

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

Gavilan 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 1A and MATH 1B
- One natural science course with a lab: CHEM 1A
- Two Calculus-based Physics courses: PHYS 4A and PHYS 4B
 - Web Design Engineering majors are not required to complete CHEM 1A, PHYS 4A & 4B. 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 Gavilan College UC transferrable courses to transfer for credit: Adapted Physical Education, some Allied Health, Athletics, and most Kinesiology courses. To view all Gavilan College's UC transferable courses, visit www.assist.org. **UC transferrable 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.

Gavilan College Course
ENGL 1A: Composition

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

Admission recommendation: Complete Critical Thinking and Writing 2 Core requirement

Gavilan College Course
ENGL 1B: Composition and Literature
ENGL 1C: Critical Reasoning and Writing

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.

Gavilan College Course
ART 1A: Art History
ART 1B: Art History
ART 21: Ancient Americas: A History through Art
CD 8A: American Education
ENGL 5A: Survey of American Lit
ENGL 5B: Survey of American Lit
HIST 1: United States History
HIST 2: United States History
HIST 3: History of California
HIST 7A: History of Western Civilization
HIST 7B: History of Western Civilization
HIST 21: Ancient Americas: A History through
HUM 4: Introduction to American Cinema
MUS 1A: Music History and Literature
MUS 1B: Music History and Literature
PHIL 7A: History of Philosophy: Ancient to
PHIL 7B: History of Philosophy: Renaissance
POLS 1: Intro to American Government
POLS 7: Intro to California Govt and Politics
POLS 10: Intro to Political Science
THEA 1: Theatre History: Greece to
THEA 29: History of American Musical Theatre

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.

Gavilan College Course
AJ 5: Intro to Modern International Terrorism
AJ 10: Intro to the Admin of Justice
ANTH 3: Intro to Cultural Anthropology
ANTH 5: Magic, Witchcraft and Religion
ART 21: Ancient Americas; A History through Art
CUMN 4: Intercultural Communication
GEOG 2: Cultural Geography
HIST 4A: Global History before 1500
HIST 4B: Global History after 1500
HIST 21: Ancient Americas; A History through Art
HUM 6: Contemporary World Cinema
HUM 10: Approaches to Contemp Film
MUS 6: Intro to World Music
PHIL 6: Comparative Religions
PHIL 15: Asian Philosophies
POLS 3: Intro to Comparative Politics
POLS 4: Intro to International Relations
POLS 5: Intro to Modern International Terrorism
POLS 9: Global Social Change
SOC 9: Global Social Change

MATHEMATICS:

Admission recommendation: Complete MATH 1A and MATH 1B

To fulfill the admission mathematics requirement, complete both MATH 1A and 1B 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).

Gavilan College Course	SCU Course equivalency
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11

MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2: Linear Algebra	MATH 53
MATH 2C: Differential Equations	MATH 22 OR AMTH 106
MATH 16: Discrete Mathematics OR CSIS 26: Discrete Structures	MATH 51 OR COEN 19

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 of transfer credit. Students transferring with more than 30 semester units of transfer credit will be exempt from this requirement.

Students transferring with less than 30 semester 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.

Gavilan College Course
<i>No approved courses at time of publication</i>

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.

Gavilan College Course
AJ 3A: Ethics
PHIL 3A: Ethics
PHIL 3B: 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.

Gavilan College Course
ART 10A: Cultural History of Ceramics
ENGL 2B: American Ethnic Lit
HIST 5: Women's Lives in Early US History
HIST 6: Women's Lives in Recent US History
HIST 12: Mexican American Cultural History
HUM 12: Mexican American Cultural History
MUS 2: History of Jazz and Rock
SJS 5: Introduction to Women's Studies
SOC 1B: Intro to Sociology: Social Problems
SOC 3: Sociology of Race, Ethnicity and Cultural Identity
THEA 3: El Teatro Campesino

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 1A; PHYS 4A & 4B

(Note: Web Design & Engineering major completes one course to satisfy Natural Science core requirement. It is recommended to complete CHEM 1A.)

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 a Gavilan College 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.

