The software engineering degree programs are administered by the department of computer sciences, whose mission is to prepare computing professionals for success and leadership in the conception, design, implementation and operation of complex, real-world systems and to expand knowledge and understanding of computing through research, scholarship and service.

MASTER OF SCIENCE DEGREE PROGRAM
The master of science in software engineering serves students who have earned a bachelor’s degree in software engineering, computer science or a related discipline, as well as working software engineers who want to broaden their perspective while deepening their skills in software development. The program also accepts students who are already competent programmers wanting to prepare for careers in software engineering. Courses in this program are taught at a level that assumes that all students have a technical undergraduate degree and significant programming experience.

ADMISSION REQUIREMENTS
Applicants must have taken courses in differential and integral calculus, discrete mathematics, statistics and data structures and algorithms, as well as at least 12 credit hours of advanced course work in undergraduate computer science. Admission may be granted with the stipulation that deficiencies are made up by taking necessary extra courses. Graduate Record Examination scores (General Test only) are recommended.

DEGREE REQUIREMENTS
The Master of Science in Software Engineering requires a minimum of 32 credit hours of approved graduate study. Students are required to complete and successfully defend a thesis or pass a comprehensive examination. The curriculum includes four required courses:

- **SWE 5001 Software Engineering 1**
- **SWE 5002 Software Engineering 2**
- **SWE 5411 Software Testing 1**
- **SWE 5621 Software Metrics and Modeling**

All students are required to earn two credit hours by a combination of Computer Science Seminar (CSE 5500) or Computer Sciences Internship (CSE 5501), each of which is one credit and can be taken multiple times. The internship is completed with an information technology business or industrial organization and is available only for students without prior experience in a practical information technology setting.

Each student selects elective courses to fulfill their credit hour requirements. One elective must be selected from courses that require significant programming and another must be a fundamental course in computer science. A list of courses fulfilling these requirements is available from the department.

The department excels in several specializations of software engineering and students are encouraged to concentrate in one of these areas by careful selection of elective courses.

SOFTWARE TESTING
Software testing is the process of technical investigation of a software product, usually to discover quality-related information (such as defects or product state data) about the product. This subfield of software engineering is undergoing rapid change, demanding more technical knowledge and more insight into the product and its risks. Florida Tech offers unusual breadth and depth of course work and research opportunities in software testing. A specialization in software testing is best suited for those who have already worked in the field and want to become leaders in the testing community, perhaps as consultants, test automation architects or managers. Software engineering students who do not have significant experience should plan to take at least one, and preferably two, internships.

The specialization in software testing requires completion of both Human-Computer Interaction (AHF 5302) and Software Testing 2 (SWE 5415). Additionally, the student must either complete a thesis on a software-testing-related topic or must take two optional courses that address software test related issues.
FINANCIAL AID
Graduate student assistantships for instruction and research are available to well-qualified master’s and doctoral degree students. Assistantships carry stipends plus a tuition waiver. In some cases, a tuition waiver alone may be awarded for a limited amount of service. Assistantships for master’s degree students are normally for an academic year; assistantships for doctoral students are renewable on a yearly basis.

THE UNIVERSITY
Florida Institute of Technology is a distinctive, independent university, founded in 1958 by a group of scientists and engineers to fulfill the need for specialized, advanced educational opportunities on Florida’s Space Coast. Florida Tech is the only comprehensive, independent scientific and technological university in the Southeast. Supported by both industry and the community, Florida Tech is the recipient of many research grants and contracts, a number of which provide financial support for graduate students.

LOCATION
Melbourne is located on the central east coast of Florida. The area offers a delightful year-round subtropical climate and is 10 minutes from the ocean and beaches. Kennedy Space Center and the massive NASA complex are just 45 minutes north of Melbourne. The city of Orlando, Walt Disney World, EPCOT and many other attractions are one hour west of Florida Tech’s main campus.

FOR MORE INFORMATION
To obtain more detailed information about this graduate program or to obtain application materials, visit our homepage at www.fit.edu/grad or the University Catalog at www.fit.edu/catalog, or contact:

Florida Institute of Technology
Office of Graduate Admissions
150 W. University Blvd.
Melbourne, FL 32901-6975
(321) 674-8027
(321) 723-9468/Fax
(800) 944-4348

Florida Institute of Technology is an independent university located in Melbourne, Florida. Florida Tech is accredited by the Southern Association of Colleges and Schools to award associate, baccalaureate, master’s, education specialist and doctoral degrees. Florida Tech admits students of any race, color, national or ethnic origin, and does not discriminate on the basis of disability in admission or access to its programs.

SOFTWARE ENGINEERING

RESEARCH ACTIVITIES
Software engineering faculty and students are currently conducting research in software documentation, evolution, reliability and testing. Research facilities provide open access to a wide range of computing hardware, operating systems, software development applications and general purpose computing applications. Several research centers and laboratories support specialized research interests of faculty and students.

Center for Software Testing Education and Research: One of the key barriers to effective testing in industry is weak education in the practical methods of software testing. The mission of the center is to create effective, grounded, timely materials to support the teaching and self-study of software testing, software reliability and quality-related software metrics. Examples of recent work can be found on the center’s Web site at www.testingeducation.org. See the Research: Institutes, Centers and Major Laboratories section in the University Catalog.

Software Evolution Laboratory (SEL): The primary mission of this laboratory is to advance the state-of-the-art in evolving complex software systems in a disciplined manner. This includes research related to legacy system re-engineering, reverse engineering, program understanding and software maintenance. The systems in question can be traditional software applications or Web-based applications. The secondary mission of the SEL is to advance the state-of-the-practice in software evolution by transitioning results from the laboratory into widespread use through evidence-based arguments (such as empirical studies) that objectively support the efficacy of the techniques in question. Issues related to technology adoption are necessarily a part of this effort. An example of recent work is the investigation of the impact of test-driven development (TDD) techniques, such as Extreme Programming (XP), on long-term software maintenance costs.