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

Hartnell 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: MAT 3A and MAT 3B
- One natural science course with a lab: CHM 1A
- Two Calculus-based Physics courses: PHY 4A and PHY 4B
    - Web Design Engineering majors are not required to complete CHM 1A, PHY 4A & PHY 4B. Complete one course in the Natural Science list.

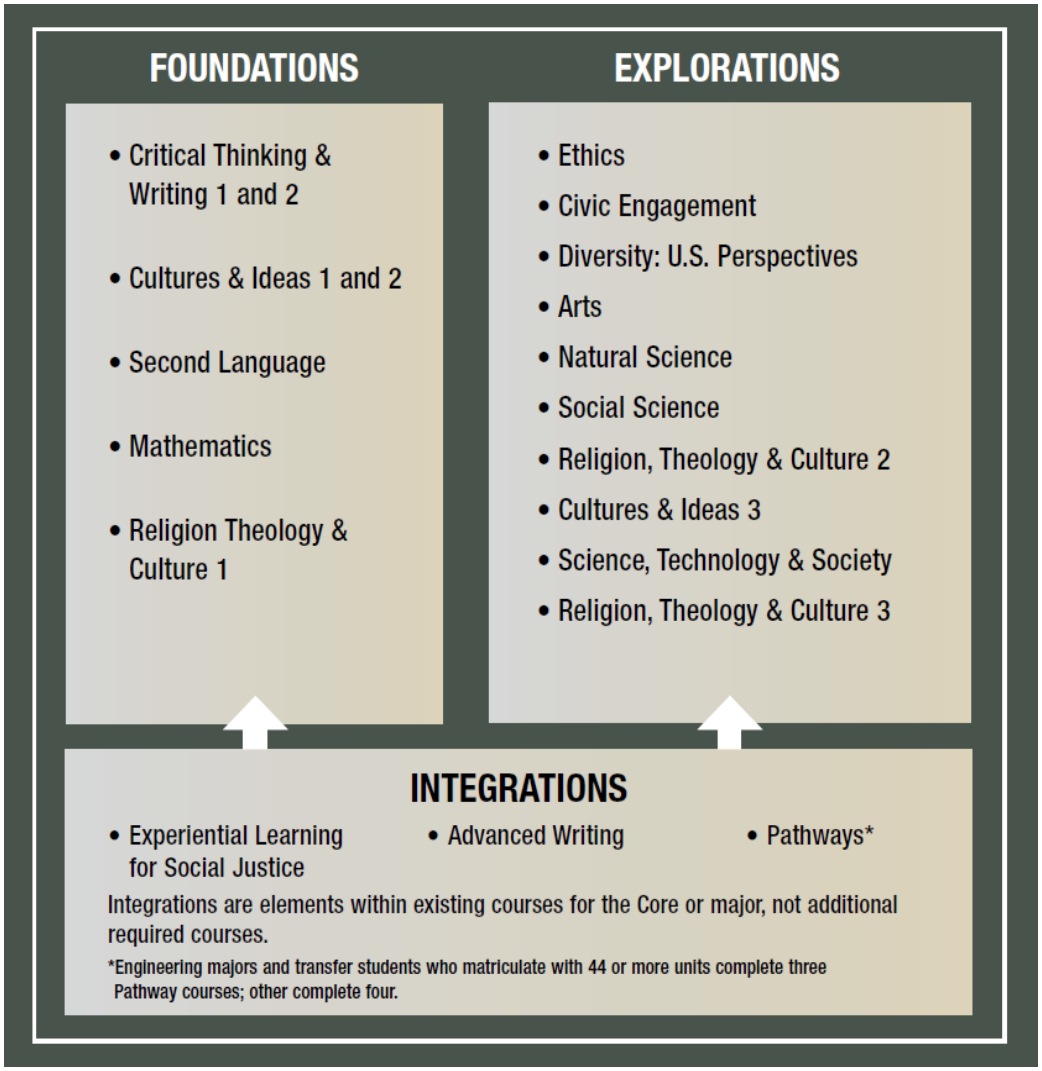
- GPA 3.5

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: *Engineering Physics*	193	96.5	64.33
Leavey School of Business	175	87.5	58.33
School of Engineering:			
Bioengineering	191	95.5	63.66
Civil Engineering	195	97.5	65
Computer Science & Engineering and General Engineering	189	94.5	63
Electrical Engineering and Electrical & Computer Engineering	190	95	63.33
Mechanical Engineering	192	96	64
Web Design and Engineering	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 Hartnell College UC transferrable courses to transfer for credit: Agriculture & Industrial Technology, some Agricultural Business & Technology courses, PE Activity, PE Adaptive, PE Intercollegiate, and some PE Theory and Health Education courses. To view all Hartnell 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.

Hartnell College Course
ENG 1A: College Composition and Reading
ENG 1AX: Intensive College Composition and Reading

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

Admission recommendation: Complete Critical Thinking and Writing 2 Core requirement

Hartnell College Course
ENG 1B: College Literature and Composition
ENG 2: Critical Thinking 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.

Hartnell College Course
ADJ 1: Introduction to Administration of Justice
ANT 10: California Indians
ANT 20: Cultures of Mexico
ART 1A: Art History Survey I
ART 1B: Art History Survey II
ETH 5: Chicano Politics and the American Political System
ETH 20: Introduction to Social Justice
HIS 4A: Western Civilization A
HIS 4B: Western Civilization B
HIS 5A: World History
HIS 5B: World History
HIS 6: History of Mexico
HIS 10: History of California
HIS 17A: United States History
HIS 17B: United States History
HIS 46A: Race and Ethnicity in American History
HIS 46B: Race and Ethnicity in American History
HIS 49A: Chicano History
HIS 49B: Chicano History
MUS 1A: Music Appreciation- Historical Perspective
POL 1: American Political Institutions
POL 5: Chicano Politics and the American Political System
