

ORANGE COAST COLLEGE

TRANSFER CURRICULUM GUIDE

ENGINEERING

Mechanical Engineering

LOWER DIVISION MAJOR REQUIREMENTS FOR TRANSFER

The following courses should be taken at OCC prior to transfer. Courses not offered at OCC will need to be taken after transfer unless otherwise noted. Four-year colleges and universities often make changes in their requirements for majors. The information contained in this guide is based on the most recent information available from the four-year school and does not constitute an official agreement.

Recent updates to this guide can be found on the Transfer Center Website at:

www.occ.cccd.edu/departments/studentsvcs/transferctr

UNIVERSITY OF CALIFORNIA, BERKELEY

Notes: Admission to the College of Engineering is highly competitive. Selection is based on the completeness of lower division preparation, GPA and the applicant essay. The college reviews the essay for evidence of interest in the chosen field and a thoughtful match between the academic program and the academic and career objectives. You must complete all of the required lower division courses by the end of the spring term prior to fall enrollment to be eligible for admission. Summer coursework is not considered to be “work in progress” for fall selection. English 100 & 101(or 101H) must be completed with a letter grade and is a prerequisite for admission. IGETC is not acceptable for this major. When courses are listed as a series, you must complete entire series. No partial credit is given. All required and strongly recommended courses must be taken for a letter grade.

Breadth Requirements:

1. ENGL 100 & 101(or 101H)
2. **Two 3-unit GE breadth courses from:** Arts & Literature, Historical Studies, Philosophy & Values or Social & Behavioral Sciences
3. Two additional upper division courses taken after transfer.

AP Credit for Engineering Majors:

Course	Score
Biology	score of 4 or 5 = BIOL 1A/AL & 1B
Chemistry	score of 3, 4 or 5 = CHEM 1A/1AL
English	score of 4 or 5 = ENGL R1A
Calculus (AB/BC Exam)	score of 3 = MATH 1A
Calculus (BC Exam)	score of 4 or 5 = MATH 1AB
Physics (Mechanics C Exam)	score of 5 = PHYS 7A

BACHELOR OF SCIENCE MECHANICAL ENGINEERING (College of Engineering)

UCB	OCC	(9/17:A16-17)
Required Core Courses:		
CHEM 1A/AL	CHEM 180	
MATH 1A	MATH 180(or 180H)*	
MATH 1B	MATH 185(or 185H)*	
MATH 53	MATH 280(or 280H)	
MATH 54	MATH 285(or 285H)	
PHYS 7A	PHYS 185	
PHYS 7B	PHYS 280	Continued

UCB	OCC	(9/17:A16-17)
ENGL R1AB	ENGL 100 & 101(or 101H)	
Complete one of the following courses: ASTR 103, BIOL 180 & 185, 185 & 183/183L, 225, CHEM 185, 220/220L, 225/225L, PHYS 285		
Strongly Recommended Courses		
ENGIN 7	No Equivalent Course	
ENGIN 25	No Equivalent Course	
ENGIN 26	No Equivalent Course	
ENGIN 27	No Equivalent Course	
EL ENG 16A	No Equivalent Course	
EL ENG 40	No Equivalent Course	
MEC ENG 40	No Equivalent Course	
MEC ENG C85	No Equivalent Course	
*MATH 182H is also equivalent to MATH 1AB.		

