



# Master of Science in Engineering (MSE)

## *Acquiring and applying advanced engineering principles and methods*

The MSE program enables graduate engineering professionals to further their problem-solving skills through the application of advanced engineering principles and methods. The strength of this program is in its flexibility. It allows for breadth and depth of engineering topics and culminates in either a project or final paper. The program offers students the opportunity to advance their quantitative skills through a series of mathematics courses and provides for their choice of specialty courses in engineering.

The MSE program spans electrical, mechanical and industrial engineering fields. It is based on the philosophy that there is a need for engineers who can solve technical problems within a variety of disciplines. The program provides a flexible platform for students to take either an integrated approach or a specialized approach to meet the demands of their engineering practice. The coursework emphasizes presentation of engineering concepts and theory through applications.

### **MSE Program Curriculum**

The MSE program is for individuals with bachelor's degrees in engineering, engineering technology or other closely related areas. Each student works with the program director or faculty advisor to plan a course of study tailored to his or her needs. Individual degree requirements are dependent upon the type of bachelor's degree. Students with a bachelor of science degree in an engineering field or a similar degree from an accredited program are typically required to complete a total of

45 graduate credits. Each course typically meets once per week for 11 weeks. Occasionally, select classes will meet twice weekly.

### **MS Program Options**

Each student completes either a Capstone project or a specialty paper.

The *Engineering Project Option* can either draw from the multiple disciplines studied within the program or focus more on technical areas within the student's chosen engineering discipline. After consulting with a faculty advisor, each student develops an engineering project proposal and presents it for approval before a committee.

The *Non-Project Option* will require a two-course sequence in 700 or 800 level EE/ME specialty courses and a final course (GE 791) in which a specialty paper is written. In this final course, each student completes a paper analysis/design of certain aspect of the chosen specialty and presents it both orally and in writing.

### **The MSOE Advantage**

An MSOE degree is widely respected. Classes are taught by professors with solid industry experience. You won't find teaching assistants in the classroom. Class sizes are small, which encourages interaction and networking. All classes are offered evenings, which makes it convenient for the working professional.

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# Master of Science in Engineering Curriculum

## Project Option Part-Time Track

		Credits	Fall	Winter	Spring
MA611	Engineering Mathematics I	3	X		
MA612	Engineering Mathematics II	3		X	
GE703	Simulation & Modeling	3			X
GE611	Numerical Methods	3	X		
IE612	Operations Research	3		X	
IE613	Quality Engineering	3			X
	EE or ME Core Course <sup>1</sup>	3	X		
	EE or ME Core Course <sup>1</sup>	3		X	
	EE or ME Core Course <sup>1</sup>	3			X
	EE or ME Core Course <sup>1</sup>	3	X		
	Elective <sup>2</sup>	3		X	
	Elective <sup>2</sup>	3			X
GE796	Proposal Development	3	X		
GE797	Engineering Project I	3		X	
GE798	Engineering Project II	3			X

## Non-Project Option Part-Time Track

		Credits	Fall	Winter	Spring
MA611	Engineering Mathematics I	3	X		
MA612	Engineering Mathematics II	3		X	
GE703	Simulation & Modeling	3			X
GE611	Numerical Methods	3	X		
IE612	Operations Research	3		X	
IE613	Quality Engineering	3			X
	EE or ME Core Course <sup>1</sup>	3	X		
	EE or ME Core Course <sup>1</sup>	3		X	
	EE or ME Core Course <sup>1</sup>	3			X
	EE or ME Core Course <sup>1</sup>	3	X		
	Elective <sup>2</sup>	3		X	
	Elective <sup>2</sup>	3			X
	EE or ME Core Course <sup>3</sup>	3	X		
	EE or ME Core Course <sup>3</sup>	3		X	
GE791	Specialty Paper	3			X

<sup>1</sup> 500-800 level courses

<sup>2</sup> 700 level courses from AE, EE, EV, ME, CS, MA, or EM

<sup>3</sup> 700-800 level courses