

Santa Clara University

School of Engineering

For use by Transfer Applicants

TRANSFER CREDIT PLANNER CHECK-SHEET

*Admission recommendations

University Core Requirement Course Completed or IP (In Progress)

FOUNDATIONS

- Critical Thinking & Writing 1*
Critical Thinking & Writing 2*
Cultures & Ideas 1
Cultures & Ideas 2
Mathematics* Satisfied within major requirements at SCU
Religion Theology & Culture 1
(Students transferring with 30 or more semester units (or 44 or more quarter units) of transfer credit will be exempt from completing one RTC Core requirement)

EXPLORATIONS

- Ethics
Civic Engagement Must be completed at Santa Clara
Diversity: U.S. Perspectives
Arts Satisfied within major requirements at SCU
Natural Science w/Lab* Satisfied within major requirements at SCU
Social Science
Religion, Theology & Culture 2 Must be completed at Santa Clara
Cultures & Ideas 3
Science, Technology & Society Must be completed at Santa Clara
Religion, Theology & Culture 3 Must be completed at Santa Clara

INTEGRATIONS

- ELSJ Must be completed at Santa Clara University
Advanced Writing Must be completed at Santa Clara University
Pathways Must be completed at Santa Clara University

SCHOOL OF ENGINEERING REQUIREMENTS

(Refer to the School of Engineering website for individual major requirements at: https://www.scu.edu/engineering/undergraduate/degree-programs/)

Engineering School Requirement Course completed or IP (In Progress)

MATHEMATICS*

- Calculus and Analytic Geometry I*
Calculus and Analytic Geometry II*
Calculus and Analytic Geom III/IV
Differential Equations

NATURAL SCIENCE*

- General Chemistry*
Physics w/ Calculus *
Physics w/ Calculus *
Physics w/ Calculus *

ADDITIONAL ENGINEERING MAJOR Requirements

- Bioengineering
Civil Engineering
Computer Science and Engineering
Electrical & Computer Engineering
Electrical Engineering
General Engineering
Mechanical Engineering
Web Design and Engineering

TOTAL SEMESTER UNITS x 1.5 = TOTAL QUARTER UNITS**

**Note: Refer to the chart listing the maximum number of units allowed to transfer (including AP/IB test credit) per major located on the SCU Undergraduate Admission webpage at: http://www.scu.edu/ugrad/transfer/

Santa Clara University

Undergraduate

School of Engineering

American River College Transfer Guide

For use by Transfer Applicants

Use the **TRANSFER CREDIT PLANNER** to map out your transfer credit.

Thank you for your interest in Santa Clara University! This guide has been designed to help make the course-planning process easier for students who wish to transfer to the School of Engineering at Santa Clara University.

Admission Recommendations for Transfer Students:

School of Engineering:

Bachelor of Science majors: Bioengineering, Civil Engineering, Computer Science & Engineering, Electrical and Computer Engineering, Electrical Engineering, General Engineering, Mechanical Engineering, and Web Design & Engineering

Courses strongly recommended for admission:

- Two English composition courses (*aka: Critical Thinking & Writing 1 & 2*)
- Mathematics: MATH 400 and MATH 401
- One natural science course with a lab: CHEM 400
- Two Calculus-based Physics courses: PHYS 410 and PHYS 421
 - Web Design Engineering majors are not required to complete CHEM 400, PHYS 410 & 421. Complete one course in the Natural Science list.
- GPA 3.5

