



Transfer/Career Options
ENGINEERING
 2010 - 2011

Engineers are problem solvers. They are concerned with using available technology to solve these problems. They rely strongly on their creativity and academic skills. They use mathematics, science, and computers to model real life situations and solve problems. There are so many different branches of engineering that there is an engineer connected to almost anything you see around you. Engineers do just about anything. Some engineering work is obvious: roads, bridges, big buildings, cars, planes, power lines, televisions, and computers.

Engineers must have a deep understanding of the science and technology behind the projects they work on. This means that it is absolutely essential to stay up-to-date with new technologies. Engineers must be capable of creating and designing the equipment needed for the project. Sometimes that involves inventing new technologies to bring ideas into reality. Engineers are given the responsibility of testing everything extremely carefully before it is used.

Engineers work in industry, government, and business, as entrepreneurs, employees, and members of diverse teams. Some engineers move on to law or medicine, a business career, or postgraduate studies in their own fields. Most highly paid engineering consultants and all senior engineering researchers and professors have advanced degrees in engineering.

Please refer to www.assist.org for additional requirements for all of the engineering majors. We are only able to feature a few of the University of California and California State University campuses.

CSU ENGINEERING MAJORS

Upper division transfer students are ordinarily required to complete general education requirements in Communication in the English Language (areas A1, A2, A3 and Quantitative Reasoning (B4) prior to transfer. For the engineering majors, critical thinking (A3) is integrated primarily in the upper division curriculum and need not be completed before transfer.

UC ENGINEERING MAJORS

In addition to completing preparatory courses for any of the engineering majors, students must also meet UC minimum transfer eligibility and admission requirements. Selections are primarily based on the completeness of the applicant's lower division preparation and the level of academic achievement reflected in the student's grade point average. IGETC is not an option for this major.

IMPORTANT NOTICE: The information included in this handout was taken directly from the articulation agreements for each major and college. Articulation agreements can be found at www.assist.org. This handout includes core requirements for the colleges and majors represented. Only courses which Skyline College has fully articulated are included within this handout. This handout *does not* include all support courses that, if taken, may strengthen a student's application for admissions. Students are advised to review the articulation agreement of neighboring community colleges to determine if they offer these support courses.

Requirements are subject to change by transfer institutions. See a counselor for further information.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ (Website: www.soe.ucsc.edu)				
MAJORS	COMP SCIENCE	MATH	OTHERS	PHYSICS
Bioengineering	COMP 250 OR 284 AND COMP 252 OR 286# #Must be completed with a grade of B or better.	•MATH 251+252+253 •MATH 275	•BIOL 215+230 •CHEM 210+220 •CHEM 234+237* *Required for grad.	PHYS 250+260 OR PHYS 210+211 AND 220+221
Computer Engineering	COMP 250 OR 284 AND COMP 252 OR 286	•MATH 251+252+253 •MATH 270+275	Review articulation agreement for admit notes	PHYS 210+211 AND 220+221 OR PHYS 250+260+270
Electrical Engineering	No course articulated	MATH 251+252+253 OR MATH 270+275	PHIL 240 Review articulation agreement for admit notes	PHYS 250+260+270

UNIVERSITY OF CALIFORNIA
Consult www.assist.org for additional requirements

UNIVERSITY OF CALIFORNIA, BERKELEY (Website: <http://coe.berkeley.edu-prospective-students>)
Note: All Engineering majors listed below require completion of ENGL 100 or 105 and ENGL 110.