Gavilan College Course	SCU course equivalencies
AH 8: General Microbiology w/Lab	TRCR 18
AH 9: Human Physiology w/Lab	TRCR 18
AH 15: Survey of Human Anatomy and Physiology w/Lab	TRCR 18
ANTH 1/1L: Introduction to Physical Anthropology w/ Lab	TRCR 18
BIO 1: Cell and Molecular Biology w/Lab	TRCR 18
BIO 2: Organismal Biology w/Lab	TRCR 18
BIO 4: General Zoology w/Lab	TRCR 18
BIO 5: General Botany w/Lab	TRCR 18
BIO 7: Human Anatomy w/Lab	TRCR 18
BIO 8: General Microbiology w/Lab	TRCR 18
BIO 9: Human Physiology w/Lab	TRCR 18
BIO 10: Principles of Biology w/Lab	TRCR 18
BIO 12: Intro to Human Biology w/Lab	TRCR 18
BIO 13: Marine Biology w/Lab	TRCR 18
BIO 15: Survey of Human Anatomy and Physiology w/Lab	TRCR 18
CHEM 1A: General Chemistry w/Lab	CHEM 11
CHEM 1B: General Chemistry w/Lab	CHEM 12
CHEM 12A: Organic Chemistry w/Lab	CHEM 31
CHEM 12B: Organic Chemistry w/Lab	CHEM 33 ((If CHEM 12A & 12B completed, equates to SCU's CHEM 31, 32 & 33)
CHEM 30A: Elementary Chemistry w/Lab	TRCR 18
CHEM 30B: Elementary Organic Biochemistry w/Lab	TRCR 18
ECOL 1: Conservation of Natural Resources w/Lab	TRCR 18
ENVS 1: Introduction to Environmental Science	TRCR 18
GEOG 1: Physical Geography w/Lab	TRCR 18
GEOL 1: Introduction to Geology w/Lab	TRCR 18
PHYS 1: Introduction to Physics w/Lab	TRCR 18
PHYS 2A: General Physics I w/Lab	PHYS 11
PHYS 2B: General Physics II w/Lab	PHYS 13 (If PHYS 2A & 2B completed, equates to SCU's PHYS 11, 12 & 13 sequence)
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers	PHYS 33

- Electricity and Magnetism w/Lab	
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B & 4C completed, equates to SCU's PHYS 31, 32, 33 & 34)

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.

Gavilan College Course
ANTH 2: Intro to Archaeology
ANTH 3: Intro to Cultural Anthropology
ECON 1: Principles of Macroeconomics
ECON 2: Principles of Microeconomics
POLS 1: Intro to American Government
POLS 3: Intro to Comparative Politics
POLS 4: Intro to International Relations
PSYC 11: Intro to Psychology
PSYC 10: Intro to Psychology
SOC 1A: Intro to Sociology
SOC 1B: Intro to Sociology- Social Problems

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.

Gavilan College Course
AJ 5: Intro to Modern International Terrorism
AJ 10: Intro to the Admin of Justice
ANTH 3: Intro to Cultural Anthropology

ANTH 5: Magic, Witchcraft and Religion
ART 21: Ancient Americas; A History through Art
CUMN 4: Intercultural Communication
GEOG 2: Cultural Geography
HIST 4A: Global History before 1500
HIST 4B: Global History after 1500
HIST 21: Ancient Americas; A History through Art
HUM 6: Contemporary World Cinema
HUM 10: Approaches to Contemp Film
MUS 6: Intro to World Music
PHIL 6: Comparative Religions
PHIL 15: Asian Philosophies
POLS 3: Intro to Comparative Politics
POLS 4: Intro to International Relations
POLS 5: Intro to Modern International Terrorism
POLS 9: Global Social Change
SOC 9: Global Social Change

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	GC COURSE	BIOE	CENG	COEN	ECEN	ELEN	ENGR	MECH	WDE
MATH 11	MATH 1A	X	X	X	X	X	X	X	X
MATH 12	MATH 1B	X	X	X	X	X	X	X	X
MATH 13	MATH 1C	X	X	X	X	X	X	X	X
MATH 14	MATH 1C	X	X	X	X	X	X	X	X
MATH 22 or AMTH 106	MATH 2C	X	X	X	X	X	X	X	
MATH 51 or COEN 19	MATH 16 OR CSIS 26			X	X				
MATH 53	MATH 2			X	X				
PHYS 31	PHYS 4A	X	X	X	X	X	X	X	
PHYS 32	PHYS 4C	X	X	X	X	X	X	X	
PHYS 33	PHYS 4B	X	X	X	X	X	X	X	
PHYS 34	PHYS 4A, 4B & 4C					X			
CHEM 11	CHEM 1A	X	X	X	X	X	X	X	
ELEN/COEN 21/21L	-			X	X	X	X		
ELEN 50/50L	ENGR 3	X		X	X	X	X	X	
CENG 41	ENGR 2		X				X	X	
COEN 10/10L	CSIS 24 OR CSIS 27 OR CSIS 43 OR CSIS 45			X	X	X	X		X
COEN 11/11L	CSIS 46			X	X	X			X
COEN 12/12L	-			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

