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, medical device manufacturing systems, CAM, CIM, robotics, automation, rapid prototyping and concurrent engineering);
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.

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.

Master's Degree Requirements
The M.S. degree requires 30 credit hours and involves depth of study in a specified area of concentration, nine hours in a minor, and six hours of research credit. The Master of Industrial Engineering (M.IE.) degree may be obtained by course work only; project work is optional. A minimum of 33 credit hours is required for the M.IE.

Doctoral Degree Requirements
This degree requires 72 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 the Master's degree, typically 30 to 36 hours of additional course work are required. A departmental written qualifying examination is required.

Student Financial Support
Research and teaching assistantships are available on a competitive basis to early applicants. Fellowships that supplement assistantship stipends are available to U.S. applicants with superior credentials. Award priority is given to Ph.D. and then to M.S. applicants.

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/)

Faculty

Full Professors
Paul Cohen
Shu-Cherng Fang
Yahya Fathi
Ola Lars Anders Harrysson
Julie Simmons Ivy
Russell E. King
Yuan-Shin Lee
Maria Esther Mayorga
Chan S. Nam
Binil Starly
Julie Swann
Reha Uzsoy

Associate professors
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Rohan Ajit Shirwaiker
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Irem Sengul Orgut
Sara Shashaani
Xu Xu

Practice/Research/Teaching Professors
Steven D. Jackson
Semra Senem Ahiska King
Brandon Mark McConnell
Kanton Tyrone Reynolds
Javad Taheri
Harvey A. West II

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**Emeritus Faculty**

Mahmoud A. Ayoub
Richard Harold Bernhard
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