scholarship Application are eligible for consideration. Santa Clara University-sponsored National Merit Scholars will receive $2,000 per year, renewable for up to four years of undergraduate study. Students must maintain satisfactory academic progress as defined by Santa Clara University. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Athletic Scholarships

The Department of Athletics awards scholarships to student-athletes competing in intercollegiate sports sponsored by the University in accordance with the regulations of the National Collegiate Athletic Association (NCAA) and the West Coast Conference. Depending on the sport and the student-athlete's eligibility, individual scholarships vary up to the full cost of attendance as defined by NCAA regulations. The Financial Aid Office will coordinate athletic scholarships with other financial aid awards in accordance with applicable federal, state, and University regulations.

Community Facilitator Grants

Students who are community facilitators in Residential Learning Communities receive a grant generally equivalent to the cost of room and board for their service in that role. The Financial Aid Office will coordinate community facilitator grants with other financial aid awards in accordance with applicable federal, state, and University regulations.

Faculty and Staff Tuition Remission

Santa Clara University Tuition Remission

The Tuition Remission program provides full tuition costs for Santa Clara University eligible employees and their dependents, provided the employee is working 30 hours or more per week. Employees working 20--29 hours per week will receive tuition remission for themselves only, on a prorated basis. Tuition remission does not include other costs, such as books, laboratory, application, service, and other fees. All charges other than tuition must be paid to the University in the same manner as required of other students. Please contact the Human Resources Department for additional eligibility requirements, such as years of service.

FACHEX

FACHEX is an acronym for Faculty, Administrators, and Staff Children Exchange. It is an undergraduate tuition remission program for children of full-time faculty and staff to apply the same benefit at participating Jesuit colleges and universities if selected by a participating college. Children of eligible employees may apply for undergraduate admission to one of the participating Jesuit colleges and universities and, if accepted, are eligible for consideration of a full tuition scholarship subject to the terms and conditions set by the accepting institution. FACHEX scholarships are not a guaranteed award. They must be offered by the accepting institution. Each member institution is obligated to maintain a balance between students sent on the exchange (exports) and students received on the exchange (imports). FACHEX eligibility does not qualify a dependent child for admission, nor does an offer of admission to a participating Jesuit university guarantee a FACHEX Award. Full-time faculty and staff with at least three years of continuous service are eligible to apply for their dependent children.

Tuition Exchange Awards

The Tuition Exchange program is a national undergraduate scholarship exchange program for institutions of higher education. Children of eligible employees may apply for undergraduate admission to one of the participating institutions and, if accepted, are eligible for consideration of a tuition scholarship subject to the terms and conditions set by the accepting institution. Tuition Exchange, Inc. is a partnership of over 675 colleges and universities offering competitive tuition exchange scholarships. Tuition Exchange scholarships are not a guaranteed award. They must be offered by the accepting institution. Each member institution is obligated to maintain a balance between students sent on the exchange (exports) and students received on the exchange (imports). Eligible employees who have at least three years of continuous service with the University are eligible to apply for Tuition Exchange Awards for their dependent children.

Federal and California Grants

Federal Pell Grant

The Federal Pell Grant is a need-based grant awarded to students in accordance with eligibility requirements set by the United States Department of Education. The maximum amount of a Federal Pell Grant is set in the funding legislation adopted by Congress. The Federal Pell Grant can be used for tuition, fees, and living expenses. Students must complete the Free Application for Federal Student Aid (FAFSA) to be considered for a Federal Pell Grant. Note: The Federal Pell Grant, as with all federal grants, is subject to federal funding.

Federal Supplemental Educational Opportunity Grant

The Federal Supplemental Educational Opportunity Grant (FSEOG) is a need-based grant available to students with the most exceptional need who have not yet received a bachelor's degree. Priority is given to students who are eligible for the Federal Pell Grant and then to other undergraduate students with the greatest demonstrated need. Note: FSEOG, as with all federal grants, is subject to federal funding.

Federal Teacher Education Assistance for College and Higher Education Grant

The Teacher Education Assistance for College and Higher Education (TEACH) Grant program provides grants of up to $4,000 per academic year to students who intend to teach in a public or private elementary or secondary school that serves students from low-income families. Eligible students must complete the Free Application for Federal Student Aid (FAFSA), be a U.S. citizen or eligible noncitizen, and maintain a cumulative grade point average of at least 3.25. If the student fails to complete the required service obligation, all amounts of TEACH grants received will be converted to an unsubsidized Federal Direct Loan. Note: The TEACH Grant, as with all federal grants, is subject to federal funding.

Cal Grants (for California residents only)

Cal Grants are administered by the California Student Aid Commission (CSAC). The Cal Grant program provides state-funded awards to California residents based on both academic achievement and financial need. Cal Grant A provides funds for partial tuition and fees. Cal Grant B recipients receive a subsistence award the first year and receive a subsistence award and tuition award in subsequent years. Note: Cal Grants, as with all state grants, are subject to state funding.

Other Grants and Scholarships

Army ROTC Scholarships

Scholarships are awarded to undergraduate students through the Army Reserve Officers Training Program (ROTC). Two-year, three-year, and four-year scholarships are awarded under the program to eligible ROTC students. The ROTC scholarships may cover full tuition from funds provided by the Army and may cover standard on-campus room and board charges from a University grant. Recipients may also receive a tax-free stipend during the academic year and an allowance for books and other educational items. Students who accept Army ROTC scholarships incur a military obligation that can be fulfilled by serving part-time in the Army National Guard or Army Reserve, or by serving full time on Army active duty. Students must maintain satisfactory academic progress as defined by Santa Clara University. Note: This scholarship may not exceed the amount of tuition; part-time attendance may cause a reduction to this scholarship.

Private Scholarships

Students receiving private scholarships must notify the Financial Aid Office if they are receiving any other form of financial aid. Private scholarship checks should be sent by the awarding organization to the Financial Aid Office to ensure appropriate and timely processing. The Financial Aid Office will coordinate private scholarships with other financial aid awards in accordance with applicable federal, state, and University regulations.

Student Employment

Campus Employment

Part-time jobs for undergraduate students are available in many offices and departments on campus. Campus job listings are maintained by the Student Employment Office.

Students earn an hourly wage at least at the current minimum wage rate for the state of California and may be paid at a higher rate depending on the type of work or skills required.

Federal Work-Study Program

The Federal Work-Study Program is a need-based student employment program under which students can work up to 19 hours per week on campus or through an approved off-campus site. Students earn an hourly wage at least at the current minimum wage rate for the state of California and may be paid at a higher rate depending on the type of work or skills required. Students receive a paycheck each period and can use the money for educational or living expenses. Earnings under the program are taxable.

Loans

William D. Ford Federal Direct Loans

William D. Ford Federal Direct Loans are federally funded low-interest loans provided to undergraduate students and administered by the United States Department of Education. Under the Federal Direct Loan program, a student may borrow funds for educationally related expenses and defer repayment until six months after graduation or when the enrollment status drops below half-time (e.g., less than 6 units). If an undergraduate is an independent student or a

dependent student whose parents were denied for a Federal Direct PLUS Loan, the student can borrow additional funds through the Federal Direct Loan program based on their academic grade level. To receive a subsidized Federal Direct Loan, a student must have financial need. Interest is not charged on a subsidized Federal Direct Loan while the student is enrolled at least half-time. Eligibility for unsubsidized Federal Direct Loans is determined after eligibility for subsidized Federal Direct Loans is decided. Interest accrues on unsubsidized Federal Direct Loans during all periods, including while the student is enrolled in school and during any grace or deferment periods.

Federal Direct PLUS Loan

A parent or stepparent of a dependent student may apply for a Federal Direct PLUS Loan through the William D. Ford Federal Direct Loan program to help cover the cost of educational expenses. To be eligible for a Federal Direct PLUS Loan, a student must be a U.S. citizen or eligible noncitizen and must be enrolled at least half-time. A parent may borrow up to the cost of attendance minus all other financial aid for each undergraduate child. An origination fee is deducted from the disbursement of the loan.

