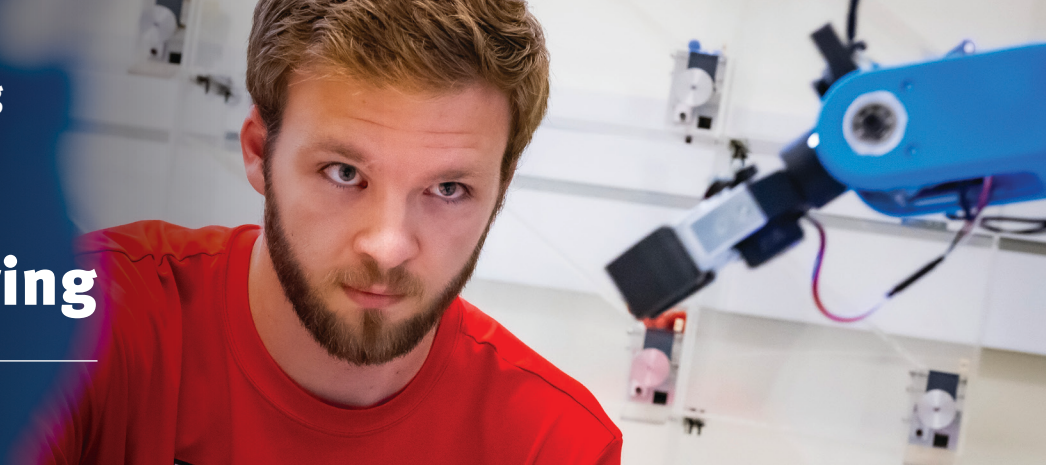


# Industrial and Systems Engineering



## RESEARCH FOCUS

### OPTIMIZATION AND DATA SCIENCE

Distributed and Stochastic Optimization  
Machine Learning  
Predictive and Prescriptive Analytics  
Forecasting, Planning, Decision Making

### ADVANCED MANUFACTURING AND PRODUCTION

Advanced Manufacturing  
Additive Manufacturing  
Laser Processing

### QUALITY AND RELIABILITY ENGINEERING

Product and System Reliability  
Accelerated Life Testing for Infrastructure  
Medical and Manufacturing Applications

### ENERGY SYSTEMS

Renewables and Distributed Energy  
Resources Predictive Analytics  
Offshore Wind Energy  
Electrification of Transportation

### AUTOMATION AND AI

Autonomous systems  
Control and AI  
Robotics, Digital Twins and Simulation  
System Integration and Informatics  
Intelligent Transportation, Smart Cities

## RESEARCH CENTERS

AUTOMATION LABORATORY  
ENERGY LABORATORY  
HUMAN-MACHINE LABORATORY  
MANUFACTURING RESEARCH  
LABORATORY  
QUALITY AND RELIABILITY  
ENGINEERING LABORATORY

The Department of Industrial and Systems Engineering at Rutgers School of Engineering provides students with a rich educational experience that combines specialized instruction with opportunities for hands-on research critical to national competitiveness and productivity. Faculty research in areas such as optimization and data science, advanced manufacturing, quality and reliability, energy systems, and automation and AI is supported with funding from leading federal and state agencies.

Graduates enjoy career success in all areas of manufacturing, transportation, finance, high-tech industry, and energy, as well as in university faculties, research centers, and labs. Rutgers offers a diverse community and is accessible to major Northeast metropolitan areas for career, cultural, recreation, global transportation, and more.

## FAST FACTS

#1

**Public University in NJ/NY Metro Region for Engineering**

*U.S. News & World Report*

#22

**Industrial Engineering Graduate Programs**

*U.S. News & World Report*

#15

**Public Research University**

*U.S. News & World Report*

265

**ISE Graduate and Undergraduate Enrollment**

5

**Graduate Degrees**

14

**Faculty Members**

- Fellows AIMBE, AIChE
- NSF CAREER Awardees

- PhD
- MS
- ME
- ME (Fully Online)
- ME (Energy)



**Melike Baykal-Gürsoy, PhD**  
**Professor**

Stochastic modeling, optimization, and control; Markov decision processes; stochastic games; queueing theory and applications to telecommunication, supply chain, and transportation systems.



**Robert Mieth, PhD**  
**Assistant Professor**

Risk analysis, stochastic optimization, and data methods for power system operations and electricity markets.



**David Coit, PhD**  
**Professor**

System reliability modeling and optimization, reliability theory, energy systems planning and optimization models, applied operations research.



**Hoang Pham, PhD**  
**Distinguished Professor**

Reliability engineering, software reliability, statistical inferences, and fault-tolerant computing.



**Elsayed A. Elsayed, PhD**  
**Distinguished Professor**

Systems reliability engineering, accelerated life testing, reliability prediction models, design of test plans, on-line quality engineering, sheet folding theory and technology, aviation research.



**Tuğrul Özel, PhD**  
**Professor**

Advanced and sustainable manufacturing, computational modeling, simulation and multi-objective optimization of manufacturing processes, micro/nano manufacturing, biomufacturing automation and control, medical device design and manufacturing.



**Ahmed Aziz Ezzat, PhD**  
**Assistant Professor**

Data science, forecasting, wind energy, maintenance optimization, industrial informatics.



**Randall A. Reagan, PhD**  
**Assistant Teaching Professor,  
Undergraduate Program Director**

Design, project management, work systems, quality management, production operations, engineering management.



**Weihong Guo, PhD**  
**Associate Professor**

Statistical quality control and process monitoring, data fusion for manufacturing and healthcare system modeling and improvements, sensing, modeling, and monitoring of high-definition profile data, quality-oriented design and modeling of complex manufacturing systems.



**Elin M. Wicks, PhD**  
**Assistant Teaching Professor**

Engineering economics, engineering education, and active learning.



**Myong K. Jeong, PhD**  
**Professor**

Data mining, sensor data analytics, process monitoring, and intelligent transportation.



**Zhimin Xi, PhD**  
**Associate Professor and  
Graduate Director**

Design for reliability and applications for reliable autonomous vehicles, robots, lithium-ion batteries, and additive manufacturing.



**Mohsen Jafari, PhD**  
**Professor and Department Chair**

Automation sciences with applications in energy, transportation, and manufacturing.



**Farzad Yousefian, PhD**  
**Assistant Professor**

Distributed optimization in multi-agent networks, stochastic and large-scale optimization, hierarchical and nonconvex optimization, variational inequalities and computational game theory, applications in transportation systems and machine learning.