

Graduate Programs in Aerospace Engineering

The Department of Aerospace Engineering offers programs leading to Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Current research topics include acoustics, aeroelasticity, aerothermodynamics, aircraft dynamic loads, aircraft flight dynamics, aircraft icing, airfoil design and rotor aerodynamics, artificial neural networks, composite materials, computational fluid dynamics, computational solid mechanics, continuum damage and fracture mechanics, damage tolerance, design, experimental aerodynamics, finite element analysis, flight dynamics and control, flight mechanics, hypersonics, intelligent control, laser velocimetry, solid mechanics, structural dynamics, and theoretical and applied aerodynamics.

The department's research and instructional facilities are among the finest in the nation. They include five wind tunnels, a water tunnel, a small aircraft prototype lab, and a structural testing laboratory. Graduate Students have opportunities to use the equipment in all laboratories for their research projects. Students also may use the research facilities in the university's National Institute for Aviation Research (NIAR), including a composite materials lab and a crash dynamics lab.

The department's programs are enhanced by Wichita's aviation heritage and the presence of major aerospace companies in the city, including Airbus, Spirit Aerosystems, Cessna, Bombardier/Learjet, and Hawker-Beechcraft.

Graduate course work is scheduled so that engineers employed in the local industry may conveniently pursue graduate degrees.

Master of Science

Courses of study leading to the MS degree are available with specialization in any of the following four fields: (1) aerodynamics and fluid mechanics; (2) structures and solid mechanics; (3) flight dynamics and control; and (4) multidisciplinary analysis and design. In the Master of Science program, students choose one of three options:

- (1) 24 hours of graduate course work plus 6 hours of thesis,
- (2) 33 hours of course work plus an exam over the core courses, or
- (3) 30 hours of course work plus 3 hours of directed project.

Doctor of Philosophy

Courses of study leading to the Doctor of Philosophy (PhD) degree are available with specializations in the same fields as listed above for the MS degree. The doctor of philosophy program requires a minimum of 60 credit hours of course work, including those of the Master of Science degree, plus a minimum of 24 credit hours of dissertation.

Faculty Experience

Faculty members have received local, regional and national recognition for excellence, including awards for excellence in teaching, excellence in research, significant contributions to teaching and student development, excellence in instruction of engineering students, contributions to the general aviation research and leadership in the advancement of teaching. The faculty members have a wide breadth of expertise spanning all areas of aerospace engineering. All faculty members teach both undergraduate and graduate courses.

Assistantships

Assistantships are awarded to select students. Almost all full-time graduate students receive some form of assistantship.

MS AE Admission Requirements

To be admitted to the MSAE program, students must have completed the equivalent of an undergraduate degree in aerospace engineering or a closely related field. Students with deficiency in certain areas will be required to take additional courses. For full-standing admission, a minimum GPA of 3.0 on a 4.0 scale is required for the last 60 hours (or two years) of undergraduate work.

Official scores from the General Test of the Graduate Record Examination (GRE) are recommended, but not required.

PhD AE Admission Requirements

Admission to the PhD AE program requires the completion of a master's degree in engineering or physical sciences with a graduate grade point average (GPA) of at least 3.25 on a 4.00 scale.

Official scores from the General Test of the Graduate Record Examination (GRE) are recommended, but not required.

Evidence of the ability to carry out independent research and present it in written English is highly desirable. Students with deficiency in certain areas will be required to take additional courses.

Faculty

Animesh Chakravarthy, Assistant Professor; PhD, Massachusetts Institute of Technology, 2007. Flight dynamics and control.

Klaus A. Hoffmann, Gordon Distinguished Professor and PhD Graduate Coordinator; PhD, University of Texas at Austin, 1983. Computational fluid dynamics, aerothermodynamics, and hypersonics.

Walter J. Horn, Professor; PhD, University of Texas at Austin, 1972. Solid mechanics, structures, composites, and aeroelasticity.

Linda K. Kliment, Assistant Professor; PhD, Wichita State University, 2009. Experimental and applied aerodynamics, flight loads.

L. Scott Miller, Professor and Chair; PhD, Texas A & M University, 1988. Theoretical and experimental aerodynamics, laser velocimetry, airfoil design and rotor aerodynamics.

Roy Y. Myose, Professor; PhD, University of Southern California, 1991. Experimental aerodynamics, structures, propulsion, and astronautics.

Michael Papadakis, Professor; PhD, Wichita State University, 1986. Computational, experimental and theoretical aerodynamics, and airframe icing.

Suresh Raju, Associate Professor; PhD, Wichita State University, 2001. Solid mechanics, structures, and composites.

Kamran Rokhsaz, Professor and Masters Graduate Coordinator; PhD, University of Missouri-Rolla, 1988. Theoretical and applied aerodynamics, flight mechanics and dynamics.

James E. Steck, Professor; PhD, University of Missouri-Rolla, 1989. Intelligent control, artificial neural networks, flight dynamics and control, and quantum computing.

John S. Tomblin, Bloomfield Distinguished Professor and Executive Director of NIAR; PhD, University of West Virginia, 1994. Solid mechanics, structures, and composites.

C. Charles Yang, Boeing Fellow in Globalization of Engineering, Professor; PhD, Louisiana State University 1993. Solid Mechanics, Composites, and finite element analysis.

For More Information

For the MS Program, contact:
Kamran Rokhsaz, PhD
Department of Aerospace Engineering
Wichita State University
Wichita, Kansas 67260-0044
Phone (316) 978-5937
Kamran.Rokhsaz@wichita.edu

For the PhD program, contact:
Klaus Hoffmann, PhD
Department of Aerospace Engineering
Wichita State University
Wichita, Kansas 67260-0044
Phone (316) 978-6327
Klaus.Hoffmann@wichita.edu

Web site: <http://www.wichita.edu/ae>

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