

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**

### **Bakersfield 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 B6A and MATH B6B
- One natural science course with a lab: CHEM B1A
- Two Calculus-based Physics courses: PHYS B4A and PHYS B4B
  - Web Design Engineering majors are not required to complete CHEM B1A, PHYS B4A & B4B. 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 <b>Quarter</b> units	Maximum transferrable <b>Semester</b> unit equivalency
<b>College of Arts and Sciences</b>	175	87.5	58.33
<b>College of Arts and Sciences: <i>Engineering Physics</i></b>	193	96.5	64.33
<b>Leavey School of Business</b>	175	87.5	58.33
<b>School of Engineering:</b>			
<i>Bioengineering</i>	191	95.5	63.66
<i>Civil Engineering</i>	195	97.5	65
<i>Computer Science &amp; Engineering and General Engineering</i>	189	94.5	63
<i>Electrical Engineering and Electrical &amp; 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 Bakersfield College UC transferable courses to transfer for credit: Physical Education courses. To view all Bakersfield College's UC transferable courses, visit [www.assist.org](http://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 2<sup>nd</sup> 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.

Bakersfield College Course
ENGL B1A: Expository Composition

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

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

Bakersfield College Course
ENGL B1B: Intro to Types of Literature
ENGL B2: Advanced Composition and Critical Thinking
ENGL B3: Argumentative Writing and Critical Thinking
PHIL B9: Critical Thinking and Advanced Composition

## 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.

<b>Bakersfield College Course</b>
ANTH B5: North American Indians
ART B35: Survey of Western Art I
ART B36: Survey of Western Art II
CRIM B1: Introduction to Criminal Justice
ENGL B30A: Survey of American Literature
ENGL B30B: Survey of American Literature
HIST B4A: European Civilization
HIST B4B: European Civilization
HIST B17A: History of the United States
HIST B17B: History of the United States since 1870
HIST B18: History of California
HIST B20A: African American History of the United States
HIST B20B: African American History of the United States
HIST B36: History of Native American Indians
MUSC B27: History of Rock and Roll
PHIL B18: History of Ancient Philosophy
POLS B1: American Government- National, State and Local
SOCI B36: Sociology of the Chicano

## **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.

<b>Bakersfield College Course</b>
ANTH B2: Introduction to Cultural Anthropology
ART B37: Survey of Art- Latin America
ART B38: Survey of Art – Asian Art
ENGL B20A: Survey of World Literature
ENGL B25B: Survey of World Literature
GEOG B2: Human Geography
GEOG B5: World Regional Geography
HIST B1: World History from the Origins of Civilization to 1600
HIST B2: History of the World since 1650
HIST B15: Civilizations of the Middle East
MUSC B24: A Survey of World Music
PHIL B37: Intro to World Religions
POLS B2: Comparative Government
POLS B3: International Politics
SOCI B28: Intro to Gender

## **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 B6A and MATH B6B**

*To fulfill the admission mathematics requirement, complete both MATH B6A and B6B 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).*

Bakersfield College Course	SCU course equivalency
MATH B6A: Analytic Geometry and Calculus I	MATH 11
MATH B6B: Analytic Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ordinary Differential Equations	MATH 22 or AMTH 106
MATH B6E: Elementary Linear Algebra	MATH 53

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

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

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

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

Bakersfield College Course
<i>No approved Bakersfield 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.

Bakersfield College Course
PHIL B10: Intro to Ethics
PHIL B12: Ethics of Living and Dying



**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.

<b>Bakersfield College Course</b>
ASL B6: American Deaf Culture
COMM B6: Intercultural Communication
ENGL B21: African American Literature
ENGL B24: Latino/a Literature
FDST B2: Food Customs and Culture
HIST B20A: African American History of the United States
HIST B20B: African American History of the United States
HIST B25: Intro to Women in American History
HIST B30A: Early Chicano History
HIST B30B: History of Chicanos in the Southwest
HIST B33: Latin American History
HIST B36: History of Native American Indians
SOCI B2: Problems of Modern Society
SOCI B45: Minority Relations

## 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 B1B; PHYS B4A & B4B**

*(Note: Web Design & Engineering major completes one course to satisfy Natural Science core requirement. It is recommended to complete CHEM B1B)*

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 Bakersfield 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.*

