ENGINEERING

MECHANICAL

LOWER DIVISION MAJOR REQUIREMENTS FOR TRANSFER

The following courses at OCC should be taken prior to transfer. Courses not offered at OCC will need to be taken after transfer. 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

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:
- Biology - score of 4 or 5 = BIOL 1A/AL & B
- Chemistry - score of 3, 4 or 5 = CHEM 1A
- Computer Science (AB Test) - score of 4 or 5 = CS 61B
- English -score of 4 or 5 = ENGL R1A
- Calculus (AB/BC Exam) - score of 3 = MATH 1A
- Calculus (BC Exam) - score of 5 = MATH 1AB
- Physics (Mechanics C Exam) - score of 4 or 5 = PHYS 7A

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
(College of Engineering)

UBC Required Core Courses:      OCC
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
ENGLISH R1AB                   ENGL 100 & 101(or 101H)

Strongly Recommended Courses:
- ENGIN 7                       No Equivalent Course
- ENGIN 10                      No Equivalent Course
- ENGIN 28                      ENGR 180
- MEC ENG 40                    No Equivalent Course
- MEC ENG C85                   No Equivalent Course

*BATCH 182H is also equivalent to MATH 1AB.

BACHELOR OF SCIENCE IN MATERIALS SCIENCE &
ENGINEERING/ MECHANICAL ENGINEERING
(College of Engineering)

UBC Required Core Courses:      OCC
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
ENGLISH R1AB                   ENGL 100 & 101(or 101H)

Strongly Recommended Courses:
- ENGIN 7                       No Equivalent Course
- ENGIN 10                      No Equivalent Course
- ENGIN 28                      ENGR 180
- MEC ENG 40                    No Equivalent Course
- MEC ENG C85                   No Equivalent Course

*BATCH 182H is also equivalent to MATH 1AB.

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 need to complete all of the required lower division courses by the end of the spring term prior to fall enrollment. It is recommended that students also have an intro engineering course. 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. The College of Engineering is aware that very little articulation exists for Berkeley’s COMPSCI 61A-B-C series. If your major requires 61ABC you are advised for admission purposes to take CS 150, 170 and 200. When courses are listed as a series, you must complete entire series. No partial credit is given. Required technical courses must be taken for a letter grade.

**UNIVERSITY OF CALIFORNIA, IRVINE**

**Important Note:** Preference is given to students with the highest grades overall who have completed the required courses: one year of calculus, one year of calculus-based physics w/lab, one course in computational methods (e.g., C, C++) and two additional courses for the major.

**BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING**

**UCI**

<table>
<thead>
<tr>
<th>UCI</th>
<th>OCC</th>
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<tbody>
<tr>
<td>MATH 2AB &amp; 2D</td>
<td>MATH 180(or 180H) &amp; 185(or 185H) &amp; 280(or 280H)*</td>
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<tr>
<td>MATH 2E</td>
<td>MATH 280(or 280H)</td>
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<tr>
<td>MATH 3D</td>
<td>MATH 285(or 285H)</td>
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<tr>
<td>MATH 2J</td>
<td>Satisfied by courses listed above</td>
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<tr>
<td>EECS 70A</td>
<td>ENGR 285</td>
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<tr>
<td>ENGRMAE 10</td>
<td>CS 150</td>
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<tr>
<td>ENGR 54</td>
<td>No Equivalent Course</td>
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<tr>
<td>ENGRMAE 30</td>
<td>ENGR 280</td>
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<tr>
<td>ENGRMAE 52</td>
<td>ENGR 180</td>
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<tr>
<td>ENGRMAE 80</td>
<td>No Equivalent Course</td>
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<tr>
<td>ENGRMAE 91</td>
<td>No Equivalent Course</td>
</tr>
<tr>
<td>BIO SCI 93 or</td>
<td>BIOL 180(or 180H) or</td>
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<tr>
<td>CHEM 1B</td>
<td>CHEM 185</td>
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<tr>
<td>EARTHSS 55 or</td>
<td>No Equivalent Course or</td>
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<tr>
<td>PHYSICS 51A</td>
<td>No Equivalent Course</td>
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<tr>
<td>CHEM 1A/LE</td>
<td>CHEM 180</td>
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<tr>
<td>PHYS 7CDE/LC/LD</td>
<td>PHYS 185 &amp; 280 &amp; 285</td>
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<tr>
<td>PHYS 52A</td>
<td>Satisfied by courses listed above</td>
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<tr>
<td>ECON 20A</td>
<td>ECON 170</td>
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*MATH 182H & 280(or 280H)* will also satisfy this requirement.

