ENGINEERING MAJOR

Transfer Requirements

> The following requirements for the major are subject to change without notice. To assure that this information is current; you should consult with an Engineering counselor, or review articulation agreements via the Internet at www.assist.org

NOTE: Transfer Requirements: (IGETC is NOT Recommended)

Minimum grades of "C" or better are required in lower division requirements. Students should complete all lower division requirements prior to transfer to be competitive for admission. Additionally, to be minimally eligible to transfer to a UC campus, students must meet minimum eligibility: two semesters of English composition (English 1A and English 1B or 1C), one transferable math, and four courses from at least two of the following areas: Arts/Humanities, Social and Behavioral Sciences, and Physical and Biological Sciences.

CALIFORNIA STATE UNIVERSITY, FULLERTON (CSUF) (2021-2022)

BS Engineering: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A, Engineering 9

Options: **BS Computer**: add Computer Science 1, 2; Math 210
BS Electrical: add Computer Science 1
BS Civil: add Engineering 9, Biology 10 H or Geology 1 (Physics 1D is not required)
BS Mechanical: Engineering 9, Chem 1A, (Physics 1D is not required)

CALIFORNIA STATE UNIVERSITY, LONG BEACH (CSULB) (2021-2022)

NOTE: Engineering students may be able to waive 3 units on the CSU general education pattern from Life Science, Area B1or Area E (except Biomedical and Clinical Engineering, Chemical, Civil, Computer Science). Critical thinking Area A3 may be waived. Math 190, 191, Physics 1A, 1B must be completed within one calendar year of transfer.

BS Aerospace: Engineering 1, 9; Chemistry 1A; CADD 43; Math 190, 191, 220; Physics 1A, 1B, 1C

BS Chemical: Chemistry 1A, 1B, 7A, 7B; Math 190, 191, 220; Physics 1A, 1B, 1C; Engineering 1, 9;

BS Civil: Chemistry 1A; Math 190, 191, 220; Physics 1A, 1B, 1C; Biology 10 or Microbiology 33; Engineering 1 and 9; CADD 43

BS Computer: Math 190, 191; Physics 1A, 1B, 1C; Computer Science 2, 3; Engineering 1; Biology 10 or Chemistry 1A or Physics 1D, ECHT 110

BS Computer Engineering Technology: Math 190,191, Math 150, or Psych 109A or Soc 109A, CIS 13, ECHT110, 130, 120, Computer Science 1 or 30; Physics 1A, 1C, or 2A, 2B, or 3A, 3B. Engr 1

BS Construction Engineering Management: Physics 2A and 2B or 3A and 3B or 1A and 1C; Business 1A; Math 190 and 150; Architecture 150A; Law 5; Engineering 1.

BS Electrical: Math 190, 191, 220; Physics 1A, 1B, 1C, 1D; Engineering 1

BS Electronics Engineering Technology: Math 190, 191, Math 150, or Psych 109A or Soc 109A, CIS 13, Physics 1A, 1C or 2A,2B, or 3A3B, ECHT110, 130,120, Computer Science 1or 30.

BS Biomedical Engineering: Physiology 31 or Anatomy Physiology 34A and 34B; Biology 10; Chemistry 1A, 1B; Engineering 1; Math 190, 191, 220; Physics 1A, 1B, 1C, 1D;

BS Mechanical: Chemistry 1A; Math 190, 191, 220; Physics 1A, 1B, 1C; Engineering 1 and 9; ETEC 16; CADD 43

NOTE: Major specific admissions requirements, please visit:
http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html

CALIFORNIA STATE UNIVERSITY, LOS ANGELES (CSULA) (2021-2022)

BS Engineering: English 1C; Engineering 1; Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D

Options: **BS Civil**: add Chemistry 1A; Engineering 9

BS Electrical: add Chemistry 1 A; Engineering 1; ECHT 130 (Physics 1A and 1C are only required)

BS Mechanical: add Chemistry 1A; Engineering 9

BS Technology: Math 190; Chem 1A; Physics 1A; Engineering 1

NOTE: Major specific admissions requirements, please visit:
https://www.calstatela.edu/admissions/major-specific-criteria