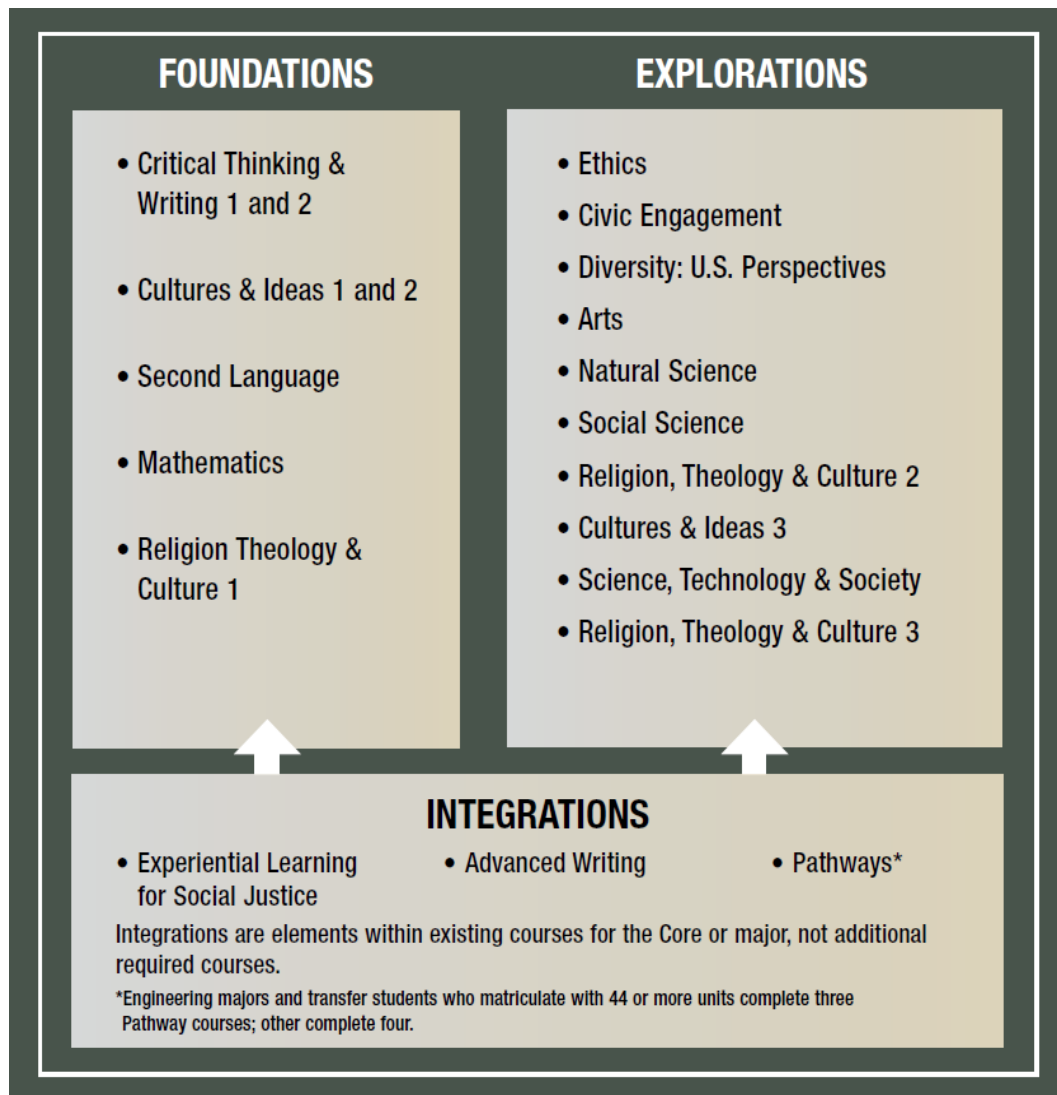
For additional SCU Transfer Admissions information:

<https://www.scu.edu/admission/undergraduate/transfer-students/>

The following information is provided to help transfer students understand and complete additional Santa Clara University Core Curriculum (General Education) requirements.

STRUCTURE OF SANTA CLARA UNIVERSITY GENERAL CORE

Below is a visual representation of Santa Clara University Core Curriculum Requirements. Some Core requirements must be met at SCU: Civic Engagement, Religion, Theology & Culture 2, Science, Technology & Society, Religion, Theology & Culture 3, Experiential Learning for Social Justice, Advanced Writing, and Pathways. Moreover, no courses listed in this guide can fulfill more than one Core requirement.



To learn more about Santa Clara University's Core Curriculum learning goals and objectives, [click here](#).

Note: Current high school students applying as First-Year students may not transfer courses to fulfill Core Critical Thinking & Writing 1 and 2 or Cultures & Ideas 1 and 2, Religion Theology and Culture 1 in addition to the Core requirements listed above that must be met at SCU.

MAXIMUM NUMBER OF TRANSFER UNITS ACCEPTED:

- Santa Clara University is on a quarter system
 - 1 semester unit is equivalent to 1.5 quarter units
- **It is recommended to transfer with 30 or more semester units (44 or more quarter units) of transfer credit (not including AP/IB test credit).**
- Students are allowed to transfer in a maximum of one-half of the total quarter units required to graduate in their specific program. The maximum number includes credit transferred from another institution and Advanced Placement and High-Level International Baccalaureate and University of Cambridge A-Level test credits.

