GRADUATE STUDY IN ELECTRICAL ENGINEERING
CALIFORNIA STATE UNIVERSITY, LOS ANGELES
(Effective Spring 2018)

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.

The university is located at the eastern edge of Los Angeles and adjacent to the western San Gabriel Valley. The convenient location ensures easy access by freeway and major surface streets, as well as by bus & metro-line from all parts of the Greater Los Angeles metropolitan area.

Admission to the Graduate Program

Applicants to the program must have a Bachelor of Science degree in Electrical Engineering (from an accredited college or university) with a minimum 2.50 grade point average (A = 4.0) in the last 60 semester units attempted in the undergraduate program.

Applicants with a Bachelor of Science degree in an allied field (e.g. Computer Science, Physics, Mathematics) may be admitted to conditionally classified graduate standing until prescribed prerequisites have been successfully completed. The GRE is not required for entering the program.

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 minimum of a B, 3.0 grade point average is required. Completion of the program requires the writing of an acceptable thesis or successful completion of a comprehensive examination.

FOR FURTHER INFORMATION

Further information about the program in Electrical Engineering may be obtained from the Department of Electrical and Computer Engineering website http://www.calstatela.edu/ecst/ece, or by calling (323) 343-4470. Admission information and application forms may be obtained online at: https://www2.calstate.edu/Apply.
## AREAS OF INSTRUCTION AND RESEARCH

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
- 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 4229 Digital Signal Processing Lab (1) **prereq:** EE 3020, coreq EE 4220
- EE 4230 Antennas (3) **coreq:** EE 3050
- EE 4240 Fiber Optics (3) **prereq:** EE 3200
- EE 4250 Digital Image Processing (3) **prereq:** EE 3200
- EE 5200 Advanced Digital Communications I (3) **prereq:** 3040, EE 4200
- EE 5210 Advanced Digital Communications II (3) **prereq:** EE 5200
- EE 5220 Principles of Signal Compression (3) **prereq:** EE 3040, EE 4200
- EE 5230 Wireless Communications (3) **prereq:** EE 5200, coreq EE 5210
- EE 5240 Computer Aided Design of Communication Sys (3) **prereq:** EE 5200, EE 5210
- EE 5250 Optical Communications (3) **prereq:** EE 5200, EE 5210
- EE 5410 Mobile Ad Hoc Networks (3) **prereq:** EE 4400

### BIOMEDICAL ENGINEERING
- EE 4200 Digital Communication Systems (3) **prereq:** EE 3200, EE 3040
- EE 4220 Digital Signal Processing (3) **prereq:** EE 3200
- EE 4229 Digital Signal Processing Lab (1) **prereq:** EE 3020, coreq EE 4220
- EE 4250 Digital Image Processing (3) **prereq:** EE 3200
- EE 4270 CMOS VLSI Design (3) **prereq:** EE 3720
- EE 4600 Control Systems II (3) **prereq:** EE 3600
- EE 4810 Biomedical Devices (3) **prereq:** EE 2040
- EE 4820 Biomedical Signal Processing (3) **prereq:** EE 3200
- EE 5130 System Analysis and Design (3) **prereq:** EE 4130
- 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 5240 Computer Aided Design of Communication Sys (3) **prereq:** EE 5200, EE 5210
- EE 5610 Stochastic Systems and Estimation (3) **prereq:** EE 3040, EE 3600
- EE 5630 Optimal Control Theory (3) **prereq:** EE 4620
- EE 5820 Neural Computation (3) **prereq:** EE 3040, EE 4820

### COMPUTER ENGINEERING
- EE 4400 Data Communications & Networking (3) **prereq:** EE 3200
- EE 4420 Multimedia Networking (3) **prereq:** EE 4400
- EE 4440 Computer Organization (3) **prereq:** EE 3450
- EE 4450 Embedded Architectures (3) **prereq:** EE 3450
- EE 4480 Advanced Digital Design (3) **prereq or coreq:** EE 4440
- EE 5400 Advanced Computer Networks (3) **prereq:** EE 4400
- EE 5410 Mobile Ad Hoc Networks (3) **prereq:** EE 4400
- EE 5440 Computer System Architecture (3) **prereq:** EE 4440
- EE 5450 Advanced Topics in Embedded Systems (3) **prereq:** EE 4450
- EE 5480 Advanced Topics in Computer Architectures(3) **prereq:** EE 4400

### POWER SYSTEMS
- EE 4300 Intro to Power Systems Engineering (3) **prereq:** EE 3300
- EE 4310 Power System Analysis (3) **prereq:** EE 4300
- EE 4320 Electric Power Distribution (3) **coreq:** EE 4300
- EE 4330 Power Electronics (3) **prereq:** EE 3700
- EE 4340 Electromagnetic Energy Conversion (3) **prereq:** EE 3300
- EE 4350 Vehiclle Electrification (3) **prereq:** EE 3300, EE 3700
- EE 5330 Computer Method in Power Systems (3) **prereq:** EE 3020, EE 4310
- EE 5340 Power System Stability (3) **prereq:** EE 3600, coreq: EE 5330
- EE 5350 Power System Protection (3) **prereq:** EE 4310
- EE 5360 Renewable Energy (3) **prereq:** EE 4310
- EE 5370 Faulted Power Systems (3) **prereq:** EE 4310

### SYSTEMS ENGINEERING
- EE 4130 Systems Engineering (3) **prereq:** EE 3600
- EE 5130 System Analysis and Design (3) **prereq:** EE 4130
- EE 5140 Systems Risk Analysis (3) **prereq:** EE 4130
- EE 5150 Systems Performance Analysis (3) **prereq:** EE 4130
- EE 5160 Systems Architecture (3) **prereq:** EE 4130

### ADDITIONAL COURSES
- EE 4540 Special Topics in EE (1-3) **prereq:** graduate standing
- EE 4730 Optoelectronics (3) **prereq:** EE 3700
- EE 4990 Undergraduate Directed Study (1-3) **prereq:** Dept permit
- EE 5540 Special Topics in EE (3) **prereq:** graduate standing
- EE 5960 Comprehensive Exam (0-3) **prereq:** Dept permit

### CONTROL SYSTEMS
- EE 4600 Control Systems II (3) **prereq:** EE 3600
- EE 4610 Digital Control Systems (3) **prereq:** EE 3020
- EE 4620 Modern Control Systems (3) **prereq:** EE 3020
- EE 4630 Machine Learning: Principles & Applications (3) **prereq:** EE 3020, EE 3040
- EE 4689 Control Systems Lab (1) **coreq:** EE 3600
- EE 5600 Linear Systems Analysis (3) **prereq:** EE 4620
- EE 5610 Stochastic Systems and Estimation (3) **prereq:** EE 3040, EE 3600
- EE 5630 Optimal Control Theory (3) **prereq:** EE 4620
- EE 5640 Nonlinear Control Systems (3) **prereq:** EE 4620 or EE 5600