<b>Bakersfield College Course</b>	<b>SCU course equivalency</b>
BIOL B3A: General Biology I	TRCR 18
BIOL B3B: General Biology II	TRCR 18
BIOL B11: Concepts of Biology	TRCR 18
BIOL B16: General Microbiology	TRCR 18
BIOL B18: Essentials of Human Anatomy and Physiology	TRCR 18
BIOL B32: Human Anatomy and Physiology I	TRCR 18
BIOL B33: Human Anatomy and Physiology II	TRCR 18
CHEM B1A: General Chemistry	CHEM 11
CHEM B1B: General Chemistry and Chemical Analysis	CHEM 12&50
CHEM B2A: Introductory General Chemistry	TRCR 18
CHEM B11: Intro to General, Organic and Biochemistry	TRCR 18
CHEM B18: Elementary Organic Chemistry	TRCR 18
CHEM B30A: Organic Chemistry for Science Majors I	CHEM 31
CHEM 30B: Organic Chemistry for Science Majors II	CHEM 33 (If CHEM B30A & B30B is completed, equates to SCU's CHEM 31, 32 & 33 sequence)
CRPS B5: Plant Science	TRCR 18
ERSC B10/B10L: Intro to Earth Science w/ Lab	TRCR 18
GEOG B1/B1L: Physical Elements of Geography w/ Lab	TRCR 18
GEOL B10/B10L: Intro to Geology w/ Lab	TRCR 18
GEOL B11/B11L: Historical Geology w/ Lab	TRCR 18
PHSC B12: Physical Science	TRCR 18
PHYS B2A: General Physics- Mechanics and Heat	PHYS 11
PHYS B2B: General Physics- Sound, Light, Electricity, Magnetism and Modern Physics	PHYS 13 (If PHYS B2A & B2B completed, equates to SCU's PHYS 11, 12 & 13 sequence)
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
PHYS B4C: Optics and Modern Physics	PHYS 34
SOIL B1: Intro to Soil Science	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.

<b>Bakersfield College Course</b>
ANTH B2: Cultural Anthropology
ANTH B3: Intro to Archaeology
ECON B1: Principles of Economics- Micro
ECON B2: Principles of Economics- Macro
POLS B2: Comparative Government
POLS B3: International Politics
PSYC B1A: General Psychology
PSYC B1B: Biological Psychology
PSYC B6: Research Methods for the Behavioral and Social Sciences
SOCI B1: Intro to Sociology

**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.

<b>Bakersfield College Course</b>
ANTH B2: Introduction to Cultural Anthropology
ART B37: Survey of Art- Latin America
ART B38: Survey of Art – Asian Art
ENGL B20A: Survey of World Literature
ENGL B25B: Survey of World Literature
GEOG B2: Human Geography
GEOG B5: World Regional Geography
HIST B1: World History from the Origins of Civilization to 1600
HIST B2: History of the World since 1650
HIST B15: Civilizations of the Middle East
MUSC B24: A Survey of World Music
PHIL B37: Intro to World Religions

POLS B2: Comparative Government
POLS B3: International Politics
SOCI B28: Intro to Gender

**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	BC COURSE	BIOE	CENG	COEN	ECEN	ELEN	ENGR	MECH	WDE
MATH 11	MATH B6A	X	X	X	X	X	X	X	X
MATH 12	MATH B6B	X	X	X	X	X	X	X	X
MATH 13	MATH B6C	X	X	X	X	X	X	X	X
MATH 14	MATH B6C	X	X	X	X	X	X	X	X
MATH 22 or AMTH 106	MATH B6D	X	X	X	X	X	X	X	
MATH 51 or COEN 19	-			X	X				
MATH 53	MATH B6E			X	X				
PHYS 31	PHY B4A	X	X	X	X	X	X	X	
PHYS 32	-	X	X	X	X	X	X	X	
PHYS 33	PHYS B4B	X	X	X	X	X	X	X	
PHYS 34	PHYS B4C					X			
CHEM 11	CHEM B1A	X	X	X	X	X	X	X	
ELEN/COEN 21/21L	-			X	X	X	X		
ELEN 50/50L	ENGR B17/B17L	X		X	X	X	X	X	
CENG 41	ENGR B36		X				X	X	
COEN 10/10L	COMP B11			X	X	X	X		X
COEN 11/11L	COMP B12**			X	X	X			X
COEN 12/12L	-			X	X	X			X

**\*\* Students need to familiarize themselves with the C language**

**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

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
CHEM B1B: General Chemistry and Chemical Analysis	CHEM 12&50
CHEM B30A: Organic Chemistry for Science Majors, I	CHEM 31
CHEM B30B: Organic Chemistry for Science Majors, II	CHEM 32 (If CHEM B30A & B30B completed, equates to SCU CHEM 31,32,33 sequence)
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
<b>Engineering:</b>	
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106