Academic Division	Minimum number of units required for graduation	Maximum transferrable Quarter units	Maximum transferrable Semester unit equivalency
College of Arts and Sciences	175	87.5	58.33
College of Arts and Sciences: <i>Engineering Physics</i>	193	96.5	64.33
Leavey School of Business	175	87.5	58.33
School of Engineering:			
<i>Bioengineering</i>	191	95.5	63.66
<i>Civil Engineering</i>	195	97.5	65
<i>Computer Science & Engineering and General Engineering</i>	189	94.5	63
<i>Electrical Engineering and Electrical & Computer Engineering</i>	190	95	63.33
<i>Mechanical Engineering</i>	192	96	64
<i>Web Design and Engineering</i>	175	87.5	58.33

TRANSFER CREDIT ACCEPTED:

SCU does not give transfer credit for P/NP, CR, or courses with a grade of C- or lower. Grades are not transferable to SCU, only units.

The following courses are not transferrable: most first-year seminars, internships, professional development courses, independent study courses, workshops, most physical education courses, remedial English and remedial mathematics courses.

Santa Clara University only accepts University of California transferable courses. In addition, SCU does not allow the following American River College UC transferable courses to transfer for credit: ESL, Fashion Careers, Horticulture, Human Career Development, most Health Education and Kinesiology, Fitness courses, Personal Activity, Sport, and Team activity courses. To view all American River College's UC transferable courses, visit www.assist.org. **UC transferable courses not listed in this guide and not listed above as excluded will be accepted as elective units. After acceptance, students may petition a course that received elective credit to be evaluated, and if approved, fulfill a Core and/or major requirement.** Transfer credit evaluations for individual students are completed after admission to SCU. However, the following information will help students evaluate their own course work.

FOUNDATIONS Core requirements

Critical Thinking & Writing 1 and 2 Core Requirement:

To fulfill the Critical Thinking & Writing (CTW) 1 and 2 Santa Clara University Core requirements, a student must complete one course from the Critical Thinking & Writing 1 course list, and one course from the Critical Thinking & Writing 2 course list below. If both requirements are not satisfied prior to enrollment at SCU, students who have completed fewer than 30 semester units (or 44 quarter units) of transfer credit will be required to take the 2-quarter course sequence at SCU. Students who transfer with 30 or more semester units (or 44 or more quarter units) of transfer credit and have fulfilled the CTW 1 but not the CTW 2 requirement will be required to complete an additional course at SCU to satisfy the CTW 2 requirement.

CRITICAL THINKING & WRITING 1: Complete one course from list below.

Admission recommendation: Complete Critical Thinking and Writing 1 Core requirement.

Exceptions for taking a course listed below to satisfy CTW 1: Students placed into the 2nd college level English, or who scored a 4 or 5 on the AP English Language exam, may substitute the course placement or the test credit for CTW 1. Students are responsible for submitting the appropriate official AP CollegeBoard Report at the time of acceptance to receive such credit.

American River College Course
ENGWR 300: College Composition
ENGWR 480: Honors College Composition

CRITICAL THINKING & WRITING 2: Complete one course from list below.

Admission recommendation: Complete Critical Thinking and Writing 2 Core requirement.

American River College Course
ENGWR 301: College Composition and Literature
ENGWR 302: Advanced Composition and Critical Thinking
ENGRW 481: Honors College Composition and Literature
ENGRW 482: Honors Advanced Comp and Critical Thinking
PHIL 320: Logic and Critical Thinking

CULTURES & IDEAS 1 and 2 Core Requirements:

To fulfill the Santa Clara University Cultures & Ideas 1 and 2 Core Curriculum requirements, a student must complete one course from the Cultures and Ideas 1 list, and one course from the Cultures and Ideas 2 course list. If both requirements are not satisfied prior to enrollment at SCU, students who have completed fewer than 30 semester units (or fewer than 44 quarter units) of transfer credit will be required to take the 2-quarter course sequence at SCU. Students who transfer with 30 or more semester units (or 44 or more quarter units) and fulfilled the Cultures & Ideas 1 but not the Cultures & Ideas 2 requirement, will be required to take one course instead of the 2-course sequence at SCU. **Although it is not listed as an admission recommendation, it is advised to fulfill the Cultures and Ideas 1 and 2 course sequence prior to enrollment at SCU.**

CULTURES & IDEAS 1: Complete one course from list below.

