AEROSPACE ENGINEERING UNDERGRADUATE STUDY

Aerospace Engineering focuses on aspects of thermodynamics, fluid mechanics, propulsion, aeroelasticity, materials science, and other elements of advanced aerospace research.

Aerospace Engineers are involved with the design, analysis, testing, manufacturing, control, operation, and maintenance of aerodynamic systems.

Aerospace Engineering deals with the flight and propulsion of anything from weather balloons and orbiting satellites to defense missiles to aircraft and spacecraft.

STUDENT ORGANIZATIONS & PROJECT TEAMS

The College of Engineering sponsors over 70 student organizations and project teams. Students have helped set world land-speed records for an electric vehicle with the Venturi Buckeye Bullet, traveled to Honduras with Engineers for Community Service (ECOS) to set up a computer lab for the Montana de Luz orphanage, and write for the award-winning Ohio State Engineer Magazine. With such a large variety of organizations, there is something to interest everyone.

For more information, visit: mae.osu.edu/undergraduate/student-organizations

DEPARTMENT HIGHLIGHTS

• Consistently ranked among the top Aerospace Engineering programs in the nation by US News and World Report.

• Students learn and study in one of the premier engineering facilities in the country, the Peter L. and Clara M. Scott Laboratory.

• Unique research opportunities and test facilities at the Aeronautical and Astronautical Research Laboratories, located adjacent to Ohio State’s Don Scott Airport.

• Curriculum easily coordinated with summer co-op and internship opportunities.

• Both Aeronautical and Astronautical Bachelor’s Degree with Honors and a BS/MS or BS/PhDPrograms offered for qualified students.

SCHEDULE A VISIT!

The best way to see if aerospace engineering at Ohio State is right for you is to come visit!

Visits can be scheduled online at: campusvisit.osu.edu or you can contact Nina Parshall, College of Engineering Recruitment Coordinator, at Parshall.8@osu.edu or (614) 292-6320.

To contact an advisor:
Phone: (614) 292-0515
Email: maeadvisor@osu.edu

Find us on Facebook: facebook.com/OhioStateMAE
Aerospace Engineering @ Ohio State

AEROSPACE ENGINEERING CURRICULUM

All engineering students at Ohio State begin their studies with math, chemistry, physics, and the Fundamentals of Engineering sequence. Once these background courses are completed, students who are admitted to the aerospace engineering major will study:

- Engineering Mechanics: Statics, Dynamics, & Strength of Materials | the study of the effects of external forces on stationary and moving objects, and on materials
- Thermodynamics | the study of the development of motion (work) from heat
- Fluid Mechanics | the study of external forces on stationary and moving fluids
- Heat Transfer | the study of the flow of heat from warm objects to cool objects, and how to control this transfer of energy
- Kinematics | the study of how objects move
- Aerodynamics | the study of flight
- Propulsion | the study of space and atmospheric propulsion systems
- Electrical Circuits and Controls | the study of electromechanical actuators, and the principles of feedback control, and analysis of control systems
- Measurement and Controls | how to take measurements, and how to control motion based on these measurements
- Design | how to incorporate all of the above into the design of aerodynamic systems

More information about the curriculum, including sample schedules, can be found in the “undergraduate” tab of the mae.osu.edu website.

APPLICATION AREAS, CONCENTRATIONS & TECHNICAL ELECTIVES

Concentrations give you the chance to specialize in one area of aerospace engineering. You can choose to take elective courses exclusively in your concentration, or choose a few outside your concentration to maintain a slightly broader background – your choice. We offer technical electives in:

- Fluid mechanics
- Propulsion
- Aircraft flight testing
- Helicopter aerodynamics
- Control theory (air-breathing and rocket)
- Turbomachinery
- Structural dynamics
- Aeroelasticity
- Stability and control of flight vehicles
- Orbital mechanics
- Hypersonics

THEORY IN ACTION

Along with imparting the broader view of how aerospace engineering also impacts fields such as automotive and wind energy, Ohio State’s aerospace engineering curriculum incorporates blended classroom activities to expose students to the technologies, facilities, and instruction that threads active learning throughout the program. The two-semester course that truly distinguishes Ohio State’s aerospace engineering curriculum is the Experimental Projects I and II class. Designed for seniors, it groups students together to conceive, plan and design an experiment that adds depth to the knowledge, skills, and competencies they acquire during their undergraduate experience. The second semester of the two-part course follows with lessons in executing and reporting on the experiments formulated during the first semester. By fostering generous opportunities for experiential learning such as this, students develop the traits of accomplished and determined problem solvers.

UNDERGRADUATE RESEARCH

Research is an encouraged part of an undergraduate student’s education. Many students participate in the Honors Research Program where they perform research under the guidance of a faculty member and write and defend an undergraduate thesis, all while earning credit hours towards their degree. Students may also conduct research at a more informal level without the requirement to write an undergraduate thesis.

CO-OPS & INTERNSHIPS

Ohio State’s Engineering Co-Op & Internship Program is a great resource for our students. Two out of every three Ohio State engineering students participate in a co-op or internship experience. Knowledge gained in an authentic engineering work environment builds career confidence and demonstrates real commitment to future employers. In addition to getting a boost in job readiness, many students are able to further reduce their education expenses through income received while working as interns or on co-op assignments. More information is available at: mae.osu.edu/undergraduate/internships-and-co-ops.

THINKING OF GRADUATE SCHOOL TOO?

Qualified students can participate in the aerospace engineering BS/MS program. Students in this program can use some of their senior courses to fulfill requirements for both their bachelor’s and master’s degrees in aerospace engineering. This reduces the amount of extra time to earn a master’s degree by nearly a year!