UNIVERSITY OF CALIFORNIA, IRVINE

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

UCI	OCC	(09/17:A16-17)
Required Courses		
MATH 2AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 2D or 2E	MATH 280(or 280H)	
MATH 3A	MATH 235 or 280(or 285H)	
MATH 3D	MATH 285(or 285H)	
PHYS 7CDE, LC/LD	PHYS 185 & 280 & 285	
CHEM 1A/LA	CHEM 180	
ENGRMAE 10	CS 150	
ENGRMAE 30	ENGR 280	
ENGRMAE 52	ENGR 180	
ENGR 54	No Equivalent Course	
EECS 70A	ENGR 285	
Additional Major Requirements		
PHYS 52A	PHYS 285	
ENGRMAE 80	No Equivalent Course	
ENGRMAE 91	No Equivalent Course	
Additional Electives		
One additional approved science course from: ANTH 185/185L, ASTR 100(or 100H)/100L, 101, 102, 103, BIOL 100, 101, 125, 180, 182/182L & 183/183L, 185, 210, 220, 221, 225, CHEM 100, 110, 130, 180, 185, 220/220L, 225/225L, ECOL 100, GEOG 180(or 180H)/180L, GEOL 105(or 105H)/105L(or 105M), 110, 160, 185/185L, MRSC 100(or 100H)/100L(or 100M), 180/180L, 185/185L, PHYS 110/111, 120, 130, 185, 250.		
*MATH 182H is equivalent to MATH 2AB.		
Important Note: Preference is given to students with the highest grades overall who have completed the required courses with a grade of "C" or better by the end of the spring term prior to transfer.		

UNIVERSITY OF CALIFORNIA, LOS ANGELES

Requirements for Admission:

Admission to an engineering major as a junior level transfer is very competitive. All courses must be taken for a letter grade. The most important selection criteria are completion of required prep courses and academic performance. A minimum transferable cumulative GPA of 3.4 is required for consideration. Prep courses should be completed by the end of the spring term prior to fall enrollment. Alternate major applicants will not be considered. Breadth and GE requirements may be fulfilled by completion of IGETC. Although not required to complete the HSSEAS GE requirements for admission, it is beneficial for students to complete one course from each of the following areas: arts, humanities, social sciences and life sciences. Partial IGETC is not accepted. Visit the listed websites for further information: <http://www.engineer.ucla.edu> and <http://www.admissions.ucla.edu>

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BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

UCLA	OCC	(09/17:A16-17)
Courses Required for Admission:		
CHEM 20AB, 20L	CHEM 180 & 185	
MATH 31AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 32AB	MATH 280(or 280H)	
MATH 33AB	MATH 285(or 285H)	
PHYS 1ABC, 4AL/BL	PHYS 185, 280 & 285**	
ENGCOMP 3	ENGL 100	
Computer Programming	CS 250	
A second course in English composition from: ENGL 101, 101H, 102, 102H, PHIL 150		
Additional Requirements (Strongly Recommended):		
COM SCI 31 <u>or</u> C&EE M20	CS 150 <u>or</u> No Equivalent Course	
MECH&AE 101	No Equivalent Course	
MECH&AE 102	No Equivalent Course	
EL ENGR 100	No Equivalent Course	
EL ENGR 110L	ENGR 285	
MAT SCI 104	No Equivalent Course	
MECH&AE 94	No Equivalent Course	
*MATH 182H is also equivalent to MATH 31AB.		
**Entire physics sequence should be completed at OCC.		

UNIVERSITY OF CALIFORNIA, RIVERSIDE

General Education Requirements for All Degrees		
UCR	OCC	
ENGL 1ABC	ENGL 100 & either 101(or 101H) or 102(or 102H) or ENGL 109 or PHIL 150	
Humanities	HIST 161(or 161H) or 162(or 162H) One course from: ART 100, 100H, 101, 101H, 102, 103, ENGL 150, 150H, 160, 160H, 161, 161H, 170, 170H, 176, 176H, 181, 181H, 270, 270H, 275, 275H, MATH 220, MUS 100, PHIL 100, 120, 220, RLST 120, 150	
Social Sciences	One course from: ECON 170, 175, PSCI 110, 180, 180H, 185	
Ethnicity	One course from: ANTH 100, 100H, 102*, 185, 280, ETHS 100*, 150*, HIST 101*, PSYC 100, 100H, SOC 100, 100H, 185, 185H	
Natural Sciences & Mathematics	Satisfied by lower division courses required for the major.	
*The following courses will satisfy both the Social Science Area and campus graduation requirement in Ethnicity.		