## CIVIL ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
GEOL B10/B10L: Introduction to Geology w/Lab	CENG 20/20L
<b>Engineering:</b>	
<i>No approved course equivalencies at time of publication</i>	MECH 10/10L
ENGR B24: Engineering Graphics and Descriptive Geometry	CENG 7/7L
ENGR B40: Surveying	CENG 10/10L
ENGR B36: Engineering Mechanics - Statics	CENG 41
ENGR B38: Strength of Materials	CENG 43 or CENG 44A & 44B (Must take lab)
ENGR B45: Properties of Materials	CENG 115/115L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11

MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106

### COMPUTER SCIENCE & ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
<b>Engineering:</b>	
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
COMP B11: Programming Concepts and Methodology I	COEN 10/10L
COMP B12: Programming Concepts and Methodology II	COEN 11/11L (Students need to familiarize themselves with the C language)
<i>No approved course equivalencies at time of publication</i>	COEN 12/12L
<i>No approved course equivalencies at time of publication</i>	COEN 19 or MATH 51
COMP B13: Computer Architecture and Organization	COEN 20
<b>Mathematics:</b>	
MATH B6A: Anal Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106
MATH B6E: Elementary Linear Algebra	MATH 53

### ELECTRICAL & COMPUTER ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
PHYS B4C: Optics and Modern Physics	PHYS 34
<b>Engineering:</b>	
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
COMP B11: Programming Concepts and Methodology I	COEN 10/10L
COMP B12: Programming Concepts and Methodology II	COEN 11/11L (Students need to familiarize themselves with the C language)

<i>No approved course equivalencies at time of publication</i>	COEN 12/12L
<i>No approved course equivalencies at time of publication</i>	COEN 19 or MATH 51
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106
MATH B6E: Elementary Linear Algebra	MATH 53

## ELECTRICAL ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
PHYS B4C: Optics and Modern Physics	PHYS 34
<b>Engineering:</b>	
ENGR B36: Engineering Mechanics - Statics	CENG 41
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
COMP B11: Programming Concepts and Methodology I	COEN 10/10L
COMP B12: Programming Concepts and Methodology II	COEN 11/11L (Students need to familiarize themselves with the C language)
<i>No approved course equivalencies at time of publication</i>	COEN 12/12L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106

## GENERAL ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
<b>Engineering:</b>	
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
ENGR B36: Engineering Mechanics - Statics	CENG 41



COMP B11: Programming Concepts and Methodology I	COEN 10/10L
<i>No approved course equivalencies at time of publication</i>	MECH 10/10L
<i>No approved course equivalencies at time of publication</i>	MECH 11/11L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106

### MECHANICAL ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b>	
CHEM B1A: General Chemistry	CHEM 11
PHYS B4A: Mechanics and Wave Motion	PHYS 31
PHYS B4B: Heat, Electricity and Magnetism	PHYS 33 (If PHYS 4A & 4B completed, equates to SCU's PHYS 31, 32 & 33)
<b>Engineering:</b>	
ENGR B17/B17L: Introduction to Electric Circuits w/Lab	ELEN 50/50L
ENGR B36: Engineering Mechanics - Statics	CENG 41
<i>No approved course equivalencies at time of publication</i>	MECH 10/10L
<i>No approved course equivalencies at time of publication</i>	MECH 11/11L
<i>No approved course equivalencies at time of publication</i>	MECH 15/15L
ENGR B20: Programming and Problem-Solving in MATLAB	MECH 45/L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: Calculus III	MATH 13&14
MATH B6D: Ord Differential Equations	MATH 22 or AMTH 106

### WEB DESIGN AND ENGINEERING MAJOR REQUIREMENTS

Bakersfield College Course	SCU course equivalency
<b>Natural Science:</b> <i>fulfilled with one course from Natural Science list.</i>	
CHEM B1A: General Chemistry	CHEM 11 ( <i>recommended</i> )
<b>Engineering:</b>	
COMP B11: Programming Concepts and Methodology I	COEN 10/10L
COMP B12: Programming Concepts and Methodology II	COEN 11/11L (Students need to familiarize themselves with the C language)

<i>No approved course equivalencies at time of publication</i>	COEN 12/12L
<b>Mathematics:</b>	
MATH B6A: Analy Geometry and Calculus I	MATH 11
MATH B6B: Anal Geometry and Calculus II	MATH 12
MATH B6C: 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](mailto: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.