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE (CSUN) (2021-2022)

BS Civil: Biology 101; Chemistry 1A; Engineering 9; Math 190, 191, 220, 270; Physics 1A, 1C

BS Electrical: Chemistry 1A, Engineering 1, 9, Math 190, 191, 220, 270; Physics 1A, 1C; Computer Science 30

BS Manufacturing Systems; **BS Mechanical**; **BS Engineering Management**: Chemistry 1A; Engineering 1, 9; Math 190, 191, 220, 270; Physics 1A, 1C

BS Computer: Computer Science 1, 2, 16; Math 190, 191, 210; Physics 1A, 1C; select one of the following science sequences: Biology 101, 102; Chemistry 1A, 1B; or Physics 1A, 1B or Physics 1A, 1C

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA (CPP) (2021 -2022)

All Engineering majors are exempt from completing Critical Thinking as a part of the admission requirements. The Critical Thinking GE A3 requirement is completed through a series of upper- and lower-division design courses within the major requirements.

BS Aerospace Engineering: Math 190, 191, 220, 270; Physics 1A, 1C; Engineering 9; Chemistry 1A

BS Chemical Engineering: Chemistry 1A, 1B, 7A, 7B; Math 190, 191, 220, 270; Physics 1A, 1C

BS Civil Engineering: Chemistry 1A; Physics 1A, 1C; Engineering 9; CADD 7; Math 190, 191, 220, 270

Options: **BS Environmental**: no additional requirements

BS Geospatial: no additional requirements

BS Computer: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A, 1C; Biology 10 or 10H

BS Electrical Engineering: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A, 1C; Biology 10 or 10H

BS Industrial: Chemistry 1A; Physics 1A, 1C; Engineering 9; Math 190, 191, 220, 270; CADD 5 or ETEC 12

BS Manufacturing: Chemistry 1A; Engineering 9; Math 190, 191, 220, 270; ETEC 16; Physics 1A, 1C

BS Mechanical: Chemistry 1A; Computer Science 1; Engineering 9; Math 190, 191, 220, 270; Physics 1A, 1C

NOTE: Major specific admissions requirements, please visit:
https://www.cpp.edu/admissions/transfer/impacted-majors.shtml

CALIFORNIA POLYTECHNIC UNIVERSITY, SAN LUIS OBISPO (SLO) (2020-2021)

BS Aerospace Engineering: support courses: Chemistry 1A; Math 190, 191, 220, 270; Engineering 9; Physics 1A, 1B, 1C, 1D; ECHT 110

BS Biomedical Engineering: Chemistry 1A, 1B; Microbiology 33; support courses: Biology 102; Math 190, 191, 220, 270; Engineering 9; Physics 1A, 1B, 1C, 1D; ECHT 22

BS Civil Engineering: support courses: Chemistry 1A, 1B; Geology 1; Math 190, 191, 220, 270; Engineering 9; Physics 1A, 1B, 1C, 1D

BS Computer Engineering: Computer Science 1 or 3 and 30; support courses: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; ECHT 22 and 110; electives: Engineering 9; or Chemistry 1B

BS Electrical Engineering: support courses: Chemistry 1A; Computer Science 1 or 3; Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; ECHT 22 and 110; three courses from electives: Biology 10; Chemistry 1B; Chemistry 21A, 21B; Computer Science 30; ETEC 12 or 12A/12B, Engineering 9

BS Environmental Engineering: support courses: Chemistry 1A, 1B; Chemistry 21A, 21B; Math

190, 191, 220, 270; Microbiology 33; Engineering 9; Physics 1A, 1B, 1C, 1D

BS General Engineering: Computer Science 3 and 30; Computer Science 30; Engineering 9; support courses: Chemistry 1A, 1B; Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; electives: Geology 1, 3;

BS Industrial Engineering: Chemistry 1A; Math 190, 191, 220, 270; ECHT 22; Engineering 1, 9; Physics 1A, 1B, 1C, 1D; Psychology 5