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

UCR	OCC	(09/17:A16-17)
Courses Required for Admission:		
CHEM 1AB w/labs	CHEM 180 & 185	
MATH 9ABC	MATH 180(or 180H) & 185(or 185H)*	
PHYS 40ABC	PHYS 185, 280, 285	
Courses strongly recommended prior to transfer:		
BIOL 5A/LA	BIOL 180+	
EE 1A/1LA	ENGR 285+	
MATH 10AB	MATH 280(or 280H)	
MATH 46	MATH 285(or 285H)	
ME 18	No Equivalent Course#	
ME 9	ENGR 180+	
ME 10	ENGR 280+	
Two Humanities or Social Science breadth courses listed in GE requirements for all degrees.		Continued

UCR	OCC	(09/17:A16-17)
Courses to be completed after transfer:		
ME 2	No Equivalent Course	
<p>**MATH 182H is also equivalent to MATH 9ABC #Take at UCR during the summer session prior to entering in the fall. +One of these courses must be taken prior to transfer.</p>		
<p>Note: This major is selective. Students are admitted Fall quarter only. Take all courses for a letter grade except for Humanities and Social Sciences. Students are strongly encouraged to focus on preparatory course work for the major rather than IGETC. Students must attain a GPA of at least 2.8 in all UC transferable courses. Also required is a 2.5 GPA in the calculus sequence and in at least one additional sequence (chemistry, physics, second year calculus or biology). AP credit can be accepted in lieu of some college course work. Consult the College of Engineering at: (951) 827-3647.</p>		

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

UCSB	OCC	(09/17:A16-17)
Required base preparation courses:		
MATH 3AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 4AB	MATH 285(or 285H)	
PHYS 1, 2, 3/3L, 4/4L	PHYS 185, 280, 285	
CHEM 1A/AL	CHEM 180	
ENGR 3	No Equivalent Course	
ME 14	ENGR 280	
Strongly recommended advanced preparation courses (Complete three courses):		
CHEM 1B/BL	CHEM 185	
MATH 6AB	MATH 280(or 280H)	
ME 6	ENGR 285	
ME 10	ENGR 180	
ME 15	ENGR 240	
ME 16	ENGR 230	
Additional major prep courses:		
ME 17	No Equivalent Course	
*MATH 182H is also equivalent to MATH 3AB.		
<p>Note: Transfer students may complete IGETC or the College of Engineering general education. Students who choose to follow College of Engineering GE should complete two to three general education courses prior to transfer. See ASSIST for requirements. Students are strongly advised to complete as many major prep courses as possible prior to transferring. Major prep courses must be completed with a grade of "C" or better. The required GPA in required prep courses is 3.6.</p>		

CALIFORNIA STATE UNIVERSITY, FULLERTON

General Education Requirements for All Degrees:	
A.1	CMST 100 <u>or</u> 110
A.2	ENGL 100
A.3	ENGL 101(or 101H), 102(or 102H), 109, MATH 220, PHIL 150, 155, 220, <u>or</u> CMST 220, 240
B.1/B.3 & B.4	Part of Math & Science Foundation Course Requirement
B.2	Waived for engineering majors
C.1	Any approved CSU GE Area C1 course
C.2	Any approved CSU GE Area C2 course
C.3.	Upper division courses
C.4	HIST 161(or 161H) <u>or</u> 162(or 162H)
D.1	Upper division course
D.3	HIST 170(or 170H), 175(or 175H)
D.4	PSCI 180(or 180H)
D.5	Not applicable for engineering majors
E.	Waived for engineering majors

Continued

General Education Requirements for All Degrees:

Z. Asterisked course from C.3

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

CSUF	OCC	(3/15:A15-16)
MATH 150AB	MATH 180(or 180H) & 185(or 185H)*	
MATH 250AB	MATH 280(or 280H) & 285(or 285H)	
CHEM 120A	CHEM 180	
PHYS 225/225L	PHYS 185	
PHYS 226/226L	PHYS 280	
EGME 102	ENGR 180	
EGCE 201	ENGR 280	
EGEE 203/203L	ENGR 285	
CPSC 120	CS 150	
EGEE 203/203L	ENGR 285@	
EGGN 205	No Equivalent Course	
*MATH 182H is equivalent to MATH 150AB		
Note: All math and physical science courses must be completed with at least a "C" grade.		