Transfer courses cannot fulfill more than one Santa Clara University Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

American River College Course
ADMJ 300: Intro to Admin of Justice
ADMJ 320: Concepts of Criminal Law
ARTH 302: Art: Stone Age through the Middle Ages
ARTH 308: Renaissance Tradition in Art
ARTH 310: Modern Art
ARTH 318: History of American Art
BUS 340: Business Law
ENGLT 320: American Literature
ENGLT 321: American Literature
HIST 300: History of Western Civilization
HIST 302: History of Western Civilization
HIST 305: Women in Western Civilization
HIST 307: History of World Civilizations to 1500
HIST 308: History of World Civilizations, 1500 to Present
HIST 310: History of the United States
HIST 311: History of the United States
HIST 318: American Intellectual and Cultural History
HIST 340: History of California through 1879
HIST 341: History of California: 1879 to Present
HIST 367: History of Russia
HIST 373: History of Mexico
HIST 374: History of Latin America to 1830
HIST 375: The History of Modern Latin American and Caribbean

HIST 399: Studying in Italy: Italian History and Culture
HIST 480: History of Western Civilization- Honors
HIST 481: History of Western Civilization- Honors
HIST 483: History of United States- Honors
HIST 484: History of United States- Honors
HUM 300: Classical Humanities
HUM 301: Introduction to the Humanities
HUM 310: Modern Humanities
HUM 330: Humanities of the Americas
PHIL 330: History of Classical Philosophy
PHIL 331: History of Modern Philosophy
POLS 301: Intro to Government- United States
POLS 304: Introduction to Government: California
POLS 330: Constitutional Rights
POLS 481: Introduction to Government: United States-Honors
MUFHL 310: Survey of Music History and Literature
MUFHL 311: Survey of Music History and Literature
SOC 301: Social Problems
SOC 320: Minorities in America
SOC 342: Gender Relations in American Society
SOC 350: Sociology of Popular Culture
TA 302: History and Theory of the Theatre I
TA 303: History and Theory of the Theatre II

CULTURES & IDEAS 2: Complete one course from list below.

Transfer courses cannot fulfill more than one Santa Clara Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

American River College Course
ANTH 310: Cultural Anthropology
ANTH 320: Intro to Archaeology and World Prehistory
ANTH 330: Magic, Witchcraft and Religion
ANTH 481: Honors Cultural Anthropology
ARTH 322: Art History of the Non-Western World
ARTH 333: Intro to Islamic Art
ARTH 334: International Contemporary Art
ENGLT 340: World Literature I
ENGLT 341: World Literature II
ENGLT 345: Mythologies of the World
GEOG 305: Global Climate Change
GEOG 310: Human Geography: Exploring Earth's Cultural Landscapes
GEOG 320: World Regional Geography
GEOL 320: Global Climate Change
HIST 307: History of World Civilizations to 1500
HIST 308: History of World Civilizations, 1500 to Present

HIST 364: Asian Civilization
HIST 365: Asian Civilization
HUM 302: Global Humanities:
HUM 320: Asian Humanities
HUM 324: Global Islam: Culture and Civilization
HUM 326: Middle Eastern Humanities
HUM 355: Introduction to World Religions
IS 301: Introduction to Global Studies
IS 302 Issues in Global Studies
IS 305: Introduction to Middle East Studies
IS 310: Peace and Conflict
IS 312: Current International Development Issues
MUFHL 330: World Music
POLS 302: Intro to Government: Foreign
POLS 310: Intro to International Relations
POLS 480: Introduction to International Relations - Honors

SECOND LANGUAGE

Note: Students accepted in the School of Engineering are not required to fulfill the second language requirement. However, if a student is admitted in the School of Engineering and decides to change schools after enrollment, the student will be required to fulfill the second language requirement at SCU.

MATHEMATICS:

Admission recommendation: Complete MATH 400 and MATH 401

To fulfill the admission mathematics requirement, complete both MATH 400 and 401 listed below. A score of 4 or 5 on the Advanced Placement Calculus BC exams will satisfy the mathematics Admission recommendations. Engineering majors at SCU require the completion of more than one math course (see table at the end of this document for additional courses to complete per major).

American River College Course	SCU Course
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 410: Intro to Linear Algebra	MATH 53
MATH 420: Differential Equations	MATH 22 or AMTH 106

Note: SCU does not accept remedial mathematics courses. Although a pre-Calculus course is transferrable, it will not fulfill any general core, major or minor requirements.

RELIGION, THEOLOGY & CULTURE 1: Only needed if transferring with less than 30 semester units (44 quarter units) of transfer credit. Students transferring with more than 30 semester units (44 quarter units) of transfer credit will be exempt from this requirement.