BS Manufacturing Engineering: support courses: Chemistry 1A, 1B; Math 190, 191, 220, 270; ETEC 12 or 12A/12B, ECHT 22 and 112; Engineering 1, 9; Physics 1A, 1B, 1C, 1D

BS Materials Engineering: electives: Law 5; Chemistry 1A, 1B, 7A, 7B; Economics 2; support courses: Math 190, 191, 220, 270; Engineering 9; Physics 1A, 1B, 1C, 1D

BS Mechanical Engineering: Engineering 9; support courses: Chemistry 1A, 1B; Math 190, 191, 220, 270; Physics 1A, 1B; ECHT 110

BS Software Engineering: Computer Science 1 or 3 or 3 and 30; Chemistry 1A, 1B or Physics 1A, 1B, 1C; Engineering 9; support courses: Biology 10 or 102 or 8 or Microbiology 33; Math 190, 191, 220, 270; Psychology 5; CHEM 7A, 7B, ECHT 110; COMS 140

BS Bioresource and Agricultural Engineering: CADD 5, 7; Microbiology 33; Economics 1 or 5; Chemistry 1A, 1B; Engineering 9; Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D

NOTE: Major specific admissions requirements, please visit: https://www.calpoly.edu/admissions/transfer-student/selection-criteria/major-specific-transfer-criteria

UNIVERSITY OF CALIFORNIA, BERKELEY (UCB) (2021-2022)

Core Courses required of all majors: English 1A and 1B; Math 190, 191, 220, 270; Physics 1A, 1B, 1C; Chemistry 1A

BS Bioengineering: add; Chemistry 7A; recommended Chemistry 7B; Strongly recommended CS 2 and 30

BS Chemical: add Biology 101, 102, 103; Physics 1D, Chemistry 1B, 7A, 7B; English 1B or 1C may be used to meet minimum UC-E eligibility requirements for admission

BS Civil: add Chemistry 1B

BS Electrical Engineering: recommended Computer Science 2, 30; one course or course sequence from list: Biology 101, 102, 103 (entire series); Chemistry 1B, 7A, 7B; Physiology 31; Physics 1D

BS Energy Engineering: Chemistry 1B or Chem 7A, or Physics 1D. Highly recommended Computer Science 2, 30, math 210.

BS Engineering Mathematics and Statistics: add CADD 5 and CADD 7; Computer Science 2, 30, Math 210

BS Engineering Physics: add Physics 1D, selected 3 courses from the following: Biology 101, 102, 103; Chemistry 1B, Chem 7A; highly recommended Computer Science 2, 30;

BS Environmental: add three science electives from Chemistry 1B, 7A, 7B; Biology 101, 102, 103 (entire sequence); Geology 1 and 3 or 2 and 4; Physics 1D

BS Industrial Engineering and Operations Research: add CADD 5, 7; Computer Science 30; students must take a course articulated with UCB COMPSCI 61A at a CCC (ECC does not offer this course) or other computer programming courses

BS Materials Science and Engineering: add one course from: Chemistry 1B; Physics 1D.

BS Mechanical: add one from the following: Biology 101, 102 and 103 (entire series) or Chemistry 1B, 7A, 7B, or Physiology 31, Physics 1D;

BS Nuclear: add Physics 1D; one course from the following Chemistry 1B, 7A, Physiology 31, Biology 101, 102, 103 (entire sequence)

NOTE: Major specific admissions requirements, please visit: https://engineering.berkeley.edu/students/undergraduate-guide/

UNIVERSITY OF CALIFORNIA, IRVINE (UCI) (2021-2022) Students must have a cumulative 3.0 in the major preparation courses for admission.

