



Master of Science in Structural Engineering (MSST)

Advanced knowledge and skills for civil, architectural and structural engineers

MSOE's Master of Science in Structural Engineering (MSST) degree emphasizes building structural design and analysis. It meets the needs of architectural, civil or structural engineers who desire increased knowledge to design structural systems for modern buildings.

The MSST degree takes you to the next level of expertise. It enhances your analytical and design capabilities and increases professional flexibility. For recent graduates with a civil or architectural engineering degree, earning an MSST will accelerate the Professional Engineer credential.

Program Overview

The MSST requires that you have completed an undergraduate curriculum that included indeterminate structural analysis, structural steel and reinforced concrete design and soil mechanics.

MSST courses focus on structural design topics such as advanced design of structural steel members and systems, light gage metal members and structures, wood structures, masonry structures, foundations and selection of structural systems. Courses on advanced structural analysis, including applications of the finite element method, structural dynamics and structural stability, are part of the program and provide a broad theoretical background for structural design.

Flexible Degree Choices

All courses are offered evenings with the option of a two-, three- or five-year

program. Students enrolled in MSOE's Bachelor of Science in Architectural Engineering program can pursue a dual degree.

Two curriculum tracks are available. One is a Capstone Report Track, which involves undertaking a literature research study, writing a formal report and presenting the findings.

The other is a Capstone Project Track on structural engineering. This enables the student to integrate the concepts learned in the classroom into a specific application. The project may focus on design issues, research in an area of structural engineering or other related topics with the approval of the program director. At the conclusion, a comprehensive presentation of the project will be given to a faculty committee.

The MSOE Advantage

Courses are taught by faculty with extensive practical experience as well as academic credentials. Coursework has been planned to show practical applications of structural engineering theory. The practical nature of an MSOE education means that the knowledge and skills you gain in the classroom can be used the next day in the workplace.

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Master of Science in Structural Engineering Curriculum

Capstone Report Track¹

		Credits	Fall	Winter	Spring
AE610	Applied Finite Materials	3	X		
AE616	Structural Stability	3		X	
AE732	Steel Design for Buildings (AISI)	3			X
AE612	Structural Dynamics	3	X		
AE614	Lateral Loads on Structural Systems	3		X	
AE742	Foundation Design	3			X
AE740	Reinforced Concrete Member Design	3	X		
AE720	Masonry Design	3		X	
AE750	Wood Design	3			X
AE730	AISC Steel Design	3	X		
AE760	Selection of Structural Systems for Buildings	3		X	
AE746	Reinforced Concrete Structure Design	3			X
AE744	Prestressed Concrete Design	3	X		
	Elective ²	3		X	
AE800	Research and Presentation	3			X

¹ A two- and three-year track are also available

² Elective can be any graduate-level course

Capstone Project Track³

		Credits	Fall	Winter	Spring
AE610	Applied Finite Materials	3	X		
AE616	Structural Stability	3		X	
AE750	Wood Design	3			X
AE612	Structural Dynamics	3	X		
AE614	Lateral Loads on Structural Systems	3		X	
AE742	Foundation Design	3			X
AE740	Reinforced Concrete Member Design	3	X		
AE720	Masonry Design	3		X	
	Structural Engineering Elective ⁴	3			X
AE730	AISC Steel Design	3	X		
AE760	Selection of Structural Systems for Buildings	3		X	
	Structural Engineering Elective ⁴	3			X
AE800	Research and Presentation	3	X		
AE890	Structural Engineering Design I	3		X	
AE892	Structural Engineering Design II	3			X

³ A two- and three-year track are also available

⁴ AE732 AISI Steel Design, AE734 Connection Design, AE744 Prestressed Concrete Design and AE746 Reinforced Concrete Structure Design satisfy the elective requirement.