MAJORS	BIOLOGY	CHEMISTRY	MATHEMATICS	PHYSICS
Bioengineering*	BIOL 230	CHEM 210 CHEM 234+237 CHEM 235+238	MATH 251+252+253 MATH 270+275	PHYS 250+260
Civil Engineering		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
NOTE: Additional course required; choose from CHEM 220 OR PHYS 270				
Computational Engineering Science		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
NOTE: To complete Basic Science Elective, choose three courses from the following:: BIOL 215, BIOL 230, CHEM 220, CHEM 234+237, CHEM 235+238, PHYS 270				
Electrical Engineering & Computer Science*			MATH 251+252+253 MATH 270+275	PHYS 250+260
NOTE: Choose one course from the following to meet the natural science requirement: BIOL 215, BIOL 230, BIOL 260, CHEM 210, CHEM 220, CHEM 234+237, CHEM 235+238, PHYS 270.				
Engineering Mathematics & Statistics*		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Engineering Physics*		CHEM 210+220	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
NOTE: Choose two classes from the following to meet the technical electives requirement: BIOL 215, BIOL 230, CHEM 234+237				
Environmental Engineering Science	BIOL 215	CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
NOTE: Choose three science electives from the following: BIO 230, CHEM 220, CHEM 234+237, CHEM 235+238, PHYS 270				
Industrial Engineering & Operations Research		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
Manufacturing Engineering		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
Materials Science and Engineering		CHEM 210+220	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Mechanical Engineering		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
Nuclear Engineering*		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
JOINT MAJORS:				
Bioengineering/Materials Science & Engineering	BIOL 230	CHEM 210 CHEM 234+237 CHEM 235+238	MATH 251+252+253 MATH 270+275	PHYS 250+260
Electrical Engineering & Computer Science/ Materials Science & Engineering*		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Electrical Engineering & Computer Science/ Nuclear Engineering*		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Materials Science and Engineering/ Mechanical Engineering		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260
Materials Science and Engineering/Nuclear Engineering		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Mechanical Engineering/ Nuclear Engineering*		CHEM 210	MATH 251+252+253 MATH 270+275	PHYS 250+260+270

- Applicants to all Engineering majors must complete **all** of the following required core UCB preparation courses in order to be eligible for admissions. If a Community College series of courses is required, **all** of the courses in the series must be completed to receive credit. Only applicants who have completed 100% of these required core courses will be considered for admissions. Admissions is primarily based on the completeness of the applicant's lower division preparation and the level of academic achievement reflected in the student's GPA.
- The UC applicant essay also plays an important role in the selection process at UCB.
- The College of Engineering requires six humanities/social science courses, two of which must be ENGL 100 or 105 and ENGL 110. The additional four humanities/social studies requirement courses are not consider for admissions purposes but are required for graduation.
- The use of IGETC is strongly discouraged.
- For all majors, please review the respective articulation agreement found on [assist.org](http://www.assist.org) for application of AP scores.

* Please review the articulation agreement for the respective major for additional admissions notes.

UNIVERSITY OF CALIFORNIA, DAVIS

(Website: <http://engineering.ucdavis.edu>)

MAJORS	BIOLOGY	CHEMISTRY	COMP SCIENCE	ENGLISH	SPEECH	MATHEMATICS	PHYSICS
Aerospace Science & Engineering	NOT REQUIRED	CHEM 210+220	# No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Biochemical Engineering	BIOL 230	CHEM 210+220 CHEM 234+237 CHEM 235	# No comparable course	ENGL 100 OR 105 OR ENGL 110	NOT REQUIRED	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Biological Systems Engineering	BIOL 215 BIOL 230	CHEM 210+220 CHEM 234+237* CHEM 235+238* *Required for graduation.	No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Biomedical Engineering	BIOL 215 BIOL 230	CHEM 210+220 CHEM 234+237* CHEM 235+238* Required for admissions.	No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Chemical Engineering	NOT REQUIRED	CHEM 210+220 CHEM 234+237 CHEM 235	# No comparable course	ENGL 100 OR 105 OR ENGL 110	NOT REQUIRED	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Chemical Engineering/ Materials Science & Engineering	NOT REQUIRED	CHEM 210+220 CHEM 234+237 CHEM 235	# No comparable course	ENGL 100 OR 105 OR ENGL 110	NOT REQUIRED	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Civil Engineering	NOT REQUIRED	CHEM 210+220	# No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Computer Engineering	NOT REQUIRED	CHEM 210	COMP 250 COMP 286	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Computer Science & Engineering	NOT REQUIRED	CHEM 210	COMP 250 COMP 286 Exposure to UNIX prior to transfer is recommended	ENGL 100 OR 105 OR ENGL 110	SPCH 100	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Electrical Engineering	NOT REQUIRED	CHEM 210	COMP 250	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Electronic Materials Engineering	NOT REQUIRED	CHEM 210+220	No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Materials Science & Engineering	NOT REQUIRED	CHEM 210+220	# No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Mechanical Engineering	NOT REQUIRED	CHEM 210+220	# No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Mechanical Engineering/ Materials Science & Engineering	NOT REQUIRED	CHEM 210+220	# No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Optical Science and Engineering	NOT REQUIRED	CHEM 210	No comparable course	ENGL 100 OR 105 OR ENGL 110	SPCH 100 OR SPCH 120	MATH 251+252+253 MATH 270+275	PHYS 250+260+270

