Guidelines by Major Effective during the 18-19 Academic Year

To: UC Berkeley
From: De Anza College
18-19 General Catalog Semester | 18-19 General Catalog Quarter

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====Engineering Mathematics and Statistics, Lower Division B.S.====

COLLEGE OF ENGINEERING JUNIOR TRANSFER ADMISSION REQUIREMENTS:

Admission to the UC Berkeley College of Engineering is highly competitive.

Applicants to the Engineering Mathematics and Statistics major must complete all required core UCB preparation courses in order to be eligible for admission. Only applicants who have completed 100% of these required courses will be considered for admission. Required courses for admission to the major must be completed by the end of the spring semester prior to fall enrollment. A summer 2019 course is not considered to be "work in progress" for the fall 2019 selection process.

If a series of courses at a community college is required (e.g., English 1A + 1B + 103 = English R1A and R1B), all the courses in the series must be completed, and must (unless otherwise indicated) be completed at the same community college. Partial completion (e.g., 2 of the 3 required courses) will result in zero credit toward the requirement(s), and the applicant will NOT be considered for admission.

Lower division UC Berkeley courses required for graduation (but not admission) are also listed in the major agreements and are strongly recommended to be taken to strengthen one's application. The more of these courses completed, the stronger the application will be.

Required core courses for admission: (all these courses must be completed to be considered for admission)

- UCB Chem 1A/L
- UCB Math 1A, 1B
- UCB Math 53, 54
- UCB Physics 7A, 7B, 7C
- UCB English 1A and 1B

Strongly recommended courses: (if your college offers the courses listed below and they are articulated, taking them will strengthen your application)

- Two courses from: UCB Civ Eng C30/Mec Eng C85, CompSci 61C, Engin 25, 26, 27 (Note that 2 courses from Engin 25, 26 & 27 count as One course), Mat Sci Engin 45 & 45L, Math 55 or CS 70
- Two courses in Computer Science: 1) CompSci 61A or Engin 7, 2) CompSci 61B

Admission is 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. The UC applicant essay also plays an important
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role in the selection process at UC Berkeley. The College reviews the essay for
evidence of interest in the student's chosen field and a thoughtful match
between the academic program and the student's academic and career objectives.

The College of Engineering requires six humanities/social science courses, two
of which must be reading and composition. The only non-technical admission
requirement for the College of Engineering is the coursework equivalent to UC
Berkeley's English R1A and R1B (reading and composition), which must be taken
for a letter grade. The College of Engineering does not recognize the
Intersegmental General Education Transfer Curriculum (IGETC) and strongly
discourages students from following this option due to the number of
major-specific technical courses required for engineering transfer admission.
NOTE: The English R1A and R1B requirements cannot be satisfied by IGETC;
applicants must complete the specific courses indicated as English R1A and R1B
equivalents to be considered for admission. Failure to complete the exact
courses listed will mean the applicant will NOT be considered for admission.

The remaining four humanities/social science requirement courses are not
considered for admission purposes but are required for graduation. See
http://engineering.berkeley.edu/hssreq for the College of Engineering
humanities/social science breadth requirements and courses. Courses which are
three semester units or more that appear in the following categories on the
"General Education/Breadth" section of assist.org may be used to satisfy
two of the remaining four humanities/social science course requirements for the
College of Engineering. ARTS AND LITERATURE; HISTORICAL STUDIES; INTERNATIONAL
STUDIES, PHILOSOPHY AND VALUES; SOCIAL AND BEHAVIORAL SCIENCES.

SAT/ACT/A-level test scores and letters of recommendation are NOT considered for
admission.

NOTE: ALL REQUIRED COURSES AND ALL STRONGLY RECOMMENDED COURSES FOR THE MAJOR
MUST BE TAKEN FOR A LETTER GRADE. FOR MORE INFORMATION, PLEASE CHECK THE
COLLEGE'S WEB SITE FOR THE COLLEGE OF ENGINEERING UNDERGRADUATE GUIDE.

For more information:
http://engineering.berkeley.edu/admissions/undergraduate-admissions

College of Engineering Undergraduate Guide:
http://engineering.berkeley.edu/academics/undergraduate-guide

For more information about Engineering Math & Statistics:
http://engineeringscience.berkeley.edu

For more information on admission to UC Berkeley:
http://admissions.berkeley.edu

For more information on majors at UC Berkeley:
Berkeley Academic Guide: http://guide.berkeley.edu

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For students who have taken Advanced Placement Exams in high school, the College will clear requirements as follows:

Biology AP: a score of 4 or 5 satisfies UCB Biology 1A/AL and 1B.
Chemistry AP: a score of 3 or better satisfies UCB Chemistry 1A/1AL.
English AP (Literature and Composition): a score of 4 or 5 satisfies UCB English R1A.
English AP (Language and Composition): a score of 4 or 5 satisfies UCB English R1A.
Mathematics AP (AB Exam): a score of 3 or better satisfies UCB Math 1A.
Mathematics AP (BC Exam): a score of 3 satisfies UCB Math 1A.
Mathematics AP (BC Exam): a score of 4 or 5 satisfies UCB Math 1A and 1B.
Physics AP (Mechanics C Exam): a score of 5 satisfies UCB Physics 7A.