SJS 20: Introduction to Social Justice

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.

Hartnell College Course
ANT 2: Intro to Cultural Anthropology
ANT 20: Cultures of Mexico
ENG 44A: World Literature I
ENG 44B: World Literature II
GEG 10: Geography and World Affairs- A Regional Approach
HED 6: Multicultural Health Beliefs
HIS 5A: World History A
HIS 5B: World History B
HIS 6: History of Mexico
HIS 47: Religions of the World
POL 2: Contemporary Governments Abroad
POL 3: Intro to 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 MAT 3A and MAT 3B

To fulfill the admission mathematics requirement, complete both MAT 3A and MAT 3B 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).***

Hartnell College Course	SCU Course equivalency
MAT 3A: Analytic Geometry and Calculus I	MATH 11

MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 4: Linear Algebra	MATH 53
MAT 5: Differential Equations	MATH 22 or AMTH 106
MAT 7: Discrete Mathematics OR CSS 7: 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.

Hartnell College Course
No approved course equivalencies at time of publication

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.*

Hartnell College Course
PHL 10: 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.

Hartnell College Course
ADJ 2: Community Relations and the Justice System
ANT 10: California Indians
COM 4: Intercultural Communication
EDU 1: Introduction to Education in a Changing World
ENG 26: Chicanx Literature
ETH 1: Intro to Ethnic Studies
ETH 2: Chicano Leadership
ETH 3: Chicanos in American Society
ETH 4: Chicano Culture
ETH 5: Chicano Politics and the American Political System
ETH 6: La Chicana
ETH 7: Chicano Theatre
ETH 12: Chicano Cinema
ETH 20: Introduction to Social Justice
ETH 21: Introduction to African American Studies
ETH 22: Introduction to Women's Studies
ETH 25: American Indian Literature
HIS 40: History of Women in the US
HIS 46A: Race and Ethnicity in American History A
HIS 46B: Race and Ethnicity in American History B
MUS 5: Ethnic Music s in the United States
MUS 8: American Popular Music
POL 5: Chicano Politics and the American Political System
SJS 20: Introduction to Social Justice
SJS 21: Introduction to African American Studies
SJS 22: Introduction to Women's Studies
SOC 5: Intro to Social Problems
SOC 30: Sociology of Latinxs in U.S. Society
SOC 42: The Sociology of Minority Relations
TAC 7: Chicano Theatre

