

## MASTER OF SCIENCE

### HEAD

Muzaffar A. Shaikh, Ph.D.

### PROFESSORS

Fredric M. Ham, Ph.D.

Cem Kaner, Ph.D.

Samuel P. Kozaitis, Ph.D.

Muzaffar A. Shaikh, Ph.D.

Wade H. Shaw, Ph.D., P.E.

### ASSOCIATE PROFESSORS

William W. Arrasmith, Ph.D.

Walter P. Bond Jr., Ph.D.

Carmo A. D'Cruz, Ph.D.

John E. Deaton, Ph.D.

Syed H. Murshid, Ph.D.

M. Mehdi Shahsavari, Ph.D.

William D. Shoaff, Ph.D.

## MASTER OF SCIENCE DEGREE PROGRAM

The master of science program in systems engineering meets the systems engineering and system integration needs of a student who has an undergraduate degree in engineering, physical science, computing or mathematics. It draws on expertise and experience in these multidisciplinary areas, preparing the engineering or science graduate in such key advanced subjects as modeling and analysis, systems engineering principles, computer networks, digital communications, software testing, decision and risk analysis, human-machine interface and operations research.

Today, an engineer or scientist who joins the workforce in the public or private sector, especially in the high-tech realm, is faced with the challenge of integrating design and development work with the work of other inter-company or intra-company groups.

Courses taught in the systems engineering curriculum prepare the engineer to meet this system design and integration challenge with emphasis on technical as well as cost and schedule requirements.

A key aspect of the program, and an alternative to completing a thesis, is the team-oriented capstone design project in which the team formulates and solves an industry problem and submits a project team paper. All nonthesis students are required to take this course in the graduating semester.

### ADMISSION REQUIREMENTS

An applicant for admission must have earned a bachelor's degree in engineering, physical science, computing or mathematics. An applicant whose undergraduate GPA is less than 3.0 on a 4.0 scale may be asked to submit two letters of recommendation, a statement of objectives, a résumé and Graduate Record Examination (GRE) results.

General admission requirements and the process of applying are discussed in the *Graduate Information and Regulations* section of the *University Catalog*.

### DEGREE REQUIREMENTS

A minimum of 30 credit hours is required for graduation, including all courses on the following list of required courses and at least three courses from the list of elective courses. Thesis students must also earn six credit hours of thesis (SYS 5999). Nonthesis students must take two additional courses from the electives list, including SYS 5380. Thesis topics may be selected from the fields of computer science, electrical engineering, systems engineering or other suitable areas. The electives list below is partial, as courses from other disciplines continue to be added. The student should check with his or her adviser about additional elective courses.

## CURRICULUM

### Required Courses

SYS 5310	Systems Engineering Principles	.....3
SYS 5350	System Modeling and Analysis	.....3
SYS 5365	Decisions and Risk Analysis	.....3
SYS 5370	Research Methods in Systems Engineering	.....3
SYS 5385	System Life Cycle Cost Estimation	.....3

### Elective Courses

AHF 5101	Human Factors in Man-Machine Systems	.....3
ECE 5223	Digital Communications	.....3
ECE 5272	Special Topics in C3I	.....3
ECE 5534	Computer Networks 1	.....3
ECE 5535	Computer Networks 2	.....3
ECE 5595	Special Projects in Computer Engineering	.....3
SWE 5411	Software Testing 1	.....3
SWE 5440	Introduction to Software Architecture	.....3
SYS 5375	Military Operations Research	.....3
SYS 5380	Systems Engineering Design Project	.....3



**Florida Institute of Technology**

College of Engineering  
Department of  
Engineering Systems

150 West University Boulevard  
Melbourne, Florida 32901-6975  
(321) 674-7132  
www.fit.edu

### 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 of 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 home page at [www.fit.edu/grad](http://www.fit.edu/grad) or the *University Catalog* at [www.fit.edu/catalog](http://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