



DEPARTMENT OF

INDUSTRIAL & SYSTEMS ENGINEERING

GRADUATE PROGRAMS

YOUR NEXT MOVE



The Industrial & Systems Engineering department at the University of Florida's Herbert Wertheim College of Engineering is at the forefront of data analytics, human and health systems, operations research, production and logistics, and smart and advanced manufacturing. By integrating people, technology, and information, the department optimizes complex systems and processes across various industries to enhance efficiency and effectiveness.

#14

BEST PUBLIC ISE GRADUATE PROGRAM

2025 U.S. News & World Report



Our department houses a total of **seven centers & labs**.



Our **research areas** include advanced manufacturing, data analytics, health systems, human systems, operations research, and smart production and logistics systems.



We offer **funding opportunities for graduate students** with departmental and external scholarships, as well as fellowships, assistantships, and other positions.



In Forbes' 2024 rankings, the **UF is ranked as the 4th best public university in the nation**, and it was also named a "New Ivy" for its outstanding graduates.

WELCOME!

I am thrilled you are interested in pursuing a graduate degree in Industrial & Systems Engineering (ISE) at UF's Herbert Wertheim College of Engineering.

Throughout the years, our department's research and educational foundation in operations research and optimization remains strong as the core of our program while expanding to include additional areas of ISE including Advanced Manufacturing, Data Analytics, Health Systems, Human Systems, and Smart Production and Logistics Systems.

Department excellence in these areas has allowed for recruiting of outstanding faculty and students who have enhanced the existing curriculum and made major research contributions. Today, the department is highly ranked among public universities and is expanding its laboratories in Human Systems while developing new laboratories to support student hands-on learning and world-class research in Smart Manufacturing, including applications on large-scale additive manufacturing.

I hope you learn more about us and get a chance to see you on campus.

Iris V. Rivero, Ph.D.

*Paul and Heidi Brown Preeminent Chair of Industrial and Systems Engineering
UF ISE Department Chair*



GRADUATE PROGRAMS

Our master's programs offer thesis and non-thesis options as well as flexibility in terms of courses and delivery methods to meet the academic goals of both full-time and part-time students as well as working professionals.

Master of Science

This degree is research-oriented emphasizing research and analytical skills. It includes advanced coursework in areas like operations research, data analytics, and human-systems engineering, with a significant focus on research methodologies. This degree is suited for those considering doctoral studies or roles that require strong research capabilities.

Engineering Management Concentration via Outreach Engineering Management Program

This degree is designed for engineers and technical professionals aiming to transition into leadership roles, equipping them with the skills to oversee complex projects and lead multidisciplinary teams effectively. Students in this program meet one weekend per month in Orlando.

Master of Engineering


This degree is designed for professionals seeking to enhance practical engineering skills without a focus on research with coursework aimed at applying technologies and methodologies to real-world projects, with an optional independent design project. This degree is ideal for professionals aiming to advance in industry roles that emphasize application and leadership. An undergraduate degree in engineering is required.

Doctorate of Philosophy in Industrial & Systems Engineering

This degree is an advanced, research-intensive program designed to prepare students for careers in academia, research institutions, and industry roles that require high-level analytical and problem-solving skills. This doctoral degree emphasizes the development of new theories, models, and methodologies to improve complex systems and processes across various sectors.

Systems Engineering Graduate Certificate

This certificate trains students in how to create, evaluate, communicate, analyze, and manage system designs. It primarily addresses industry needs for expertise in core methodological and application areas of Systems Engineering, including mathematical modeling and analysis of problems and design and management of



DEGREE OPTIONS		
On-Campus Master's	31 Credit Hours	Gainesville, FL
UF EDGE	31 Credit Hours	Online
UF REEF	31 Credit Hours	Shalimar, FL
Outreach Engineering Management	32 Credit Hours	Orlando, FL
Ph.D.	90 Credit Hours	Gainesville, FL

Areas of Concentration

- Advanced Manufacturing
- Data Analytics
- Engineering Management
- Health Systems
- Human Systems
- Information Technology
- Operations Research
- Quantitative Finance
- Supply Chain & Logistics

To Apply:

Interested students must submit their applications to the UF Office of Admissions, as well as the Department of Industrial & Systems Engineering.

