

Graduate Programs in Industrial Engineering and Management Systems

ABOUT

Industrial engineers use many analytical approaches to improve productivity, efficiency, safety, and quality of working life while reducing operating costs. UCF's 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.

EMPLOYED EVERYWHERE

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 more.

THE UCF DIFFERENCE

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.



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.

Assistant Prof. Ivan Garibay's \$6.2 million award from DARPA will allow his interdisciplinary team to develop models and massive simulations to help the agency better understand online social behavior, its evolution, and predict the spread of information in online social networks.

Associate Prof. Vladimir Boginski was awarded \$2.2 million from Air Force Research Lab to develop a comprehensive mathematical modeling and optimization framework for inherently flexible and reconfigurable operation of networked systems. The work could lead to optimal network connectivity patterns for multi-agent coordination in war zones.

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. In 2019, she was named Technologist of the Year by *Women of Color* magazine, the first time an academic has received the honor.

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.

UCF's Engineering Leadership & Innovation Institute (eli²) 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.

GRADUATE DEGREES OFFERED

MASTER'S

Industrial Engineering
Engineering Management
Professional Engineering Management (PEM)
Healthcare Systems Engineering Track
Modeling and Simulation*

DOCTORAL

Industrial Engineering
Modeling and Simulation*

*Joint program with UCF's College of Graduate Studies

FACULTY HONORS

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,

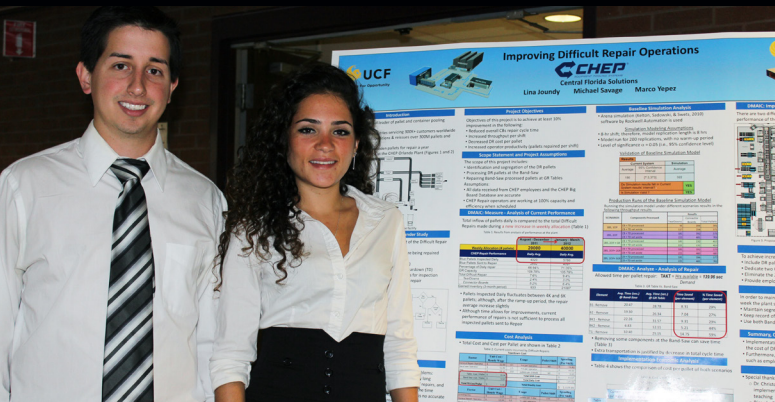
Director, Business Development & Quality Engineering, Universal Studios, Orlando

"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



**College of Engineering
and Computer Science**



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.

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

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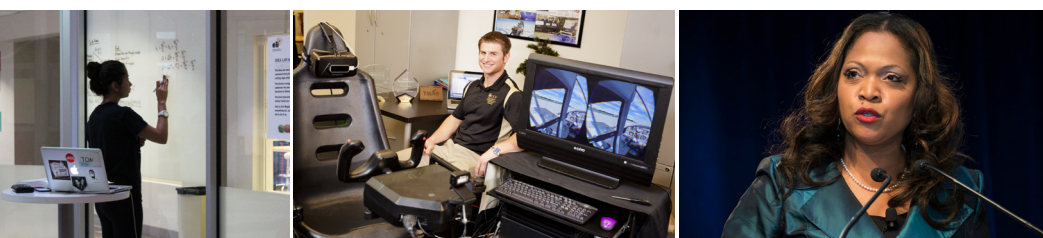
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ADMISSION

Visit graduatecatalog.ucf.edu and select your program of interest to see admission requirements, deadlines and additional program information.



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

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

INDUSTRY TIES

Lockheed Martin | Harris | Siemens
Mitsubishi | Walt Disney World | Universal Studios | IBM | NASA | many more



College of Engineering and Computer Science