GRADUATE STUDY IN ELECTRICAL ENGINEERING
CALIFORNIA STATE UNIVERSITY, LOS ANGELES
(Effective Fall 2021 revised 5-13-2022)

The Master of Science degree in Electrical Engineering at California State University, Los Angeles, is designed for engineers who wish to prepare for advancement in their profession, whether in management research and development, sales, manufacturing, construction, consulting, teaching, or any of the expanding number of fields requiring highly educated electrical engineers. The graduate program in Electrical Engineering at Cal State L.A. is organized to accommodate the need of engineers employed full time as well as those interested in accelerating their programs by attending full time. Courses are scheduled both during the day and at hours to suit the needs of those working in the profession. Instruction is offered on a semester-based system. Each of the two semesters that comprise the academic year (fall and spring) is 16 weeks in duration.

Admission to the Graduate Program

Applicants must possess a Bachelor's Degree in Electrical Engineering or a closely related field with an overall GPA of 2.75 or better to be considered for admission. A promising applicant with a GPA between 2.5 and 2.74 may be admitted as a special action student. Special action students must achieve an overall GPA of 3.0 for four qualifying courses as approved in advance by the department.

Students with non-EE BS degrees or from non-ABET accredited EE programs may be admitted with condition. Prerequisite courses (in 2000- or 3000-level) will be required only for conditionally admitted students.

The Writing Proficiency Examination requirement is determined by Admissions office upon evaluation of the student's undergraduate degree.

Degree Requirements

A total of 30 semester units is required, including at least 18 units of 5000 level courses. A thesis (EE 5990) or comprehensive examination (EE 5960) is required. A minimum of a B, 3.0 grade point average is required to complete the program. The program is structured as follows:

Core Courses in Electrical Engineering (18 units)
Take 18 total units in the following four categories:

 Category 1: Applied Machine Learning (3 units)
EE 4630 - Machine Learning Principles and Application (3) *suggested prereq: EE 3020, EE 3040*
 Category 2: ECE Computation (3 units)
EE 5020 - Electrical and Computer Engineering Computation (3) *suggested prereq: EE 3450*
 Category 3: EE Systems (6 units)
Select two courses with the advisor's approval from the following list:
EE 4810, EE 5200, EE 5210, EE 5340, EE 5350, EE 5440, EE 5600
 Category 4: EE Current Technologies and Applications (6 units)
Select two courses with the advisor's approval from the following list:
EE 5230, EE 5320, EE 5360, EE 5450, EE 5630, EE 5830

Electives in Electrical Engineering (9-12 units)
Take 9 units if you choose EE 5990 (Thesis) or 12 units if you choose EE 5960 (Comprehensive Examination).

All 4000- and 5000-level courses listed on the second page not included in the Core are eligible Electives. To satisfy the degree requirement, completion of at least 18 units of 5000-level courses is required for the degree. Students may select any 4000- or 5000-level course listed in Categories 3 and 4 above and from the list of elective courses. Courses taken to satisfy the core requirement are not to be double counted to satisfy the elective unit requirement.

Further information about the program in Electrical Engineering may be obtained at:
http://www.calstatela.edu/ecst/ece, or by calling (323) 343-4470.
MSEE handbook is available at: https://www.calstatela.edu/ecst/ece/student-handbook-0

Illustrative of the areas from which students select courses that will prepare them for their area of special interest are the following blocks of Engineering courses for graduate students. Unit values are indicated in parenthesis.