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 CHM 1A; PHY 4A& 4B

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

Hartnell College Course	SCU course equivalencies
ABT 90: Soil Science w/Lab	TRCR 18
ABT 92: Plant Science w/Lab	TRCR 18
AST 1/1L: Introduction to Astronomy w/Lab	TRCR 18
BIO 1: Fundamental Biological Concepts w/Lab	TRCR 18
BIO 2: General Zoology w/Lab	TRCR 18
BIO 3: General Botany w/Lab	TRCR 18
BIO 5: Human Anatomy w/Lab	TRCR 18
BIO 6/6L: Introductory Physiology w/Lab	TRCR 18
BIO 10: General Biology w/Lab	TRCR 18
BIO 11: Introductory Human Anatomy and Physiology w/Lab	TRCR 18
BIO 20: Field Biology/Natural Science w/Lab	TRCR 18
BIO 27: Principles of Microbiology w/Lab	TRCR 18
BIO 30: Marine Biology w/Lab	TRCR 18
BIO 47: Ecology w/Lab	TRCR 18
BIO 48/48L: Environmental Science w/Lab	TRCR 18
CHM 1A: General Chemistry I w/Lab	CHEM 11
CHM 1B: General Chemistry II w/Lab	CHEM 12&50
CHM 12A: Organic Chemistry I w/Lab	CHEM 31
CHM 12B: Organic Chemistry II w/Lab	CHEM 33 (If CHEM 12A & 12B completed, equates to SCU's CHEM 31, 32 & 33)
CHM 22: The Science of Chemistry w/Lab	TRCR 18

GEL 1: Physical Geology w/Lab	TRCR 18
GEL 6: History of the Earth w/Lab	TRCR 18
PHY 2A: College Physics I w/Lab	PHYS 11
PHY 2B: College Physics II w/Lab	PHYS 13 (If PHY 2A & 2B completed, equates to SCU's PHYS 11, 12 & 13 sequence)
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C: General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B & 4C completed, equates to SCU's PHYS 31, 32, 33 & 34)
PHY 10: Introduction to Physics w/Lab	TRCR 18

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.

Hartnell College Course
ANT 2: Intro to Cultural Anthropology
ECO 1: Principles of Macroeconomics
ECO 5: Principles of Microeconomics
POL 1: American Political Institutions
POL 2: Contemporary Governments Abroad
POL 3: Intro to International Relations
PSY 2: General Psychology
SOC 1: Intro to Sociology
SOC 5: Intro to Social Problems
SOC 41: Marriage and the Family

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.

Hartnell College Course
ANT 2: Intro to Cultural Anthropology
ANT 20: Cultures of Mexico
ENG 44A: World Literature I
ENG 44B: World Literature II
GEG 10: Geography and World Affairs- A Regional Approach
HED 6: Multicultural Health Beliefs
HIS 5A: World History A
HIS 5B: World History B
HIS 6: History of Mexico
HIS 47: Religions of the World
POL 2: Contemporary Governments Abroad
POL 3: Intro to 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	HC COURSE	BIOE	CENG	COEN	ECEN	ELEN	ENGR	MECH	WDE
MATH 11	MAT 3A	X	X	X	X	X	X	X	X
MATH 12	MAT 3B	X	X	X	X	X	X	X	X
MATH 13	MAT 3C	X	X	X	X	X	X	X	X
MATH 14	MAT 3C	X	X	X	X	X	X	X	X
MATH 22 or AMTH 106	MAT 5	X	X	X	X	X	X	X	
MATH 51 or COEN 19	MAT 7 OR CSS 7			X	X				
MATH 53	MAT 4			X	X				
PHYS 31	PHY 4A	X	X	X	X	X	X	X	
PHYS 32	PHY 4C	X	X	X	X	X	X	X	
PHYS 33	PHY 4B	X	X	X	X	X	X	X	
PHYS 34	PHYS 4A, 4B, & 4C					X			
CHEM 11	CHM 1A	X	X	X	X	X	X	X	
ELEN/COEN 21/21L	-			X	X	X	X		
ELEN 50/50L	EGN 6	X		X	X	X	X	X	
CENG 41	EGN 8		X				X	X	
COEN 10/10L	CSS 4			X	X	X	X		X
COEN 11/11L	CSS 2A*			X	X	X			X
COEN 12/12L	CSS 2B			X	X	X			X