Financial Aid Eligibility

Enrollment Status and Financial Aid Eligibility

Undergraduate students receiving financial aid must meet general University eligibility requirements and any applicable eligibility criteria associated with specific federal, state, or University aid programs from which they are receiving support. Financial aid recipients generally must be enrolled as full-time students in a minimum of 12 units each quarter in which aid is received, must be making satisfactory progress toward a degree, and must maintain a minimum cumulative grade point average of 2.0. Financial aid awards to students who drop below full-time status (e.g., less than 12 units) will be adjusted unless certification for continuing eligibility is granted by the Financial Aid Office. Eligibility for institutional financial aid is limited to a maximum of 12 consecutive academic quarters of undergraduate study. Financial aid awards will cease after the 12 quarters of enrollment in a postsecondary institution unless certification for continuing eligibility is granted by the Financial Aid Office. Specific financial aid awards may have additional requirements for continuing eligibility.

The U.S. Department of Education has basic eligibility requirements for financial aid, which must be met and maintained in order for a student to be eligible to receive aid. These requirements apply to all federal, state, and Santa Clara University--funded aid. A student must "be enrolled in an eligible program as a regular student seeking a degree or certificate." Students cannot be awarded aid for classes that do not count toward their degree, certificate, or other recognized credential. In short, students are only eligible for federal, state, and University-funded aid when taking classes that are required to complete a degree (either major or minor). Once those degree requirements have been met and a student is eligible to graduate, he or she is no longer entitled to receive aid. This holds true even if the student has been here fewer than 12 academic quarters.

Students who are able to graduate because they have completed all of their degree requirements but **decide to enroll for an additional term** are not eligible to receive federal, state, or University-funded aid for the additional term. Students who believe that they may be impacted by the U.S Department of Education regulations should reach out to a financial aid counselor to discuss their particular circumstances. The University has developed responses to some frequently asked questions.

Academic Standing and Satisfactory Progress Requirements

All financial aid recipients must maintain good academic standing and be making satisfactory progress toward a degree according to the University standards and applicable federal and state regulations. Students are evaluated for satisfactory academic progress each quarter.

Qualitatively

Students must maintain a cumulative GPA of 2.0 or higher. Note: Some Santa Clara University aid programs require a higher cumulative grade point average than the federal minimum requirement.

Quantitatively

Students must maintain a cumulative 67 percent completion rate for all units attempted toward their academic programs.

Maximum Attempted Units Allowed

Students must complete the requirements for their academic programs within 150 percent of the minimum units required to complete their academic programs. Units attempted also include all units transferred into Santa Clara University from prior institutions that can be used to satisfy students' academic program requirements. Students who have reached their maximum attempted units allowed are ineligible for additional financial aid. Students may appeal for financial aid probation status if they feel their circumstances warrant an exception to this standard.

Unit Requirements

All financial aid recipients must register for and maintain a full course load of 12 units or more per quarter, if the aid was awarded on this basis. Students who drop below 12 units may see their financial aid adjusted. Full-time and part-time status is defined as follows:

- Full-time: 12 or more units
- Three-fourths time: 9 to 11 units
- Half-time: 6 to 8 units
- Less than half-time: fewer than 6 units

Course Incompletes, Withdrawal, Failures, and/or Repetitions

Incompletes (I), Withdrawals (W), Failures (F), and/or repeated courses will adversely affect a student's completion rate. Students must complete the minimum number of units to fulfill federal, state, and University requirements. Completion rates are calculated cumulatively and will include all quarters that the student was enrolled, whether or not the student received financial aid.

Students who wish to withdraw from Santa Clara University during a quarter must complete a withdrawal form and an exit interview in the Drahmann Advising and Learning Resource Center. If the formal requirements for withdrawal are met, the student's registration will be canceled without academic penalty. A withdrawal notation (W) will be assigned for each course from which the student withdraws after the fourth week of the quarter. Students who leave Santa Clara University during a quarter without formally withdrawing are subject to failing grades in all courses in which they were registered and are ineligible for refund of tuition.

IMPORTANT: Any student leaving Santa Clara University at the conclusion of any quarter should also complete the standard withdrawal process.

Repetition of Courses

Students may only repeat a course in which they have received a grade of less than C minus (C-). In such cases, the grades of both the original and the repeated course are included in the calculation of the student's grade point average, but units are awarded toward graduation only once for each course passed. Certain courses, such as special topics courses and performance courses, are repeatable, and students will receive a grade and units for each successful completion.

Evaluation

All students enrolled at Santa Clara University are evaluated for satisfactory academic progress at the end of each quarter after the Office of Registrar has released official grades.

Appeal Process

There may be extenuating circumstances encountered by a student that affect his/her ability to be academically successful during an enrollment period. These circumstances include personal injury or illness that occurs during an enrollment period; death of an immediate family member or legal guardian during an enrollment period; or other documented circumstances that were unexpected in nature and beyond control of the student. In these cases, cumulative grade point average or completion rate may decline resulting in the student not meeting the minimum qualitative and quantitative standards previously described. If the student wishes to appeal the suspension from financial aid eligibility, a Satisfactory Academic Progress Appeal form must be submitted to the Financial Aid Office. If the appeal is approved, s/he will be placed on financial aid probation (separate from academic probation). Students will be notified of the appeal results in writing.

Loss of Eligibility

A student who has lost eligibility to participate in federal, state, and University aid programs for reasons of academic progress can regain that eligibility only by enrolling at Santa Clara University at his/her own expense. The mere passage of time will not restore eligibility to a student who has lost eligibility for failure to make satisfactory academic progress. Students who have been dismissed from Santa Clara University for academic reasons, but who are subsequently readmitted are not automatically eligible to participate in federal, state, or institutional aid programs and will be placed on financial aid warning. Re-admission decisions are separate from funding decisions.

Regaining Eligibility

Students who fail to meet satisfactory academic progress and who choose to enroll without financial aid may request a review of their academic record after any term in which they are enrolled without the receipt of financial aid. If the standards are met at the time of review, eligibility may be regained for subsequent terms of enrollment in the academic year.

Other Program Eligibility

Study Abroad and Global Programs

Santa Clara University students participating in study abroad and domestic public sector study programs operated by or affiliated with the University are eligible for Santa Clara University financial aid and tuition remission as well as federal and state aid consistent with the policies and practices applicable to students enrolled for on-campus classes. Tuition and room and board rates associated with the specific program will be factored into the determination of the financial aid award consistent with applicable policies and practices. The total amount of tuition remission for the academic year cannot exceed the annual tuition rate for that year. Students with private scholarships should contact the donor for prior approval to use funds for study abroad or domestic study programs. Students from other colleges and universities enrolled in Santa Clara University study abroad programs are not eligible for Santa Clara University financial aid.

Veterans and Veterans' Dependents Assistance

Santa Clara University has been certified by the Department of Veterans Affairs as qualified to enroll students under applicable federal legislation and regulations, including Chapter 35 (child of a deceased or 100 percent disabled veteran, widow of any person who died in the service or died of a service-connected disability, or wife of a veteran with a 100 percent service-connected disability), Chapter 31 (rehabilitation), Chapter 30/1606 (active duty Montgomery G.I. Bill®), Chapter 33 (Post 9/11 GI Bill®), and Yellow Ribbon. Individuals interested in attending under any of the veteran assistance programs should contact the Veterans Administration and the University Office of the Registrar.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at http://www.benefits.va.gov/gibill.

Cancellation of Financial Aid and Return of Funds

Students who withdraw from the University and who have federal financial aid are subject to the federal regulations applicable to the return of Title IV funds. These regulations assume that a student earns his or her financial aid based on the period of time he or she remains enrolled during a term. A student is obligated to return all unearned federal financial aid funds governed under Title IV other than those earned under the college work-study program.

Unearned financial aid is the amount of disbursed Title IV that exceeds the amount of Title IV aid earned in accordance with the federal guidelines. During the first 60 percent of the term, a student earns Title IV funds in direct proportion to the length of time he or she remains enrolled. That is, the percentage of time during the term that the student remains enrolled is the percentage of disbursable aid for that period that the student has earned. A student who withdraws after the 60 percent point of the enrollment term earns all Title IV aid disbursed for the period. The amount of tuition and other charges owed by the student plays no role in determining the amount of Title IV funds to which a withdrawn student is entitled.

