

# Industrial & Systems Engineering at Rutgers

Industrial and systems engineers devise ways to make products and services better, safer, easier to use, less expensive, and more energy efficient. Whether it's overseeing the design and construction of a plant, streamlining operations in a hospital, or getting products into the marketplace quicker and with higher quality and reliability, industrial engineers develop, model, and analyze complex problems and deliver solutions.

The ISE program at Rutgers is a rich educational experience that provides students with a broad engineering education along with specialization in a wide range of industrial engineering and manufacturing fields. Students have the opportunity for hands-on research in areas that include healthcare, energy, manufacturing, transportation, and more.

## Industrial and Systems Engineering Degrees Offered and Curricular Options

### BS

Options:

- Financial Systems
- Manufacturing Engineering

### BS/BA Dual Degree

### BS/MS Five-year Dual Degree Program

### BS/MBA Five-year Dual Degree Program

### MS PhD

## ISE Highlights

- » Among top 25 graduate engineering programs nationwide (USNWR)
- » State-of-the-art laboratory facilities for manufacturing automation, manufacturing processes, and design of engineering systems
- » Faculty generate student supported research projects with leading organizations and partners



### WHAT CAN YOU DO WITH AN ISE DEGREE?

Quality engineer  
Project manager  
Production engineer  
Consultant  
Process analyst  
Reliability engineer  
Operations manager  
Supply chain analyst



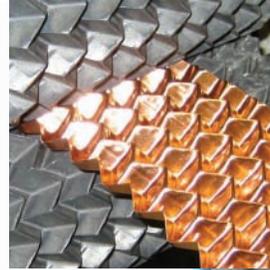
*"The Senior Design course teaches you about leadership and group work and collaboration, which is how you'll be working in the real world. Probably one of the best classes I've taken."*

*Holly Powell*



TOP  
25  
ISE

GRADUATE  
ENGINEERING  
PROGRAMS  
(USNWR)



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## Hands-On Experience

Students work collaboratively in multi-disciplinary project teams. State-of-the-art laboratory facilities emphasize robotics, machine vision, manufacturing, automated material handling, quality engineering, electronic and sensor devices, simulation, and computer information systems. Students have an opportunity to gain real-world experience in corporate or industrial settings through our co-op internship program.

## ISE Out Front

ISE faculty and students are developing an in-vivo motion driven elbow simulator to expand our technical knowledge of elbow disorders and to improve current clinical practice.

## Research Opportunities

- Aviation
- Energy
- Quality and reliability
- Biomechanics
- Healthcare
- Logistics
- Manufacturing
- Mathematical modeling
- Data mining
- Process monitoring
- Transportation
- Informatics
- Analytics

## Program Highlights

The undergraduate program focuses on classroom instruction fostered by learning in multi-disciplinary project-team finding engineering solutions to real-world industry problems. Courses include work design and ergonomics, optimization, simulation modeling, probability, stochastic processes, quality engineering, manufacturing processes, facilities layout, design of engineering systems, and more.

### Production and Manufacturing

The ISE department provides state-of-the-art teaching and research in production and manufacturing determining the most effective way to use people, machines, materials, information, and energy to develop a product. The course-

work within this discipline includes integrating decision making in manufacturing, production planning, and distribution, designing control systems, and designing enterprise-wide database information systems.

### Quality and Reliability Engineering

Quality and reliability in engineering deals with methods for quality improvements, design of experiments, automatic control, sensors, and data analysis. It also deals with system reliability modeling, reliability optimization, accelerated life testing, software reliability, maintenance modeling and optimization. This option is offered in cooperation with the Statistics Department.



Established in 1864, the School of Engineering at Rutgers, The State University of New Jersey, is home to educational opportunity and innovation, pursuing work of enormous relevance to society and the economy. With seven academic departments and world-renowned research centers, the School of Engineering currently enrolls more than 3,300 undergraduate and 700 graduate students, and generates more than \$60 million in research funding annually.

For more information, visit [ise.rutgers.edu](http://ise.rutgers.edu)

