

Industrial Engineering (MS)

Master of Science Degree Requirements

Code	Title	Hours	Counts towards
Required Course		10	
ISE 601	Seminar		
ISE 695	Master's Thesis Research		
Breadth Requirement Courses		12	
See "Breadth Requirement Courses" listed below			
Minor Courses		9	
"Minor Courses" will be determined in conjunction with the academic committee			
Total Hours ^{1,2}		31	

¹ At least 24 of the 31 credit hours must be at the 500-level or higher and at least 21 credits must be ISE courses

² Students should have one 700-level ISE course approved in conjunction with the academic committee

Breadth Requirements

Code	Title	Hours	Counts towards
Select a minimum of one course from at least three of the following groups:		9	

Group A : Economic & Decision Analysis

ISE 510 Applied Engineering Economy

ISE 519 Database Applications in Industrial and Systems Engineering

ISE 535 Python Programming for Industrial & Systems Engineers

MA 547 Stochastic Calculus for Finance

ISE 711 Capital Investment Economic Analysis

Group B: Human Factors and Ergonomics

ISE 540 Human Factors In Systems Design

ISE 541 Occupational Safety Engrg

ISE 544 Occupational Biomechanics

ISE 741 Systems Safety Engineering

ISE 744 Human Information Processing

Group C: Manufacturing Systems

ISE 515 Manufacturing Process Engineering

ISE 545 Digital Manufacturing

ISE 714 Product Manufacturing Engineering for the Medical Device Industry

ISE 716 Automated Systems Engineering

ISE 718 Micro/Nano-Scale Fabrication and Manufacturing

Group D: Production Systems

ISE 552 Design and Control of Production and Service Systems

ISE 553 Modeling and Analysis of Supply Chains

ISE 748 Quality Engineering

ISE 754 Logistics Engineering

Group E: Systems Analytics and Optimization

ISE/OR 501 Introduction to Operations Research

OR 504 Introduction to Mathematical Programming

ISE/OR 505 Linear Programming

ISE 560 Stochastic Models in Industrial Engineering

ISE/OR 562	Simulation Modeling	
Select one course from the following:		3
Group F: Computer Science, Mathematics, and Statistics		
Other graduate level CSC, Math, or Statistics courses may be substituted with approval		
CSC 513	Electronic Commerce Technology	
CSC 520	Artificial Intelligence I	
CSC 570	Computer Networks	
CSC 742	Advanced Topics in Database Management Systems	
MA 520	Linear Algebra	
MA 580	Numerical Analysis I	
ST 515	Experimental Statistics for Engineers I	
ST 516	Experimental Statistics For Engineers II	
ST 531	Experimental Design	
Total Hours		12

Accelerated Bachelor's/Master's Degree Requirements

The Accelerated Bachelors/Master's (ABM) degree program allows exceptional undergraduate students at NC State an opportunity to complete the requirements for both the Bachelor's and Master's degrees at an accelerated pace. These undergraduate students may double count up to 12 credits and obtain a non-thesis Master's degree in the same field within 12 months of completing the Bachelor's degree, or obtain a thesis-based Master's degree in the same field within 18 months of completing the Bachelor's degree.

This degree program also provides an opportunity for the Directors of Graduate Programs (DGPs) at NC State to recruit rising juniors in their major to their graduate programs. However, permission to pursue an ABM degree program does not guarantee admission to the Graduate School. Admission is contingent on meeting eligibility requirements at the time of entering the graduate program.

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

Associate Professors

Adolfo Escobedo

Michael G. Kay

Yunan Liu

Osman Yalin Ozaltin

Hong Wan

Xu Xu

Assistant Professors

Karen Boru Chen

Xiaolei Fang

Leila Hajibabai Dizaji

Seyedmohammadhossein Hosseini

Jordan Kern

Benjamin A. Rachunok

Sara Shashaani

Renran Tian

Zhuoting Yu

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

Adjunct Professor

Amy Diane Wilson

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