All funds must be returned to federal programs before funds are returned to state or University financial aid programs or to the student. The return of funds allocation will be made in the following order for students who have received Federal Title IV assistance:

- Unsubsidized Federal Direct Loans (other than Direct PLUS Loans)
- Subsidized Federal Direct Loans
- Federal Direct PLUS Loans
- Federal Pell Grants for which a return is required
- Federal Supplemental Educational Opportunity Grants for which a return is required
- TEACH Grants for which a return is required
- Iraq and Afghanistan Grants for which a return is required

Student Verification of Information

The United States Department of Education requires all institutions disbursing federal financial aid funds to verify the accuracy of the information students and their families submit as a basis for the award of aid. Each year, a percentage of students receiving federal financial aid funds are randomly selected for verification of the information on which their awards were based. Students selected for verification may be required to submit additional documents and verify information, such as household size and number of family members enrolled in college. The University reserves the right to request similar information for verification purposes for any student awarded aid and to verify the attendance of other children in college. Information collected may result in changes to a financial aid award and, in some cases, the repayment of funds already received. Failure to comply with the request for this information will result in the cancellation of financial aid funds.

Billing and Payment Procedures

Student Accounts and Billing

Students assume responsibility for all costs incurred as a result of enrollment at Santa Clara University and agree to abide by applicable University policies and procedures.

Students may designate a third party (e.g., parent, family member, spouse) to be an authorized payer for the purpose of reviewing student account/billing information and remitting payments on the student's behalf. However, it is ultimately the student's responsibility to make sure all financial obligations are completed by the published deadlines.

Students receive monthly bills electronically via a third-party vendor that are accessible through University eCampus. Billing notification will be sent to the student's assigned SCU gmail account and to the email address of any authorized payer. Students may also forward their billing statements electronically to any third party they authorize for remittance. Information on a student's account cannot be provided to any third party payer unless a completed Family Educational Rights and Privacy Act (FERPA) form authorizing its release by the student is on file with the University.

Students are obligated to pay the applicable tuition and fees associated with their enrollment status by the published term payment deadline, regardless of receiving a billing statement. Students enrolling after the initial payment deadline may be required to prepay for their enrollment. Registered students who do not withdraw formally from the University are responsible for all tuition and fees assessed to their student account as well as any penalty charges incurred for nonpayment. Nonattendance does not relieve the student of his or her obligation to pay tuition and fees.

Payment Methods

Santa Clara University offers a variety of payment methods to students and their parents to assist with their financial obligations.

Payment by Electronic Check

A student or authorized payer may make online payments by authorizing a fund transfer directly from their personal checking or savings account through a third-party website accessible via the University eCampus system. The payer is able to make electronic check payments online without incurring a transaction fee.

Payment by Mail

Payments for student account charges are accepted by mail utilizing the University's cash management service lockbox. The payer should download a copy of the student's billing statement, enclose it with a personal or cashier's check payable to "Santa Clara University," and mail both items to: SCU Payment Processing, P.O. Box 550, Santa Clara, CA 95052-0550.

Payment in Person

Payments for student account charges may be made in person by cash or check only at the OneStop Office located in the Admissions and Enrollment Services Building. The Office is not able to accept any electronic form of payment. However, there are computer kiosks located in the Admissions and Enrollment Services Building for the convenience of students and their payers who wish to make electronic payments. The University does not accept credit cards as payment for student account charges.

Extended Payment Options

For students and their families wishing to spread payments over a period of time, the University offers term payment plans, which are available through the online billing system via eCampus or authorized payer login. There is a modest, non refundable, fixed fee to enroll in these plans each term, but no interest is charged during the payment term. Information about these plans is available on the Bursar's Office website.

Delinquent Payments

If all charges on a student's account have not been cleared by payment, financial aid, or loan disbursement, a late payment fee will be assessed to the student's account and a hold will be placed on the student's account. A hold on a student's account prevents the release of diplomas or certificates, prevents access to any registration services, and

may limit access to other University services. Students who have unpaid accounts at the University or who defer payment without approval are subject to dismissal from the University. All unpaid balances will accrue 10 percent interest per annum on the balance remaining from the date of default in accordance with California state law.

Delinquent student accounts may be reported to one or more of the major credit bureaus and may be forwarded to an outside collection agency or an attorney for assistance in recovering the debt owed to the University. The student is responsible for all costs incurred to collect outstanding debt, including but not limited to accrued interest, late fees, court costs, collection fees, and reasonable attorney fees. All outstanding bills and costs of collection incurred by the University must be paid in full prior to a student re-enrolling at the University. Students with prior delinquent student accounts may be required to prepay for future enrollment.

Refunds and Payment Policies

Students may be eligible for a refund if they have a credit balance on their account. Refunds are processed after the add/drop period of each term/semester. Payment received by personal check will have a 14 calendar day hold before a refund can be issued. A 7 calendar day hold applies for electronic check payments. Refunds will not be processed for any overpayment on the account unless the student has completely withdrawn or dropped units causing a credit balance.

The University has partnered with A.W.G. Dewar, Inc. to provide a low-cost, tuition insurance protection plan. This plan protects students and their families against financial loss due to an unexpected complete withdrawal from the University, for diagnosed medical or mental health reasons. Santa Clara will charge the tuition insurance plan quarterly to the student's account. Students can choose to opt-out of the tuition insurance plan by completing a waiver on the Dewar website prior to the first day of the academic quarter. Information on the waiver and tuition insurance plan is available on the Bursar's Office website.

Billing Disputes

If a student wishes to dispute any charge on his or her billing statement, a written explanation should be forwarded to: Santa Clara University, Bursar's Office, 500 El Camino Real, Santa Clara, CA 95053-0615. The Bursar's Office must receive written correspondence within 60 days from the billing statement date on which the disputed charge appeared. Communication can be made by telephone, but doing so will not preserve the student's rights.

Communication should include the student's name, SCU identification number, the amount in question, and a brief explanation. Payment for the amount in question is not required while the investigation is in progress. However, all other charges need to be paid by the payment deadlines. If the disputed amount is deemed to be invalid, then an adjustment will be made on the student's account. If the amount in question is found to be valid, payment must be submitted to the Bursar's Office immediately upon notification.

University Honor Societies and Awards

Honor Societies

Santa Clara University is proud to host 27 prestigious national honor societies in the liberal arts, sciences, business administration, and engineering. These societies reflect a long tradition of academic excellence, tracing their origins back at least 50 years. Some date from the 19th century and one dates from the 18th century.

Alpha Delta Gamma

Alpha Delta Gamma, the national Medieval and Renaissance studies honor society, was founded in 1993 by the Program in Medieval and Renaissance Studies of the College of William and Mary to recognize faculty and students who share a love for the European Middle Ages and Renaissance. The Alpha chapter at Santa Clara was founded in 2000. Alpha Delta Gamma strives to encourage the highest ideals of scholarship and intellectual attainment. To be eligible, a student must be a declared candidate for a minor in Medieval and Renaissance studies, have completed at least three courses in the program, and have earned a grade point average of 3.0 overall and 3.1 for the courses in the program.

Alpha Kappa Delta

Alpha Kappa Delta, the national sociology honor society, was founded at the University of Southern California in 1920. The Santa Clara University chapter, Alpha Mu, was founded in 2000. The society's primary goal is to encourage excellence in social research for the purpose of service. To be invited to join, a student must be a sociology major of junior or senior standing, have an overall grade point average of at least 3.3 and 3.5 in the major, have completed at least four sociology courses at Santa Clara, and have successfully completed at least one of the sociology Core requirements.

Alpha Psi Omega

Alpha Psi Omega is the national theatre arts honor society founded in 1925 at Fairmont College. Chapters are called \"casts,\" and the Alpha Gamma Psi cast at Santa Clara University was started in 2000. Alpha Psi Omega has sponsored the formation of theatre honors societies with the aim of encouraging dramatic production at every step in a person\'s academic career. The Alpha Gamma Psi cast provides an opportunity for student leadership and a regard for academic excellence and active participation in the Department of Theatre and Dance. Members must accumulate a minimum of 75 points by active participation in two Theatre Arts disciplines and maintain an appropriate cumulative GPA.

Alpha Sigma Nu

Alpha Sigma Nu, the national Jesuit honor society, was founded at Marquette University in 1915. The Santa Clara University chapter was established in 1942. Alpha Sigma Nu upholds the Jesuit values of academic excellence and service to the University and the community. Juniors and seniors who are in the top 15 percent of their class and have a demonstrated record of service and loyalty to the Jesuit ideals of education are eligible for membership.

Beta Beta Beta

Beta Beta Beta, the national honor and professional society for students of the biological sciences, was founded in 1922, and the Santa Clara University chapter was established in 1994. As a national organization, this society emphasizes a threefold program for the local chapter members: to stimulate scholarship, disseminate scientific knowledge, and promote biological research. Membership is reserved for those who achieve a superior academic record and demonstrate a special aptitude for the life sciences.

