Industrial engineers use many analytical approaches to improve productivity, efficiency, safety, and quality of working life while reducing operating costs. Our graduate curriculum focuses on the systems approach, including complexity, system-of-systems perspective, human-systems integration, as well as the critical issues of economic and social globalization, environmental and business sustainability, innovation and leadership.

Industrial engineering combines technical and business skills to design and improve systems, products and processes. Our diverse programs produce graduates who can work in any environment: manufacturing, service, healthcare, government and other industries.

Degree programs are structured to support the emergence of central Florida as a national center of high technology. They also support diverse service industries in the region and the nation. Programs are designed to produce highly-skilled professionals and researchers with broad knowledge of industrial engineering and in-depth knowledge of specialty fields for careers in academia, industry, and government.

UCF offers a master’s and a doctoral degree in Modeling and Simulation through its College of Graduate Studies. This Interdisciplinary Studies program was co-founded by Assoc. Prof. Michael Proctor.

GRADUATE DEGREES OFFERED

**MASTER’S**
- Industrial Engineering
- Engineering Management
- Professional Engineering Management (PEM)
- Healthcare Systems Engineering Track

**DOCTORAL**
- Industrial Engineering

Our award-winning faculty are members and fellows of scientific and professional societies such as the National Academy of Engineering, Institute of Industrial and Systems Engineers, American Society for Quality, Human Factors and Ergonomics Society, Systems Dynamics Society, American Society for Engineering Management, and American Society of Engineering Education.

Professors Gavriel Salvendy and Deborah Nightingale are National Academy of Engineering members inducted for their fundamental contributions to the field.

**ALUMNI SAY**

“UCF was the perfect place for me to obtain my degrees – my classes were relevant and interesting, the Ph.D. process was organized, my committee was responsive and supportive, and the environment was flexible.”
— Melissa Francisco, Ph.D., ’03 ’11,’12, ’14

“Universal has been one of the most profitable theme park companies over the past five years based very heavily on the support of our team of UCF industrial engineers.”
— Robert Kantor, ’97, ’04, ’09, Director, Business Development & Quality Engineering, Universal Studios, Orlando

“I could not have asked for a more relevant and complimentary part-time graduate engineering program to help me create and apply new frameworks at my workplace that were essential in delivering successful results.”
— Stuart Laval, Ph.D., ’15, Engineer, Duke Energy

“I hope to always be a living product of the quality curriculum offered by the UCF Department of Industrial Engineering.”
— Corey Gellis, ’15, ’17, Engineer, Siemens Gamesa Renewable Energy

**FACTS OF INTEREST**

Prof. and Chair Waldemar Karwowski is globally recognized for significant contributions in human factors engineering, safety of advanced manufacturing, ergonomics and fuzzy systems theory and applications. He received the 2017 William Floyd Award from the Chartered Institute of Ergonomics & Human Factors.

UCF’s Engineering Leadership & Innovation Institute (eli®) began in IEMS under the guidance of directors Prof. Tim Kotnour and Assoc. Prof. Robert Hoekstra, and is building a community of leaders through programs that emphasize creativity, collaboration, innovation and accountability to bring forth world-changing solutions.

Prof. Pamela McCauley served the nation in a key advisory role as one of only 11 selected for the 2015 class of United States Jefferson Science Fellows.

RESEARCH FOCUS AREAS

- Modeling and simulation
- Operations research
- Production and supply chain
- Engineering management
- Quality engineering and management
- Service engineering
- Industrial data analytics
- Human-system integration and ergonomics
- Systems engineering
- Healthcare systems ergonomics

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RESEARCH LABS

SYNTHETIC ENVIRONMENT LEARNING LABORATORY
Provides the physical facilities and know-how to develop, instruct, conduct research and promote the use of synthetic environment technologies for improving human performance and for economic development through problem solving. The laboratory supports and augments existing UCF simulation and modeling programs by providing physical devices and software technologies relevant to the design, development and application of synthetic environments. Various technologies for creating virtual environments and the illusion of real and abstract systems are available for integration into existing curriculum. Software tools for creating virtual prototypes of products, manufacturing processes and exploring the use of new media are also available. The SELL facility, through the integration of multiple disciplines at UCF, fosters the cross-pollination of ideas resulting in students receiving a comprehensive education, with greater innovation and creativity.

SIMULATION INTEROPERABILITY LABORATORY
Provides a collaborative computing environment that supports the creation, execution, and reuse of simulations that are capable of integrating multidisciplinary models representing the elements of network-centric warfare.

INSTITUTE FOR ADVANCED SYSTEMS ENGINEERING
Promotes the cross-disciplinary research and education in systems engineering at UCF, and is committed to developing advanced solutions and tools for systems problems in a variety of application domains.

ERGONOMICS LABORATORY
Designed and equipped to support classroom instruction and research in areas such as human engineering, ergonomics, work physiology, biomechanics, industrial hygiene, safety engineering, and more.

RESEARCH CENTERS/CLUSTERS
IEMS faculty participate in university-wide interdisciplinary research teams, including the Cyber Security and Privacy cluster and the Prosthetic Interfaces cluster.

RESEARCH PARTNERS
National Science Foundation
U.S. Department of Energy
U.S. Department of Labor
Office of Naval Research
Air Force Office of Scientific Research
Defense
Advanced Research Projects Agency
South Korean Army
Florida Department of Transportation
Veteran’s Administration

INDUSTRY TIES
Lockheed Martin
Harris
Siemens
Mitsubishi
Walt Disney World
Universal Studios
IBM
NASA
Many more

ALUMNI STARS

NICOLE STOTT, ’92
The former NASA astronaut is the first UCF graduate to launch into orbit aboard a NASA space shuttle. She lived on the International Space Station for 91 days, serving as a flight engineer for Expeditions 20 and 21. She holds a UCF master’s degree in Engineering Management.

GRACE BOCHENEK, PH.D., ’98
Director, National Energy Technology Laboratory. She oversees the operations of more than 1,000 employees at five sites. Previously, she was the director of the U.S. Army’s Tank Automotive Research, Development and Engineering Center (TARDEC), and was the first female to serve in the role.

KELVIN MANNING, ’02
Associate director, NASA’s John F. Kennedy Space Center. Manning’s numerous awards include the NASA Exceptional Service Medal; the astronauts’ Silver Snoopy Award; National Black Engineer of the Year Award for Outstanding Technical Achievement in Government; and many more.

CONTACT
DR. WALDEMAR KARWOWSKI, CHAIR
wkar@ucf.edu
DR. AHMAD ELSHENNAWY
Graduate Program Coordinator
ahmade@ucf.edu
Phone: 407-823-5742
UCF Department of Industrial Engineering & Management Systems
Engineering II Building
12800 Pegasus Drive, Room 312
Orlando, FL 32816-2450
Phone: 407-823-2204
FAX: 407-823-3413
Web: iems.ucf.edu

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