Students transferring with less than 30 semester units (44 quarter units) of transfer credit may complete **one course** from the list below to satisfy the RTC 1 Core requirement.

Transfer courses cannot fulfill more than one Santa Clara Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

American River College Course
HUM 360: Intro to the Old Testament (Hebrew)
HUM 365: Intro to the new Testament

Note: The 'transferring with more than 30 semester units (or more than 44 quarter units) of transfer credit for the RTC 1 exemption rule does not apply to freshmen applicants.

EXPLORATIONS Core requirements

ETHICS: Complete **one course** from the list below.

American River College Course
PHIL 310: Introduction to Ethics
PHIL 315: Contemporary Moral Issues

CIVIC ENGAGEMENT: Must be completed at Santa Clara University.

DIVERSITY: US Perspectives: Complete **one course** from list below.

Transfer courses cannot fulfill more than one Santa Clara Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

American River College Course
ADMJ 302: Community Relations: Multicultural Issues
ANTH 334: Native Peoples of North America
DANCE 300: Diverse Cultures in Dance

ENGLT 335: Latino, Mexican-American, and Chicano Literature
ENGLT 338: Native American Literature
ENGLT 360: Women in Literature
ENGLT 365: Introduction to Gay, Lesbian, Bisexual and Transgender Literature
HIST 318: American Intellectual and Cultural History
HIST 320: History of the United States: African-American Emphasis
HIST 321: History of the United States: African-American Emphasis
HIST 323: History of the United States: The American Indian Experience
HIST 325: History of Asian/ Pacific Americans
HIST 327: History of the Chicano/Mexican American
HIST 330: Women in American History
POLS 342: Women and Politics from a Global Perspective
SJS 310: Introduction to LGBTQ Studies
SOC 301: Social Problems
SOC 320: Minorities in America
SOC 325: Chicano Culture
SOC 335: Sociology of Aging
SOC 342: Gender Relations in American Society
SPEECH 325: Intercultural Communication
TA 306: Diversity in American Drama (1960 to Present)
TAFILM 307: Diversity in American Film

ARTS

School of Engineering students will automatically fulfill the Arts by taking required courses within their major at SCU. However, if a student is admitted in the School of Engineering and decides to change schools after enrollment, the student will be required to fulfill the ARTS requirement by taking a course(s) at SCU. Refer to the College of Arts & Sciences or Leavey School of Business transfer guides for a list of courses that could satisfy the Arts core requirement.

NATURAL SCIENCE (WITH A LAB) Core Requirement: *Complete one course from list below.*

Admission recommendation: Complete CHEM 400; PHYS 410 & 421.

(Note: Web Design & Engineering major completes one course to satisfy Natural Science core requirement. It is recommended to complete CHEM400)

To satisfy the Core Natural Science requirement, the course must have a lab component.

Engineering majors at SCU require the completion of more than one science course (see table at the end of this document for additional courses to complete per major).

When an ARC course does not have a direct SCU course equivalent, but fulfills the Natural Science Core requirement, a transfer credit (TRCR) code of TRCR 18 is assigned.