Beta Gamma Sigma

Beta Gamma Sigma, the national business honor society, was founded in 1913. The Santa Clara chapter was founded in 1955. The mission of Beta Gamma Sigma is to encourage and honor academic achievement in the study of business and personal and professional excellence. Membership is offered to students who show promise of success in the field of business and rank in the top 10 percent of their junior class or in the top 10 percent of their senior class.

Eta Sigma Phi

Eta Sigma Phi, the national classics honorary society, was founded at the University of Chicago in 1914 and became a national organization in 1924. The Epsilon Psi chapter of Eta Sigma Phi was founded at Santa Clara University in 1987. Its primary purposes are to further the spirit of cooperation and goodwill among members of the classics profession, to stimulate interest in the study of the classics, and to increase knowledge of the art, literature, history, and culture of ancient Greece and Rome. To be eligible for nomination to membership, a student must be at least a sophomore, must have completed at least three classics courses including two in Latin or Greek, and must have a minimum grade-point average of 3.0 both in classics courses and overall.

Iota Iota Iota

Iota Iota Iota is an academic honor society for the field of women\'s studies. The purpose of this organization is to encourage and support scholarship and excellence. Iota Iota Iota is named for the ancient goddesses Inanna, Ishtar, and Isis. Students must have completed two courses in women's and gender studies and cross-listed courses and have a grade point average of 3.4 or higher in those courses and a cumulative grade point average of 3.0 or higher.

Kappa Delta Pi

Kappa Delta Pi, an international education honor society, was founded in 1911 at the University of Illinois. The Santa Clara chapter was established in 1996. Organized to recognize excellence in education, Kappa Delta Pi elects to membership those students who exhibit the ideals of scholarship, high personal standards, and promise in teaching and allied professions. To be eligible for membership, students must have completed five quarters of college work, rank in the upper 20 percent of their class, and have a cumulative grade point average of 3.25 or better.

Lambda Alpha

Lambda Alpha, the national anthropology honor society, was founded in 1968 at Wichita State University. The Santa Clara chapter was established in 1999. The society seeks to encourage and stimulate scholarship and research in anthropology by recognizing and honoring superior achievement in the discipline and among students. To be eligible for membership, students must have achieved junior status, completed five courses in anthropology, have a cumulative grade point average of 3.3, and have a minimum grade point average of 3.5 in anthropology.

Lambda Pi Eta

Lambda Pi Eta, the official communication studies honor society of the National Communication Association, was founded at the University of Arkansas in 1985. As an accredited member of the Association of College Honor Societies, Lambda Pi Eta (LPH) has active chapters at four-year colleges and universities worldwide. Theta Rho, the Santa Clara University chapter, was established in 1999. LPH represents what Aristotle described in The Rhetoric as three ingredients of persuasion: logos (Lambda), meaning logic; pathos (Pi), relating to emotion; and ethos (Eta), defined as character credibility and ethics. The goals of Lambda Pi Eta are to recognize, foster, and reward outstanding scholastic achievement; stimulate interest in the field of communication; provide an opportunity to discuss and exchange ideas about the field; establish and maintain close relationships and understanding between faculty and students; and explore options for further graduate studies. Members must be a communication major or minor in good standing with the University; have completed at least 90 units of coursework with 18 in communication; have an overall grade point average of 3.0 and a grade point average of 3.5 in communication courses; and rank in the top 35 percent of their graduating class. Students are also required to complete community service projects.

National Honor Society for Dance Arts

The National Honor Society for Dance Arts™ (NHSDA) collegiate program of the National Dance Education Organization was created to recognize outstanding artistic merit, leadership, and academic achievement in students studying dance.

Phi Alpha Theta

Phi Alpha Theta, the international history honor society, was founded in 1921 at the University of Arkansas. The Lambda Upsilon chapter was established at Santa Clara University in 1966. The chapter has been active in encouraging student research in history by sponsoring an annual undergraduate research journal and attending the annual regional conference. Members are elected to membership on the basis of excellence in the study and writing of history.

Phi Beta Kappa

Phi Beta Kappa, the oldest national honor society, was founded in 1776 in Williamsburg, Virginia, by students at the College of William and Mary. The Pi chapter at Santa Clara University was installed in 1977. Its purpose is to celebrate excellence in all scholarly endeavors and to encourage educational breadth, including languages, mathematics, the sciences, and the humanities. Election to membership in Phi Beta Kappa signifies that a student has achieved an outstanding academic record as indicated by grades and intensive study in both a second language and college mathematics, as well as a general breadth in coursework.

Phi Lambda Upsilon

Phi Lambda Upsilon, the national chemistry honor society, was founded in 1899 at the University of Illinois "for the promotion of high scholarship and original investigation in all branches of pure and applied chemistry." It was the first honor society dedicated to a single scientific discipline. Santa Clara University participates in the membership-at-large program, which extends recognition to outstanding chemistry students who are not enrolled at an institution where an active chapter of the society is located. Members must have senior standing, be in the top 20 percent of their chemistry class, and have a minimum grade point average of at least 3.5.

Phi Sigma Iota

Phi Sigma Iota, the international foreign language honor society, was founded in 1922 at Allegheny College. The Beta Delta chapter was installed at Santa Clara University in 1982. The society recognizes outstanding ability and achievement in languages, literatures, and linguistics. It stimulates advanced work in these fields, fosters intercultural understanding, and promotes a spirit of amity between our own people and other peoples of the world. Third-year and fourth-year students with at least four upper-division courses completed in a qualifying language by Winter Quarter of nominating year, a minimum grade point average of 3.5 in that language, and a cumulative grade point average of 3.0 or above, are eligible for membership.

Phi Sigma Tau

Phi Sigma Tau, the national honor society in philosophy, was founded at Muhlenberg College in 1930 as Alpha Kappa Alpha. In 1955, it was incorporated as Phi Sigma Tau. The Santa Clara University chapter received its charter in 1986. Its essential purpose is to promote ties between philosophy departments in accredited institutions and students in philosophy nationally. To be eligible for membership, students must have completed five quarters of college work, rank in the upper 35 percent of their class, and have completed at least three courses in philosophy with a grade point average of 3.4 or higher.

Pi Mu Epsilon

Pi Mu Epsilon, the national mathematics honor society, was incorporated in 1914 at Syracuse University. The California Eta chapter was founded in 1967 at Santa Clara University. The stated purpose of the society is to engage in activities designed to promote the mathematical and scholarly development of its members. Students may be elected to membership if they have completed at least two courses in mathematics in addition to a year of calculus, and have completed their mathematical and general college courses with distinction.

Pi Sigma Alpha

Pi Sigma Alpha, the national political science honor society, was founded at the University of Texas in 1920. Santa Clara University\'s chapter, Rho Epsilon, was founded in 1988. The purpose of the society is to honor students and practitioners in political science and related subfields. Membership is granted to senior political science majors with a grade point average of 3.5 in political science and 3.25 overall. Juniors with a grade point average of at least 3.7 in political science are also eligible for membership.

Pi Tau Sigma

Pi Tau Sigma, the national mechanical engineering honorary society, was founded in 1915 at the University of Illinois. The Santa Clara University Alpha Epsilon chapter was granted its charter in 1991. The objectives are to foster high ideals in the engineering profession, stimulate and support departmental activities, promote professional welfare, and develop leadership and citizenship. Members are selected from the top 25 percent of the junior class and top 35 percent of the senior class in the Department of Mechanical Engineering.

Psi Chi

Psi Chi, the international psychology honor society, was founded in 1929. The Santa Clara University chapter was established in 1991. The purpose of the society is to encourage, stimulate, and maintain scholarship of the individual members in all fields, particularly in psychology, and to advance the science of psychology. To be eligible for membership in the SCU Chapter, students must have completed 15 or more units in psychology with a grade point average of 3.3 overall and a 3.4 in psychology, be a declared psychology or public health major, and rank in the upper 35 percent of their class.

Sigma Pi Sigma

Sigma Pi Sigma, the national physics honor society, was founded in 1921 at Davidson College in North Carolina. The Santa Clara University chapter was founded in 1969. Sigma Pi Sigma endeavors to help students attain a clearer understanding of the powers of science, to promote further interest in the advanced study of physics, to foster the spirit of scientific research, and to encourage a professional spirit and collegiality among students of physics. Members are selected from the upper 25 percent of their class and must also have a grade point average of 3.3 in physics and mathematics.