BS Aerospace: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A; Computer Science 1 or 2, or 3, or 14, or 17, or 30; Engineering 9; 11 and 12; Econ 102, one course from: Anatomy Physiology 34A, 34B, Anatomy 30, 32, Biology 8, 10, 11, 15, 16, 101, 102, 103, Chemistry 1B, 20, 21A, 7A, 7B, Microbiology 33, Ocean 10, Physical Science 25, Physiology 31, Psychology 7, Physics 2A, 3A, or Physics 11 and 12, Anthropology 1 and 5, Astronomy 20 or 25 and 12, Biology 17 and 18, Geography 1 and 6, Geology 1 and 3, 32, 34 or 36, Geology 2 and 4, 15

BS Biomedical: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A, 1B; Comp. Sci 17; Math 150 or Sociology 109A

BS Biomedical, Premedical: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A, 1B, 7A, 7B, 21B; Comp. Sci 17; Biology 103

BS Chemical: Math 190, 191, 220, 270; Chemistry 1A, 1B, 7A, 7B; Physics 1A, 1C; Computer Science 1 or 2, or 3, or 14, or 17, or 30; Additional Major electives, Chem 21B; Biology 103

BS Civil: Math 190, 191, 220, 270; Physics 1A, 1C; Chemistry 1A, 1B; math150; Engineering 9; Economics 1, 2; select one course from: Engineering 11, Biology 102; Oceanography 10; Geology 1, Hist 140, 141, 143.

BS Computer: Math 190, 191, 220, 270, 210; Physics 1A, 1B, 1C, 1D; Computer Science 1 2,3, and 30; Engineering 11 and 12

BS Computer Science and Engineering: Math 190, 191, 220, 270, 210; Physics 1A, 1C; Computer Science 1 and 30; Engineering 1.

BS Electrical: Math 190, 191, 220, 270, 210; Physics 1A, 1B, 1C, 1D; Computer Science 1 or 30; Chemistry 1A Engineering 11 and 12. Major Electives: Computer Science 2, Physics 1B and 1D.

BS Environmental: Math 190, 191, 220, 270; Physics 1A, 1C; Chemistry 1A, 1B, 7A; math 150; Engineering 9 and 11; Economics 101, 1022; electives Biology 102 or Hist 140, 141, 143.

BS Materials Science: Math 190, 191, 220, 270, 210; Physics 1A, 1B, 1C, 1D; Computer Science 1 or 2, or 3, or 14, or 17, or 30; Chemistry 1A, 1B; Engineering 9, Engineering 11 and Engineering 12. Additional major electives: Bio 102, Chem 7A; Math 150, Psych 109A.

BS Mechanical: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A; Computer Science 1 or 2, or 3,or 14, or 17,or 30; Engineering 9; ; Engineering 11 and Engineering 12; Econ 102; one course from: Anatomy Physiology 34A, Anatomy 32, Biology 8, 10, 11, 15, 16, 101, 102, 103, Chemistry 1B, 20, 21A, Microbiology 33, Ocean 10, Physical Science 25, Physiology 31, Psychology 7, Physics 2A, 3A, or Physics 11 and 12, Anthropology 1 and 5, Astronomy 20 or 25 and 12, Biology 17 and 18, Geography 1 and 6, Geology 1 and 3, 32, 34 or 36, Geology 2 and 4.

BS Software Engineering: Math 190, 191, 210 or 270; Computer Science 1 and 30, 3

NOTE: Major specific admissions requirements, please visit:
https://www.admissions.uci.edu/apply/transfer/requirements.php

UNIVERSITY OF CALIFORNIA, RIVERSIDE (UCR) (2021-2022)

NOTE: Check ASSIST.org for specific GE courses

BS Bioengineering: Math 190, 191; Chemistry 1A, 1B; Biology 102; complete two: Biology 101 or Biology 8 and 11; Physics 1A, 1B, 1C or 1D; recommended: Chemistry 7A, 7B; Computer Science 1 or 3; Math 220, 270; Physics 1A, 1B, 1C

BS Chemical: Chemistry 1A, 1B; Math 190, 191; Physics 1A; complete two: Biology 102; Physics 1B, 1C; Strongly Recommended: Chemistry 7A and 7B; Computer Science 1 or 3; Math 220, 270.

