

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

Fresno City 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 5A and MATH 5B
- One natural science course with a lab: CHEM 1A
- Two Calculus-based Physics courses: PHYS 4A and PHYS 4C
 - Web Design Engineering majors are not required to complete CHEM 1A, PHYS 4A & 4C. Complete one course in the Natural Science list.
- GPA 3.5

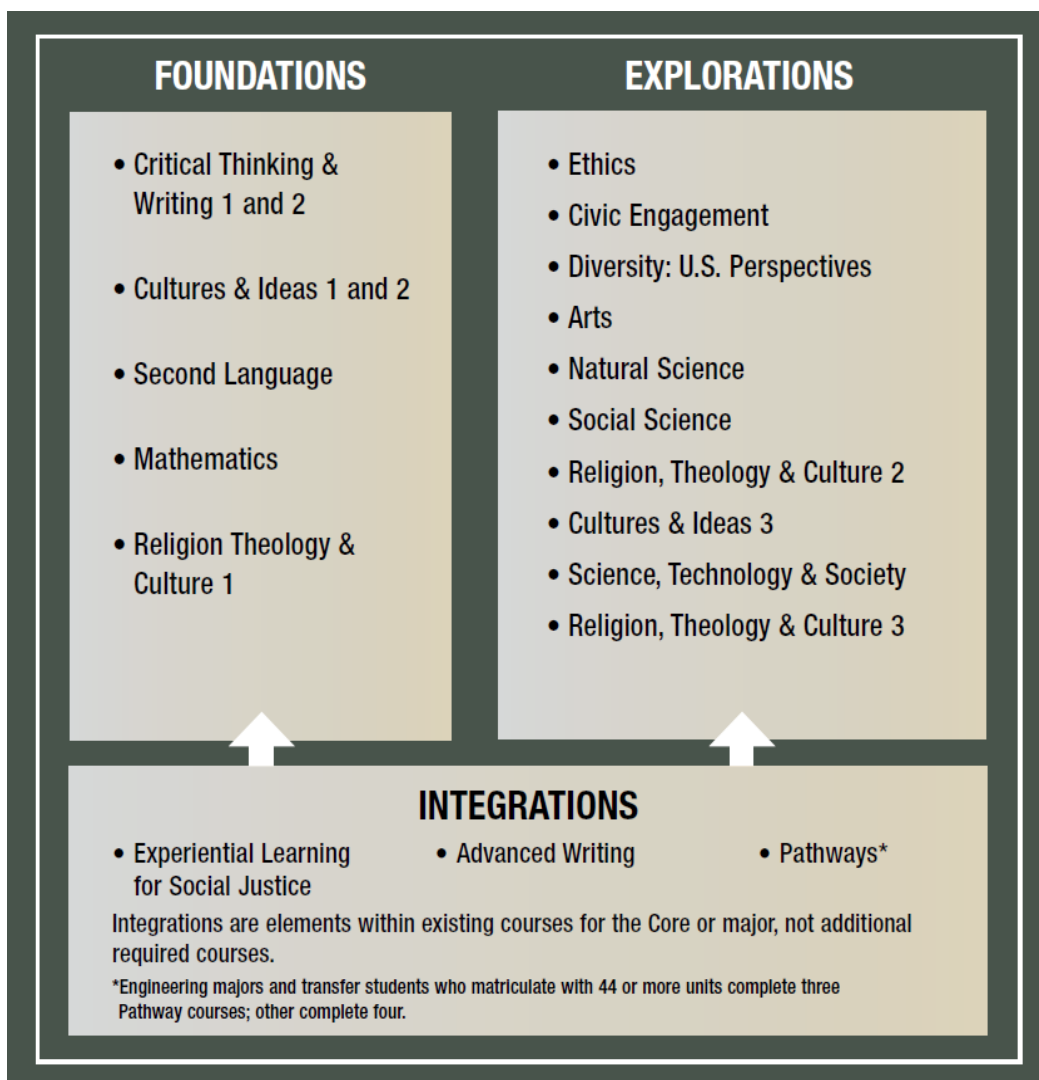
For additional SCU Transfer Admissions information:

<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 Fresno City College UC transferrable courses to transfer for credit: Aerospace Studies, some Health Science, and Physical Education courses. To view all Fresno City 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.

