



ENGINEERING MAJOR

COUNSELING DIVISION

The following requirements for the major are subject to change without notice. To assure accuracy of the information on this sheet, you should consult with the Engineering counselor or review articulation agreements via the Internet at www.assist.org. You may also consult with the Articulation Officer for specific articulation agreements.

NOTE: Many universities receive more applications than they can accept. Engineering majors should consider applying to more than one school. **Many of the courses required for this major have prerequisites that are listed in the El Camino College Catalog. *Computer Science 25 has been inactivated. *Computer Science 3 & 10 are offered fall semester only; Math 210 & Computer Science 15P & 30 are offered spring semester only. Engineering 9 will be offered in spring 2008.**

Transfer Requirements: (IGETC is NOT Recommended)

Admission to Engineering programs is very competitive. 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 one course from 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. Please see a counselor for additional admissions information.

CALIFORNIA STATE UNIVERSITY, FULLERTON (2005-2007) www.fullerton.edu/ecs/

Requirements for all Options: Math 190, 191, 220, 270; Physics 1A-1B-1C

Computer Engineering: add Biology 10; Computer Science 2; Math 210; Physics 1D

Mechanical Engineering: add Physics 1D

Electrical Engineering: add Biology 10; Chemistry 4; Physics 1D

Engineering Science: add Chemistry 1A; Computer Science 10*; Physics 1D

Civil Engineering: add Biology 10; Chemistry 4

Mechanical: add Computer Science 10*; Physics 1D;

Emphases available in Architectural Engineering (under civil engineering), Engineering Science and Pharmaceutical Engineering

CALIFORNIA STATE UNIVERSITY, LONG BEACH (2006-2007) www.csulb.edu/colleges/coe

NOTE: *Engineering students can waive 6 units of general education; 3 units CSU general education pattern from Life Science (Area B 1.A), or Area C or Area E; and 3 units from Area D.*

Aerospace Engineering: Chemistry 1A; Computer Science 10* at ECC or MAE 205 at CSULB; Math 190, 191, 220; Physics 1A-1B-1C; *Engineering 9**,

CADD 49 at ECC or MAE 172 at CSULB

Chemical Engineering: Chemistry 1A, 1B, Computer Science 10* at ECC or CH E 210 at CSULB; one course from Quantitative Chemistry taken at CSULB or Microbiology 33 at ECC; Math 190, 191, 220; Physics 1A-1B-1C; *Engineering 9**

Civil Engineering: Chemistry 1A; Computer Science 10* at ECC or C E 206 at CSULB; Math 190, 191, 220; Physics 1A-1B-1C; Biology 10 or Microbiology 33; *Engineering 9**, CADD 49 at ECC or MAE 172 at CSULB

Computer Engineering: Computer Science 1, 2, 3*; Math 190, Physics 1A-1B-1C (Physics 1B-1C has a Math 191 prerequisite)

Construction Engineering Management: Physics 2A-2B or 3A-3B; CEM 201 at CSULB or Business 1A and 1B at ECC; Math 122 at CSULB or Math 190 at ECC

Electrical Engineering: Computer Science 1; ECHT 130; Math 190, 191, 220; Physics 1A-1B-1C-1D

Mechanical Engineering: Chemistry 1A; Math 190, 191, 220; Physics 1A-1B-1C; Computer Science 10* at ECC or MAE 205 at CSULB; *Engineering 9**; CADD 49 at ECC or MAE 172 at CSULB

Engineering Technology: For all options: Chemistry 1A; Physics 2A-2B or 3A-3B; CADD 5; CIS 13; Math 122 at CSULB or Math 190 at ECC

Options: Environmental Technology: No comparable courses available at ECC

Manufacturing Technology: Add MTT 13A or 46

Quality Assurance: Add Law 5; MTT 13A or 46

Electronics and Computer Engineering Technology: Add ECHT 112, 120

Additional Engineering options available in Audio, Biomedical and Clinical, Industrial-Management, Materials, Theme Park

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CALIFORNIA STATE UNIVERSITY, LOS ANGELES (2006-2007) www.calstatela.edu/academic/engr/tmp/et/

Requirements for all Options: English 1C; Engineering 1; Chemistry 1A; Math 190, 191, 220, 270; Physics 1A-1B-1C (pending review)

Civil Engineering: add Chemistry 1B or Physics 1D; Strongly recommended: Computer Science 10*, CADD 5

Electrical and Computer Engineering: add Physics 1D; Strongly recommended "C" Programming for Engineers

Mechanical Engineering: add Physics 1D; Strongly recommended: Computer Science 10* or other high-level programming language with department approval from CSULA.

