

AEROSPACE ENGINEERING

Wichita has been named the “Air Capital of the World” because it is one of the world’s largest producers of aircraft through Airbus, Boeing, Cessna, Bombardier Learjet, Hawker Beechcraft, and Spirit Aerosystems. Thus, it is an excellent place to study aerospace engineering. Wichita State University grew up with the pioneers in early aviation and became a pioneer in its own right by offering the bachelor’s degree in aeronautical engineering as early as 1928 (it was only the 6th university to offer the program in the United States at the time). Both the University and its students benefit from a location rich in aviation heritage and current technology.

Our aerospace engineering program provides an array of courses that will enable students to participate in the design and analysis of aircraft and spacecraft. We offer courses in the following general fields:

- Propulsion—The study of the systems associated with producing useful motion.
- Structures—The study of the structural components of the flight vehicle.
- Aerodynamics—The study of the fluid environment surrounding a flight vehicle.
- Performance—The analysis of the useful operational characteristics of the flight vehicle.
- Stability and control—The study of the systems required to direct the flight of the vehicle.

The aerospace engineering curriculum is designed to develop skills in these five areas, as well as in math, physical science, general engineering, digital computation, and written and oral communication. When you become a senior, you will be part of a design team in the two-course senior design sequence.

You may want to participate in cooperative education, a voluntary program in which you’ll have the opportunity to integrate formal course work with periods of relevant off-campus employment. Our co-op students have worked at such facilities as the NASA Johnson Space Center, NASA Dryden Flight Research Center, Boeing, Cessna, Learjet, Hawker Beechcraft, and the Federal Aviation Administration.

Admission

When you choose to major in aerospace engineering, your faculty adviser from the aerospace engineering department will help you plan your course of study and will outline specific requirements for degree completion. It is important that you complete the basic skills classes, Calculus I, and University Physics I before the completion of 48 college hours.

Laboratory and Computer Facilities

The aerospace engineering department has well-equipped laboratories for required courses and student design projects.

You will have access to laboratory facilities, including many in the National Institute for Aviation Research, which are among the finest found in academic institutions nationwide. These include: five wind tunnels, a water tunnel, structural testing lab, a crash-dynamics lab, and a composites lab. In addition, College of Engineering students have access to computer laboratories equipped with an abundance of computers.

Related Opportunities

Aerospace engineering students are encouraged to participate in extracurricular organizations such as: the student chapter of the American Institute of Aeronautics and Astronautics, the Society of Automotive Engineers, and the Society of Women Engineers. If you’re eligible, you may join Sigma Gamma Tau, the aerospace engineering honor society, and Tau Beta Pi, the honor society for all areas of engineering.

Related Programs

All of Wichita State’s engineering programs— aerospace, computer, electrical, industrial, manufacturing, and mechanical—share a math/science background and technical orientation. Graduate programs leading to master’s and doctoral degrees are offered in aerospace, electrical, industrial, and mechanical engineering, as well as a master’s program in engineering management.

Faculty

- Animesh Chakravarthy (PhD, Massachusetts Institute of Technology). Flight dynamics and controls.
- Klaus A. Hoffmann (PhD, University of Texas at Austin). Computational fluid dynamics, aerothermodynamics, hypersonics.
- Walter J. Horn, (PhD, University of Texas at Austin). Solid mechanics, structures, composites, aeroelasticity.
- Linda Kliment, (PhD, Wichita State University). Aerodynamics.
- L. Scott Miller, **Chairman** (PhD, Texas A&M University). Experimental aerodynamics, laser velocimetry, airfoil and aircraft design, rotor aerodynamics.
- Roy Y. Myose (PhD, University of Southern California). Experimental aerodynamics and structures, propulsion, astronautics.
- Michael Papadakis (PhD, Wichita State University). Computational, experimental, and theoretical aerodynamics.
- K. Suresh Raju (PhD, Wichita State University). Aircraft structures and solid mechanics.
- Kamran Rokhsaz (PhD, University of Missouri-Rolla). Theoretical and applied aerodynamics, design, flight mechanics.
- James E. Steck (PhD, University of Missouri-Rolla). Flight dynamics and controls, neural networks, acoustics.
- John Tomblin, Executive Director-NIAR (PhD, West Virginia University). Solid mechanics, structures, composites.
- Charles Yang (PhD, Louisiana State University). Composites and machine design.

For More Information

To receive more information, or to arrange a campus visit, contact:

Office of Admissions
 Marcus Welcome Center
 Wichita State University
 1845 Fairmount
 Wichita, Kansas 67260-0124
 Telephone (316) 978-3085
 Toll-free (800) 362-2594
www.wichita.edu

The University reserves the right to revise or change rules, charges, fees, schedules, courses, requirements for degrees, and any other regulations affecting students whenever considered necessary or desirable.

Notice of Nondiscrimination: Wichita State University does not discriminate on the basis of race, religion, color, national origin, gender, age, marital status, sexual orientation, status as a Vietnam-era veteran, or disability. Any person having inquiries concerning this may contact the Office of Equal Employment Opportunity, Wichita State University, 1845 Fairmount, Wichita, Kansas 67260-0145; telephone (316) 978-3001.

General Education Requirements	
Basic Skills (9 hours minimum) Must be completed in the first 48 college hours with a C or better	Minimum number of semester hours
<ul style="list-style-type: none"> • College English Composition (English 100 or 101 and 102) • Public Speaking (Communication 111) 	6 3
Fine Arts, Humanities, and Social and Behavioral Sciences (18 hours minimum)	
<ul style="list-style-type: none"> • One introductory course from a fine arts discipline • One introductory course from a humanities discipline • One introductory course from a social and behavioral sciences discipline • One introductory course from a second humanities discipline or a second social and behavioral sciences discipline • One further study course from one of the two disciplines in the division, humanities or social and behavioral sciences, in which two introductory courses are taken • Philosophy 385: Engineering Ethics 	3 3 3 3 3 3
Mathematics and Natural Sciences	
Calculus I, II, and III	13
Ordinary Differential Equations	3
University Physics I and II	8
University Physics I Lab	1
General Chemistry I	5
Natural Science Elective	3
Professional Courses	
	Semester Hours
Engineering Graphics	3
Engineering Digital Computation	3
Statics and Dynamics	6
Fundamentals of Atmospheric Flight	3
Mechanics of Materials	3
Circuits I	4
Engineering Economy	3
Thermodynamics	3
Materials Engineering	3
Fluid Mechanics	3
Aerodynamic Theory	4
Introduction to Space Dynamics	3
Experimental Methods in Aerodynamics	2
Flight Dynamics and Control	3
Flight Structures I and II	6
Flight Control Systems	3
Aerospace Propulsion	3
Aerospace Design I and II	8
Technical electives	9
General Education Course Requirements	60 Hours
Professional Course Requirements	75 Hours
Grand Total Hours for BSAE	135 Hours