2011-13 Cal Poly Catalog
Aerospace Engineering Department

MS AEROSPACE ENGINEERING

General Characteristics. The Master of Science program in Aerospace Engineering prepares the student for entry into a well-established field of aerospace engineering. Two versions of the master's program are available: MS Aerospace Engineering with Specialization in Research or MS Aerospace Engineering with Specialization in Space Systems Engineering.

General Prerequisites.
For admission as a classified graduate student, an applicant must hold a bachelor's degree in engineering or a closely related physical science with a minimum grade point average of 3.0 in the last 90 quarter units (60 semester units) attempted. Applicants are required to submit satisfactory scores for the General (Aptitude) Test of the Graduate Record Examination.

An applicant who meets these standards but lacks prerequisite coursework may be admitted as a conditionally classified student and must make up any deficiencies before advancement to classified graduate standing. Information pertaining to specific requirements for admission to graduate standing (classified or conditionally classified) may be obtained from the Graduate Coordinator, Department of Aerospace Engineering.

General Program of Study.
Graduate students must file a formal study plan with their advisor, department, college and graduate studies office by no later than the end of the quarter in which the 12th unit of approved courses is completed. The formal program of study must include a minimum of 45 units (at least 24 of which must be at the 500 level).

MS Aerospace Engineering, Specialization in RESEARCH

Characteristics. Emphasizes engineering science and research activity. Graduates have an increased capability for complex research, development, and innovative design, and are prepared for further study in engineering, leading to the Doctor of Engineering or Ph.D. or advanced positions within industry.

Program of Study. 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: dynamics and control, fluid dynamics and aerodynamics, multidisciplinary design and optimization, aerospace propulsion, aerospace structures, and systems engineering.

For the most recent, comprehensive list of courses offered by the department, please contact the Department Graduate Coordinator or see the listing at *http://aero.calpoly.edu*.

Mathematics courses 8
  MATH 501 Applied Mathematics I (4)
  MATH or approved numerical methods elective (4)
Advisor approved electives 28
  16 units must be 500-level AERO courses;
    12 units must be 400-500 level courses from the
    College of Engineering or College of Science
    and Mathematics
Culminating experience 9
  AERO 599 Thesis (Design Project) (2) (2) (5)
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M.S. Aerospace Engineering, Specialization in SPACE SYSTEMS ENGINEERING

Characteristics. Emphasizes space systems and systems engineering. It is designed to accommodate students with undergraduate degrees in science or engineering disciplines other than aerospace engineering. Students develop an understanding of all subsystems in a space vehicle (spacecraft or missile/launch vehicle) and how they are combined to form a complete space vehicle. The program also presents the basic principles of systems engineering and their application to space vehicle design. A project is required as a culminating experience.

Systems engineering courses 12
  AERO 450 Intro to Space Systems (4)
  AERO 510 Systems Engineering I (4)
  AERO 511 Systems Engineering II (4)
Space systems courses 16
  AERO 446 Intro to Space Systems (4)
  AERO 512 Aerospace Vehicle Software App (4)
  AERO 519 Fundamentals of Vehicle dynamics and
    Control (4)
  AERO 566 Adv Topics in Spacecraft Design (4)
  or AERO 567 Launch Vehicle and Missile
    Design (4)
Advisor approved electives 12
  Must be 500-level courses from the College of
    Engineering
Culminating experience 5
  AERO 599 Thesis (Design Project) (5)
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