* Student must learn C language 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

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
CHM 1B: General Chemistry II w/Lab	CHEM 12&50
CHM 12A: Organic Chemistry I w/Lab	CHEM 31
CHM 12B: Organic Chemistry II w/Lab	CHEM 33 (If CHEM & CHEM completed, equates to SCU CHEM 31, 32, 33 sequence)
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106

CIVIL ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
GEL 1: Physical Geology w/Lab	CENG 20/20L
Engineering:	
EGN 2: Engineering Graphics and Design	CENG 7/7L
EGN 11: Surveying	CENG 10/10L
EGN 8: Statics	CENG 41
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106

COMPUTER SCIENCE & ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
CSS 4: Programming for Scientists and Engineers	COEN 10/10L
CSS 2A: Object Oriented Programming	COEN 11/11L (*Student must learn C language on own)
CSS 2B: Data Structures and Algorithms	COEN 12/12L
MAT 7: Discrete Mathematics OR CSS 7: Discrete Structures	COEN 19 or MATH 51
CSS 3: Computer Architecture and Assembly Language Programming	COEN 20/20L
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106
MAT 4: Linear Algebra	MATH 53

ELECTRICAL & COMPUTER ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
CSS 4: Programming for Scientists and Engineers	COEN 10/10L
CSS 2A: Object Oriented Programming	COEN 11/11L (*Student must learn C language on own)
CSS 2B: Data Structures and Algorithms	COEN 12/12L
MAT 7: Discrete Mathematics OR CSS 7: Discrete Structures	COEN 19 or MATH 51
Mathematics:	

MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106
MAT 4: Linear Algebra	MATH 53

ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
EGN 8: Statics	CENG 41
CSS 4: Programming for Scientists and Engineers	COEN 10/10L
CSS 2A: Object Oriented Programming	COEN 11/11L (*Student must learn C language on own)
CSS 2B: Data Structures and Algorithms	COEN 12/12L
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106

GENERAL ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
EGN 4: Materials Science and Engineering	MECH 15/15L
EGN 8: Statics	CENG 41
CSS 4: Programming for Scientists and Engineers	COEN 10/10L
Mathematics:	

MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106

MECHANICAL ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab	CHEM 11
PHY 4A: General Physics I/ Mechanics w/Lab	PHYS 31
PHY 4B: General Physics II/ Electricity and Magnetism w/Lab	PHYS 33
PHY 4C General Physics III/ Waves, Heat, Light, Sound and Modern Physics w/Lab	PHYS 32 (If PHY 4A, 4B, & 4C completed, equates to SCU's PHYS 31, 32, 33, & 34)
Engineering:	
EGN 6: Circuit Analysis	ELEN 50/50L
EGN 4: Materials Science and Engineering	MECH 15/15L
EGN 8: Statics	CENG 41
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and Calculus III	MATH 13&14
MAT 5: Differential Equations	MATH 22 or AMTH 106

WEB DESIGN AND ENGINEERING MAJOR REQUIREMENTS

Hartnell College Course	SCU course equivalency
Natural Science:	
CHM 1A: General Chemistry I w/Lab *(Recommended)*	CHEM 11
Engineering:	
CSS 4: Programming for Scientists and Engineers	COEN 10/10L
CSS 2A: Object Oriented Programming	COEN 11/11L (*Student must learn C language on own)
CSS 2B: Data Structures and Algorithms	COEN 12/12L
Mathematics:	
MAT 3A: Analytic Geometry and Calculus I	MATH 11
MAT 3B: Analytic Geometry and Calculus II	MATH 12
MAT 3C: Analytic Geometry and 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.