1. Complete online application
2. Upload supporting documents, including a statement of purpose, resume, transcripts and three references
3. Report official test scores
 - GRE scores are not required.
4. Send confirmation email to the ISE department
5. Mail all documents to the UF Admissions Office

UF EDGE

UF Electronic Delivery of Gator Engineering (EDGE) is the Herbert Wertheim College of Engineering's distance learning program. It offers both M.S. and M.E. degrees. Course lectures and materials are offered completely online.

In order to pursue an M.S. or M.E. degree in industrial and systems engineering through UF EDGE, prospective students must apply and receive acceptance from the UF Graduate School, as well as the UF Industrial & Systems Engineering Program.

For more information on UF EDGE, visit ufedge.ufl.edu.



UF REEF

The UF Research & Engineering Education Facility (REEF) is located in Shalimar, Florida, and supports the greater Eglin Air Force Base community and responds to Air Force research needs.

UF REEF offers a 31 credit hour online M.S. degree program in industrial and systems engineering to the Eglin Air Force Base community via UF EDGE. Students are also provided with the opportunity to work with world-class researchers from UF and the Air Force.

For more information, visit reef.ufl.edu.



OEM PROGRAM

The Outreach Engineering Management (OEM) Program is a master's program offered by the Department of Industrial & Systems Engineering and is designed for working professionals with various technical backgrounds. Beginning each August, the 20-month program is held in Orlando and features live instruction one weekend a month. The degree is a joint program offered by UF's Herbert Wertheim College of Engineering and UF's Warrington College of Business that includes an engineering management concentration through the Outreach Engineering Management Program.

For more information, visit ise.ufl.edu/oem.

ALUMNI TESTIMONIAL

"Within two months of graduating from the OEM program, my new degree and experiences allowed me to land an Engineering Manager role that I had been pursuing for the past few years. Without OEM, this would not have been possible, and I'm extremely grateful for the experience."

- Zach Helmberger, OEM '23



CENTERS & LABS

Our distinguished faculty members are actively engaged in pioneering research and are eager to welcome dedicated graduate researchers into their laboratories.

CENTER FOR APPLIED OPTIMIZATION

The Center for Applied Optimization (CAO) is an interdisciplinary center that fosters joint research and applied projects in optimization across faculty from engineering, mathematics, health, business, and other disciplines.

Faculty: *Leo Hamed Amini, Ph.D., associate professor; Yongpei Guan, Ph.D., George E. & Rolande G. Willis Endowed Professor; Aleksandr Kazachkov, Ph.D., assistant professor; Hongcheng Liu, Ph.D., associate professor; Jorge A. Sefair, Ph.D., associate professor; Alexander Semenov, Ph.D., research assistant professor; and Yu Yang, Ph.D., assistant professor*



DATA INFORMATICS FOR SYSTEMS IMPROVEMENT & DESIGN LAB

The Data Informatics for Systems Improvement and Design (DISIDE) Laboratory's mission is to study and develop efficient data analytics and operations research algorithms for designing, modeling, monitoring, and controlling data-rich systems for performance improvement.

Faculty: *Mostafa Reisi Gahrooei, Ph.D., assistant professor, and Minhee Kim, Ph.D., assistant professor*

ENERGY SYSTEMS LAB

The Computational Optimizations & Energy Systems (CSO) Lab at the University of Florida is focused on modeling of large-scale, stochastic integer programs. Current applications include electricity grid distribution and operation and supply chain logistics.

Faculty: *Yongpei Guan, Ph.D., George E. & Rolande G. Willis Endowed Professor*

HEALTH-ENGINE LAB

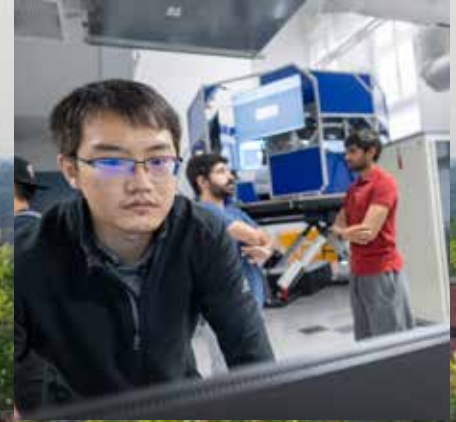
The High Quality Effective Affordable Lean Translational Healthcare-Engineering Lab at the University of Florida is focused on developing rigorous methods for modeling, analysis, design and improvement of service and healthcare delivery systems and applying the results in practice.

