

MASTER OF SCIENCE IN MECHANICAL AND AEROSPACE ENGINEERING

The master of science degree program advances knowledge through post-baccalaureate coursework. The program requires 32 credit hours. Students have the option of completing a thesis based on up to eight credit hours of research (MMAE 591) with the approval of a thesis adviser, or completing the program with courses, which may include up to six credit hours of projects (MMAE 594). In line with the department's approach to its graduate programs, a student has considerable flexibility, in consultation with their adviser, in formulating an M.S. program. All full-time thesis students are required to register for MMAE 593 MMAE Seminar in every semester and achieve an attendance of greater than 80%.

Before completion of the first semester of graduate study, full-time students should select a permanent adviser. Graduate students pursuing the M.S. degree on a part-time basis should select a permanent adviser before registering for their twelfth credit hour. The student, in consultation with the adviser, prepares a program of study that reflects individual needs and interests. The adviser as well as the department's graduate studies committee and the department chair must approve this program. Students with the thesis option are required to pass an oral comprehensive examination on their thesis and related topics. The examination committee consists of at least three appropriate faculty members who are nominated by the thesis adviser and appointed by the department's graduate studies committee.

Master of Science in Mechanical and Aerospace Engineering (Coursework Only Option)

Requirement	Credits
Minimum Credits Required	32
Maximum 400-Level Credit	9
Maximum 700-Level Credit	6

Code	Title	Credit Hours
Required Courses		(6-7)
MMAE 501	Engineering Analysis I	3
Select one core course in major area of study (see below)		3-4
Numerical Methods Elective		(3)
Select three credit hours from the following:		3
MMAE 451	Finite Elmnt Methods in Engrg	3
MMAE 517	Computational Fluid Dynamics	3
MMAE 532	Finite Element Methods II	3
MMAE 544	Design Optimization	3
MMAE 570	Computational Methods in MSE	3
Elective Courses		(22-23)
Select 22-23 credit hours of 400-level and above MMAE courses ¹		22-23

¹ Students may include up to six credit hours of MMAE 594 Project for Master of Engineering Students. Up to three credit hours of INTM courses may be used with adviser approval.

Master of Science in Mechanical and Aerospace Engineering (Thesis Option)

Requirement	Credits
Minimum Credits Required	32
Maximum 400-Level Credit	9
Maximum 700-Level Credit	6

Code	Title	Credit Hours
Required Courses		(9-10)
MMAE 501	Engineering Analysis I	3
MMAE 502	Engineering Analysis II	3
Select one core course in major area of study (see below)		3-4
Elective Courses		(14-17)
Select 14-17 credit hours of 400-level and above MMAE courses		14-17
Thesis Research		(6-8)
MMAE 591	Research and Thesis M.S.	6-8

Core Courses as Determined by Major Area of Study

Code	Title	Credit Hours
Fluid Dynamics		(4)
MMAE 510	Fundmntls of Fluid Mechanics	4
Thermal Sciences		(3)
MMAE 520 or MMAE 525	Advanced Thermodynamics Fundamentals of Heat Transfer	3
Solids and Structures		(3)
MMAE 530	Advanced Mechanics Solids	3
Dynamics and Controls		(3)
MMAE 541	Advanced Dynamics	3
Computer Aided Design and Manufacturing		(3)
MMAE 545	Advanced CAD/CAM	3