

# ELECTRICAL ENGINEERING (MS)

Offered at: San Luis Obispo Campus

<https://ee.calpoly.edu/academics/graduate-program/>

The Master of Science in Electrical Engineering provides students with the advanced knowledge and practical skills needed to innovate and lead in a rapidly evolving technological landscape. The program emphasizes core areas such as embedded systems, signal processing, power systems, control systems, communications, and integrated circuit design. With multiple culminating experience options—including a thesis or comprehensive exam—the program offers flexibility to match students' professional goals. Through hands-on labs, collaborative research, and access to cutting-edge tools, students gain the depth and versatility to succeed in the electrical engineering field. The program also lays a strong foundation for those pursuing doctoral-level study.

## Requirements for Admission

Students apply via Cal State Apply (<https://www.calstate.edu/apply>) and must submit a transcript, personal statement, resume, and three letters of recommendation. No GRE scores required.

International Students must meet all the standard eligibility criteria and demonstrate proficiency in English (English Proficiency Exam Requirements)

Prerequisites: Bachelor's degree in engineering or a closely related physical science with a minimum grade point average of 3.0.

Minimum GPA: 3.0

Application due date: Fall and Spring enrollment for domestic students. Fall only for international students. Please see Graduate Students Dates and Deadlines (<https://www.calpoly.edu/admissions/graduate-student/dates-and-deadlines>) for application deadlines.

## Advancement to Candidacy

Completion of at least 6 units of graduate coursework with cumulative and higher ed GPA of 3.0 or higher and an approved culminating experience proposal.

## Culminating Experience

Complete one of the following:

- **Thesis Option:** Along with a faculty advisor, students will work on a specific research topic, preparing a written thesis document and presenting to the public as a 30-45-minute oral defense, after which a three-person committee will have the opportunity to privately ask related questions.
- **Comprehensive Exam Option (two formats):** The comprehensive exam will give an opportunity for the student to demonstrate technical mastery of the discipline, including the ability to address open-ended engineering problems and synthesize knowledge. The exam will be composed of a written component, and/or an oral presentation. The student choosing this option must take 1 unit of EE 5597: MS Comprehensive Examination.
- **Professional Engineer Examination:** The objective of this format is for students to prepare for the Electrical Engineering Professional Engineer Examination and pass a department-administered mock exam. The student choosing this option must take 1 unit of EE 5594: Professional Engineer Examination.

A blended program provides a potentially accelerated route to a graduate degree, with simultaneous conferring of both Bachelor's and Master's degrees. Students in the blended program are provided with a seamless process whereby they can progress from undergraduate to graduate status. Students are required to complete all requirements for both degrees.

## Blended Options

BS Electrical Engineering + MS Electrical Engineering

BS Computer Engineering + MS Electrical Engineering

## Units Double Counted

0 units are double counted.

## Requirements for Admission for the Blended Program

Students apply directly to the program and not through Cal State Apply; please contact the department graduate coordinator (<https://grad.calpoly.edu/about/coordinators.html>).

- Prerequisites: Must be a current BS student in Electrical Engineering or Computer Engineering. Students must have completed all EE/CPE 3000 level courses, all lower-division courses and the GWR prior to transitioning to graduate status.
- Minimum GPA: 3.2

- Timeline for admission: Please see the MS in Electrical Engineering website (<https://ee.calpoly.edu/academics/graduate-program/>) for more information.
- Application materials: Statement of purpose and resume, complete application package, and letters of recommendation. See BMS Honors program website (<https://ee.calpoly.edu/academics/bms-honors>) for details.

## Program Learning Objectives

1. Apply engineering principles, methodologies, and tools to achieve technical competency in electrical engineering.
2. Demonstrate the ability to conduct background research, analyze data, draw conclusions, and formulate effective solutions to complex electrical engineering problems.
3. Communicate engineering ideas, analyses, and results effectively both orally and in writing to diverse audiences.
4. Evaluate the societal and environmental impacts of engineering technologies and practices.
5. Demonstrate an understanding of ethical principles and responsible professional conduct in engineering work.
6. Implement effective planning and decision-making strategies in the design, execution, and management of electrical engineering projects.
7. Embrace life-long learning and pursue continuous professional growth.

Code	Title	Units
<b>REQUIRED COURSES</b>		
EE 5563	Graduate Seminar <sup>1</sup>	2
Select from the following:		6
Thesis		
EE 5599	Thesis <sup>1</sup>	
Comprehensive Examination		
EE 5594 or EE 5597	Professional Engineer Examination Comprehensive Examination	
& Select any 5000 level EE or CPE courses <sup>2</sup>		
Electrical Engineering Core		
Select from the following: <sup>3</sup>		8-9
EE 4406	Power System Analysis I	
EE 4410	Fundamentals of Power Electronics	
EE 4431	Computer-Aided Design of VLSI Devices	
EE 5502	Microwave and Millimeter Wave Device and System Electronics	
EE 5509	Computational Intelligence	
EE 5513	Modern Control Systems	
EE 5525	Stochastic Processes	
<b>Approved Electives</b>		
Select from the following: <sup>2, 3, 4</sup>		13-14
Select any 4000-5000 level EE or CPE courses		
Select any 4000-5000 level College of Engineering, MATH, STAT, or PHYS courses <sup>4</sup>		
<b>Total Units</b>		<b>30</b>

<sup>1</sup> Course may need to be repeated to complete the degree requirements.

<sup>2</sup> Courses can only be used once for major degree credit.

<sup>3</sup> A minimum of 18 units, of the required 30 units, must be at the 5000 level to complete the degree.

<sup>4</sup> A maximum of 8 units of 4000-5000 level courses from College of Engineering, MATH, STAT or PHYS may be used to satisfy the Approved Electives requirement.