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
CHEM 1B: General Chemistry w/Lab	CHEM 12&50
CHEM 12A: Organic Chemistry w/Lab	CHEM 31
CHEM 12B: Organic Chemistry w/Lab	CHEM 33 (If CHEM 12A & CHEM 12B completed, equates to SCU CHEM 31, 32, 33 sequence)
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
ENGR 1: Graphical Communication and Design	MECH 10/10L (*Medical Device track)
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106

CIVIL ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
GEOL 1: Introduction to Geology w/Lab	CENG 20/20L
Engineering:	
ENGR 1: Graphical Communication and Design	CENG 7/7L
<i>No approved course equivalency at time of</i>	CENG 10/10L

<i>publication</i>	
ENGR 2: Statics	CENG 41
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106

COMPUTER SCIENCE & ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
CSIS 24: Java Programming I OR CSIS 27: Java Programming II OR CSIS 43: C Programming OR CSIS 45: C++ Programming I	COEN 10/10L
CSIS 46: C++ Programming II	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
MATH 16: Discrete Mathematics OR CSIS 26: Discrete Structures	COEN 19 OR MATH 51
CSIS 12/12L: Assembly Language Programming w/Lab	COEN 20/20L
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106
MATH 2: Linear Algebra	MATH 53

ELECTRICAL & COMPUTER ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11

PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
CSIS 24: Java Programming I OR CSIS 27: Java Programming II OR CSIS 43: C Programming OR CSIS 45: C++ Programming I	COEN 10/10L
CSIS 46: C++ Programming II	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
MATH 16: Discrete Mathematics OR CSIS 26: Discrete Structures	COEN 19 OR MATH 51
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106
MATH 2: Linear Algebra	MATH 53

ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
ENGR 2: Statics	CENG 41
CSIS 24: Java Programming I OR CSIS 27: Java Programming II OR CSIS 43: C Programming OR CSIS 45: C++ Programming I	COEN 10/10L
CSIS 46: C++ Programming II	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11

MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106

GENERAL ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
ENGR 1: Graphical Communication and Design	MECH 10/10L
ENGR 4: Properties of Materials	MECH 15 (need to take MECH 15L at SCU)
ENGR 2: Statics	CENG 41
CSIS 24: Java Programming I OR CSIS 27: Java Programming II OR CSIS 43: C Programming OR CSIS 45: C++ Programming I	COEN 10/10L
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106

MECHANICAL ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers – Mechanics w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers - Electricity and Magnetism w/Lab	PHYS 33
PHYS 4C: Physics for Scientists and Engineers - Heat, Optics, Modern Physics w/Lab	PHYS 32 (If PHYS 4A, 4B, 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
ENGR 3: Electric Circuit Analysis	ELEN 50/50L
ENGR 1: Graphical Communication and Design	MECH 10/10L
ENGR 4: Properties of Materials	MECH 15 (need to take MECH 15L at SCU)
ENGR 2: Statics	CENG 41

Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	MATH 13&14
MATH 2C: Differential Equations	MATH 22 OR AMTH 106

WEB DESIGN AND ENGINEERING MAJOR REQUIREMENTS

Gavilan College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab <i>(Recommended)</i>	CHEM 11
Engineering:	
CSIS 24: Java Programming I OR CSIS 27: Java Programming II OR CSIS 43: C Programming OR CSIS 45: C++ Programming I	COEN 10/10L
CSIS 46: C++ Programming II	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
Mathematics:	
MATH 1A: Single-Variable Calculus and Analytic Geometry	MATH 11
MATH 1B: Single-Variable Calculus and Analytic Geometry	MATH 12
MATH 1C: Multivariable Calculus	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.