Aerospace engineering graduate programs at Florida Tech are designed to advance engineers in their professional careers (M.S. degree) and allow them to pursue creative investigation of scientific and engineering problems that impact society (Ph.D. degree). Florida Tech offers a very diverse pool of aerospace-related graduate courses. As a result, students have the opportunity to gain knowledge in many technical areas while rigorous scientific research allows them to pursue discovery and create scientific knowledge.

**Why Aerospace Engineering at Florida Tech?**

Located in the heart of Florida’s Space Coast region, Florida Tech is in close proximity of Kennedy Space Center (KSC) as well as a large number of major high-tech engineering companies such as Harris Corp., Siemens USA, Boeing Company and Northrop Grumman. Our ideal location allows close interaction between our students and faculty with nearby scientists and engineers of the U.S. space program. Florida Tech is established as a well-recognized research institution. It is ranked as a Tier One Best National University by *U.S. News & World Report* in 2013 and also ranked in the top 200 World Universities 2013-2014 by *Times of London Higher Education*. Our faculty is distinguished and dedicated and work very closely with graduate students to ensure their success. Florida Tech is one of the most culturally diverse educational and research institutions in Florida with a strong international presence and connections.

**Research Facilities**

Major research facilities include the Low-Speed Wind Tunnel, Shock Tube, Rocket Thrust Stand, Drop Tower, Shaker Table, Materials Testing Machine, Composite Manufacturing Lab, Cascade Tunnel, Laser Application Lab, Robotics and the Control Lab.

**Research Focused**

As a leading research university, graduate students at Florida Tech can pursue research in a wide range of areas that align with their interests and career goals. Florida Tech is home to several aerospace engineering-related research centers and laboratories, including: Federal Aviation Administration Center of Excellence for Commercial Space Transportation, Center for Space Commercialization, Aerospace Systems and Propulsion Laboratory, Wind and Hurricane Impacts Research Laboratory, and Human Centered Design Institute. Our faculty is highly distinguished and has research interests in propulsion, flight mechanics and control, mechatronics, robotics, fluid mechanics, aerodynamics, computational methods, composite structures, lasers, and hurricane and wind damage, among others. Recent faculty research has been funded by NASA, DARPA, AFOSR, ONR, NSF, State of Florida, and DOE.

**WHAT TO EXPECT**

Florida Tech’s reputation is built on a solid record of graduate education and faculty and student research. Graduate students can expect to benefit from a wide range of advanced courses that allows them to learn the latest body of knowledge and excellent research facilities and infrastructure that helps them conduct state-of-the art research. Our faculty is dedicated to graduate education and student success, and work very closely with students to ensure their success and timely graduation.
Master of Science in Aerospace Engineering

The Master of Science degree is designed to allow students to advance their professional careers in industry or prepare for further graduate (doctoral) study. For students pursuing the latter option, ample opportunities are available to conduct state-of-the-art research, thus enhancing their chances of admission to doctoral programs. The master’s degree can be earned on either a full-time or a part-time basis. The program offers four areas of specialization. They are:

- **Aerodynamics and Fluid Dynamics**—This specialization concentrates on the advanced studies in aerodynamics and fluid mechanics and their application to aerospace vehicles and systems. Courses in this specialization include Continuum Mechanics, Turbulent Flows, Computational Fluid Dynamics (CFD), and Experimental Fluid Dynamics.

- **Aerospace Structures and Materials**—This specialization focuses on aircraft and spacecraft structures, aerospace materials and the design of various aerospace structural components. Courses in this specialization include Elasticity, Finite Element Fundamentals, Composite Materials and Structural Dynamics.

- **Combustion and Propulsion**—This specialization concentrates on the advanced studies of aerospace propulsion systems, including propellants and thrusters, high-performance solar sails and combustion simulations. Courses in this specialization include Combustion Fundamentals, Gas Turbines and Hypersonic Air-Breathing Engines.

- **Flight Mechanics and Control**—This specialization focuses on aircraft and spacecraft dynamics and the linear and multi-variable controls. Courses in this area include Flight Stability and Control, Spacecraft Control and Optimal Multi-variable Feedback Control.

**Doctoral Program**

The Aerospace Engineering Ph.D. program is designed for students who wish to pursue advanced, independent scientific research. The majority of the research programs are sponsored by government agencies or industry. Candidates work closely with a committee of advisors in order to successfully complete their research in a timely manner. For full-time doctoral graduate research assistants, full-pay tuition scholarships are available.

**Careers**

Many of our master’s graduates go on to seek higher degrees in aerospace engineering at Florida Tech and other prestigious universities. Those choosing to enter the workforce after graduation can expect to find an abundance of job opportunities in design and development, field service, marketing, software development, and research at leading aerospace firms. Employers that have hired our graduates include NASA, Raytheon, Northrop Grumman, Boeing, Harris Corp., GE, Pratt and Whitney, U.S. Army, U.S. Navy, U.S. Air Force, and Mainstream Engineering.

Research Areas

Faculty members are engaged in a wide range of research in which graduate students can participate and contribute, including:

- Aerodynamic testing and wind engineering
- Experimental and CFD analyses of non-stationary complex flows
- Crashworthiness of composite materials
- Astrodynamics
- Trajectory and mission design optimization
- Spacecraft Guidance Navigation and Control (GNC)
- Graphic Processing Unit (GPU) computing
- Solid, liquid and hybrid rocket propulsion system design, analysis and testing
- Liquid slosh and low-gravity fluid dynamics
- Gas turbine blade film-cooling and combustor-turbine flow interaction
- Simulation of blast-wave induced trauma on biological tissues
- Experimental modal analysis
- Vibrational qualification for rocket payloads

**Research Portal**

Want to learn more about the cutting-edge research happening at Florida Tech? Visit our research portal and discover something new.

[www.fit.edu/research/portal](http://www.fit.edu/research/portal)