CALIFORNIA STATE UNIVERSITY, LONG BEACH

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

CSULB	OCC	(09/17:A16-17)
CHEM 111A	CHEM 180	
CE 205	ENGR 280	
MATH 122 & 123	MATH 180(or 180H) & 185(or 185H)**	
MATH 224	MATH 280(or 280H)	
ENGR 101 & 102	No Equivalent Courses*	
MAE 101B	No Equivalent Course	
MAE 172	ENGR 180 <u>or</u> MACH 152	
MAE 205	No Equivalent Course	
MAE 272	No Equivalent Course	
PHYS 151	PHYS 185	
PHYS 152 <u>or</u> E E 210/210L	PHYS 280 <u>or</u> No Equivalent Course	
*Requirement waived for transfer students who have completed 3 units in CSU GE Area E.		
**MATH 182H is also equivalent to MATH 122 & 123.		
Note: This major is impacted. See CSULB catalog for supplemental major specific admission criteria. Transfer students must complete 60 units or more and the CSU GE requirements in Written and Oral Communication, Critical Thinking and Mathematics/Quantitative Reasoning with a grade of "C" or better by the end of the prior spring term for fall admission or by the end of the prior summer for spring admission. Critical thinking may be waived as this is integrated throughout the engineering baccalaureate programs. Students are encouraged to take as many of these courses prior to transfer as possible. A grade of "C" or better must be achieved in all required major courses.		

CAL POLY, POMONA

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

CPP	OCC	(09/17:A16-17)
Required Core Courses		
ME 100L	No Equivalent Course	
ME 214/224L	ENGR 280	
ME 215	No Equivalent Course	
ME 218	No Equivalent Course	
ME 219	No Equivalent Course	Continued

CPP	OCC	(09/17:A16-17)
ME 220L	No Equivalent Course	
ME 232/232A	No Equivalent Courses	
ME 233/233L	No Equivalent Courses	
MAT 114, 115, 116	MATH 180(or 180H) & 185(or 185H)*	
MAT 214 & 215	MATH 280(or 280H)	
MAT 224	MATH 285(or 285H)	
PHYS 131/L, 132/L, 133/L	PHYS 185, 280, 285 <u>or</u> 130, 135 & 285	
Required Support Courses		
ENGR 100/100L	No Equivalent Courses	
CHM 121/L, 122L	CHEM 180	
EC 201 <u>or</u> 202	ECON 170 <u>or</u> 175	
ECE 231/231L	ENGR 285	
MFE 126/126L	MACH 152	
MFE 201/201L	No Equivalent Courses	
*MATH 182H is also equivalent to MAT 114, 115, 116.		
Note: This program is impacted and requires a supplementary admission process.		

SAN DIEGO STATE UNIVERSITY

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

SDSU	OCC	(03/15:A16-17)
BIOL 100 <u>or</u> BIOL 101	BIOL 100(or 100H) <u>or</u> No Equivalent Course	
CHEM 200 <u>or</u> 202	CHEM 180+ <u>or</u> No Equivalent Course	
E E 204	No Equivalent Course	
A E 200 <u>or</u> E M 200	ENGR 280+	
A E 220 <u>or</u> E M 220	No Equivalent Courses	
A E 280	MATH 285(or 285H)	
MATH 150 & 151	MATH 180(or 180H) & 185(or 185H)*+	
MATH 252	MATH 280(or 280H)	
PHYS 195/195L	PHYS 185	
PHYS 196	PHYS 280	
PHYS 197	PHYS 285	
M E 101	No Equivalent Course	
M E 102	No Equivalent Course	
M E 202	No Equivalent Course	
M E 204	No Equivalent Course	
M E 240	No Equivalent Course	
M E 241	No Equivalent Course	
*MATH 182H is also equivalent to MATH 150 & 151. Complete sequence.		
+ Courses must be completed with a letter grade of "C" or better.		
Note: This program is impacted and requires a minimum 2.7 GPA.		