   Option: **BS Biochemical**; **BS Nanotechnology**: no additional requirements

BS Computer: Math 190, 191; Computer Science 1 or 3, 30; Physics 1A Select three courses: math 210,

Physics 1B, 1C; recommended Computer Science 2; Math 220, Chem 1A or Engineering 9
BS Electrical: Computer Science 1or 3; Math 190, 191; Physics 1A; complete three: Computer Science 30; Math 220; Physics 1B, 1C.
BS Environmental Engineering: Chem 1A, 1B; math 190 and 191; Physics 1A; Select two courses: Bio 102; Physics1B; 1C, Chem 7A, and 7B. Strongly Recommended. Com Sci 1 or 3, math 220, 270, Eng. 9.
BS Materials Science: Chemistry 1A, 1B; Math 190, 191; select three: Physics 1A, 1B, 1C; Math 220, 270; Chemistry 7A; recommended: Engineering 9
BS Mechanical Engineering: Chemistry 1A, 1B; Math 190, 191; Physics 1A; select three: CADD 7 or 5; Engineering 9; Physics 1B, 1C. Strongly recommended: math 220, 270.
Option: **BS Air Pollution Control Technology**; **BS Water Pollution Control Technology**: no additional requirements
NOTE: Major specific admissions requirements, please visit: https://admissions.ucr.edu/transfer/majors-preparation-guide

UNIVERSITY OF CALIFORNIA, SAN DIEGO (UCSD) (2021-2022)
Core Courses required of all majors: Math 190, 191, 220, 270; Physics 1A, 1B, 1C; Chemistry 1A
BS Bioengineering: add Chemistry 1B; Biology 101 102; Com Sci 17
BS Biotechnology: add Chemistry 1B, 7A, 7B, Bio 101 and 102; Comp Sci 17.
BS Bioinformatics: add Bio 101 and 102, Chemistry 1B; Computer Science 2, 3.
BS Biosystems: does not require Biology 101, 102
BS ECE Computer: add Computer Science 2, 3, Math 210 – no Chem 1A
BS ECE Electrical Engineering and Society: add Physics 1D – Historical Studies: Hist 122; Economic Studies: Econ 102, Bus 1A, Political Science Studies; Political Science 1,2,10, and 7; Sociology Studies: Soc 101 and 104
BS ECE Electrical: add Physics 1D
BS ECE Engineering Physics: add Physics 1D
BS MAE Aerospace: Add Com Sci 17
BS MAE: Environmental: add Chemistry 1B
BS MAE: Mechanical: add Comp Sci 17.
BS Chemical: add Chemistry 1B
BS Nano: add Physics 1D; Chemistry 1B; Biology 101, 102
BS Structural: no additional requirements
NOTE: Major specific admissions requirements, please visit: https://admissions.ucsd.edu/transfer/transfer-major-preparation.html

UNIVERSITY OF CALIFORNIA, SANTA BARBARA (UCSB) (2021-2022)
Core Courses required of all majors: Math 190, 191, 220, 270; Physics 1A, 1B, 1C, 1D; Chemistry 1A
BS Chemical: add Chemistry 1B, 7A, 7B, Comp Sci 17 – No Physics 1D.
BS Computer: add Computer Science 1, 2, 30; Math 210
BS Electrical: add Computer Science 1
BS Mechanical: add Chemistry 1B; Engineering 9; Comp Sci 17. Recommended: Engineering 11, 12 CADD 7 or 43
Note: UCSB Selective Majors: https://admissions.ext-prod.sa.ucsb.edu/selective-majors

UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)
See transfer planning guide for UCLA Henry Samueli School of Engineering and Applied Science

LOYOLA MARYMOUNT UNIVERSITY (LMU) (2021-2022)

Core Courses required of all majors: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A, 1C; Engineering 9
BS Civil and Environmental: Engineering 9
BS Electrical and Computer: Engineering 9 and Computer Science 17
    Option: **BS Computer Science**: add Computer Science 3 or 4
BS Engineering Physics: no additional coursework
BS Mechanical: Engineering 9
Note: LMU Recommended Courses by Major:
https://transfer.lmu.edu/howtotransfer/prepare/recommendedcoursesbymajor/

UNIVERSITY OF SOUTHERN CALIFORNIA (USC)
See transfer planning guide for USC Viterbi School of Engineering