UC CAMPUS-SPECIFIC TRANSFER PREPARATION PATH

UC Berkeley Electrical Engineering

Electrical Engineering and Computer Sciences, B.S.
Electrical Engineering and Computer Sciences/Materials Science and Engineering, B.S.
Electrical Engineering and Computer Sciences/Nuclear Engineering, B.S.

Major Description

Electrical Engineering and Computer Sciences encompasses many areas that have a direct bearing on our everyday lives. Industrial end products such as computers, communication systems and consumer electronics are visible evidence of the vitality and importance of these disciplines. The department offers two programs: Electrical and Computer Engineering and Computer Science and Engineering. Students working for the **Bachelor of Science** degree select an option within their program. The Computer Science and Engineering program puts a greater emphasis on computer science, whereas the Electrical and Computer Engineering program puts a greater emphasis on electrical engineering.

The **Bachelor of Science** in Electrical Engineering and Computer Sciences/Materials Science and Engineering degree can be valuable for students interested in materials and devices. The program combines the study of materials from a broad perspective, as taught in Materials Science and Engineering, with the study of their applications in electronic devices and circuits, as taught in Electrical Engineering and Computer Sciences.

The **Bachelor of Science** in Electrical Engineering and Computer Sciences/Nuclear Engineering degree combines the traditional Electrical Engineering program with one in the nuclear sciences. Nuclear engineering shares with electrical engineering a concern for electrical power generation, automatic control, computer sciences and plasmas.

Starting Your Electrical Engineering Degree

Lower-Division Major Requirements in Electrical Engineering

From UC's perspective, community college is where you begin working on the first two years of your bachelor's degree. This includes taking lower-division coursework specifically related to your field of study that may be applied toward graduation in your major.

!!! IMPORTANT !!!
All of these requirements do not necessarily have to be completed **before** you transfer. See the next section of this path for what you must do to be competitive for admission.

Listed below are the lower-division requirements for **Electrical Engineering and Computer Sciences, B.S., Electrical Engineering and Computer Sciences/Materials Science and Engineering, B.S. and Electrical Engineering and Computer Sciences/Nuclear Engineering, B.S.** that may be satisfied with approved community college courses unless otherwise noted. To find out which of these requirements are shared by other UC campuses, see the UC Statewide Transfer Preparation Path in Electrical Engineering.

- Calculus (full sequence)
- Multivariable Calculus
- Linear Algebra
- Discrete Mathematics or Statistics
- Differential Equations
- Calculus-based Physics (full sequence; the Electrical Engineering and Computer Sciences, B.S., degree requires only two terms)
- Circuits
- Systems and Signals
- English Composition (coursework comparable to UCB's Reading and Composition requirement)
- The Structure and Interpretation of Computer Programs (CompSci 61A)
- Data Structures (CompSci 61B). If your community college does not offer an articulated course to CS 61B, for admissions purposes you may use a course in Data Structures and a course in C++ or Java.
- Machine Structures (CompSci 61C; optional for Electrical Engineering and Computer Sciences/Nuclear Engineering)

FIND YOUR COURSES

Every course at your community college that can be used to meet any of the lower-division major requirements is listed at **www.assist.org**

Additional Requirements for **Electrical Engineering and Computer Sciences, B.S**

- One natural science elective selected from the following: General Chemistry, Calculus-based Physics (third semester or equivalent), General Biology (for Biological Science majors) or Physiology with lab

Additional Requirements for **Electrical Engineering and Computer Sciences/Materials Science and Engineering, B.S.**

- General Chemistry
- Computer Programming: MATLAB (Engin 7). If your community college does not offer an articulated course to Engin 7, for admission purposes you may use an Introductory Computer Programming course such as C, C++ or Java.
- Engineering Design and Analysis
- Materials

Additional Requirements for **Electrical Engineering and Computer Sciences/Nuclear Engineering, B.S.**

- General Chemistry
- Engineering Design and Analysis
- Materials

Becoming Competitive for Admission to Electrical Engineering

Selection Requirements

Important information on selection requirements for admission to the major, including what this campus advises applicants to complete, and by when, is outlined below. It is important to note that meeting these requirements does not necessarily guarantee admission to a campus or major. Majors designated as "highly selective" receive many more qualified applicants than there are spaces available. The stronger your major preparation, the more competitive you are for these slots.

- A **highly selective** major
- You **must** complete at least 80 percent of the required lower-division admission courses with UCB-equivalent courses by the end of the spring term prior to transfer. See **www.assist.org** for the required admission courses. You **must** demonstrate strong academic performance in this coursework.
- Prior to transfer, you **must** complete coursework comparable to UCB's Reading and Composition requirement for a letter grade.

Satisfying General Education in Electrical Engineering

General Education Requirements

While all UC campuses urge you to focus on your lower-division major requirements while in community college, it is important to remember that general education (GE), or "breadth," requirements for your bachelor's degree may also be met with approved community college courses. In fact, some majors require completion of lower-division GE coursework as part of your preparation prior to transfer. The good news is you may be able to double-count some of your lower-division major coursework for related GE requirements.

The Intersegmental General Education Transfer Curriculum (IGETC) is a series of courses at California community colleges that students may complete to satisfy GE requirements. Certain students, however, may not be well served by following this GE option. Specific information about satisfying GE requirements as an Electrical Engineering major is listed below.

- Prior to transfer, you **must** complete coursework comparable to UCB's Reading and Composition requirement for a letter grade.
- GE requirements may **not** be double-counted toward lower-division major coursework.
- IGETC is **strongly** discouraged for this major.

Related Majors

Preparation for the following majors may be similar to the Electrical Engineering and Computer Sciences majors described above (consult the campus catalog and **www.assist.org**).

- Materials Science and Engineering/Mechanical Engineering, B.S.
- Mechanical Engineering/Nuclear Engineering, B.S.