Sigma Tau Delta

Sigma Tau Delta, the international English honor society, was founded in 1924 at Dakota Wesleyan University. The Santa Clara University chapter, Phi Phi, was established in 1987. Sigma Tau Delta confers on students distinction for high achievement in English language, literature, and writing and is dedicated to fostering literacy and all aspects of the discipline of English. Members must have both a cumulative grade point average of 3.5 and a grade point average of 3.5 in their English classes.

Sigma Xi

Sigma Xi, the national scientific research society, was founded at Cornell University in 1886. The Santa Clara chapter was established in 1967. The purpose of the society is to encourage original investigation in pure and applied science. The requirements for full membership include noteworthy achievements in research as demonstrated by publications, patents, written reports, or a dissertation. Students who have demonstrated an aptitude for original scientific research are eligible for associate membership.

Tau Beta Pi

Tau Beta Pi is the only engineering honor society representing the entire engineering profession. It is the nation's second-oldest honor society, founded at Lehigh University in 1885 to mark in a fitting manner those who have conferred honor upon their Alma Mater by distinguished scholarship and exemplary character as students in

engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in engineering colleges. The Santa Clara chapter was established in 1956. Engineering seniors in the upper 20 percent of their class are eligible.

Theta Alpha Kappa

Theta Alpha Kappa, the national theology and religious studies honor society, was founded in 1976 at Manhattan College. The Santa Clara chapter, Alpha Phi, was granted a charter in 1981. Theta Alpha Kappa seeks to encourage research, good teaching, and publication; to encourage an exchange of learning and thought among scholars; and to bring together students and teachers in intellectual and social fellowship. Religious studies majors and minors with a grade point average of 3.5 and a cumulative average of 3.0 who have completed 18 religious studies course units and are in the top 35 percent of their class are eligible for admission to the society.

Upsilon Pi Epsilon

Upsilon Pi Epsilon, the computing sciences honor society, was founded at Texas A&M University in 1967. The Santa Clara Lambda chapter was established in 1990. Its purpose is to promote high scholarship and original investigation in the computing sciences. Students must be majors in a computing discipline. Undergraduates must possess a 3.25 grade point average overall and in the major, and must have completed at least 64 units of credit and rank in the upper third of their class.

University Awards

Peter-Hans Kolvenbach, S.J., Award

Established in 2001 on the occasion of the sesquicentennial of Santa Clara University, in honor of The Very Reverend Peter-Hans Kolvenbach, superior general of the Society of Jesus, this award is given by the President to a graduating senior who exemplifies the ideals of Jesuit education, especially being a "whole person of solidarity in the real world," and having the courage and faith to build a more just and humane world.

Nobili Medal

Established in 1876 by Joseph A. Donohoe in honor of John Nobili, S.J., founder of the University, this award is given to the male graduate judged outstanding in academic performance, personal character, school activities, and constructive contribution to the University by the faculty and the provost.

Saint Clare Medal

Established by the University in 1967 in honor of Saint Clare of Assisi, this award is given to the female graduate judged outstanding in academic performance, personal character, school activities, and constructive contribution to the University by the faculty and the provost.

Valedictorian

Established by the University in 1980, this honor is conferred annually on a graduating senior selected for outstanding academic achievement and University service as determined by the president in consultation with the faculty of the University and the provost.

Markkula Prize

Established in 1997 by the Advisory Board of the Markkula Center for Applied Ethics in honor of A.C. "Mike" Markkula Jr.'s leadership as chairman of the board, this award is given annually to a student or students in recognition of outstanding work in applied ethics.

Richard J. Riordan Awards

Established in 1984 by Richard J. Riordan, these awards are given annually to students judged outstanding in community service.

Gracelyn Bateman Inclusive Excellence Award for Students

This award, established in 2008 by the University Council on Inclusive Excellence and renamed for Gracelyn Rillorta Bateman, class of 2012, is given annually to a graduating senior or group of graduating seniors that have demonstrated a commitment to the campuswide goal of advancing excellence through diversity and inclusion at Santa Clara University.

Student Life Award

This award, established in 1984, is presented to the senior who has contributed to the overall quality of life in the University community.

College of Arts and Sciences Awards

Gerald and Sally DeNardo Senior Prize in Science Research

Established in 2007 to complement the Gerald and Sally DeNardo Lectureship, this prize is given by the dean to recognize outstanding science research accomplishment by a graduating senior who reflects the distinctive characteristics of a Jesuit education and is pursuing a career in the health sciences.

Orella Prize

Established in 1915 by Dr. and Mrs. Fermín R. Orella B.S. 1889, this prize is awarded to the senior science student who attains the highest average in scientific subjects during the junior and senior years.

Anthropology

Outstanding Achievement in Anthropology

This prize is given to a senior anthropology major who has done outstanding work in anthropological research.

Art and Art History

Art History Research Paper Prize

This award is given for the best art history research paper as judged by the Art History faculty.

Art History Symposium Award

This award is given to the best presentation given at the annual Art History Student Research Symposium as judged by the art history faculty.

Gerald P. Sullivan, S.J., Award

Created by Gerald P. Sullivan, S.J., and his mother, Mary F. Sullivan, this award honors students who show extraordinary potential and outstanding effort in their studio art classes. Because Fr. Sullivan was a figurative artist of great skill, this award primarily honors students who excel in life drawing and painting.

Chemistry and Biochemistry

American Chemical Society Award in Analytical Chemistry

Sponsored by the American Chemical Society Division of Analytical Chemistry, this award honors a junior student for excellence in both lower- and upper-division analytical chemistry courses.

American Chemical Society Award in Inorganic Chemistry honors an undergraduate student who has demonstrated excellence in inorganic chemistry and whose future plans include a career in chemistry.

American Chemical Society Polyed Undergraduate Award, sponsored by the Polymer Education Committee of the American Chemical Society, honors a student for outstanding achievement in the Organic Chemistry I, II, and III course sequence.

American Institute of Chemists Foundation Award

Awarded to an outstanding senior chemistry major in recognition of a record of leadership, ability, character, and scholastic achievement.

CRC Press Chemistry Achievement Award

Sponsored by the Chemical Rubber Company (CRC), this award honors a first-year student for outstanding performance in the General Chemistry I and II course sequence.

John Gilbert and Stephen Martin Award in Organic Chemistry

Awarded to a senior chemistry or biochemistry major for outstanding performance in organic chemistry courses and/or research.

Michael Sweeney Endowed Award

Awarded to one or more students majoring in chemistry or biochemistry who best exemplify Dr. Michael Sweeney's passion for teaching, curiosity, and humor.

Professor Joseph F. Deck Award

Established in 1973, this award is given by the faculty of the Department of Chemistry and Biochemistry to the outstanding student majoring in chemistry who has excelled in studies and undergraduate research, extracurricular activities, leadership, and generous tutoring of fellow students, while maintaining a "B" average.

Child Studies

Child Advocacy Award

Established in 2014, the Child Advocacy Award is given to a graduating senior who exemplifies the Jesuit values of "Competence, Conscience, and Compassion" in service of children and families.

Child Studies Academic Achievement Award

Established in 1995, the Child Studies Academic Achievement Award is given to a senior Child Studies major with the highest overall grade point average among the Child Studies graduating class.

Pre-Teaching Award

Established in 1995, the Pre-Teaching Award is given to a senior Child Studies student who demonstrates outstanding scholarship and professional service during their time at SCU, and who also plans to enter a career in elementary school teaching.

Classics

The Augusta Prize

Established in 2013 in honor of Helen E. Moritz, Professor Emerita, by the faculty of the Department of Classics, this award is given to the most promising Greek student who continues from introductory into advanced Greek the following fall quarter. The award may take the form of a large Greek dictionary, textbooks, or other appropriate support for the continuing study of the Greek language.

Arete Prize

Established in 1997, this prize is given to the classics major or minor who writes the best single essay or research paper on a classical topic, as determined by the faculty of the Department of Classics.

Walter J. Kropp Prize

Established in 1997 in memory of Walter J. Kropp, S.J., by the faculty of the Department of Classics, this award is given to the senior classics major who has attained the highest grade point average in classics courses.

Communication

Communication Department Prize

Established in 1985 by alumni and friends, this award is given by the faculty of the Department of Communication to the graduating senior who best meets the goals of the department: education of the mind, heart, and voice.