Fresno City College Course
ENGL 1A: Reading and Composition
ENGL 1AH: Honors Reading and Composition

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

Admission recommendation: Complete Critical Thinking and Writing 2 Core requirement

Fresno City College Course
ENGL 1B: Intro to the Study of Literature
ENGL 3: Critical Reading and Writing
ENGL 3H: Honors Critical Reading and Writing
ENGL 40: Critical Thinking about Literature
PHIL 2/2H: Critical Reasoning and Analytic 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.

Fresno City College Course
AFRAM 34: History of the American Civil Rights Movement
ANTHRO 28: Ancient Mexico
ARCH 15B: History of Architecture II
ART 5/5H: Art History Ancient to Medieval
ART 6/6H: Art History Renaissance to Modern
ART 70: Modern and Contemporary Art
CLS 12: Mexican American History
CLS 22: Art of the Ancient Americas
CLS 28: Ancient Mexico
CLS 29: History of Mexico, Colonial to Contemporary Period
ENGL 46B: English Literature from 1800 to the Present
ENGL 48A: Intro to American Literature to World War I
ENGL 48B: Intro to American Literature from World War I to the Present
GEOG 20: Geography of California
HIST 1/1H: Western Civilization to 1648
HIST 2/2H: Western Civilization since 1648
HIST 3: History of Ancient Rome
HIST 11: History of the United States to 1877
HIST 12/12H: History of the United States since 1877
HIST 15: History of the British Isles
HIST 18: History of Ancient Greece
HIST 21: United States Civil War
HIST 22: History of American Women

HIST 25: History of Religion in the United States
HIST 29: History of Mexico, Colonial to Contemporary Period
HIST 30: California History
HIST 34: History of the American Civil Rights Movement
HUMAN 10/10H: Classical Humanities
HUMAN 11/11H: Modern Humanities
HUMAN 42: Classic Myths
MUS 13: History of Music
MUS 17: History of Rock
POLSCI 2/2H: American Government
TA 31: Theatre History and Dram Lit I
TA 32: Theatre History II and Dram Lit 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.

Fresno City College Course
AFRAM 4: Classical and Pre-Colonial Africa
AFRAM 5: The Africans of the New World
AFRAM 6: African Cultures and Languages
ANTHRO 2/2H: Cultural Anthropology
ANTHRO 3: Archaeology and World Prehistory
ANTHRO 8: Language and Culture
ANTHRO 13: Anthropology of Magic, Witchcraft and Religion
ARCH 15A: History of Architecture I
ART 55: Introduction to Asian Art
ASAMER 8: Chinese Culture
ASAMER 10: Hmong Culture
CLS 22: Art of the Ancient Americas
COMM 10: Intercultural Communication
ENGL 44A: World Literature to the Renaissance
ENGL 44B: World Literature since the Renaissance
ENGL 45: Contemporary World Literature
FILM 2A: History of Cinema 1895-1960
FILM 2B: History of Cinema 1960 - Present
GEOG 2: Cultural Geography
GEOG 4A: World Geography
GEOG 4B: World Geography
GLST 1: Introduction to Global Studies
GLST 2: Global Issues

HIST 17: History of the Muslim World to 1405
HIST 20: World History I, to 1600
HIST 23: World History II, since 1500
MUS 15: World Music Survey
PHIL 1D: World Religions
POLSCI 1: Modern Politics
POLSCI 5: Comparative Government
POLSCI 24: International Relations

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 5A and MATH 5B

To fulfill the admission mathematics requirement, complete both MATH 5A and 5B 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).