**UNIVERSITY OF CALIFORNIA, RIVERSIDE**

**Note:** Admission to this major is competitive. Students are admitted Fall and winter quarters only. 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 GPA of 2.5 in the calculus sequence and in at least one additional sequence (chemistry, physics, second year calculus or biology). Students with less than 60 units completed and who have completed two semesters of UC transferable English composition, in addition to the required GPA and major preparation are also eligible to apply. For TAG program information visit: [www.engr.ucr.edu/tag.html](http://www.engr.ucr.edu/tag.html) Consult the College of Engineering at: (951) 827-3647 or [www.engr.ucr.edu/transferring.html](http://www.engr.ucr.edu/transferring.html)

**General Education Requirements for All Degrees**

**UCR**

<table>
<thead>
<tr>
<th>ENGL 1ABC</th>
<th>OCC</th>
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<tbody>
<tr>
<td>ENGL 100 &amp; either 101(or 101H) or 102(or 102H) or ENGL 109 or PHIL 150</td>
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</tbody>
</table>

**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, |
| 180, 180H, 270, 270H, 275, 275H, MATH 220, MUS 100, PHIL 100, 120, 220, RLST 120, 150 |

**Social Sciences**

**One course from:**

| ANTH 100, 100H, 102, 185, 280, ETHS100, 150, HIST 101, 150, PSYC 100, 100H, SOC 115, 100, 100H, 185, 185H |

**One course from:**

| ECON 170, 175, PSCI 110, 180, 180H, 185 |

**Ethnicity**

**One course from:**

| ETHS 100, 150, HIST 101, 150, ANTH 102 |

**Natural Sciences & Mathematics**

Satisfied by lower division courses required for the major below.

*The following courses will satisfy both the Social Science Area and campus graduation requirement in Ethnicity.

Continued>>>>>>
AP Credit for Engineering Majors:

Computer Science (A or AB Test) - score of 3, 4 or 5 = CS 10
Computer Science (AB Test) - score of 3, 4 or 5 = CS 12
English Language/Composition - score of 3 = English 1A
English Literature/Composition - score of 4 or 5 = ENGL 1B
Calculus (AB Exam or BC subscore) - score of 3, 4 or 5 = MATH 9A
Calculus (BC Exam) - score of 3, 4 or 5 = MATH 9AB

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
UCR OCC
Courses which must be taken before transfer:
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(or 180H)+
EE 1A/1LA ENGR 285+
MATH 10AB MATH 280(or 280H)
MATH 46 MATH 285(or 280H)
ME 18 No Equivalent Courses#
ME 9 ENGR 180 & DRAF 150A+(=one course)
ME 10 ENGR 280+

Two Humanities or Social Science breadth courses listed in general education requirements for all degrees.

Courses to be completed after transfer:
ME 2 No Equivalent Course

*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.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

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 ed courses prior to transfer. See ASSIST for requirements. A guaranteed transfer agreement is available. Please see ASSIST for specific eligibility requirements. You should complete as many major prep courses as possible prior to transferring. Major prep courses must be completed with a grade of "C" or better.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
UCSB OCC
Required basic preparation courses:
MATH 3AB MATH 180(or 180H) & 185(or 185H)*
MATH 3C MATH 285(or 280H)
MATH 5A MATH 285(or 280H)
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
ME 16 No Equivalent Course

Strongly recommended advanced preparation courses:
CHEM 1B/BL CHEM 185
MATH 5B MATH 280(or 280H)
MATH 5C MATH 280(or 280H)
ME 6 ENGR 285
ME 10 No Equivalent Course
ME 15 No Equivalent Course

*MATH 182H is also equivalent to MATH 3AB.

CALIFORNIA STATE UNIVERSITY, FULLERTON

General Education Requirements for All Degrees+

A.1 CMST 100 or 110
A.2 ENGL 100
A.3 ENGL 101(or 101H), 102(or 102H), 109, MATH 220, PHIL 150, 220 or CMST 130
D.3 HIST 161(or 161H) or 162(or 162H)
    HIST 100, 170(or 170H), 175(or 175H) or 177
D.4 PSCI 180(or 180H)
Any approved CSU GE Area C1 course
Any approved CSU GE Area C2 course

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
CSULB OCC
CHEM 111A CHEM 180
MATH 122 & 123 MATH 180(or 180H) & 185(or 185H)*
MATH 224 MATH 280(or 280H)
CHEM 120A CHEM 180
PHYS 225/225/L PHYS 185
PHYS 226/226L PHYS 280
PHYS 227/227L PHYS 285
EGME 102 ENGR 180
EGCE 201 ENGR 280
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

Engineering transfer students may follow the new 12 unit lower division transfer agreement which includes the following requirements: a) CSU eligibility based upon high school achievement or high school deficiency removed at the community college, b) completion of the GE requirements in English and Mathematics with a grade of C or better, c) complete at least 12 transferable units with grades of C or better, d) declare a major in Engineering, and e) complete at least 3 units of calculus (MATH 180 or 180H) or above or students must complete 60 units 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.