Handlery Prize

Established in 1947 by Rose Handlery in memory of her son, Raymond Handlery '34, this prize is awarded each year to the graduating senior who has contributed most to the success of student publications at the University.

Edward Shipsey, S.J., Journalism Prize

Established in 1984 by Alfred Orr Kelly in honor of Edward J. Shipsey, S.J., this prize is awarded to the outstanding junior student who has made a commitment to a career in journalism.

Justin T. McCarthy Award

Established in 1976 in memory of Justin T. McCarthy, this award is given to the senior student who has excelled in oratory or other forms of public expression.

Ryland Prize

Established in 1897 by the Hon. Caius T. Ryland, this award is given to the winners of the annual Ryland debate. Focusing on current social and political issues, this public debate is held each spring and is judged by a faculty committee.

Economics

Charles and Barbara Hazel Outstanding Student in Economics Award

In recognition of the contributions made by Charles and Barbara Hazel in the economics department, this award is given annually to the graduating senior economics major judged outstanding in scholarship, leadership, and service by the faculty of the department. (Also see Leavey School of Business Awards-Economics.)

English

Academy of American Poets Prize

Founded in 1994 by Victoria Verga Logan and Frank Verga Jr. in memory of Tamara Verga, this prize is given to the undergraduate who writes the best group of poems, as determined by an annual competition.

First-Year Critical Thinking and Writing Prize

Established by the Department of English in 1983, this prize honors the student who has written the best essay for a composition and rhetoric I class, as determined by a faculty panel.

Christiaan Theodoor Lievestro Prize

Founded in 2000 by Christiaan T. Lievestro, this prize is awarded to the senior English major whose portfolio of essays best demonstrates a sustained, improved, and/or versatile ability to think and write about complex literary, critical, cultural, rhetorical, or theoretical issues, as determined by a faculty panel.

McCann Short Story Prize

Established in 1894 in honor of Daniel M. McCann B.S. 1884, this award is given by the Department of English to the author of the best short story, as determined by an annual competition.

Shipsey Poetry Prize

Established in 1954 by Richard W. Schmidt in honor of the late Edward Shipsey, S.J., this prize recognizes the outstanding contribution in the art of poetry, as determined by an annual competition.

Katherine Woodall Prize in Literary Criticism

Established in 1995 by the Department of English in honor of alumna and friend Katherine Woodall '78, this prize is awarded to the senior English major whose capstone or senior seminar project best exemplifies analysis of literary texts and/or issues in literary theory, as determined by a faculty panel.

Environmental Studies and Sciences

Environmental Science Research Award

This award is given to the senior Environmental Science major who, in the judgment of the Department of Environmental Studies and Sciences faculty, has done the most outstanding work in environmental science research.

Environmental Studies Research Award

This award is given to the senior Environmental Science major who, in the judgement of the Department of Environmental Studies and Sciences faculty, has done the most outstanding work in environmental studies research.

Lucky Hinkle Sustainability Award

This award was established to honor the memory of Lucky Hinkle, a longtime University staff member who worked diligently to promote recycling on campus, and is given to the graduating senior with a declared major in Environmental Science or Environmental Studies who, in the judgment of the Environmental Studies and Science faculty, has made the most significant contribution to promoting a culture of sustainability at Santa Clara University and beyond.

Ethnic Studies

Matt Meier Award for Excellence in Student Research

Established in 1994 in honor of History Professor Matt Meier, a longtime supporter of the Ethnic Studies Department and one of the principal figures in the fields of Mexican American history and Chicana/o/x Studies, this award is given to a graduating senior who has demonstrated excellence in the production of original academic work centered on issues of race and ethnicity.

Ramón Chacón Community Service Award

Established in 2016 in honor of Dr. Ramón Chacón, one of the founding members of the Ethnic Studies Department at Santa Clara, this award is given to a graduating senior with a declared major in Ethnic Studies who has demonstrated sustained and substantive work with marginalized communities, either through Santa Clara University or outside of the institution.

History

Giacomini Prize

Established in 2017 by Thomas Bender ('66) in honor of SCU alumnus and professor George Giacomini ('56), an outstanding teacher who influenced generations of students. This prize is awarded to a student who excels in historical research and has written the best paper based on primary sources, as determined by the faculty of the Department of History.

McPhee Prize

Established in 2007 through the generosity of Lulu and John McPhee, this award is given to the student whose sustained achievement in history includes writing the most outstanding paper in a senior seminar.

Frederick J. Mehl Prize

An annual prize established in 1993 by the department in memory of friend and benefactor Frederick J. Mehl '74, M.A. '75, this award is given to the student who writes the best senior thesis as determined by the faculty of the Department of History.

***The Redwood* Prize**

Established in 1908 by the executive committee of *The Redwood*, this award is given to the student whose exemplary record in history includes writing the best essay on a historical subject.

Mathematics and Computer Science

Robert P. Balles SCU Mathematics Scholars Award

The Balles Prize recognizes a distinguished mathematics major entering his or her senior year at Santa Clara University, as evidenced by a high cumulative grade point average in mathematics courses completed in the student\'s first three years in mathematics.

George W. Evans Memorial Prize for Mathematical Writing and Research

Established in 1972 by the family and friends of the late George W. Evans II, professor of mathematics at Santa Clara University, these awards are given to those students judged most outstanding in mathematical writing and research by a panel of mathematics consultants.

First-Year Student Mathematics Prize

Established in 1958, this annual award is given by the faculty of the Department of Mathematics and Computer Science to the first-year student who demonstrates excellence in mathematical study and achievement, determined by a competitive examination each spring.

Paul R. Halmos Prize

This prize is awarded to the senior student or students with an outstanding academic record judged to have distinguished themselves in mathematics or computer science beyond the standard coursework.

Military Science

Armed Forces Communications and Electronics Award

Established by the Department of the Army at Santa Clara in 1973, this annual award is given by the faculty of the Department of Military Science to the cadet in a communications or electronics field who excels in academic achievement, demonstrated leadership potential, and meritorious contribution to the ROTC program.

Association of the U.S. Army ROTC Medal

Established by the Department of the Army at Santa Clara in 1956, this award is given by the faculty of the Department of Military Science to the junior cadet judged most outstanding in meritorious academic attainment, exemplary conduct, efficiency, and fidelity.

Distinguished Military Graduate Award

Given to those graduating Army ROTC cadets who rank in the top 20 percent of all cadets nationally as determined by academic GPA and performance in the Army ROTC program.

George C. Marshall ROTC Award

Established by the Department of the Army at Santa Clara in 1977, this award is given by the faculty of the Department of Military Science to the cadet judged most outstanding in military studies and leadership.

Superior Cadet Award

Established by the Department of the Army at Santa Clara in 1958, these ribbons are given by the faculty of the Department of Military Science to the cadet in each of the four years of training who consistently demonstrates potential qualities of an officer, outstanding performance of duty, and overall proficiency.

Modern Languages and Literatures

Geoff and Josie Fox German Studies Award

This award is given to cultivate and encourage students to learn the German language and to familiarize themselves with the German culture. Preference is given to students who have shown a consistent interest in German culture; who have an understanding of the experience, values, and traditions of Germanic speaking countries.

French and Francophone Studies Prize

Established in 2012, this prize is given to a graduating senior with a declared major in French and Francophone studies who has shown academic excellence in the study of French and Francophone language, literature, and culture.

Celeste Fritchle Award

Established in 2003 by the friends and family of the late Celeste Fritchle, a longtime University staff member, this award is given by the Department of Modern Languages and Literatures to a graduating senior student with a declared major in modern languages and literatures who has excelled in the study of more than one foreign language.

Francisco Jiménez Scholar Award

Established to honor Francisco Jiménez '66, Fay Boyle Professor of Inter-American Culture and Affairs, by his colleagues in the Department of Modern Languages and Literatures, this award recognizes outstanding accomplishment by a student who represents Professor Jiménez's indefatigable passion for learning and compassion for others. This senior award is presented to an eligible student at the end of the junior year. The recipient will be a first-generation college student with a minimum GPA of 3.0 who shows a special dedication to social justice. Preference will be given to a LEAD and/or Hurtado scholar (and/or a migrant to the United States) majoring or minoring in modern languages, ethnic studies, or Latin American studies with future plans to become a teacher, scholar, and/or writer.