**Required Courses for Admission:**

<table>
<thead>
<tr>
<th>COURSE</th>
<th>PREREQUISITES</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1A &amp; General Chemistry</td>
<td>(3)</td>
<td>CHEM 1A &amp; General Chemistry (5)</td>
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<tr>
<td>CHEM 1AL &amp; General Chemistry</td>
<td>(1)</td>
<td>CHEM 1B &amp; General Chemistry (5)</td>
</tr>
<tr>
<td>Laboratory</td>
<td></td>
<td>CHEM 1C General Chemistry and Qualitative Analysis</td>
</tr>
<tr>
<td>CHEM 1B General Chemistry</td>
<td>(4)</td>
<td></td>
</tr>
<tr>
<td>MATH 1A Calculus</td>
<td>(4)</td>
<td>MATH 1A &amp; Calculus (5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATH 1B Calculus (5)</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td>MATH 1AH &amp; Calculus - HONORS (5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MATH 1BH Calculus - HONORS (5)</td>
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<tr>
<td>MATH 1B Calculus</td>
<td>(4)</td>
<td>MATH 1B &amp; Calculus (5)</td>
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<td></td>
<td>MATH 1C Calculus (5)</td>
</tr>
<tr>
<td>MATH 53 Multivariable Calculus</td>
<td>(4)</td>
<td>MATH 1C &amp; Calculus (5)</td>
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<tr>
<td></td>
<td></td>
<td>MATH 1D Calculus (5)</td>
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<tr>
<td>MATH 54 Linear Algebra and Differential Equations</td>
<td>(4)</td>
<td>MATH 2A &amp; Differential Equations (5)</td>
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<tr>
<td></td>
<td></td>
<td>MATH 2B Linear Algebra (5)</td>
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<tr>
<td>PHYSICS 7A Physics for Scientists and Engineers</td>
<td>(4)</td>
<td>PHYS 4A Physics for Scientists and Engineers: Mechanics</td>
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<td></td>
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</tr>
<tr>
<td>PHYSICS 7B Physics for Scientists and Engineers</td>
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<td>PHYS 4B</td>
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<td>PHYS 4C</td>
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PHYSICS 7C Physics for Scientists and Engineers (4) | PHYS 4C Physics for Scientists and Engineers: Fluids, Waves, Optics and Thermodynamics (6)
| PHYS 4D Physics for Scientists and Engineers: Modern Physics

ENGLISH R1A Reading and Composition (4) | EWRT 1A Composition and Reading (5)
| OR
| EWRT 1AH Composition and Reading - HONORS (5)

ENGLISH R1B Reading and Composition (4) | EWRT 1B Reading, Writing and Research (5)
| OR
| EWRT 2 Critical Reading, Writing and Thinking (5)
| OR
| EWRT 1BH Reading, Writing and Research - HONORS (5)
| OR
| EWRT 2H Critical Reading, Writing and Thinking - HONORS (5)

Strongly Recommended Courses (if your college offers courses listed below and they are articulated, taking them will strengthen your application):

If no articulation, students are strongly encouraged to take an introductory course in Statistics AND a course in Computer Programming. Courses in statics, graphics and properties of materials would also be useful.

Two Technical Elective Courses from the following:

CIV ENG C30 Introduction to Solid Mechanics (3) | NO COURSE ARTICULATED
| Same as: MEC ENG C85
| OR
| MEC ENG C85 Introduction to Solid Mechanics (3) | NO COURSE ARTICULATED
| Same as: CIV ENG C30

COMPSCI 61C Machine Structures (4) | NO COURSE ARTICULATED

NOTE: Two courses from ENGIN 25, 26 and 27 count as One course:

ENGIN 25 Visualization for Design (2) | NO COURSE ARTICULATED
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<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGIN 26</td>
<td>Three-Dimensional Modeling for Design</td>
<td>(2)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>ENGIN 27</td>
<td>Introduction to Manufacturing and Tolerancing</td>
<td>(2)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>MAT SCI 456</td>
<td>Properties of Materials</td>
<td>(3)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>MAT SCI 45L</td>
<td>Properties of Materials Laboratory</td>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>MATH 55</td>
<td>Discrete Mathematics</td>
<td>(4)</td>
<td>MATH 22 Discrete Mathematics (5) OR</td>
</tr>
<tr>
<td>COMPSCI 70</td>
<td>Discrete Mathematics and Probability Theory</td>
<td>(4)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>COMPSCI 61A</td>
<td>The Structure and Interpretation of Computer Programs</td>
<td>(4)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>ENGIN 7</td>
<td>Introduction to Computer Programming for Scientists and Engineers (MATLAB)</td>
<td>(4)</td>
<td>NO COURSE ARTICULATED</td>
</tr>
<tr>
<td>COMPSCI 61B</td>
<td>Data Structures</td>
<td>(4)</td>
<td>CIS 22C Data Abstraction and Structures (4.5) OR</td>
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<td></td>
<td></td>
<td></td>
<td>CIS 26B Advanced C Programming (4.5)</td>
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</tbody>
</table>

**NOTE:** Students must also complete UCB COMPSCI 47B - Project Only at Berkeley to satisfy this requirement.

END OF MAJOR