Fresno City College Course	SCU course equivalency
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22
MATH 26: Elementary Linear Algebra	MATH 53
CSCI 26: Discrete Mathematics for Computer Science	MATH 51

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.

Fresno City College Course
<i>No approved Fresno City College course equivalencies 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.

Fresno City College Course
PHIL 1C/1CH: Ethics

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.

Fresno City College Course
AFRAM 1: Introduction to African American Studies
AFRAM 2: Cultural Adaptation of the African-American
AFRAM 3: African-American Art
AFRAM 8: African-American Creative Workshop
AFRAM 15: African-American Music from 1940 to the Present
AFRAM 17: African-American Literature
AFRAM 34: History of the American Civil Rights Movement
AFRAM 41: African-American Women's Studies
AMIND 20: Native Peoples of California
AMIND 31: American Indian Culture
AMIND 32: American Indian History
AMIND 34: The American Indian in Contemporary Society
AMIND 35: American Indian Art
AMST 10: American Pluralism- A Search for Common Ground in a Multicultural Soc.
AMST 11: Law and Democracy
ASAMER 1: Indo-Chinese Americans
ASAMER 15: Intro to Asian Americans
ASAMER 20: Asian-American Literature
ASAMER 25: Asian-American Social Issues
ASAMER 30: Asian-American Women
ASAMER 55: Introduction to Asian Art
ASL 5: Deaf Culture
CLS 11: Intro to Chicano-Latino Studies
CLS 12: Mexican American History
CLS 13: Politics and the Chicano-Latino Community
CLS 14: Sociology of the Mexican American Community
CLS 18: Latin Jazz Ensemble
CLS 20: Chicano Art
CLS 21: Chicano Literature
CLS 24: La Chicana and Latina
CLS 30: The Mexican American Family- Social and Psychological Perspectives
ENGL 17: African-American Literature
ENGL 20: Asian-American Literature
ENGL 36: Women in Literature
FILM 3: Film and Culture
GEOG 20: Geography of California
HIST 22: History of American Women
HIST 30: California History
JOURN 16: Race, Gender and the Media
SOC 2: American Minority Groups
SOC 14: Sociology of the Mexican American Community
SPAN 42: Hispanic American Culture
WSTS 10: Changing Roles of Women
WSTS 22: History of American Women
WSTS 24: La Chicana and Latina
WSTS 30: Asian-American Women
WSTS 36: Women in Literature
WSTS 41: African-American Women's Studies

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 & 4C*

(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 Fresno City 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.

Fresno City College Course	SCU course equivalency
ANTHRO 1/1L: Biological Anthropology w/Lab	ANTH 1
ANTHRO 15: Laboratory Methods in Archaeology	TRCR 18
ASTRO 10: Basic Astronomy w/Lab	TRCR 18
BIOL 3: Introduction to Life Science w/Lab	TRCR 18
BIOL 4: Principles of Zoology w/Lab	TRCR 18
BIOL 5: Human Biology w/Lab	TRCR 18
BIOL 6: Principles of Botany w/Lab	TRCR 18
BIOL 7: Field Biology w/Lab	TRCR 18
BIOL 11A/11AH: Biology for Science Majors I w/Lab	TRCR 18
BIOL 11B: Biology for Science Majors II w/Lab	TRCR 18
BIOL 20: Human Anatomy w/Lab	TRCR 18