American River College Course	SCU Course Equivalency
ANTH 300/301: Physical Anthro w/ Lab	ANTH 1
ASTR 300/400: Intro to Astronomy/ Lab	TRCR 18: Core Natural Science
ASTR 310/400: The Solar System/ Lab	TRCR 18: Core Natural Science
ASTR 320/400: Stars, Galaxies and Cosmology/ Lab	TRCR 18: Core Natural Science
BIOL 303: Survey of Biology	TRCR 18: Core Natural Science
BIOL 305: Natural History	TRCR 18: Core Natural Science
BIOL 310: General Biology	TRCR 18: Core Natural Science
BIOL 322: Ethnobotany	TRCR 18: Core Natural Science
BIOL 332: Introduction to Ornithology	TRCR 18: Core Natural Science
BIOL 370: Intro to Marine Environment	TRCR 18: Core Natural Science
BIOL 400: Principles of Biology	TRCR 18: Core Natural Science
BIOL 410: Principles of Botany	TRCR 18: Core Natural Science
BIOL 415: Introduction to Biology: Biodiversity, Evolution, and Ecology	TRCR 18: Core Natural Science
BIOL 420: Principles of Zoology	TRCR 18: Core Natural Science
BIOL 430: Anatomy and Physiology	TRCR 18: Core Natural Science
BIOL 431: Anatomy and Physiology	TRCR 18: Core Natural Science
BIOL 440: General Microbiology	TRCR 18: Core Natural Science
BIOL 442: General Bacteriology	TRCR 18: Core Natural Science
BIOL 482: Honors Marine Biology	TRCR 18: Core Natural Science
CHEM 305: Intro to Chemistry	TRCR 18: Core Natural Science
CHEM 306: Intro to Chemistry	TRCR 18: Core Natural Science
CHEM 309: Integrated General, Organic, and Biological Chemistry	TRCR 18: Core Natural Science
CHEM 400: General Chemistry	CHEM 11
CHEM 401: General Chemistry	CHEM 12 & 50
CHEM 420: Organic Chemistry	CHEM 31
CHEM 421: Organic Chemistry	CHEM 32
CHEM 423: Organic Chemistry	CHEM 33
GEOG 300/301: Physical Geography: Exploring Earth's Environmental Systems w/ Lab	TRCR 18: Core Natural Science
GEOG 308/309: Intro to Ocean w/L	TRCR 18: Core Natural Science
GEOL 300/301: Physical Geol w/ Lab	CENG 20/20L
GEOL 305/306: Earth Science w/ Lab	TRCR 18: Core Natural Science
GEOL 310/311: Historical Geology w/ Lab	TRCR 18: Core Natural Science
GEOL 330/331: Intro to Oceanography w/ Lab	TRCR 18: Core Natural Science
PS 300/301: Intro to Phys Sci w/ Lab	TRCR 18: Core Natural Science
PHYS 310/312: Conc Physics w/ Lab	TRCR 18: Core Natural Science
PHYS 350: General Physics	PHYS 11
PHYS 360: General Physics	PHYS 13 (If PHYS 350 & 360 completed, equates to SCU's PHYS 11, 12 & 13)
PHYS 410: Mech of Solids & Fluids	PHYS 31
PHYS 421: Electricity & Magnetism	PHYS 33 (If PHYS 410 & 421 completed, equates to PHYS 31, 32 & 33)

PHYS 431: Heat, Waves, Light and Modern Physics	PHYS 32 (If PHYS 410, 421 & 431 completed, equates to SCU's PHYS 31, 32, 33 & 34)
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SOCIAL SCIENCE: Complete one course from list below.

Transfer courses cannot fulfill more than one Santa Clara Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

American River College Course
ANTH 310: Cultural Anthropology
ANTH 320: Intro to Archaeology and World Prehistory
ANTH 330: Magic, Witchcraft, and Religion
ANTH 333: American Indians of California
ECON 302: Principles of Macroeconomics
ECON 304: Principles of Microeconomics
GERON 300: Sociology of Aging (same as SOC 335)
POLS 302: Intro to Government: Foreign
POLS 310: Intro to International Relations
POLS 480: Introduction to International Relations - Honors
PSYC 300: General Principles
PSYC 320: Social Psychology
PSYC 361: Psychology of Women in a Multicultural Society
PSYC 480: Honors General Principles
SOC 300: Intro Sociology
SOC 301: Social Problems
SOC 335: Sociology of Aging (same as GERON 300)
SOC 350: Sociology of Popular Culture
SOC 480: Introductory Sociology - Honors

RELIGION, THEOLOGY & CULTURE 2: Must be completed at Santa Clara University.

CULTURES & IDEAS 3: Complete one course from the list below.

Transfer courses cannot fulfill more than one Santa Clara Core requirement. If you already took a course listed below to satisfy a different requirement, you will want to choose a different course to complete.

Note: Students accepted in the Leavey School of Business fulfill the Cultures and Ideas 3 requirement at SCU. Refer to Leavey School of Business Transfer Guide for specific core and school requirements.

American River College Course
ANTH 310: Cultural Anthropology
ANTH 320: Intro to Archaeology and World Prehistory
ANTH 330: Magic, Witchcraft and Religion
ANTH 481: Honors Cultural Anthropology
ARTH 322: Art History of the Non-Western World
ARTH 333: Intro to Islamic Art
ARTH 334: International Contemporary Art
ENGLT 340: World Literature I
ENGLT 341: World Literature II
ENGLT 345: Mythologies of the World
GEOG 305: Global Climate Change
GEOG 310: Human Geography: Exploring Earth's Cultural Landscapes
GEOG 320: World Regional Geography
GEOL 320: Global Climate Change
HIST 307: History of World Civilizations to 1500
HIST 308: History of World Civilizations, 1500 to Present
HIST 364: Asian Civilization
HIST 365: Asian Civilization
HUM 302: Global Humanities:
HUM 320: Asian Humanities
HUM 324: Global Islam: Culture and Civilization
HUM 326: Middle Eastern Humanities
HUM 355: Introduction to World Religions
IS 301: Introduction to Global Studies
IS 302 Issues in Global Studies
IS 305: Introduction to Middle East Studies
IS 310: Peace and Conflict
IS 312: Current International Development Issues
MUFHL 330: World Music
POLS 302: Intro to Government: Foreign
POLS 310: Intro to International Relations
POLS 480: Introduction to International Relations - Honors

SCIENCE, TECHNOLOGY & SOCIETY: Must be completed at Santa Clara University.