Faculty: *Hongcheng Liu, Ph.D., associate professor, and Xiang Zhong, Ph.D., associate professor*

HUMAN SYSTEMS ENGINEERING LAB

The Human Systems Engineering Lab's research areas include transportation human factors and human-autonomous vehicle interaction, applying wearable sensing technology and machine learning in occupational injury prevention and rehabilitation, and improving user interactions with new and emerging technologies in safety-critical systems.

Faculty: *Suman Chowdhury, Ph.D., associate professor; Wayne Giang, Ph.D., assistant professor; and Boyi Hu, Ph.D., associate professor*



INTERDISCIPLINARY MANUFACTURING ENGINEERING & DESIGN LAB

The Interdisciplinary Manufacturing Engineering and Design (iMED) Lab at the University of Florida specializes in research intended to design scalable fabrication techniques of customized material systems. Materials design emphasis is in polymer and metal composites, while traditional and nondestructive testing techniques are employed for characterization and modeling of newly devised and fabricated materials.

Faculty: *Iris V. Rivero, Ph.D., Department Chair of Industrial & Systems Engineering, Paul and Heidi Brown Preeminent Chair, and professor*

SUPPLY CHAIN & LOGISTICS ENGINEERING LAB

The Supply Chain & Logistics Engineering Lab at the University of Florida is an interdisciplinary center that encourages joint research and applied projects among faculty from engineering, computer science and business administration in conjunction with industry participants.

Faculty: *Elif Akçali, Ph.D., Michael Durham Professor in Creativity and associate professor*

OUR DEPARTMENT

Advising

Graduate advising provides students with personalized guidance to navigate their academic journey effectively. Advisors assist in course selection, ensuring alignment with degree requirements and career aspirations. Beyond academics, they offer mentorship, helping students set and achieve professional goals. This collaborative relationship fosters a supportive environment, empowering students to make informed decisions and maximize their educational experience.

Student Organizations

Student organizations are a great way to get involved at UF.

ISE Graduate Student Organization

The ISE Graduate Student Organization is a highly active and welcoming hub that fosters social connection across cohorts and promotes research collaboration among graduate students. It supports students throughout their graduate journey by offering academic and professional development resources and assisting with the transition to post-graduate careers. The ISEGSO also partners with department leadership and the Engineering Graduate Student Council to strengthen recruitment efforts and serve as a voice for student feedback.

The department hosts several student chapters affiliated with national and international professional societies, including the Institute of Industrial and Systems Engineers (IISE), the Institute for Operations Research and the Management Sciences (INFORMS), the Human Factors and Ergonomics Society (HFES), SME (formerly the Society of Manufacturing Engineers), and the Society for Health Systems (SHS). These chapters support both undergraduate and graduate students through academic engagement, research presentations, and discipline-specific events.

[Learn More](#)



CAREERS IN ISE

Graduates from the Industrial & Systems Engineering program at UF go on to develop careers in many different industries.

Industry Positions

CSX • BNSF • GE • Expedia
• Fresenius Medical Care
• Google • Sabre • Bank of
America • Deutsche Bank •
American Express • Optym •
Sandia National Laboratories •
Walt Disney • Alstom • D-Wave
• Siemens • United

Academic Appointments

Arizona State University •
Arkansas • Buffalo • Houston
• Iowa State • John Hopkins
• Memphis • Michigan • North
Dakota • Oklahoma State •
University of Central Florida
• University of Florida •
Washington • Wichita State

Postdoctoral Appointments

John Hopkins • Massachusetts
General Hospitals • Sandia
National Laboratories •
University of Florida

\$97K

Average salary for graduates of the Master's Degree program working in fields such as aerospace and aviation, engineering and mathematics and manufacturing.

\$119K

Average salary for graduates of the Ph.D. program working in fields such as higher education, healthcare, information and technology, engineering, mathematics and national research laboratories.





MASTER'S DEGREE

Requirements

- 31 or more credits of graduate-level coursework (5000 level and above)
- 17 or more credits of ISE courses (courses with prefix EIN or ESI)
- 1 credit of Graduate Seminar (EIN 6918)

In addition, each student is required to complete a thesis course or one of the following pre-approved project courses at most six months before graduation.