Special Option available in Manufacturing

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE (2006-2007) www.csun.edu/~ecsdean/degprog.html

For options in Civil, Electrical, Manufacturing Systems, Mechanical: Chemistry 1A, Engineering 1 and 9*, Math 190, 191, 220, 270; Physics 1A and 1C; (Computer Science 25* or 30* (for electrical))

For option in Computer Engineering: Computer Science 1, 2, 15P*; Math 190, 191, 220, 270; Physics 1A-1C; 8 units from: Biology 1A, 1B, Chemistry 1A, 1B, Physics 1B & 1D

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA (2004-2005) www.csupomona.edu/~engineering

For options in Aerospace, Chemical, Civil, Electrical, Industrial, Manufacturing, Mechanical and Materials: Chemistry 1A (not required for Aerospace); *Engineering 9** (except Electrical); Math 190, 191, 220, 270; Physics 1A, 1B, 1C

Chemical, Civil: add Chemistry 1B

Electrical: add Computer Science 30*

Industrial: add CADD 5 or CADD 34ABCD

Manufacturing: add CADD 5 or CADD 34ABCD

For options in Mechanical & Materials: add Chemistry 1B; CADD 5 or CADD 34ABCD

CALIFORNIA POLYTECHNIC UNIVERSITY, SAN LUIS OBISPO (2005-2006) <http://ceng.calpoly.edu/>

NOTE: students should view SLO's website for additional admissions and selection criteria.

Requirements for all options: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A-1B-1C-1D

Aerospace Engineering: No additional requirements

Bioresource and Agricultural Engineering: add one course from Computer Science 10* or 25*; CADD 5, CADD 10 ABCD; Chemistry 1B

Civil: add Computer Science 25*, Chemistry 1B

Computer Engineering: Add Chemistry 1B; Computer Science 1 or 3* or 25*; Computer Science 30*, Math 210

Electrical: add Computer Science 1 or 3* or 25*

General Engineering: add Computer Science 1 or 3* or 25*

Environmental: add Computer Science 10* or 25*; Microbiology 33; Chemistry 1B

Industrial: add Computer Science or 25*

Manufacturing: add Computer Science 25*, Welding 1; Chemistry 1B

Materials Engineering: add Computer Science 1 or 3* or 10* or 25*, Chemistry 1B

Mechanical: add Computer Science 10* or 25*; ME 152 at Cal Poly or CADD 5 & 47 at ECC; Chemistry 1B; Welding 1; MTT 13A

UNIVERSITY OF CALIFORNIA, BERKELEY (2006-2007) www.coe.berkeley.edu

Admission to the College of Engineering is highly competitive. Selection is based on high GPA, completion of prerequisites and specified options, and the essay. Applicants should have at least 80% of the lower division courses completed by the end of the spring semester prior to fall transfer. It is recommended that students have an Introduction to Engineering course. The College of Engineering at Berkeley admits students by major and does not consider students for an alternate major. Summer courses will not be considered for "work in progress" for fall selection. Please refer to www.assist.org for more detailed transfer information.

Core Courses required of all junior level transfer students:

English 1A and 1B (Chemical Engineering will accept English 1B or 1C); Math 190, 191, 220, 270; Physics 1A, 1B, 1C; Chemistry 1A (optional for EECS major--see below); one introductory course in computer programming (i.e. C, C++, or Java); If a sequence is listed for math, physics, chemistry, biology or English, the entire series needs to be complete. No partial credit will be given.

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UNIVERSITY OF CALIFORNIA, BERKELEY (Continued)

Bioengineering: add Biology 1A & 1B & 1C; Chemistry 1B, 7A & 7B; one course from Physics 1D or entire Biology sequence listed above

Chemical: add Chemistry 1B; Physics 1D. Recommended Chemistry 7A & 7B with a score in the 75th percentile or higher on the American Chemical Society Exam will constitute completion of Chemistry 112A-112B or Berkeley's Chemistry 112A-112B; **NOTE:** Chemical Engineering is housed under the College of Chemistry, therefore, IGETC should be completed by the end of spring prior to fall transfer.

Civil: add one course from Physics 1D or Chemistry 1B

Computational Engineering Science: add Math 210*; Physics 1D; Chemistry 1B; Computer Science 2, 30*; Biology 1A & 1B & 1C

Electrical: add one course from Physics 1D or Chemistry 1A or Physiology 31 or entire Biology sequence Biology 1A & 1B & 1C; Math 210* or Statistics 20 at Berkeley. Computer Science 2, 30*

Environmental: add Biology 1A & 1B & 1C at ECC; Chemistry 1B, 7A; two science elective from Chemistry 7B, Physics 1D, Geology 1 & 3 or Geology 2 & 4

Industrial and Operations Research: no additional courses

Manufacturing: no additional courses

Materials Science and Engineering: add Chemistry 1B; Physics 1D

Mechanical: add one course from Physics 1D or Chemistry 1B or entire Biology sequence Biology 1A & 1B & 1C at ECC or Biology 1A at Berkeley

Nuclear Engineering: add Chemistry 1B; Physics 1D

UNIVERSITY OF CALIFORNIA, IRVINE (2006-2007) www.eng.uci.edu

Preference will be given to junior-level applicants with the highest grades overall, and who have completed as many of the lower-division degree requirements as possible prior to transfer.