RELIGION, THEOLOGY & CULTURE 3: Must be completed at Santa Clara University.

INTEGRATIONS Core requirements

EXPERIENTIAL LEARNING FOR SOCIAL JUSTICE: Must be completed at Santa Clara University.

ADVANCED WRITING: Must be completed at Santa Clara University.

PATHWAYS: Must be completed at Santa Clara University.

Transfer students who matriculate with fewer than 44 quarter units (or fewer than 30 semester units) must take 4 courses to fulfill the pathways requirement. However, students transferring in with more than 44 quarter units (or with 30 semester units or more) will complete 3 courses to fulfill the Core Pathways requirement.

ADDITIONAL SCHOOL OF ENGINEERING REQUIREMENTS PER MAJOR

The following courses allow students to complete additional School of Engineering requirements.

SCU COURSE	ARC COURSE	BIOE	CENG	COEN	ECEN	ELEN	ENGR	MECH	WDE
MATH 11	MATH 400	X	X	X	X	X	X	X	X
MATH 12	MATH 401	X	X	X	X	X	X	X	X
MATH 13	MATH 402	X	X	X	X	X	X	X	X
MATH 14	MATH 402	X	X	X	X	X	X	X	X
MATH 22 or AMTH 106	MATH 420	X	X	X	X	X	X	X	
MATH 51 or COEN 19	CISP 440			X	X				
MATH 53	MATH 410			X	X				
PHYS 31	PHYS 410	X	X	X	X	X	X	X	
PHYS 32	PHYS 431	X	X	X	X	X	X	X	
PHYS 33	PHYS 421	X	X	X	X	X	X	X	
PHYS 34	-					X			
CHEM 11	CHEM 400	X	X	X	X	X	X	X	
ELEN/COEN 21/21L	-			X	X	X	X		

ELEN 50/50L	ENGR 401	X		X	X	X	X	X	
CENG 41	ENGR 420		X				X	X	
COEN 10/10L	CISP 360			X	X	X	X		X
COEN 11/11L	CISP 400 OR 401			X	X	X			X
COEN 12/12L	CISP 430			X	X	X			X
Abbreviations and Links:									
BIOE = Bioengineering									
CENG = Civil, Environmental, and Sustainable Engineering									
COEN = Computer Science and Engineering									
ECEN = Electrical and Computer Engineering									
ELEN = Electrical Engineering									
ENGR = General Engineering									
MECH = Mechanical Engineering									
WDE = Web Design and Engineering									
A "-" indicates that an equivalent course has not been approved at time of publication.									

BIOENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
CHEM 401: General Chemistry	CHEM 12&50
CHEM 420: Organic Chemistry	CHEM 31
CHEM 421: Organic Chemistry	CHEM 32
CHEM 423: Organic Chemistry	CHEM 33
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 410 & 421 completed, equates to SCU PHYS 31,32,33 sequence)
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
ENGR 312: Engineering Graphics	MECH 10/10L (*Medical Device track)
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106

CIVIL ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11

PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU PHYS 31,32,33 sequence)
GEOL 300/301: Physical Geology + Lab	CENG 20/20L
Engineering:	
ENGR 312: Engineering Graphics	CENG 7/7L
ENGR 310: Engineering Survey	CENG 10/10L
ENGR 420: Statics	CENG 41
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106

COMPUTER SCIENCE & ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU PHYS 31,32,33 sequence)
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
CISP 360: Intro to Structured Programming	COEN 10/10L
CISP 480: Honors Intro to Structured Programming	COEN 10/10L
CISP 400 or 401: Object Oriented Programming	COEN 11/11L
CISP 430: Data Structures	COEN 12/12L
CISP 440: Discrete Structures	COEN 19 or MATH 51
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106
MATH 410: Linear Algebra	MATH 53

ELECTRICAL & COMPUTER ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 410 & 421 completed, equates to SCU PHYS 31,32,33 sequence)
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
CISP 360: Intro to Structured Programming	COEN 10/10L

