

# 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. 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.

## 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 other industries.

## 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

The UCF Engineering Leadership & Innovation Institute (eli<sup>2</sup>) began in IEMS under the guidance of its directors, Prof. Tim Kotnour and Assoc. Prof. Robert Hoekstra. The goal is to build a community of engineering leaders through programs that emphasize creativity, collaboration, innovation and accountability to bring forth world-changing solutions.

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

Prof. and Chair Waldemar Karwowski is renowned in ergonomics and human factors.

Stand-out alumna Dr. Grace Bochenek is the director the National Energy Technology Laboratory.

Prof. Pam McCauley served the nation in a key advisory role after being one of only 11 selected to the 2015 class of United States Jefferson Science Fellows.



## 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

## GRADUATE DEGREES OFFERED

### MASTER'S

Industrial Engineering  
Engineering Management  
Professional Engineering  
Management (PEM)  
Healthcare Systems Engineering Track

### DOCTORAL

Industrial Engineering

## FACULTY HONORS

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

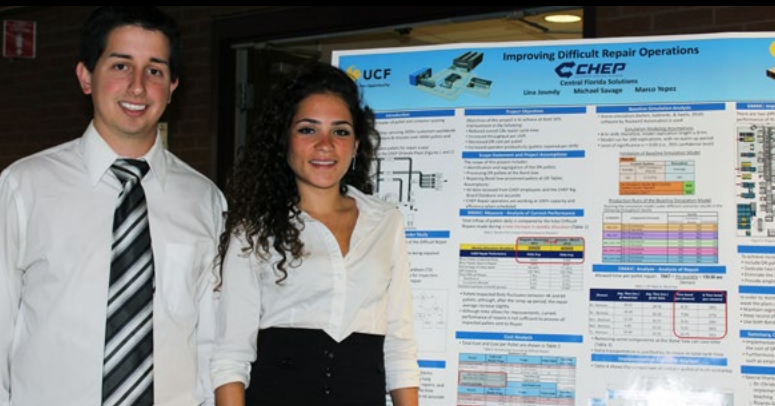
Prof. Gavriel Salvendy was elected to the National Academy of Engineering for fundamental contributions to human, physical and cognitive aspects of engineering systems.

## ALUMNI AND STUDENTS 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, Lockheed Martin Advanced Agreements & Functional Excellence Lead, Orlando, FL and Moorestown, NJ

"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, timely and complimentary part-time graduate engineering program to help me create, apply and validate new frameworks at my workplace that were essential in delivering successful results." — **Stuart Laval**, Ph.D., '15, Engineer, Duke Energy



**RESEARCH FOCUS AREAS**

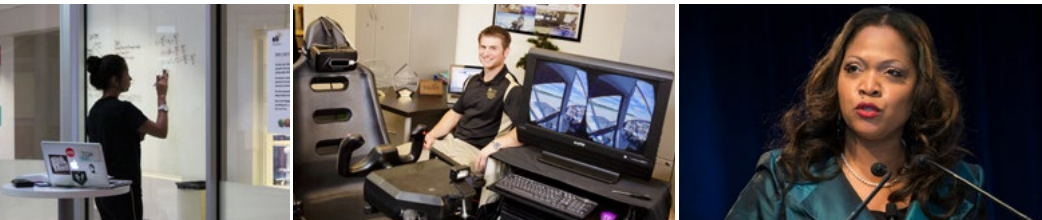
- Modeling and simulation
- Operations research
- Production and supply chain
- Engineering management
- Quality engineering and management
- Service engineering
- Industrial data analytics
- Human-system integration and ergonomics
- Systems engineering
- Healthcare systems

**RESEARCH LABS**

**SYNTHETIC ENVIRONMENT LEARNING LABORATORY**

The Synthetic Environment Learning Laboratory (SELL) provides the physical facilities and know-how to communicate, 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 simulation and modeling programs within the university 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 within the university, fosters the cross-pollination of ideas resulting in students receiving a comprehensive education, with greater innovation and creativity.



**SIMULATION INTEROPERABILITY LABORATORY**

The 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**

The Institute for Advanced Systems Engineering (IASE) promotes the cross disciplinary research and education in systems engineering at UCF, and is committed to developing advanced solutions and tools for basic and advanced 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

**RESEARCH CENTERS/CLUSTERS**

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

**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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**ADMISSION**

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