BIOL 21A: Human Anatomy & Physiology I w/Lab	TRCR 18
BIOL 21B: Human Anatomy & Physiology II w/Lab	TRCR 18
BIOL 22: Human Physiology w/Lab	TRCR 18
BIOL 31: Microbiology w/Lab	TRCR 18
CHEM 1A: General Chemistry w/Lab	CHEM 11
CHEM 1B: General Chemistry and Qualitative Analysis w/Lab	CHEM 12&50
CHEM 3A: Introductory General Chemistry w/Lab	TRCR 18
CHEM 3B: Introductory Organic & Biological Chemistry w/Lab	TRCR 18
CHEM 8A/18L: Elementary Organic Chemistry w/Lab	TRCR 18
CHEM 28A/29A: Organic Chemistry I w/ Lab	CHEM 31
CHEM 28B/29B: Organic Chemistry II w/ Lab	CHEM 33 (If CHEM 28A/29A & 28B/29B completed, equates to SCU's CHEM 31, 32 & 33 sequence)
GEOG 1: Physical Geography	TRCR 18
GEOG 7: Physical Geography: Earth's Surface w/Lab	TRCR 18
GEOG 8: Physical Geography: Weather and Climate w/Lab	TRCR 18
GEOL 1: Physical Geology w/Lab	TRCR 18
GEOL 2/2L: Historical Geology w/Lab	TRCR 18
GEOL 9: Introduction to Earth Science w/Lab	TRCR 18
NATSCI 1A: Integrated Science: Physics and Chemistry	TRCR 18
PHYS 2A: General Physics 1 w/Lab	PHYS 11
PHYS 2B: General Physics 2 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 w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33

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.

Fresno City College Course
ANTHRO 2: Cultural Anthropology
ANTHRO 4: Intro to Archaeology
ECON 40/40H: Intro to Microeconomics
ECON 50/50H: Intro to Macroeconomics
POLSCI 5: Comparative Government
PSY 2/2H: General Psychology
PSY 5: Social Psychology
PSY 36: Biological Psychology
PSY 45: Intro to Research Methods in Psychology
SOC 1A/1AH: Intro to Sociology
SOC 1B: Critical Thinking about 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.

Fresno City College Course
AFRAM 4: Classical and Pre-Colonial Africa
AFRAM 5: The Africans of the New World
AFRAM 6: African Cultures and Languages
ANTHRO 2/2H: Cultural Anthropology
ANTHRO 3: Archaeology and World Prehistory
ANTHRO 8: Language and Culture
ANTHRO 13: Anthropology of Magic, Witchcraft and Religion
ARCH 15A: History of Architecture I
ART 55: Introduction to Asian Art
ASAMER 8: Chinese Culture
ASAMER 10: Hmong Culture
CLS 22: Art of the Ancient Americas
COMM 10: Intercultural Communication
ENGL 44A: World Literature to the Renaissance
ENGL 44B: World Literature since the Renaissance
ENGL 45: Contemporary World Literature
FILM 2A: History of Cinema 1895-1960

FILM 2B: History of Cinema 1960 - Present
GEOG 2: Cultural Geography
GEOG 4A: World Geography
GEOG 4B: World Geography
GLST 1: Introduction to Global Studies
GLST 2: Global Issues
HIST 17: History of the Muslim World to 1405
HIST 20: World History I, to 1600
HIST 23: World History II, since 1500
MUS 15: World Music Survey
PHIL 1D: World Religions
POLSCI 1: Modern Politics
POLSCI 5: Comparative Government
POLSCI 24: International Relations

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	FCC COURSE	BIOE	CENG	COEN	ECEN	ELEN	ENGR	MECH	WDE
MATH 11	MATH 5A	X	X	X	X	X	X	X	X
MATH 12	MATH 5B	X	X	X	X	X	X	X	X
MATH 13	MATH 6	X	X	X	X	X	X	X	X
MATH 14	MATH 6	X	X	X	X	X	X	X	X
MATH 22 or AMTH 106	MATH 7 OR MATH 17	X	X	X	X	X	X	X	
MATH 51 or COEN 19	CSCI 26			X	X				
MATH 53	MATH 26			X	X				
PHYS 31	PHYS 4A	X	X	X	X	X	X	X	
PHYS 32	PHYS 4B	X	X	X	X	X	X	X	
PHYS 33	PHYS 4C	X	X	X	X	X	X	X	
PHYS 34	-					X			
CHEM 11	CHEM 1A	X	X	X	X	X	X	X	
ELEN/COEN 21/21L	ENGR 12			X	X	X	X		
ELEN 50/50L	ENGR 6	X		X	X	X	X	X	
CENG 41	ENGR 8		X				X	X	
COEN 10/10L	CSCI 40 or CIT 63			X	X	X	X		X
COEN 11/11L	CIT 66 *			X	X	X			X
COEN 12/12L	-			X	X	X			X

