

# Graduate Programs in Civil, Environmental and Construction Engineering

## THE UCF DIFFERENCE

### HIGH-IMPACT RESEARCH

The department's robust research activities (\$5.6 million new external funding in 2015-16) address a myriad of relevant societal topics, including coastal hydro-science, structural monitoring and performance, traffic safety, drinking water safety and intelligent transportation systems.

### WORLD-CLASS FACULTY

Graduate students work alongside and publish with distinguished researchers internationally renowned for their scholarly contributions. They publish approximately 200 books, chapters and papers annually with external funding averaging \$300,000. Department Chair Mohamed Abdel-Aty is editor of *Accident Analysis & Prevention*, the premier journal for transportation safety research. See below for more faculty highlights.

### POWERFUL PARTNERSHIPS

Our partners and funders include the National Science Foundation, National Oceanic and Atmospheric Administration, Florida Department of Transportation, state and local agencies across the nation, as well as numerous corporate affiliates. Visit our website at [cece.ucf.edu](http://cece.ucf.edu), and click Partnerships to learn more.



### PRIME LOCATION

The central Florida region provides a year-round outdoor living laboratory for research areas such as water resources, coastal hydro-science and geotechnical topics such as erosion and sinkhole formation.

Jobs and internships are plentiful in the greater Orlando region, an economic powerhouse in the southeast.

### FACTS OF INTEREST

UCF is home to the nation's best Graduate Structural Engineering Student Chapter (Structural Engineering Institute), advised by Prof. Necati Catbas.

The world's largest rainfall simulator at UCF's Stormwater Management Academy is used to research soil erosion and other topics.

Potable water expert Steven Duranceau, associate professor, directs UCF's Environmental Systems Engineering Institute. He is associate editor of *Desalination and Water Treatment* and has contributed to the understanding of corrosion control in water distribution systems.

Earthquake experts: Prof. Nicos Makris is editor of *Earthquakes and Structures*, and Assoc. Professor Kevin Mackie is chair of the American Society of Civil Engineers' national technical committee on seismic effects.

Faculty member Dennis Filler wrote a chapter in a first-of-its-kind text-book, *Handbook of Oil Spill Science and Technology*.

Assistant Prof. Kelly Kibler, a water resources expert, is on a team of UCF scientists analyzing the impact of 20 years of restoration efforts in Indian River Lagoon, a significant estuary on Florida's east coast. Her work on the \$1.6 million NSF project focuses on how shorelines restored with oyster reefs and mangroves shape the physical and aquatic environments through the flow of water, input of sediments and more.

## GRADUATE DEGREES OFFERED

### MASTER'S

Civil Engineering (general or with track)

- Structures and Geotechnical
- Transportation Systems
- Water Resources

Environmental Engineering

### DOCTORAL

Civil Engineering

Environmental Engineering

### FACULTY HONORS

Our faculty are members and fellows of scientific societies including

- American Society of Civil Engineers
- American Association for the Advancement of Science
- European Academy of Sciences.

### ALUMNI AND STUDENTS SAY

"I credit much of my workplace success to the training and education I received at UCF."

– Joanne Keller, '03, '04  
Engineer for Palm Beach County, Florida

"The opportunities at UCF have enriched my development and leadership. I have conducted breakthrough research on the effects of sea level rise in the northern Gulf of Mexico that benefits the scientific community and helps coastal managers and policy makers make informed decisions."

– Davina Passeri, Ph.D., '15



**RESEARCH FOCUS AREAS**

Water resources and quality  
 Structural health and monitoring  
 Infrastructure  
 Transportation  
 Traffic safety  
 Environmental engineering  
 Structural topics related to earthquakes  
 Sinkholes and other geotechnical topics

**RESEARCH CENTERS/CLUSTERS**

Center for Advanced Transportation  
 Systems Simulation  
 Stormwater Management Academy  
 Civil Infrastructure Technologies for  
 Resilience and Safety  
 Coastal Dynamics of Sea Level Rise  
 Research Cluster of Excellence  
 Potable Water Quality and Treatment

**LABORATORIES**

Spaces for advanced research techniques including micro- and macro-scale sensing, data mining, big data, simulation and computer modeling.

- Air Quality Modeling
- Bioenvironmental System Research
- Boyle Engineering Organic Analysis
- Joint-Use Computer Teaching
- Chemical/Biological Process
- Coastal Hydroscience Analysis, Modeling & Predictive Simulations
- Environmental Process
- Florida Water Service Drinking Water
- Geotechnical and Pavement
- Hydraulics
- Metals/Inorganic
- Microbiology
- Microsensor Biofilm Research
- Structural Health Monitoring
- Structural
- Transportation Simulation
- Water Treatment and Sustainability Research
- Welbro Construction Engineering

**ALUMNI STARS**

**MARYAM GHYABI, CE, '83, '86**  
 Owner and CEO of a transportation engineering firm. Chaired the Interstate 4 - St. Johns River Bridge Coalition. Was named one of the 10 most powerful women in the state by *Florida Transportation* magazine, and one of the five most influential women in Volusia County.

**TAYLOR LOCHRANE, PH.D., CE, '08, '09, '14**  
 Research civil engineer, Federal Highway Administration. At UCF, he was the first engineering doctoral student to be elected student body vice president. He designed a student ridesharing system and an evening bus service for students.

**LEILA JAMMAL NODARSE, CE, '82**  
 Senior client manager, Terracon. Started her own geotechnical engineering company after graduating. Established a UCF lecture series in memory of her father S.E. "Jim" Jammal.

**CONTACT**

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**ADMISSION**

Visit <http://graduatecatalog.ucf.edu/programs/> and select your program of interest to see admission requirements, deadlines and additional program information.



**UNIVERSITY TRANSPORTATION RESEARCH CENTERS**

**ELECTRIC VEHICLE TRANSPORTATION CENTER TIER 1**

*Funding: \$3 million federal; \$1.5 million matching*  
 Creating a national system to address influx of electric vehicles and resulting power demands. Sample project: Electric vehicle charging technologies analysis and standards.

**NATIONAL CENTER FOR TRANSPORTATION SYSTEMS PRODUCTIVITY AND MANAGEMENT TIER 1**

*Funding: \$1.2 million federal; \$1.2 million matching*  
 Addresses safety, state-of-good-repair, more. Sample project: Real-time monitoring and prediction system for reduced visibility conditions.

**SAFER SIM TIER 1**

*Funding: \$540,000 federal; \$270,000 matching*  
 Uses high-tech simulation techniques. Sample project: Operational and safety-based analyses of toll roads.

**SOUTHEASTERN TRANSPORTATION CENTER REGION 4**

*Funding: \$500,000 federal; \$500,000 matching*  
 Multi-university partnership focusing on topics to achieve comprehensive safety, including human factors in transportation. Sample project: Evaluating the wrong-way driving incidents problem on Florida's Turnpike Enterprise Roadway System.