

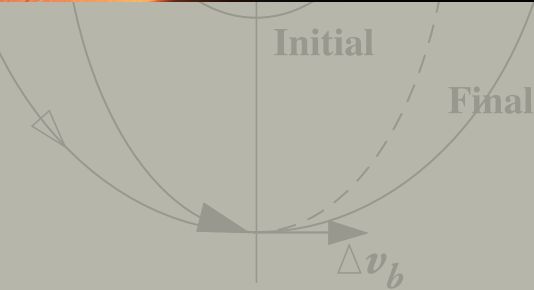
SANTA CLARA UNIVERSITY

DEPARTMENT OF  
Mechanical Engineering

Aerospace Engineering  
Minor



$$\frac{\Delta m}{m_0} = 1 - e^{\frac{-\Delta v}{I_{sp}g_0}}$$



# Aerospace Engineering Minor



Aerospace Engineering deals with designing, building, and testing aerospace vehicles such as unmanned aerial vehicles, airplanes, helicopters, spacecraft, and rockets. This innovative and rapidly developing field affords great potential for future engineers. Demand is high for aerospace engineers due to the recent renewed interest in space programs and missions such as commercialization of space flights by Space X, NASA's planned development of a colony of habitats on the moon and Mars, asteroid mining, planetary defense, and protecting the earth from asteroid impact.

The Aerospace Engineering Minor develops the engineering analysis and design skills necessary for creating and understanding aerospace vehicles and their subsystems. The minor includes diverse topics relevant to applications both in atmospheric and space flight.

All undergraduates are eligible for the Aerospace Engineering Minor. Students intending to earn this minor should seek advice from the Mechanical Engineering Department.

## Requirements

Students must take two Fundamental Courses, MECH 145, one Aerospace Core Course, and one Elective Course. All courses counting toward the minor must be taken on a letter-grade basis and must be completed with an overall grade point average of at least 2.0.

- **MECH 145** : Introduction to Aerospace Engineering (4 units)  
Prerequisite: MECH 140, MECH 121

## Fundamental Courses:

- **CENG 43:** Strength of Materials (4 units)  
Prerequisite: CENG 41 Co-requisite: CENG 43L
- **MECH 121:** Thermodynamics (4 units)  
Prerequisite: PHYS 32
- **MECH 122 and 122L:** Fluid Mechanics (4 units)  
Prerequisite: MECH 140 Co-requisite: MECH 122L
- **MECH 140:** Dynamics (4 units)  
Prerequisite: CENG 41 Co-requisite: AMTH 106

## Aerospace Core Courses:

- **MECH 132:** Aerodynamics (4 units)  
Prerequisite: MECH 121, MECH 122
- **MECH 153:** Aerospace Structures (4 units)  
Prerequisite: CENG 43, CENG 43L
- **MECH 155:** Astrodynamics (4 units)  
Prerequisite: MECH 140
- **MECH 158:** Aerospace Propulsion Systems (4 units)  
Prerequisite: MECH 121, MECH 122

## Elective Courses:

- **MECH 205/206:** Aircraft Flight Dynamics I, II (4 units)  
Prerequisite: MECH 140 or equivalent
- **MECH 220/222:** Orbital Mechanics I, II (4 units)  
Prerequisite: MECH 140 or equivalent
- **MECH 313:** Aerospace Structures (4 units)  
Prerequisite: CENG 43 or equivalent
- **MECH 371/372:** Space Systems Design and Engineering I, II (8 units)
- **MECH 431/432:** Spacecraft Dynamics I, II (4 units)  
Prerequisite: MECH 142 or equivalent

or

- Another course from the Aerospace Courses list (4 units)



Aerospace Engineering Minors are connected to the local industry. Field trip to Space Systems/Loral pictured here.



**For further information,  
please contact**

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