Pancrazio and Giulia Infantino Italian Award

This award is given to cultivate and encourage the pursuit of the Italian language and culture at Santa Clara University. It is given to graduating seniors who have an understanding of the experiences, values, and traditions of Italian culture, primarily demonstrated by a declared major in Italian.

Richard F. Rebello Phi Sigma Iota Awards

Established in 1986 by the family of the late Richard Rebello, a longtime University staff member, these awards are given by the Modern Languages and Literatures Department to senior language majors for outstanding accomplishments in the study of foreign languages and cultures.

Music

American Choral Directors Association National Choral Student Award

This award is given to a student who has been involved in continued participation in choral ensembles, has provided service to the ensemble and conductor, has demonstrated a high degree of choral proficiency and music literacy, and has contributed to the advancement of choral singing at the University.

Arrigo and Caterina Descalzi Prize

Established in 1990 in honor of Arrigo and Caterina Descalzi, this award is presented to the senior music student who, in the judgment of the faculty of the Department of Music, best demonstrates technical and artistic growth and dedication to the art of music.

Performing Arts

Charles Lampkin Award for Performance

This annual award, established in 1989 in honor of Charles Lampkin, the late actor and University artist-in-residence, is given to the junior or senior African-American student who has demonstrated excellence and commitment to performance in theatre, music, dance, or television.

Philosophy

Fallon Prize

Established in 1995 in memory of Timothy Fallon, S.J., by the faculty of the Department of Philosophy, this award is given to the junior student demonstrating outstanding achievement in the study of philosophy.

Sourisseau Prize

Established in 1956 by Eva Sourisseau in honor of her parents and family, this award is given by the faculty of the Department of Philosophy to the senior student demonstrating outstanding achievement in the study of philosophy.

Physics

David Blockus Award

Established in 2007 in memory of David L. Blockus, Ph.D., this prize is presented each year to the outstanding senior physics major, as determined by the faculty of the Department of Physics.

Carl H. Hayn Physics Prize

Established in 1997 by William and Katherine Duffy in honor of Carl H. Hayn, S.J., longtime physics professor at Santa Clara University. The prize is awarded annually to the most outstanding student in the sequence Physics for Scientists and Engineers I, II, and III, as selected by the faculty who teach the sequence.

John B. Drahmann Prize in Physics

Established in memoriam in 2001 by Jean Drahmann, this prize is awarded to the graduating senior physics major who best exemplifies the hard-working and earnest values of John B. Drahmann, longtime dean of sciences and professor of physics.

Political Science

The Amos Dana Award for Distinction in Public Service

This award honors excellent performance and personal growth through hands-on public sector experience, potential for success in a career or studies in the public sector, and/or outstanding research related to a public sector project.

Michael Shallo Prize

Established by the University in 1955 in honor of Michael Shallo, S.J., the award is given by the faculty of the Department of Political Science to the student judged most proficient in political science.

Psychology

Eleanor Willemsen Community Service Award

Established in 2019 in honor of Eleanor Willemsen, professor emeritus and child advocate, this award is given to a psychology major who has demonstrated a dedication to community service within Santa Clara University or outside of the institution.

Wilhelm Wundt Award

Established in 1988, this award is given annually by the faculty of the Department of Psychology to the senior student who has excelled in scholarship, research, and service to the department.

Public Health

Public Health Science Senior Prize in Community Engagement

This award is given annually to a graduating senior Public Health Science major who has exemplified the principles and practices of health equity and social justice through applied community engagement.

Public Health Science Senior Scholar Award

This award is given annually to a graduating senior Public Health Science major who has demonstrated outstanding academic achievement, while actively and effectively promoting community health through extracurricular activities.

Religious Studies

Catherine Bell Award

Established in 2009, this award is given to junior religious studies majors for outstanding academic achievement.

The Joseph A. Grassi Social Justice Award

Established in 2003, this award is given annually to the student who has exhibited the greatest commitment to social justice.

Religious Studies Major Prize

Established in 1950 by the president of the University, this prize is given each year by the faculty of the Department of Religious Studies to the department major most proficient in all aspects of religious studies.

Theodore Mackin Senior Thesis Award

Established in 1994 in memory of Theodore Mackin, this prize is given each year by the faculty of the Department of Religious Studies to the religious studies major with the best senior research paper.

Tennant C. Wright, S.J., Religious Studies Minor Prize

Established in 2003, this prize is given annually by the faculty of the Department of Religious Studies to the religious studies minor most proficient in the religious studies program.

Sociology

The Sociology Academic Excellence Award

This award recognizes academic excellence and is granted to the graduating senior with the highest grade point average in the Sociology major. The recipient is determined by a faculty committee in the Department of Sociology and a cash award is granted.

The Sociology Alumni Award for Excellence in Community-based Research

Established in 2016, this prize is given annually by the faculty of the Department of Sociology to a graduating senior for excellence in applied sociological research.

Witold Krassowski Sociology Award

Established by the department, alumni, and friends in honor of Professor Witold Krassowski, the first sociologist at Santa Clara University and the first chair of the department, this award is given to a senior sociology major who has written a sociological research paper in a sociology course that is considered of exemplary quality.

Theatre and Dance

Anna Halprin Dance Award

This award honors the extended creative and socially active career of Anna Halprin, a pioneer in the art of dance. This award is given to the graduating senior dancer who best exemplifies excellence in dance and an awareness of community values while at Santa Clara University.

William H. Leahy Prize

Established in 1925 in honor of William H. Leahy by his wife and his brother, James, this prize is awarded to the graduating senior who has made the greatest contribution to dramatic art at Santa Clara as determined by the members of the Department of Theatre and Dance.

Women's and Gender Studies

Audre Lorde Social Justice Award

The Audre Lorde Social Justice Award recognizes graduating seniors who exemplify the activist ideals of women's and gender studies.

Mary Gordon Prize

Established in 1992 in honor of Professor Mary Gordon, founder of the Women's Studies Program and its first director, this prize is awarded to the Women's and Gender Studies Department student who writes the best essay on a women's or gender studies topic.

Nina Leibman Essay Competition

Recognizes a student essay or project addressing the general topic of women and creative expression. The essay is judged by the faculty of the Women's and Gender Studies Department.

Leavey School of Business Awards

Charles J. Dirksen Prize

Established in 1965 by Eliot Jones, Ph.D., in honor of Charles J. Dirksen, late dean and professor of marketing emeritus, this prize is awarded to the junior in the Leavey School of Business with the highest cumulative grade point average.

Leavey School of Business Leadership Award

This award honors the graduating business student who best demonstrates leadership in curricular, co-curricular, and community endeavors as evidenced by his or her commitment and dedication to exhibiting leadership within the School of Business and Santa Clara University. This student continuously motivates and inspires his or her colleagues to make significant contributions to the community in the context of the University mission.

Leavey School of Business Service Award

This award honors the graduating business student who exemplifies the mission of the University by significantly impacting student life and/or the greater community through service in the Jesuit tradition.

Isabel Jones Academic Achievement Prize

Established by Eliot Jones, Ph.D., in 1956 in memory of his wife, Isabel, this award is given to the graduating senior in the Leavey School of Business who has earned the highest cumulative grade point average.

Outstanding Student Entrepreneur Award

This award is presented by the Center for Innovation and Entrepreneurship (CIE) to a graduating student in recognition of significant achievements and involvement in CIE endeavors, acknowledgment of accomplishments in entrepreneurship, and the promise of future success.

Delta Sigma Pi Scholarship Key

This award is given by the International Fraternity of Delta Sigma Pi to the graduating senior student with the highest grade point average for all coursework toward a degree in business administration or economics.

Accounting

Professor O. Robert Anderson Outstanding Student in Accounting Award

Established in 1973, this award is given in memory of Professor O. Robert Anderson, who taught accounting at the University. Awarded annually to the graduating senior accounting major judged outstanding in scholarship, leadership, and service by the faculty of the department.

Professor O. Robert Anderson Outstanding Student in Accounting and Information Systems Award

This award honors the graduating senior accounting and information systems major recognized by the faculty of the department as having achieved high academic performance, possessing strong leadership skills, exhibiting a commitment to service, and demonstrating career potential for professional success in accounting and information systems.

Thomas Maier Memorial Award for Outstanding Academic Achievement

The Thomas Maier Memorial Award for Outstanding Academic Achievement is presented to the junior accounting major with the highest grade point average.