CISP 480: Honors Intro to Structured Programming	COEN 10/10L
CISP 400 or 401: Object Oriented Programming	COEN 11/11L
CISP 430: Data Structures	COEN 12/12L
CISP 440: Discrete Structures for Computer Science	COEN 19 or MATH 51
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106
MATH 410: Linear Algebra	MATH 53

ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 410 & 421 completed, equates to SCU PHYS 31,32,33 sequence)
PHYS 431: Heat, Waves, Lgt & Modern Physics	PHYS 34
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
ENGR 420: Statics	CENG 41
CISP 360: Intro to Structured Programming	COEN 10/10L
CISP 480: Honors Intro to Structured Programming	COEN 10/10L
CISP 400 or 401: Object Oriented Programming	COEN 11/11L
CISP 430: Data Structures	COEN 12/12L
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106

GENERAL ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 410 & 421 completed, equates to SCU PHYS 31,32,33 sequence)
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
ENGR 312: Engineering Graphics	MECH 10/10L
ENGR 320: Manufacturing Processes	MECH 11
ENGR 413: Properties of Materials	MECH 15/15L

ENGR 420: Statics	CENG 41
CISP 360: Intro to Structured Programming	COEN 10/10L
CISP 480: Honors Intro to Structured Programming	COEN 10/10L
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106

MECHANICAL ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry	CHEM 11
PHYS 410: Engineering Physics	PHYS 31
PHYS 421: Engineering Physics	PHYS 33 (If PHYS 410 & 421 completed, equates to SCU PHYS 31,32,33 sequence)
Engineering:	
ENGR 401: Intro to Electrical Circuits & Devices	ELEN 50/50L
ENGR 312: Engineering Graphics	MECH 10/10L
ENGR 320: Manufacturing Processes	MECH 11
ENGR 413: Properties of Materials	MECH 15/15L
ENGR 420: Statics	CENG 41
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 402: Calculus III	MATH 13&14
MATH 420: Differential Equations	MATH 22 or AMTH 106

WEB DESIGN AND ENGINEERING MAJOR REQUIREMENTS

American River College Course	SCU course equivalency
Natural Science:	
CHEM 400: General Chemistry (<i>Recommended</i>)	CHEM 11
Engineering:	
CISP 360: Intro to Structured Programming	COEN 10/10L
CISP 480: Honors Intro to Structured Programming	COEN 10/10L
CISP 400 or 401: Object Oriented Programming	COEN 11/11L
CISP 430: Data Structures	COEN 12/12L
Mathematics:	
MATH 400: Calculus I	MATH 11
MATH 401: Calculus II	MATH 12
MATH 4A: Calculus III	MATH 13&14

Additional notes:

- Consult the current Undergraduate Bulletin for Advanced Placement and High-Level International Baccalaureate test credit equivalencies at:
<https://www.scu.edu/bulletin/undergraduate/chapter-8/AcademicCreditEvaluation.html>
- Consult the Santa Clara University Undergraduate Bulletin for additional requirements in a major. The Bulletin can be found at:
<https://www.scu.edu/academics/course-catalogs/undergraduate-bulletin/>
- Once students are admitted to Santa Clara University, they must abide by the policies, regulations and other requirements outlined in the Undergraduate Bulletin for their cohort year.
- **Per SCU policy, transfer credit earned after enrollment cannot satisfy University Core, major or minor requirements.** Refer to the SCU Undergraduate Bulletin for additional transfer credit restrictions.
- This guide is to be used by transfer applicants, not First-Year (aka: freshmen) applicants. Admitted First-Year students must complete the following Core requirements at SCU: Critical Thinking & Writing 1 and 2; Cultures & Ideas 1 and 2; Religion Theology & Culture 1, 2 and 3 (taken in sequence order at SCU); Civic Engagement; Science, Technology & Society; Experiential Learning for Social Justice; Advanced Writing; and four Pathway courses.

For questions regarding transfer credit or test credit, contact the Transfer Record Analyst at:
Registrar@scu.edu.

Disclosure: The information contained in this document is to be used as a guide for the purpose of admissions into Santa Clara University. This information is reviewed periodically and the date of the most recent update is noted in the bottom right-hand corner of this guide. Students are responsible to make sure that any courses taken are listed on this guide at the time of actual enrollment. Transferability is not guaranteed and is up to our discretion, largely based upon the Santa Clara University core curriculum in effect at the time of admission.