



EMBEDDED SYSTEMS ENGINEERING CERTIFICATE PROGRAM • ONLINE

Embedded systems range from microprocessor-based control systems to system-on-chip (SoC) design and device software development. Examples can be found in consumer electronics, medical devices, and commercial and military applications. The explosion of the Internet-of-Things (IoT) has multiplied the need for embedded system designers and programmers.

Understand embedded systems engineering as a synergistic function between hardware, firmware and software device design and development. Learn the essential concepts of development through a practical, hands-on approach utilizing industry design automation (EDA) tools and design kits.

WHO SHOULD ENROLL

This program is designed for working professionals who are interested in transitioning into the embedded systems/ system-on-chip (SoC) industry, including hardware/software engineers; computer engineers; communications and networking engineers; control systems engineers; and other technical professionals involved in embedded systems design and development.

PROGRAM BENEFITS

- Gain essential knowledge of embedded systems design and programming
- Learn how to program an embedded device
- Become proficient in programmable logic design and analysis
- Increase your understanding of real-time operating systems
- Explore the latest embedded technologies
- Utilize EDA tools to optimize embedded systems designs

CERTIFICATE ELIGIBILITY AND REQUIREMENTS

The program is designed for individuals with working experience or education in engineering or computer science, and can demonstrate proficiency in C programming.

Candidates must complete *EECS 805, C Programming for Embedded Systems*; and *EECS X497.2, Introduction to Digital Logic and Hardware Architecture*; or possess equivalent experience or education in engineering or computer science.

A certificate is awarded upon completion of 15 credit units (9 required and 6 elective credit units), with a grade of "C" or better in each course. All requirements must be completed within 5 years after the student enrolls in his/her first course. Students not pursuing a certificate are welcome to take as many individual courses as they wish.

PROGRAM FEES

The total cost of the program varies depending on prerequisite and elective courses chosen. Actual fees may differ from the estimate below. Fees are subject to change without prior notice.

Course Fees (4.5 prerequisite, 9 required and 6 elective units)	\$4,870
Textbooks	\$1,350
Candidacy Fee	\$125
Total Estimated Cost	\$6,345

FOR MORE INFORMATION:

EngineeringSciences@ce.uci.edu

TO ENROLL

Visit ce.uci.edu/embedded for full course descriptions, instructor biographies, and to enroll.

EMBEDDED SYSTEMS CERTIFICATE PROGRAM		
COURSE #	PREREQUISITE COURSES	UNITS
EECS 805	C Programming for Embedded Systems	1.5 (CEU)
EECS X497.2	Introduction to Digital Logic and Hardware Architecture [#]	3
COURSE #	REQUIRED COURSES	UNITS
EECS X497.32	Fundamentals of Embedded Systems Design and Programming ^{**}	3
EECS X497.36	Embedded Systems Architecture [*]	3
EECS X497.34	Real-Time Embedded Systems Programming ^{**}	3
COURSE #	ELECTIVE COURSES (Minimum 6 units)	UNITS
Embedded Hardware Development		
EECS X494.92	Logic Design and Analysis using Verilog	3
EECS X494.95	FPGA Design and Implementation [#]	3
Embedded Software Development		
EECS X497.6	Motor Control Algorithms and Applications [#]	4
EECS X497.31	Designing Embedded Software Using Real-time Operating Systems ^{**}	3
EECS X497.10	Fundamentals of Embedded Linux	3
EECS X497.12	Linux Driver Primer	3
EECS X497.4	Applied Control Theory for Embedded Systems ^{**}	3
I&C SCI X481	Designing and Integrating IoT Devices	3

*Prerequisite: EECS 805, C Programming for Embedded Systems; or equivalent experience.

[#]Course requires hardware or software, please refer to online listing for details.