*Student must learn C programming on own

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

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
CHEM 1B: General Chemistry and Qualitative Analysis w/Lab	CHEM 12&50
CHEM 28A/29A: Organic Chemistry I w/ Lab	CHEM 31
CHEM 28B/29B: Organic Chemistry II w/ Lab	CHEM 33 (If CHEM 28A/29A & 28B/29B completed, equates to SCU's CHEM 31, 32 & 33 sequence)
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106

CIVIL ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
GEOL 1: Physical Geology	GEOL 20/20L
Engineering:	
ENGR 2: Graphics	CENG 7/7L
ENGR 1A: Elementary Plane Surveying 1	CENG 10/10L

ENGR 8: Statics	CENG 41
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106

COMPUTER SCIENCE & ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
CIT 63: Beginning JAVA Programming OR CSCI 40: Programming Concepts & Methodology I	COEN 10/10L
CIT 66: Beginning C++ Programming (student must learn C programming on own)	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
CSCI 26: Discrete Mathematics for Computer Science	COEN 19 or MATH 51
CSCI 45: Computer Architecture and Organization	COEN 20/20L
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106
MATH 26: Elementary Linear Algebra	MATH 53

ELECTRICAL & COMPUTER ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers	PHYS 31

w/Lab	
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
CIT 63: Beginning JAVA Programming OR CSCI 40: Programming Concepts & Methodology I	COEN 10/10L
CIT 66: Beginning C++ Programming (student must learn C programming on own)	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
CSCI 26: Discrete Mathematics for Computer Science	COEN 19 or MATH 51
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106
MATH 26: Elementary Linear Algebra	MATH 53

ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
<i>No approved course equivalency at time of publication</i>	PHYS 34
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
ENGR 8: Statics	CENG 41
CIT 63: Beginning JAVA Programming OR CSCI 40: Programming Concepts & Methodology I	COEN 10/10L
CIT 66: Beginning C++ Programming (student must learn C programming on own)	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
Mathematics:	

MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106

GENERAL ENGINEERING MAJOR REQUIREMENTS

Fresno City College	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
ENGR 8: Statics	CENG 41
CIT 63: Beginning JAVA Programming OR CSCI 40: Programming Concepts & Methodology I	COEN 10/10L
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106

MECHANICAL ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab	CHEM 11
PHYS 4A: Physics for Scientists and Engineers w/Lab	PHYS 31
PHYS 4B: Physics for Scientists and Engineers w/Lab	PHYS 32
PHYS 4C: Physics for Scientists and Engineers w/Lab	PHYS 33
Engineering:	
ENGR 6: Circuits with Lab	ELEN 50/50L
ENGR 5: Programming and Problem Solving in MATLAB	MECH 45/45L
ENGR 8: Statics	CENG 41

Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis III	MATH 13&14
MATH 7: Introduction to Differential Equations OR MATH 17: Differential Equations and Linear Algebra	MATH 22 or AMTH 106

WEB DESIGN AND ENGINEERING MAJOR REQUIREMENTS

Fresno City College Course	SCU course equivalency
Natural Science:	
CHEM 1A: General Chemistry w/Lab <i>(Recommended)</i>	CHEM 11
Engineering:	
CIT 63: Beginning JAVA Programming OR CSCI 40: Programming Concepts & Methodology I	COEN 10/10L
CIT 66: Beginning C++ Programming (student must learn C programming on own)	COEN 11/11L
<i>No approved course equivalency at time of publication</i>	COEN 12/12L
Mathematics:	
MATH 5A: Mathematical Analysis I	MATH 11
MATH 5B: Mathematical Analysis II	MATH 12
MATH 6: Mathematical Analysis 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.