Economics

Charles and Barbara Hazel Outstanding Student in Economics Award

In recognition of the contributions made by Charles and Barbara Hazel in the economics department, this award is given annually to the graduating senior economics major judged outstanding in scholarship, leadership, and service by the faculty of the department. (Also see College of Arts and Sciences Awards-Economics.)

Finance

Outstanding Student in Finance Award

This award honors the graduating senior finance major recognized by the faculty of the department as having achieved high academic performance, possessing strong leadership skills, exhibiting a commitment to service, and demonstrating career potential for professional success in finance.

Management

Outstanding Student in Management Award

This award recognizes a graduating management senior who has achieved high academic performance and demonstrated noteworthy scholarship, strong leadership, and managerial aptitude in co-curricular activities.

Marketing

Albert F. Bruno Outstanding Student in Marketing Award

Established in 1982 in memory of Albert F. Bruno by Albert V. Bruno and family, this award is conferred annually to the outstanding graduating senior marketing major on demonstration of scholarship, leadership, service, and career potential.

Information Systems and Analytics

Outstanding Student in Management Information Systems Award

This award is given to the graduating senior management information systems major recognized by the faculty of the department as having achieved high academic performance, possessing strong leadership skills, exhibiting a commitment to service, and demonstrating career potential for professional success in management information systems.

School of Engineering Awards

Award for Research Excellence in Undergraduate Engineering

This award honors a senior undergraduate engineering student who has demonstrated excellence in research while an undergraduate.

Brian Drocco Award

This award is presented to a graduating senior who applies an entrepreneurial mindset, innovative problem-solving capability, and enthusiasm for perseverance despite obstacles to the advancement of green energy and sustainability. Established in 2014, this award honors the memory of Brian Drocco '08, whose indomitable spirit continues to inspire.

Frugal Innovation Hub Humanitarian Senior Project Award

Awarded to those seniors who have completed a capstone design project that is distinguished by an exceptionally high degree of positive social impact.

Raymond M. Galantine Award

Established in 1996 to honor the memory of Raymond M. Galantine '53, whose life was an example of this ideal, this award recognizes an outstanding engineering student who has demonstrated a commitment to putting into practice the Catholic and Jesuit ideal of people in the service of others.

James W. Reites, S.J., Award

Established in 2010, this award recognizes an outstanding senior engineering student who best exemplifies the values espoused by Fr. James Reites. The award is given to a selfless team player whose strong work ethic, love for learning, relentless can-do spirit, and commitment to the service of others makes them the heart and soul of any project in which they are involved.

School of Engineering Humanities Award

This award is conferred each year on an engineering student who has been nominated by members of the humanities faculty and selected by the School of Engineering for outstanding work in the humanities while maintaining a strong record in engineering.

Senior Design Presentation Awards

This award is given to senior design groups in the School of Engineering who produce the best presentation in each of the following areas: bioengineering, civil engineering, computer science and engineering, electrical engineering, mechanical engineering, and interdisciplinary engineering. The award recipients are selected by a panel of external judges.

Santa Clara University Engineering Ethics Prize

Co-sponsored by the Markkula Center for Applied Ethics and the School of Engineering, the prize is awarded for the best ethical analysis in a senior design project.

Bioengineering

Bioengineering Academic Achievement Award

This award is given to a graduating senior by the faculty of the Bioengineering Department for achieving the highest GPA in the bioengineering graduating class.

Bioengineering Excellent Service and Outreach Award

This award is given to a graduating senior by the faculty of the Bioengineering Department who has demonstrated excellent services to the department and school, the University, and local community.

Bioengineering Award for Research Excellence

This award is given to one or more senior undergraduate bioengineering students who have demonstrated excellence in research.

Outstanding Bioengineering Senior Award

This award is given to a senior by the faculty of the Bioengineering Department based on excellent academic standing, contribution to the department and school, and quality senior design project.

Civil, Environmental and Sustainable Engineering

Edmund C. Flynn Award for Best Civil, Environmental and Sustainable Engineering Capstone Design Project

Established in 1981 by Mrs. Edmund C. Flynn in memory of her husband, these awards are given to the graduating civil engineering student presenting the best capstone design project and to the two junior civil engineering students with the highest scholastic averages.

Outstanding Civil, Environmental and Sustainable Engineering Senior Award

This award is given to a senior by the faculty of the Civil Engineering Department based on excellent academic standing, contribution to the department and school, and quality senior design project.

Computer Science and Engineering

Computer Science and Engineering Award for Technical Excellence

Awarded to those seniors who, in the judgement of the department faculty, have completed a capstone design project that is distinguished by an exceptionally high degree of technical and scholarly achievement.

Outstanding Computer Science and Engineering Senior Award

Awarded to seniors by the faculty of the Computer Science and Engineering Department based on academic standing, esprit de corps, and contribution to the department, school, and community.

Electrical and Computer Engineering

Academic Achievement Award in Electrical and Computer Engineering

This award is given to a graduating senior by the faculty of the Electrical and Computer Engineering Department for achieving the highest GPA in the electrical and computer engineering graduating class.

Outstanding Electrical and Computer Engineering Senior Award

This award is given to a senior by the faculty of the Electrical and Computer Engineering Department based on excellent academic standing, contribution to the department and school, and quality senior design project.

Mechanical Engineering

Outstanding Mechanical Engineering Senior Award

This award is given to a senior by the faculty of the Mechanical Engineering Department based on excellent academic standing, contribution to the department and school, and quality senior design project.

Academic Accreditations

University Accreditation

Western Association of Schools and Colleges (WASC)

Senior College and University Commission

985 Atlantic Avenue, Suite 100

Alameda, CA 94501

510-748-9001

Specialized Academic Accreditations

American Association of Museums

ABET Inc.

American Bar Association

American Chemical Society

Association of American Law Schools

Association of Theological Schools

Association to Advance Collegiate Schools of Business--Accounting

Association to Advance Collegiate Schools of Business

California Board of Behavioral Sciences Accredited Marriage and Family Therapists

California State Commission on Teacher Credentialing

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B.A., 1971, Whitworth College; M.S., 1973, Washington State University; Ph.D., 1978, University of California, Los Angeles.

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B.A., 1958, College of Notre Dame of Maryland; M.A., 1966, Ph.D., 1970, Boston College.

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Professor of Electrical Engineering, Emeritus

B.S., 1955, Virginia Military Institute; M.S., 1957, Ph.D., 1963, University of Illinois.

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B.S., 1975, Santa Clara University; M.S., 1976, Stanford University; Ph.D., 1982, University of Notre Dame.

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B.S., 1949, Santa Clara University; Ph.D., 1960, Stanford University.

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B.S., 1957, University of San Francisco; M.A., 1958, San Francisco State University; M.A., 1966, San Jose State University; Ph.D., 1973, Oregon State University.

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B.A., 1949, M.A., 1950, Gonzaga University; STL, 1957, Alma College; M.S., 1961, Ph.D., 1965, St. Louis University.

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B.S., 1965, Cornell University; M.S., 1967, Ph.D., 1972, University of Wisconsin, Madison.

GEORGE F. GIACOMINI JR. (1963)

Professor of History, Emeritus

B.A., 1956, Santa Clara University; M.A., 1957, University of California, Berkeley.

JOHN C. GILBERT (2006)

Professor of Chemistry and Biochemistry and Sociology, Emeritus

B.S., 1961, University of Wyoming; M.S., 1962, Ph.D., 1965, Yale University.

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Professor of Psychology and Counseling Psychology, Emerita

B.A., Wells College; M.S., Yale University; Ph.D., 1974, University of Texas, Austin.

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B.A., 1974, M.A., 1979, Ph.D., 1983, University of Oregon.

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B.A., 1950, University of Sydney; M.A., 1952, Radcliffe College; Ph.D., 1974, University of Pittsburgh.

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B.A., 1959, University of London; M.Div., 1965, University of Western Ontario; Rel.D., 1969, Graduate School of Theology, Claremont.

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B.S., 1964, Georgetown University; LL.B., 1967, University of Virginia; LL.M., 1973, New York University.

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B.A., 1957, University of Massachusetts; Ph.D., 1962, Clark University.

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Professor of History, Emerita

B.A., 1962, Mt. Holyoke College; M.A., 1964, Boston University; M.A., 1973, Ph.D., 1987, University of California, Davis.

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Professor of Communication, Emeritus

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Academic Department and Program Abbreviations

What's New