AEROSPACE ENGINEERING CONCENTRATION

Study the design, manufacturing, and operating techniques of air-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 have completed MECH 342: Mechanics and Thermodynamics of Flow Processes. Once you have completed this course, work with your advisor to declare the concentration.

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.

For 500-level courses, students must have a 3.0 GPA or instructor approval.

FLUID FLOW

- MECH 460: Aeronautics
- MECH 478: Computational Fluid Dynamics
- MECH 480A6: Compressible Flow
- MECH 507: Laser Diagnostics for Thermosciences
- MECH 539: Advanced Fluid Mechanics
- MECH 551: Physical Gas Dynamics

PROPELLION

- MECH 450: Aerospace Propulsion
- MECH 468: Space Propulsion & Power Engineering
- MECH 517: Chemical Rocket Propulsion
- MECH 557: Turbomachinery
- MECH 558: Combustion
- MECH 567: Broad-Beam Ion Sources

STRUCTURES & SYSTEMS

- MECH 417: Control Systems
- MECH 420: Aerospace Structures
- MECH 425: Vibrations
- MECH 426: Advanced Machine Design
- MECH 515: Advanced Topics in Mechanical Vibrations
- MECH 520: Finite Element Analysis in ME

MATERIALS & MANUFACTURING

- MECH 530: Advanced Composite Materials
- MECH 535: Mechanics of Composite Materials
- MECH 581A9: Processing of Polymer Composites

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