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
CSULB OCC
CHEM 111A CHEM 180
C E 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
MAE 205 No Equivalent Course
MAE 272 No Equivalent Course
PHYS 151 PHYS 185
PHYS 152 or PHYS 280
E E 210/210L No Equivalent Courses

*MATH 182H is also equivalent to MATH 122 & 123.
+Waived for transfer students who have taken 3 units of CSU GE Area E.

Continued>>>>>>
Note: This major has implemented competitive admissions. See CSULB catalog for supplemental admission criteria. All prerequisite, corequisite and major prep courses must be completed with a letter grade of C or better.

CAL POLY, POMONA

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

CPP | OCC
---|---
All Options:  
**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  
ME 220L | No Equivalent Course  
ME 232/232A | No Equivalent Course  
ME 233/233L | No Equivalent Course  
MAT 114, 115, 116 |  
MAT 180(or 180H) & 185(or 185H)*  
MAT 214 & 215 |  
MAT 224 |  
PHYS 131/L, 132/L, 133/L |  
PHYS 185, 280, 285 or 130, 135 & 285

**Required Support Courses**
CHM 121/L, 122/L, 123/L | CHEM 170 & 175**  
EC 201 or 202 | ECON 185 or 180  
ECE 231/231L | ENGR 285  
MFE 126/126L | DRAF 110  
MFE 201/201L | No Equivalent Courses

*MATH 182H is also equivalent to MAT 114, 115, 116.  
**CHEM 185 may not be required for transfer students who have excess units within the College of Engineering of College of Science.

SAN DIEGO STATE UNIVERSITY

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

SDSU | OCC
---|---
All Options:  
BIOL 100 or 101 | BIOL 100 or 101  
CHEM 200 | CHEM 180  
E E 204 | No Equivalent Course  
ENGR 280 | MATH 285(or 285H)  
EM 200 | ENGR 280  
EM 220 | No Equivalent Course  
MATH 150 & 151 |  
MATH 180(or 180H) & 185(or 185H)*  
MATH 252 |  
PHYS 195 & 196/L | No Equivalent Courses  
PHYS 197 | PHYS 285  
ME 101 | No Equivalent Course  
ME 102 | No Equivalent Course  
ME 202 | No Equivalent Course  
ME 240 | No Equivalent Course  
ME 241 | No Equivalent Course

*MATH 182H is also equivalent to MATH 150 & 151.

Note: This program is impacted and requires a minimum 2.0 GPA.

UNIVERSITY OF SOUTHERN CALIFORNIA

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

USC | OCC
---|---
Composition/Writing | ENGL 101(or 101H) or 102(or 102H)*  
Diversity |  
One course from: ANTH 102, 150, ETHS 100, 150, GNDR 100, 130, HIST 150, SOC 150, 180(or 180H), 185(or 185H)  
CHEM 105A | CHEM 180  
PHYS 151 & 152 | PHYS 185, 280 & 285  
MATH 125 & 126 | Either MATH 180(or 180H) or 185(or 185H)*  
MATH 226 |  
MATH 245 | MATH 285(or 280H)

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.

Continued>>>>>>
Subject credit for MATH 180 (or 180H) and MATH 185 (or 185H) can be earned by successful completion of MATH 280 (or 280H).

**BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING - Mechanical Engineering**

<table>
<thead>
<tr>
<th>USC</th>
<th>OCC</th>
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<tbody>
<tr>
<td>Composition/Writing</td>
<td>ENGL 101 (or 101H) or 102 (or 102H)*</td>
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<tr>
<td>Diversity</td>
<td>One course from: ANTH 102, 150, ETHS 100, 150, GNDR 100, 130, HIST 150, SOC 150, 180 (or 180H), 185 (or 185H)</td>
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<tr>
<td>MATH 125 &amp; 126</td>
<td>Either MATH 180 (or 180H) or 185 (or 185H)*+</td>
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<tr>
<td>MATH 226</td>
<td>MATH 280 (or 280H)</td>
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<tr>
<td>MATH 245</td>
<td>MATH 285 (or 285H)</td>
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<tr>
<td>CHEM 105AB</td>
<td>CHEM 180 &amp; 185</td>
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<tr>
<td>CHEM 322A</td>
<td>CHEM 220 &amp; 220L</td>
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<tr>
<td>BISC 220</td>
<td>BIOL 180 (or 180H) &amp; 185 or BIOL 180 (or 180H) &amp; 182/T82L &amp; 183/183L</td>
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<tr>
<td>PHYS 151, 152 &amp; 153</td>
<td>PHYS 185, 280 &amp; 285</td>
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</tbody>
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+Subject credit for MATH 180 (or 180H) and MATH 185 (or 185H) can be earned by successful completion of MATH 280 (or 280H).

*(8/12:A11-12)