Programs of Study

The School of Aerospace Engineering encompasses a wide variety of disciplines related to flight. As new opportunities and problems are explored, the boundaries of the field of aerospace engineering continue to expand. Graduate studies in aerospace engineering expose the student to advanced course work, research, and design. While the courses provide specialization and depth in individual areas, research and design pose unique challenges that require the student to venture far and wide in search of new solutions.

The School offers the Master of Science and Ph.D. degrees. The Master of Science degree requires 33 semester hours of course work beyond the bachelor's degree including up to 3 semester hours or 24 semester hours plus a thesis. Depending on the student's background, this program can be completed in three to four semesters.
The Doctor of Philosophy degree requires 50 semester hours of course work beyond the bachelor's degree, admission to candidacy based on a qualifying examination and a dissertation proposal, and successful completion and defense of a doctoral thesis on original research. Most students complete the Ph.D. degree in three to five years.

Research Facilities

The research program at Georgia Tech ranks among the top five aerospace programs nationwide and enjoys a worldwide reputation. Research projects in a variety of areas are performed under contract to federal agencies that include the U.S. Army, Navy, and Air Force; NASA; the Department of Energy; the National Science Foundation; the Environmental Protection Agency; and the Federal Aviation Administration, as well as several industries. The major laboratory facilities in the School are the acoustics laboratory, aeroelastic rotor test chamber, composites laboratory, crashworthiness facility, flight dynamics laboratory, low-turbulence wind tunnel, chemical propulsion research laboratory, laboratory for pulse combustion processing, rotor static thrust facility, rotorcraft simulator, solid propellant combustion laboratory, system identification laboratory, turbulent combustion diagnostics laboratory, and John J. Harper 7 foot by 9 foot wind tunnel. Many of these facilities are equipped with state of the art laser diagnostics and computerized data acquisition.

In addition, the facilities of the Computer-aided Design Laboratory and the Symbolic Computation Laboratory of the College of Engineering are available for use by the aerospace faculty and students. A variety of mainframe computers, dedicated minicomputers, workstations, and microcomputers are available, and several research projects are conducted on off-campus supercomputers using nationwide networks. This strong research program enables students to work with state-of-the-art research facilities and ensures that aeronautical engineering courses are taught by faculty members who are actively engaged in research at the cutting edge of their fields.
Financial assistance for highly qualified applicants is available through research or teaching assistantships, and Presidential Fellowships. Financial awards are based on academic qualifications and potential for research productivity. Stipends can range from $13,500 to $16,000 per year, plus all tuition and fees. International students are required by faculty members to provide certified documentation of financial support but are eligible to compete for financial aid.

Cost of Study

Tuition and fees for the 1999-2000 academic year are expected to be $6,000 per semester for nonresidents of Georgia and $1750 per semester for residents. Part-time students are charged prorated amounts. The rates for tuition and fees are subject to change at the end of any semester.

Housing Costs

Dormitory rooms for unmarried students and apartments for married students and their families are available at reasonable cost through the Institute. Most of these rooms were upgraded for the 1996 Olympics. Rooms and apartments in privately owned dwellings within walking distance or a short driving distance are available for a range of prices. Assistance in locating housing is offered by the Institute's Housing Office.

Student Group

Approximately 13,000 students are enrolled at Georgia Tech. About 9,300 of these are undergraduate students, and 3,700 are graduate students. The School of Aerospace Engineering has an approximate enrollment of 250 undergraduate students and 210 graduate students.

Student Outcomes

Graduates have found employment in industry, government laboratories, and universities in this country and abroad.

Location

Atlanta is one of the most beautiful and exciting cities in the United States. Situated at an altitude of 1,050 feet above sea level, Atlanta is the second-highest major city in the country. Its topography is responsible for a favorable climate of moderate summers and mild winters. Atlanta's location has been an important factor in its development into the transportation, financial, and communications hub of the Southeast. Within a 2-hour drive of Atlanta are the beautiful Great Smoky Mountains; much closer are Lake Lanier and Lake Allatoona, noted for their swimming, boating, fishing, and picnicking opportunities. Atlanta is also home of the Atlanta Braves, the Falcons, and the Hawks. Atlanta, site of the 1996 Summer Olympics, is the headquarters of many large corporations and is the financial hub of the rapidly growing southeastern United States.

The School

The Daniel Guggenheim School of Aeronautics was established in 1930. It has continuously been at the forefront of the rapidly changing field of aerospace engineering. The first master's degree was awarded in 1934, and the Ph.D. program was started in 1961. The School currently has 29 faculty members and nearly 40 professional staff members. Over the five-year period from 1992 to 1997, the School has awarded a total of 296 M.S. degrees and 88 Ph.D.'s. The high graduate-degree productivity is the result of the very active research programs throughout all disciplines of the School. Most of the research conducted is performed by students as part of their M.S. or Ph.D. programs.

Applying

To assure full consideration for financial aid, submit a complete application by the end of January of the year of planned enrollment.

Correspondence

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Georgia Institute of Technology
Atlanta, GA 30332-0150
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Georgia Institute of Technology

THE FACULTY AND THEIR RESEARCH

David S. Lewis, Jr. Chair
Ben T. Zinn, Regents' Professor; Ph.D., Princeton, 1965. Combustion instability, combustion control, propulsion, pulse combustion.