COMMUNICATION SYSTEMS	BIOMEDICAL ENGINEERING
EE 4200 Digital Communication Systems (3) *prereq: EE 3200, EE 3040*	EE 4200 Digital Communication Systems (3) *prereq: EE 3200, EE 3040*
EE 4210 Coding for Communications (3) *prereq: EE 3200*	EE 4220 Digital Signal Processing (3) *prereq: EE 3200*
EE 4220 Digital Signal Processing (3) *prereq: EE 3200*	EE 4229 Digital Signal Processing Lab (1) *prereq: EE 3020, coreq EE 4220*
EE 4229 Digital Signal Processing Lab (1) *prereq: EE 3020, coreq EE 4220*	EE 4600 Applied Control System Design & Simulation (3) *prereq: EE 3600*
EE 4230 Antennas (3) *coreq: EE 3050*	EE 4710 Analog Integrated Circuits (3) *prereq: EE 3710*
EE 4240 Fiber Optics (3) *prereq: EE 3200*	EE 4810 Biomedical Devices (3) *prereq: EE 2040*
EE 4400 Data Communications & Networking (3) *prereq: EE 3200*	EE 4820 Biomedical Signal Processing (3) *prereq: EE 3020*
EE 5200 Advanced Digital Communications I (3) *prereq: EE 3040, EE 4200*	EE 5130 System Analysis and Design (3) *prereq: EE 4130*
EE 5210 Advanced Digital Communications II (3) *prereq: EE 5200*	EE 5200 Advanced Digital Communications I (3) *prereq: EE 3040, EE 4200*
EE 5220 Principles of Signal Compression (3) *prereq: EE 3040, EE 4200*	EE 5220 Principles of Signal Compression (3) *prereq: EE 3040, EE 4200*
EE 5230 Wireless Communications (3) *prereq: EE 5200, coreq: EE 5210*	EE 5610 Stochastic Systems and Estimation (3) *prereq: EE 3040, EE 3600*
EE 5410 Mobile Ad Hoc Networks (3) *prereq: EE 4400*	EE 5630 Optimal Control Theory (3) *prereq: EE 4620*
	EE 5830 Neural Networks, Learning, and Computation (3) *prereq: EE 3040*
COMPUTER ENGINEERING	POWER SYSTEMS
EE 4400 Data Communications & Networking (3) *prereq: EE 3200*	EE 4300 Intro to Power Systems Engineering (3) *prereq: EE 3300*
EE 4440 Computer Organization (3) *prereq: EE 3450*	EE 4310 Power System Analysis (3) *prereq: EE 4300*
EE 4450 Embedded Architectures (3) *prereq: EE 3450*	EE 4320 Electric Power Distribution (3) *coreq: EE 4300*
EE 4480 Advanced Digital Design (3) *prereq or coreq: EE 4440*	EE 4330 Power Electronics (3) *prereq: EE 3700*
EE 5400 Advanced Computer Networks (3) *prereq: EE 4400*	EE 5320 Vehicle Electrification (3) *prereq: EE 3300, EE 3700*
EE 5410 Mobile Ad Hoc Networks (3) *prereq: EE 4400*	EE 5340 Power System Stability (3) *prereq: EE 4310*
EE 5440 Computer System Architecture (3) *prereq: EE 4440*	EE 5350 Power System Protection (3) *prereq: EE 4310*
EE 5450 Advanced Topics in Embedded Systems (3) *prereq: EE 3450*	EE 5360 Renewable Energy (3) *prereq: EE 4310*
	EE 5370 Faulted Power Systems (3) *prereq: EE 4310*
CONTROL SYSTEMS	ADDITIONAL COURSES
EE 4600 Applied Control System Design & Simulation (3) *prereq: EE 3600*	EE 4130 Systems Engineering (3) *prereq: EE 3600*
EE 4610 Digital Control Systems (3) *prereq: EE 3600*	EE 5130 System Analysis and Design (3) *prereq: EE 4130*
EE 4620 Modern Control Systems (3) *prereq: EE 3020*	EE 5140 Systems Risk Analysis (3) *prereq: EE 4130*
EE 4689 Control Systems Lab (1) *coreq: EE 3600*	EE 5150 Systems Performance Analysis (3) *prereq: EE 4130*
EE 5600 Linear Systems Analysis (3) *prereq: EE 4620*	EE 5160 Systems Architecture (3) *prereq: EE 4130*
EE 5610 Stochastic Systems and Estimation (3) *prereq: EE 3040, EE 3600*	EE 4540 Special Topics in EE (1-3) *prereq: graduate standing*
EE 5630 Optimal Control Theory (3) *prereq: EE 4620*	EE 4990 Undergraduate Directed Study (1-3) *prereq: Dept permit*
	EE 5540 Special Topics in EE (3) *prereq: graduate standing*
	EE 5960 Comprehensive Exam (-0-) *prereq: Dept permit*
	EE 5970 Graduate Research (3) *prereq: Dept permit*
	EE 5980 Graduate Directed Study (1-3) *prereq: Dept permit*
	EE 5990 Thesis (3) *prereq: Dept permit*