All majors: When there are more applicants than spaces available in the College, priority is given to transfer applicants from California community colleges who have completed the required lower division courses available at the student's community college and who have a minimum overall GPA of 3.10.

Admissions requirement - For the majors of Aerospace Science & Engineering, Biochemical Engineering, Chemical Engineering, Chemical Engineering/Materials Science & Engineering, Civil Engineering, Materials Science & Engineering, Mechanical Engineering, and Mechanical Engineering/Materials Science & Engineering – Students must complete one programming course in a higher level language. *Skyline College does not offer a comparable course.* Students are advised to take ENGR 215 or CIS 278 at the College of San Mateo. Please note that both classes have prerequisites.

CALIFORNIA STATE UNIVERSITY
Consult www.assist.org for additional requirements

MAJORS	CHEMISTRY	COMP SCIENCE	ENGLISH	OTHERS	MATHEMATICS	PHYSICS
SAN FRANCISCO STATE UNIVERSITY (Website: http://engineering.sfsu.edu)						
Civil	CHEM 210		ENGL 100 OR 105 ENGL 110 OR 165		MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Computer	CHEM 210		ENGL 100 OR 105 ENGL 110 OR 165		MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Electrical OR Mechanical	CHEM 210		ENGL 100 OR 105 ENGL 110 OR 165		MATH 251+252+253 MATH 270+275	PHYS 250+260+270
SAN JOSE STATE (Website: www.engr.sjsu.edu)						
Aerospace OR Civil OR Computer OR Electrical OR General OR Mechanical	CHEM 210 OR CHEM 220		ENGL 110 OR 165		MATH 251+252+253 MATH 275	PHYS 250+260+270
Chemical General Engineering, concentration in Bioengineering	CHEM 210 + 220		ENGL 110 OR 165		MATH 251+252+253 MATH 275	PHYS 250+260+270
Industrial and Systems	CHEM 210 OR CHEM 220		ENGL 110 OR 165		MATH 251+252+253	PHYS 250+260+270
Materials	CHEM 210 + 220		ENGL 110 OR 165		MATH 251+252+253 MATH 275	PHYS 250+260+270
Software	NOT REQUIRED		ENGL 110 OR 165		MATH 251+252+253 MATH 275	PHYS 250+260
SAN LUIS OBISPO (Website: http://www.ess.calpoly.edu/_admiss/undergrad/index.htm)						
Aerospace	CHEM 210				MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Architectural	CHEM 210			GEOL 100	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Civil Engineering	CHEM 210+220			GEOL 100	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Electrical	CHEM 210	COMP 250			MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Environmental	CHEM 210+220 CHEM 234+237			BIOL 240	MATH 251+252+253 MATH 270+275	PHYS 250+260+270
General	CHEM 210+220 CHEM 234+237	COMP 250			MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Industrial	CHEM 210				MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Manufacturing OR Mechanical	CHEM 210+220				MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Materials	CHEM 210+220	COMP 250			MATH 251+252+253 MATH 270+275	PHYS 250+260+270
Software	CHEM 210+220* OR PHYS 250+260+270*	COMP 250		PSYC 100	MATH 251+252+253 MATH 270+275	CHEM 210+220* OR PHYS 250+260+270*
	*Choose one series only – either CHEM 210+220 OR PHYS 250+260+270					

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