Regents' Professors
N.L. Sankar, Ph.D., Georgia Tech, 1977. Computational fluid dynamics, helicopter aerodynamics.
Regents' Professors Emeriti
Robin B. Gray, Ph.D., Princeton, 1957. Aerodynamics.
Edward W. Price, B.A. (math), B.A. (physics), UCLA, 1948. Propulsion, combustion.

Professors
Krishan K. Ahuja, Ph.D., Syracuse, 1976. Aeroacoustics, fluid mechanics. (Joint appointment with the Georgia Tech Research Institute)
E.A. Armanios, Ph.D., Georgia Tech, 1985. Composite and structures, fracture mechanics, design.
Olivier Bauchau, Ph.D., MIT, 1981. Structural dynamics, multi-body dynamics, experimental dynamics.
Anthony J. Calise, Ph.D., Pennsylvania, 1968. Flight mechanics and controls.
James I. Craig, Ph.D., Stanford, 1968. Structural mechanics, experimental mechanics, design.
Wassim M. Haddad, Ph.D., Florida Tech, 1987. Stochastic modeling, robust multivariable control, structural dynamic control.
S.V. Hanagud, Ph.D., 1963. Structural mechanics and materials, flexible body control, nonlinear dynamics.
D.H. Hodges, Ph.D., 1973. Nonlinear structural mechanics, computational mechanics and dynamics, rotorcraft dynamics and aeroelasticity.
J.I. Jagoda, Associate Director for Research and Graduate Studies; Ph.D., Imperial College (London), 1976. Experimental combustion, optical diagnostics, chemical propulsion systems.
M.P. Kamat, Ph.D., Georgia Tech, 1972. Nonlinear structural analysis and optimization, computational methods.
George A. Kardomateas, Ph.D., MIT, 1985. Mechanics of materials and structures, composite structures, fracture mechanics.
N.M. Komerath, Ph.D., Georgia Tech, 1982. Experimental fluid mechanics, aerodynamics.
Robert G. Loewy, Chair; Ph.D., Pennsylvania, 1962. Helicopter structure dynamics, aeroelasticity, composite structures for aircraft and spacecraft, unsteady aerodynamics.
David J. McGill, Ph.D., Kansas, 1960. Dynamics. (Joint appointment with the School of Civil and Environmental Engineering).
Suresh Menon, Ph.D., Maryland, 1984. Combustion/propulsion, computational fluid dynamics, turbulence and turbulent mixing.
J.V.R. Prasad, Ph.D., Georgia Tech, 1985. Applied mechanics, flight mechanics and controls.
Daniel P. Schrage, D.Sc., Washington (St. Louis), 1978. Rotorcraft and aircraft design, aeroelasticity, flight mechanics and controls, concurrent engineering.
Ramesh R. Talreja, Ph.D., Denmark Technical, 1974. Composite materials and structures.

Professors Emeriti
Robert L. Carlson, Ph.D., Ohio State, 1962. Structural mechanics, fatigue in structures.
Donnell W. Dutton, M.S., Georgia Tech, 1940; PE. Systems engineering design, stress analysis, aerodynamic vehicle structures.
Wilfred F. Horton, B.Sc., University College (England), 1940. Structures, design.
James E. Hubbart, M.S., Case Tech, 1950. Fluid mechanics, boundary layer control and propulsion.
Howard M. McMahon, Ph.D., Caltech, 1958. Fluid mechanics, turbulent boundary layers, helicopters, V/STOL aerodynamics.
G. Alvin Pierce, Ph.D., Ohio State, 1966. Aeroelasticity, unsteady aerodynamics.
James C. Wu, Ph.D., Illinois at Urbana-Champaign, 1957. Unsteady aerodynamics, viscous flow, computational aerodynamics, turbulence.

Associate Professors
Stanley C. Bailey, Ph.D., Stanford, 1967. Structural mechanics, solar energy.
Oliver McGee, Ph.D., Arizona, 1988. Composite structures, structural dynamics, turbomachinery.
C.V. Smith, Sc.D., MIT, 1962. Structural mechanics, dynamics.
Panagiotis Tsiotras, Ph.D., 1993, Purdue University. Flight mechanics and controls.
P.K. Yeung, Ph.D., Cornell, 1989. Turbulence and turbulent mixing, computational fluid dynamics.

Assistant Professors
Dimitiri N. Mavris, Ph.D., Georgia Tech, 1988. Aircraft and notercraft design, air breathing propulsions system design, aerodynamics.
John Olds, Ph.D., North Carolina State, 1993. Multidisciplinary design optimization, orbital mechanics, space launch vehicle design.
Amy R. Pritchett, Sc.D., MIT, 1997. Flight simulation, avionics and cockpit design.
Stephen Ruffin, Ph.D., Stanford, 1993. Computational fluid dynamics, high-speed propulsion, hypersonics and nonequilibrium flows, aerodynamics.
Jerry M. Seitzman, Ph.D., Stanford, 1991. Experimental combustion, propulsion, laser diagnostics.
Marylin Smith, Ph.D., Georgia Tech, 1994. Computational aeroelasticity, computational fluid mechanics, aeroacoustics.

Lecturer
Michael W.M. Jenkins, C.Eng., Gloucester College (England), 1958. Aerospace vehicle design, stability/control and handling qualities, flight and tunnel testing, advanced concepts.

Adjunct Professors
David A. Peters, Ph.D., Stanford, 1974. Aeroelasticity, vibrations and helicopter dynamics.
Brian L. Stevens, Ph.D., Manchester (England), 1966. Controls, nonlinear simulations.