

The background of the page is a collage of aerospace-related images. At the top, a fighter jet is shown from a top-down perspective, flying towards the viewer. Below it, a white space capsule is shown in a museum setting, with a mannequin in a white spacesuit standing next to its hatch. The text and title are overlaid on a dark green rectangular area that has a faint, large-scale geometric pattern.

AEROSPACE ENGINEERING CONCENTRATION

Study the design, manufacturing, and operating techniques of flight capable machines. Courses cover a range of engineering disciplines such as fluid mechanics, chemical propulsion, structures, and stability and control as they apply to aircraft and rockets that fly within and above Earth's atmosphere.



WHEN AND HOW TO DECLARE

To declare a concentration in aerospace engineering, you must be a declared mechanical engineering major. If you decide you would like to declare the concentration, email your academic advisor and they will initiate the process.

THE COURSEWORK

Students who complete 12 credit hours from the lists of courses below will earn a concentration in aerospace engineering. The 12 credit hours fulfill the technical elective requirement for mechanical engineering students. Courses in bold are recommended if students have a specific interest in that thematic area. Courses can be selected from a single theme or multiple.

To enroll in 500-level courses, students must have a 3.0 GPA or instructor approval.

FLUID FLOW

MECH 460	Aeronautics
MECH 478	Computational Fluid Dynamics
MECH 419	Compressible Flow
MECH 507	Laser Diagnostics for Thermosciences
MECH 518	Orbital Mechanics
MECH 539	Advanced Fluid Mechanics
MECH 551	Physical Gas Dynamics

PROPULSION

MECH 450	Aerospace Propulsion
MECH 468	Space Propulsion & Power Engineering
MECH 517	Chemical Rocket Propulsion
MECH 519	Aerospace Vehicles Trajectory and Performance
MECH 557	Turbomachinery
MECH 558	Combustion
MECH 567	Broad-Beam Ion Sources

STRUCTURES & SYSTEMS

MECH 417	Control Systems
MECH 420	Aerospace Structures
MECH 425	ME Vibrations
MECH 426	Advanced Machine Design
MECH 515	Advanced Topics in Mechanical Vibrations Finite Element Analysis in ME
MECH 520	Element Analysis in ME
SYSE 501	Foundations of Systems Engineering

MATERIALS & MANUFACTURING

MECH 530	Advanced Composite Materials
MECH 535	Mechanics of Composite Materials
MECH 537	Processing of Polymer Composites