CAL POLY, SAN LUIS OBISPO

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Options: Heating, Ventilating, Air-Conditioning & Refrigeration

CPSLO	OCC	(03/12:A15-16)
Major Courses		
ME 218	No Equivalent Course	
ME 129	No Equivalent Course	
ME 130	No Equivalent Course	
ME 211	ENGR 280	
ME 212	No Equivalent Course	Continued

CPSLO	OCC	(03/12:A15-16)
ME 234	No Equivalent Course	
ME 236	No Equivalent Course	
ME 251	No Equivalent Course	
Support Courses		
BIO 213 <u>or</u> BRAE 213	No Equivalent Courses	
CE 204 & 207	No Equivalent Courses	
CHEM 124 & 125	CHEM 180 & 185	
CSC 231 <u>or</u> 234	No Equivalent Courses	
EE 201 & 251	ENGR 285	
ENGL 149	ENGL 105*	
IME 142	WELD 140 & 200	
IME 143	MACH 105 & 110	
MATE 210 & 215	No Equivalent Courses	
MATH 141, 142, 143, 241	MATH 180(or 180H) & 185(or 185H) & 280(or 280H)+	
MATH 244	MATH 285(or 285H)	
PHYS 131, 132, 133	PHYS 185 & 280 & 285	
*Credit only when additional GE Area A3 course is completed.		
+MATH 182H & 280H is also equivalent to MATH 141, 142, 143 & 241.		
Note: Selection criteria for transfer students can be found at: http://admissions.calpoly.edu/applicants/transfer/criteria.html		

UNIVERSITY OF SOUTHERN CALIFORNIA

Note: Students may fulfill four of the six required GE requirements with transfer courses taken before starting USC (see USC GE requirements). Credit for courses is not granted if (1) the course is taken before high school graduation, (2) the grade is lower than C-, (3) is a lab science or foreign language course and is not taken in a traditional classroom setting, (4) is offered through “study abroad”, (5) repeats credit from another college course or from an AP or IB exam.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Tracks: Standard, Computational, Design, Dynamic/Controls, Thermo/Fluids

USC	OCC	(09/17:A16-17)
WRIT 130	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	One course from: ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
CHEM 105A	CHEM 180	
PHYS 151, 152 & 153	PHYS 185, 280 & 285	
MATH 125 & 126	MATH 180(or 180H) & 185(or 185H or 182H)+	
MATH 226	MATH 280(or 280H)	
MATH 245	MATH 285(or 285H)	
CHEM 300-499	CHEM 220/220L <u>or</u> 225/225L@	
*Course must be taken for a letter grade.		
+Subject credit for MATH 180(or 180H) can be earned by successful completion of MATH 185(or 185H). Subject credit for MATH 185(or 185H) can be earned by successful completion of MATH 280(or 280H).		
@Required for all Tracks except Computational		

BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING – Mechanical Engineering

USC	OCC	(09/17:A16-17)
WRIT 130	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	One course from: ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	Continued

USC	OCC	(09/17:A16-17)
MATH 125 & 126	MATH 180(or 180H) & 185(or 185H or 182H)+	
MATH 226	MATH 280(or 280H)	
MATH 245	MATH 285(or 285H)	
CHEM 105AB	CHEM 180 & 185	
CHEM 322A	CHEM 220/220L	
BSIC 220	BIOL 180 & 185 <u>or</u> BIOL 180 & 182/182L & 183/183L	
PHYS 151, 152 & 153	PHYS 185, 280 & 285	
**MATH 182H is also equivalent to MATH 126.		

ADDITIONAL AGREEMENTS ARE AVAILABLE ON THE INTERNET FOR THE FOLLOWING SCHOOLS AT:

www.assist.org

Campus	Campus
UC Merced	UC San Diego
CSU Chico	CSU Los Angeles
CSU Northridge	San Francisco State
San Jose State	