

# Industrial Engineering (MR)

## Master of Industrial Engineering Degree Requirements

Code	Title	Hours	Counts towards
<b>Required Course</b>		<b>1</b>	
ISE 601	Seminar		
<b>Breadth Requirement Courses</b>		<b>15</b>	
See "Breadth Requirement Courses" listed below			
<b>Technical Elective Courses</b>		<b>9</b>	
"Technical Elective Courses" will be determined in conjunction with the academic committee			
<b>Additional Technical Elective Courses</b>		<b>6</b>	
"Additional Technical Elective Courses" are approved in conjunction with the academic committee			
<b>Total Hours</b>		<b>31</b>	

## Breadth Requirement Courses

Code	Title	Hours	Counts towards
<b>Select a minimum of one course from at least four of the following breadth requirement groups:</b>		<b>12</b>	
<b>Group A : Economic &amp; Decision Analysis</b>			
ISE 510	Applied Engineering Economy		
ISE 711	Capital Investment Economic Analysis		
ISE 712	Bayesian Decision Analysis For Engineers and Managers		
ISE 731	Multi-Attribute Decision Analysis		
<b>Group B: Human Factors and Ergonomics Category</b>			
ISE 540	Human Factors In Systems Design		
ISE 541	Occupational Safety Engrg		
ISE 544	Occupational Biomechanics		

ISE 744 Human Information Processing

ISE 745 Human Performance Modeling

### Group C: Manufacturing Systems Category

ISE 515 Manufacturing Process Engineering

ISE 714 Product Manufacturing Engineering for the Medical Device Industry

ISE 716 Automated Systems Engineering

ISE 519 Database Applications in Industrial and Systems Engineering

### Group D: Production Systems Category

ISE 552 Design and Control of Production and Service Systems

ISE 723 Production Planning, Scheduling and Inventory Control

ISE 726 Theory of Activity Networks

ISE 748 Quality Engineering

ISE 754 Logistics Engineering

### Group E: Systems Analytics and Optimization Category

ISE 501 Introduction to Operations Research

OR 504 Introduction to Mathematical Programming

ISE 505 Linear Programming

ISE 560 Stochastic Models in Industrial Engineering

ISE 562 Simulation Modeling

ISE 709 Dynamic Programming

ISE 760	Applied Stochastic Models in Industrial Engineering
ISE 761	Queues and Stochastic Service Systems
ISE 762	Computer Simulation Techniques
<b>Select one course from the following: 3</b>	
<b>Group F: Computer Science, Mathematics, and Statistics</b>	
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	
ST 516	Experimental Statistics For Engineers II
ST 711	Design Of Experiments

<b>Total Hours</b>	<b>15</b>
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## 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

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## Associate professors

Adolfo Escobedo

Michael G. Kay

Yunan Liu

Osman Yalin Ozaltin

Hong Wan

Xu Xu

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## Assistant Professors

Karen Boru Chen

Xiaolei Fang

Leila Hajibabai Dizaji

Jordan Kern

Benjamin A. Rachunok

Sara Shashaani

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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## **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