AEROSPACE ENGINEERING (MS)

Offered at: San Luis Obispo Campus

https://aero.calpoly.edu/

The Master of Science in Aerospace Engineering offers a hands-on education focused on solving complex challenges in modern aerospace systems. The program covers a wide range of advanced topics, including aerodynamics, aerospace structures, dynamics and control, propulsion systems, orbital mechanics, and multidisciplinary design and optimization. Students develop a deep technical foundation while working closely with faculty on research aligned with their interests. With access to state-of-the-art labs and design tools, students gain practical experience that prepares them for careers in advanced industry roles or for pursuing doctoral studies.

Requirements for Admission

Students apply via Cal State Apply and must submit a transcript, personal statement addressing motivation for pursuing an Aerospace Engineering Master's at Cal Poly, GRE scores, and three letters of recommendation.

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

Prerequisites: Bachelor's degree in aerospace engineering or a closely related physical science. Strong foundation in undergraduate mathematics, physics, and engineering (preferred).

Minimum GPA: 3.0

Application due date: Applications are accepted for Fall enrollment only. Please see Graduate Student Dates and Deadlines (https://www.calpoly.edu/admissions/graduate-student/dates-and-deadlines/) for application deadlines.

Advancement to Candidacy

Completion of at least 3 units with an overall GPA of 3.0 or higher and an approved culminating experience proposal.

Culminating Experience

A thesis is required as a culminating experience. Students work with their advisor and the Department Graduate Coordinator to develop a program of study which supports their thesis topic. A thesis topic would typically be in an area such as but not limited to dynamics and control, fluid dynamics and aerodynamics, multidisciplinary design and optimization, aerospace propulsion, aerospace structures, orbital mechanics, and systems engineering.

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 Aerospace Engineering + MS Aerospace Engineering

Units Double Counted:

3 units of 4000-5000 level graduate program courses can be double counted towards undergraduate degree requirements. Neither undergraduate senior project nor graduate culminating experience may be applied toward double-counted units.

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 Aerospace Engineering and be in their final full undergraduate year at Cal Poly. Students must have completed all lower division classes and the GWR prior to transitioning to graduate status.
- Minimum GPA: 3.0
- Timeline for admission: Applications are due in the fall of the applicant's final full year as an undergraduate. Contact the department graduate coordinator (https://grad.calpoly.edu/about/coordinators.html) for details.
- Application materials: Contact the department graduate coordinator (https://grad.calpoly.edu/about/coordinators.html) for details.

Program Learning Objectives

1. Competency in advanced mathematics, science, and aerospace engineering knowledge.
2. Ability to apply advanced mathematics, science, and aerospace engineering knowledge to an independently-conducted project relevant to the aerospace engineering field.

3. Awareness of emerging and modern technology and how to incorporate new ideas into aerospace engineering.
4. Awareness of professional and ethical responsibilities related to aerospace engineering and society at large.
5. Ability to convey effectively engineering ideas and results both orally and in writing.

Code	Title	Units
REQUIRED COURSES		
Select from the following:		3
AERO 5507	Computational Aerodynamics	
AERO 5534	Aerospace Structural Dynamics Analysis	
AERO 5540	Advanced Ground to Space Transportation	
AERO 5549	Systems Engineering Applications	
AERO 5560	Advanced Spacecraft Dynamics and Control	
AERO 5599	Thesis	6
MATH 5651	Numerical Analysis	3
MATH 5691	Applied Mathematics for Engineers	3
Approved Electives		
Select any 4000-5000 level courses from the Orfalea College of Business, College of Engineering, or Bailey College of Science and Mathematics		6
Select any 5000 level AERO courses		9
Total Units		**30**