

# Industrial Engineering

The graduate faculty of the Edward P. Fitts Department of Industrial and Systems Engineering supports academic and research interests in four areas:

1. manufacturing systems (manufacturing processes, additive and advanced manufacturing, medical device manufacturing systems, micro/nano manufacturing, robotics, and automation);
2. production systems (logistics systems, supply chain management, scheduling, inventory control, materials handling, facility design, furniture manufacturing and management, quality control, and engineering economics);
3. systems analysis and optimization (health systems, stochastic processes, simulation, mathematical programming, and soft computing); and
4. ergonomics (human performance, occupational safety, and biomechanics). The department faculty actively supports independent graduate degree programs in operations research, integrated manufacturing systems engineering, textile technology and management, and financial mathematics.

## Master's Degree Requirements

The Master of Science in Industrial Engineering (MSIE) degree requires 31 credit hours and involves depth of study in a specified area of concentration, and 3-6 hours of research credit. The Master of Industrial Engineering (MIE) degree may be obtained by course work only; project work is optional. A minimum of 31 credit hours is required for the MIE.

## Doctoral Degree Requirements

This degree requires 74 credit hours of course and research work beyond the Bachelor's degree. Undergraduate students with superior credentials may apply directly to the doctoral program and bypass the Master's degree. For students who have completed a Master's degree at North Carolina State University, typically 36 to 42 additional credit hours are required. Students who have completed a Master's degree at North Carolina State University, but have taken a break between degrees, or at an outside institution, can transfer up to 18 credit hours. A departmental written qualifying examination is required.

## Student Financial Support

Fellowships, as well as research and teaching assistantships, are available on a competitive basis to early applicants. Supplemental awards are also available to applicants with superior credentials. Award priority is given to Ph.D. and then to M.S. applicants.

## More Information

Industrial Engineering Program Website (<https://www.ise.ncsu.edu/future-students-parents/degrees/mie/>)

Distance Website (<https://engineeringonline.ncsu.edu/graduate/master-of-industrial-engineering/>)

## Admission Requirements

Applications are accepted from undergraduate majors in engineering and in the behavioral, physical and mathematical sciences who meet

prerequisites in calculus and linear algebra, computer science, and statistics.

## Applicant Information

### Industrial Engineering (MS and PhD)

- **Delivery Method:** On-Campus
- **Entrance Exam:** GRE
- **Interview Required:** None

### Industrial Engineering (MR)

- **Delivery Method:** On-Campus, Online, Hybrid
- **Entrance Exam:** GRE
- **Interview Required:** None

## Application Deadlines

- **Fall:** June 25 (US); March 1 (Intl)
- **Spring:** November 25 (US); July 15 (Intl)
- **Summer 1:** March 25 (US); December 15 (Intl)
- **Summer 2:** May 10 (US); December 15 (Intl)
- Priority for financial awards goes to students who apply before **January 15th** (for Fall) and **June 15th** (for Spring).

## Degrees

- Industrial Engineering (MR) (<http://catalog.ncsu.edu/graduate/engineering/industrial-engineering/industrial-engineering-mr/>)
- Industrial Engineering (MS) (<http://catalog.ncsu.edu/graduate/engineering/industrial-engineering/industrial-engineering-ms/>)
- Industrial Engineering (PhD) (<http://catalog.ncsu.edu/graduate/engineering/industrial-engineering/industrial-engineering-phd/>)
- Industrial Engineering (Minor) (<http://catalog.ncsu.edu/graduate/engineering/industrial-engineering/industrial-engineering-minor/>)

## Faculty

### Full Professors

Jingyan Dong

Shu-Cherng Fang

Yahya Fathi

Ola Lars Anders Harrysson

Julie Simmons Ivy

Russell E. King

Yuan-Shin Lee

Maria Esther Mayorga

Chan S. Nam

Rohan Ajit Shirwaiker

Julie Swann

Reha Uzsoy

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## Associate Professors

Adolfo Escobedo

Michael G. Kay

Osman Yalin Ozaltin

Hong Wan

Xu Xu

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## Assistant Professors

Karen Boru Chen

Xiaolei Fang

Leila Hajibabai Dizaji

Syedmohammadhossein Hosseinian

Jordan Kern

Gal Mendelson

Benjamin A. Rachunok

Sara Shashaani

Renran Tian

Zhuoting Yu

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## Practice/Research/Teaching Professors

Semra Sebnem Ahiska King

Fred Livingston

Brandon Mark McConnell

Nur Ozaltin

Kanton Tyrone Reynolds

Christopher Rock

Michael Spano

Harvey A. West II

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## Adjunct Professor

Amy Diane Wilson

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## Adjunct Associate Professor

Yunan Liu

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## Emeritus Faculty

Mahmoud A. Ayoub

Richard Harold Bernhard

Paul Cohen

Charles Thomas Culbreth Jr.

Thom Joel Hodgson

Henry Nuttle

Richard G. Pearson

Stephen Dean Roberts

Ezat Sanli

Clarence Smith Jr.

James Reed Wilson

Richard Wysk

Robert E. Young