

UC Berkeley Extension

CERTIFICATE PROGRAM IN

Semiconductor IC Design



The Certificate Program in Semiconductor IC Design provides in-depth knowledge in a convenient, self-paced, online format designed for working professionals. Develop an understanding of key concepts in state-of-the-art design, including semiconductor characteristics; semiconductor device modeling; and analog, digital and mixed-signal integrated circuit (IC) design. Instruction emphasizes a practical perspective involving physical concepts, operation principles, second-order effects, modeling and simulation. By choosing UC Berkeley Extension, you benefit from an association with a university known worldwide for engineering excellence. An advisory board—comprising UC Berkeley College of Engineering faculty and industry leaders of major semiconductor companies in the Asia/Pacific region and the United States—ensures that the program is academically strong and professionally relevant.

4 Required Courses, 1–2 Electives
10 Semester Units, 150 Hours of Instruction

Required Courses

Analog IC Design EL ENG X491 (2 semester units)

Review topics such as stability of feedback, frequency compensation, multistage operational amplifiers and CMOS op amp designs with HSPICE.

Fundamental Analog ICs EL ENG X489 (2 semester units)

Study integrated analog filters, oscillators and multivibrators, topics that are crucial for developing analog modules that implement many applications in signal processing or wireless communications.

IC Filters and Oscillators EL ENG X490 (2 semester units)

Learn how to analyze, simulate and design CMOS analog integrated circuits.

Capstone Semiconductor IC Design EL ENG X492 (1 semester unit)

Explore advanced microelectronic circuits and advanced analog ICs, and work on an optional research project.

Electives

For a list of electives, visit extension.berkeley.edu/cert/icdesign.html

Course availability is subject to change.

Prerequisites for Admission

There are no formal prerequisites for the Certificate Program in Semiconductor IC Design, but it is strongly recommended that you are familiar with English terminology in math, science and electronics and have a working knowledge of algebra II, precalculus and physics. You should also have a college-level understanding of microelectronic circuits and semiconductor physics.

Curriculum and Completion Requirements

The curriculum comprises 4 required courses (7 semester units) and 1–2 electives (1–2 semester units) for a total of 10 semester units (150 hours of instruction). Candidates must pay a nonrefundable certificate registration fee.

You must take all courses for a letter grade. To receive the Award of Completion, you must maintain an overall minimum 2.5 grade point average (GPA), with a grade of C or better in each course. A Certificate With Distinction will be awarded to those who complete the certificate with a GPA of 3.7 or higher.

You must complete all coursework within three years of registering for the certificate. However, requirements may be updated based on new developments in the field of study; we recommend completing the curriculum in a timely fashion.

How to Register for This Professional Certificate

Register for the Certificate Program in Semiconductor IC Design at extension.berkeley.edu/cert/register.html. Click on the More Information button next to the certificate title to begin the registration process. Complete your student account profile if you are a new student, and pay the nonrefundable certificate registration fee. You should register for the certificate before you complete your second course in the curriculum.

You may enroll in individual courses without registering for the Certificate Program in Semiconductor IC Design.

Value of a UC Berkeley Extension Professional Certificate

As the continuing education arm of the University of California, Berkeley, UC Berkeley Extension is a respected provider of adult and professional education. A UC Berkeley Extension professional certificate is approved by an academic advisory board consisting of industry experts; University of California, Berkeley, professors; and UC Berkeley Extension academic staff. A certificate is widely recognized as proof of the successful completion of a high-caliber, in-depth course of study.

Related Programs

Professional Sequence in Semiconductor Technology Fundamentals
extension.berkeley.edu/spos/semiconductor_fundamentals.html

Professional Sequence in Innovation Leadership for Technology Professionals
extension.berkeley.edu/spos/technology_leadership.html

Learn More

For more information about the Certificate Program in Semiconductor IC Design, visit extension.berkeley.edu/cert/icdesign.html, email extension-techeng@berkeley.edu or call (510) 642-4151.



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