- | | |
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| • EIN 6510 – Principles of Manufacturing Systems Engineering | • ESI 6616 – Data Analytics for Systems Monitoring |
| • ESI 6529 – Digital Simulation Techniques | • ESI 6617 – High-Dimensional Data Analytics |
| • ESI 6552 – Systems Architecture | • EIN 5501 – Models in Health Systems Engineering |
| • ESI 6553 – Systems Design | • ESI 6341 – Intro to Stochastic Optimization |
| • ESI 6555 – Systems Management | |
| • EIN 6905 – Intro to Data Analytics | |



DOCTORATE DEGREE

A minimum of 90 credits is required for the Ph.D. degree.

- Graduate Coursework (5000 level and above) – 30 credits
- Qualifying Examination Courses – 9 credits
- Breadth Requirement – 9 credits
- Advanced Electives/Research – 27 credits
- Dissertation Research – 15 credits

Qualifying Exam

The Qualifying Exam (QE) has a twofold defined purpose of evaluating a student's advanced knowledge of industrial and systems engineering through graduate coursework and assessing their research aptitude through a scholarly literature review. The QE is the first milestone for Ph.D. students to complete before they can form a dissertation committee.

The exam takes place at the end of the first year of Ph.D. student study. Students entering the Ph.D. program in the fall semester will complete the QE at the conclusion of the following summer term, while students entering the Ph.D. program in the spring semester will complete the QE two summer terms after starting the program.

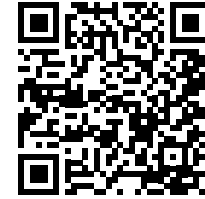
[Learn More](#)



FUNDING OPPORTUNITIES

Information about funding opportunities available to graduate students in the Department of Industrial & Systems Engineering, including departmental scholarships, external scholarships, fellowships, assistantships, and other paid positions, can be found on our website.

[Learn More](#)



PH.D. GRADUATES IN ACADEMIA SINCE 2022



MAHTAB ESKANDAR

Instructional Assistant
Professor
University of Florida



YUNMEI LIU

Assistant Professor
University of Louisville



TOBIAS LODEMANN

Adjunct Lecturer
University of Florida



YUE LUO

Assistant Professor
San Jose State University



JAEYOUNG PARK

Assistant Professor
University of Central Florida



XIN ZAN

Assistant Professor
University of Iowa



MENG ZHAO

Assistant Professor
Lehigh University

LIFE IN GAINESVILLE

Gainesville, Florida, is a dynamic city that seamlessly blends the vibrant atmosphere of the University of Florida with a rich array of cultural, recreational, and culinary experiences. Beyond the university's esteemed campus and athletic events, the city offers a diverse range of activities and attractions that cater to residents and visitors alike.

Culture and Performing Arts

The University and its community provide a rich assortment of cultural events. There is a Performing Arts Center on campus with symphony, opera, chamber music, Broadway musicals, and jazz performances featuring internationally known artists. Popular recording stars often perform at the O'Connell Center, an arena seating 12,000. The Hippodrome Theater downtown hosts a great variety of local plays year-round. In the summer, there is live music in Bo Diddley Plaza and the Tioga Town Center. On campus, residents enjoy Harn Museum of Fine Arts and the Florida Museum of Natural History, with an impressive butterfly garden.

Outdoor Fun

Easy access to the Gulf of Mexico, the Atlantic coast, and many lakes and freshwater springs in the area makes Gainesville a perfect home for water sports enthusiasts. Tennis, racquetball, golf, biking, and swimming can be enjoyed year-round. The city also has an impressive variety of jogging and bicycle paths, including the Gainesville-Hawthorne Rail Trail, which winds through the Paynes Prairie State Park, home to bison, wild horses, and, of course, alligators.

Proximity to Major Attractions

Residents take advantage of many Florida attractions in proximity for a day trip or weekend getaway. St. Augustine on the northern Florida coast has a walkable historic Spanish downtown district and many great restaurants. The theme parks in the greater Orlando area are a short drive away, as are Jacksonville, Orlando,

Phillips Center for the Performing Arts



Phillips Center for the Performing Arts



Paynes Prairie State Park



Santa Fe River





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