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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====Industrial Engineering & Operations Research, 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 Industrial Engineering and Operations Research 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
- UCB English 1A and 1B
- UCB Compsci 61A or other programming course

Strongly recommended courses: (if your college offers the courses listed below and they are articulated, taking them will strengthen your application)
- UCB Engin 7
- Nine units from UCB Civ 11, Civ Eng C30 or Mec Eng C85, Civ Eng 60, Civ Eng 70, E1 Eng 40 or E1 Eng 16A, E1 Eng 16B, Engin 10, Engin 15, Engin 25, Engin 26, Engin 27, Mat Sci Engin 45/45L, Mec Eng 40

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 on Industrial Engineering & Operations Research:
http://www.ieor.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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**AP TEST CREDIT**

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.

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**Required Courses for Admission:**

- **CHEM 1A** General Chemistry (3) | **CHEM 1A** General Chemistry (5)
- **CHEM 1AL** General Chemistry (1) | **CHEM 1B** General Chemistry (5) Laboratory | **CHEM 1C** General Chemistry and Qualitative Analysis (5)
- **CHEM 1B** General Chemistry (4) | **MATH 1A** Calculus (4) | **MATH 1A** Calculus (5)
- **CHEM 1AL** General Chemistry (1) | **MATH 1B** Calculus (5) | **MATH 1B** Calculus (5) OR **MATH 1AH** Calculus - HONORS (5)
- **CHEM 1B** General Chemistry (4) | **MATH 1A** Calculus (5) | **MATH 1B** Calculus (5) OR **MATH 1AH** Calculus - HONORS (5)
- **MATH 1C** Calculus (5)
- **MATH 1C** Calculus (5)
- **MATH 1D** Calculus (5)
- **MATH 2C** Calculus (5)
- **MATH 2E** Calculus (5)
- **MATH 53** Multivariable Calculus (4) | **MATH 1A** Calculus (5) OR **MATH 1AH** Calculus - HONORS (5)
- **MATH 54** Multivariable Calculus (4) | **MATH 1C** Calculus (5) OR **MATH 1B** Calculus (5)
- **MATH 54** Linear Algebra and Differential Equations (4) | **MATH 2A** Calculus (5) OR **MATH 2B** Calculus (5)
- **MATH 54** Linear Algebra and Differential Equations (4) | **MATH 2B** Calculus (5) OR **MATH 2B** Calculus (5)
- **PHYSICS 7A** Physics for Scientists and Engineers (4) | **PHYS 4A** Physics for Scientists and Engineers: Mechanics (6)
- **PHYSICS 7B** Physics for Scientists and Engineers (4) | **PHYS 4B** Physics for Scientists and Engineers: Electricity and Magnetism (6)
- **PHYSICS 7B** Physics for Scientists and Engineers (4) | **PHYS 4C** Physics for Scientists and Engineers: Fluids, Waves, Optics and Thermodynamics (6)
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<tr>
<th>Course Code</th>
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<th>Units</th>
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<td>ENGLISH R1A</td>
<td>Reading and Composition</td>
<td>4</td>
<td>EWRT 1A</td>
<td>Composition and Reading</td>
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<td></td>
<td>OR</td>
<td></td>
<td>EWRT 1AH</td>
<td>Composition and Reading - HONORS</td>
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<tr>
<td>ENGLISH R1B</td>
<td>Reading and Composition</td>
<td>4</td>
<td>EWRT 1B</td>
<td>Reading, Writing and Research</td>
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<td>OR</td>
<td></td>
<td>EWRT 2</td>
<td>Critical Reading, Writing and Thinking</td>
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<td></td>
<td>OR</td>
<td></td>
<td>EWRT 1BH</td>
<td>Reading, Writing and Research - HONORS</td>
<td>5</td>
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<tr>
<td></td>
<td>OR</td>
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<td>EWRT 2H</td>
<td>Critical Reading, Writing and Thinking - HONORS</td>
<td>5</td>
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<tr>
<td>COMPSCI 61A</td>
<td>The Structure and Interpretation of Computer Programs</td>
<td>4</td>
<td></td>
<td>NO COURSE ARTICULATED</td>
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**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 electronics or circuits AND a course in Computer Programming.

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ENGIN 7</td>
<td>Introduction to Computer Programming for Scientists and Engineers (MATLAB)</td>
<td>4</td>
<td></td>
<td>NO COURSE ARTICULATED</td>
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9 Units of Engineering Technical Electives:

CIV ENG 11  Engineered Systems and Sustainability  (3) | NO COURSE ARTICULATED

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

CIV ENG 60  Structure and Properties of Civil Engineering Materials  (3) | NO COURSE ARTICULATED

CIV ENG 70  Engineering Geology  (3) | GEOL 10 Introductory Geology  (5)

EL ENG 40  Introduction to Microelectronic Circuits  (4) | NO COURSE ARTICULATED

EL ENG 16A  Designing Information Devices and Systems I  (4) | NO COURSE ARTICULATED

EL ENG 16B  Designing Information Devices and Systems II  (4) | NO COURSE ARTICULATED

ENGIN 15  Design Methodology  (2) | NO COURSE ARTICULATED

ENGIN 25  Visualization for Design  (2) | NO COURSE ARTICULATED

ENGIN 26  Three-Dimensional Modeling for Design  (2) | NO COURSE ARTICULATED

ENGIN 27  Introduction to Manufacturing and Tolerancing  (2) | NO COURSE ARTICULATED

MAT SCI 45&  Properties of Materials  (3) | NO COURSE ARTICULATED
MAT SCI 45L  Properties of Materials Laboratory  (1)

MEC ENG 40  Thermodynamics  (3) | NO COURSE ARTICULATED

END OF MAJOR