Requirements for all options: Chemistry 1A (except Computer); Math 190, 191, 220, 270

Aerospace: add Chemistry 1B; Computer Science 10* or 25; Physics 1A, 1B, 1C, 1D; *Engineering 9**

Civil: add Physics 1A; Chemistry 1B or Physics 1C; one from Physics 1B & 1D or Biology 1A & 1B; Computer Science 3* or 25*; *Engineering 9**. Students must choose one of the following specializations: General Civil Engineering, Structural Engineering, Transportation Information and Control Systems, Water Resource Engineering, or Environmental Engineering

Chemical: add Chemistry 1B, 7A, 7B; Computer Science 10* or 25*; Physics 1A, 1C

Computer: add Computer Science 2, 3*, 15P*, 25* & 30*; Mathematics 210; Physics 1A, 1B, 1C, 1D

Electrical: add Computer Science 25*; Physics 1A, 1B, 1C, 1D

Environmental: Chemistry 1B, 7A; Computer Science 10* or 25*; *Engineering 9**; Physics 1A;

General Engineering: Computer Science 25*; Physics 1A, 1B, 1C, 1D; *Engineering 9**

Materials Science: add Chemistry 1B; Computer Science 10* or 25*; Physics 1A, 1B, 1C, 1D; *Engineering 9**

Mechanical: add Computer Science 10* or 25*; Chemistry 1B; Physics 1A, 1B, 1C, 1D; *Engineering 9**

UNIVERSITY OF CALIFORNIA, LOS ANGELES—SEE GUIDESHEET FOR UCLA SCHOOL OF ENGINEERING AND APPLIED SCIENCES.

UNIVERSITY OF CALIFORNIA, RIVERSIDE (2006-2007) www.engr.ucr.edu/

Students accepted fall quarter only. Consult the current UC Riverside catalog or ASSIST for information on additional general education breadth requirements.

Requirements for all options: Chemistry 1A; Computer Science 1 or 25*; English 1A, and 1B or 1C or Philosophy 5 or Psychology 3; Math 190, 191, 220, 270; Physics 1A-1B-1C

Options available: Chemical; Computer; Electrical; Environmental; Mechanical

Chemical: add Biology 1A; Chemistry 1B; Chemistry 7A-7B; **Computer:** Add CS 2, 15P*, 30*; Math 210; Biology 10 or 1A;

Electrical: add Biology 10 or 1A; Computer Science 15P*; *Engineering 9**; **Environmental:** add Biology 1A; Chemistry 1B; Chemistry 7A-7B; *Engineering 9**; **Mechanical:** Add Biology 1A; Chemistry 1B; *Engineering 9**; CADD 5 or 10abcd (subject credit only, no UC transfer credit)

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UNIVERSITY OF CALIFORNIA, SAN DIEGO (2006-07) www.jacobsschool.ucsd.edu/

Transfer students are advised to complete as many preparatory courses before transferring to UCSD.

Requirements for all options: Math 190, 191, 220, 270; Physics 1A, 1B, 1C; Chemistry 1A;

Aerospace Engineering: add CS 1 or 10* or 25* or 30*

Chemical Engineering: add CS 1 or 10* or 25* or 30*; Chemistry 1B, 7A

Computer Engineering: Chemistry 1A not required; add CS 2, 3*, 15P*, 30*; Physics 1D; Math 210

Electrical Engineering: add Physics 1D; CS 1 or 3* or 25* or 30*

Engineering Physics: add Physics 1D; CS 1 or 3* or 25* or 30*

Environmental Engineering: add CS 1 or 10* or 25* or 30*; Chemistry 1B, 7A

Mechanical Engineering: add CS 1 or 10* or 25* or 30*; Recommended: Chemistry 1B

Structural Engineering: CS 1 or 25* or 30*

LOYOLA MARYMOUNT UNIVERSITY (2006-2007) www.lmu.edu/pages/129.aspx

Requirements for all options: Civil, Electrical, and Mechanical: Chemistry 1A; Math 190, 191, 220, 270; Physics 1A-1C.

Engineering 9*; **Electrical Engineering with an emphasis in Computer Engineering:** add CS 2, 3*, 25*

UNIVERSITY OF SOUTHERN CALIFORNIA —SEE USC TRANSFER GUIDE FOR ENGINEERING MAJOR.

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