Integrated Manufacturing Systems Engineering

The Integrated Manufacturing Systems Engineering (IMSE) program was established in 1984. IMSE provides multidisciplinary graduate-level education and practical training opportunities in the theory and practice of integrated manufacturing systems engineering at the master's level. IMSE focuses on providing a manufacturing presence and a program environment in the College of Engineering where faculty, graduate students, and industry can engage cooperatively in multidisciplinary graduate education in areas of common interest related to modern manufacturing systems technology. The objective of the IMSE program is to offer students with traditional discipline backgrounds in engineering and the physical sciences an opportunity to broaden their understanding of the multidisciplinary area of manufacturing systems. As part of their degree, students are required to complete an industry internship and present a project report on this experience. Core areas of concentration are offered in manufacturing systems, logistics, mechatronics, and advanced manufacturing.

Master's Degree Requirements

The IMSE program requires a minimum of 27 hours of graduate coursework and a six-hour project. The graduate coursework can include courses that provide a multidisciplinary overview of subject materials basic to manufacturing systems, logistics, mechatronics, and advanced manufacturing and coursework that allows a student to specialize. The six-hour project is focused on creating a report of a student's internship experience and culminates in a presentation to their graduate committee.

The IMSE degree is now available through Engineering Online as a distance program. Application to the IMSE Distance Education program is the same as the on-campus program.

Student Financial Support

Assistantships and internships are available to qualified students. The full financial support package covers tuition and health insurance. Internships are also undertaken directly with host companies.

Internship

The IMSE internship program was established to provide a cooperative industrial and academic experience for IMSE students. Several Internship awards are made available every year for special training in IMSE host companies. Typically, the student attends classes for two semesters (fall and spring), works at the sponsor company for the following summer and fall semesters, and completes their IMSE course requirements the following spring semester. The student uses the experience at the sponsor company as the basis for their IMSE project report.

Other Relevant Information

IMSE students are supported by companies across the country during their internships. Both full-time and part-time internship support is provided depending on availability. These companies have included: ABB, ABCO Automation, Applied Materials, AT&T, Bayer, BSH, Bosch, Biogen, Castle Hill Technologies, Caterpillar, Closure Medical, Corning Cable Systems, CSX, Cummins, Disney, Dupont, Daimler Trucks, Elkay, Ford, GE, GKN, GSK, IBM, Ingersoll Rand, Intel, John Deere, Mack Trucks, Mayne Pharma, Michelin, Morganite, MTS Systems, Nekton Technologies, Rubbermaid, RxMedic, Samsung Semiconductor, Schwanns, Snap-On, Tesla, UPS, Volvo Trucks, and ZF Corporation and many others.

Integrated Manufacturing Systems Engineering Program Website (http://www.imsei.ncsu.edu/)

Distance Website (https://engineeringonline.ncsu.edu/graduate/master-of-integrated-manufacturing-systems-engineering/)

Admission Requirements

Admission to the IMSE master's program requires a B.S. degree from an accredited institution in engineering, physics, mathematics, or computer science. Check with IMSE if your degree is in a field other than these listed.

Applicant Information

- 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)

Degrees

- Integrated Manufacturing Systems Engineering (MR) (http://catalog.ncsu.edu/graduate/engineering/integrated-manufacturing-systems-engineering/integrated-manufacturing-systems-engineering-mr/)

Full Professors

Roger L. Barker
Michael D. Boyette
Marianne Bradford
Gregory D. Buckner
Yuang Sung Al Chen
Mo-Yuen Chow
Timothy Gladstone Clapp
Elizabeth Carol Dickey
Yahya Fathi
Tushar K. Ghosh
Robert B. Handfield
Ola Lars Anders Harrysson
Thom Joel Hodgson
Julie Simmons Ivy
Warren J. Jasper
Jeffrey Allen Joines
Russell E. King
James Woodrow Leach
Yuan-Shin Lee
Trevor J. Little
Ning Lu
Louis A. Martin
Michael A. Rappa
William John Rasdorf
Jon Paul Rust
Abdel-fattah Mohamed Seyam

Associate Professors
Jacob James Adams
Dennis R. Bahler
Pamela Banks-Lee
Kristin Anne Barletta
Ramon R. Collazo
Jingyan Dong
George Lawrence Hodge
Hsiao-Ying Shadow Huang
Michael G. Kay
Karlyn Mitchell
Daniel Erique Saloni
Donald P. Warsing

Assistant Professor
Timothy Joseph Horn

Practice/Research/Teaching Professors
Marianne Bradford
Semra Sebnem Ahiska King
Billy L. Edge

Steven D. Jackson
David Lee Lubkeman
Brandon Mark McConnell
Henry Lee Nuttle
Tania Milkova Paskova
Claude Lewis Reynolds Jr.
Javad Taheri

Emeritus Faculty
Roy E. Carawan
Stephen N. Chapman
Charles Thomas Culbreth Jr.
Perry L. Grady
Thom Joel Hodgson
Thomas Johnson
Stephen Dean Roberts
Ezat Sanii
William A. Smith Jr.
James Reed Wilson
Richard Allen Wysk
Robert E. Young
Carl Frank Zorowski

Adjunct Faculty
Brian Denton
Mihail Devetsikiotis
Tania Milkova Paskova
Amy Diane Wilson