

MASTER OF SCIENCE IN MANUFACTURING ENGINEERING

The master of science degree program advances knowledge through post-baccalaureate coursework and state-of-the-art research in preparation for careers in industrial research and development. The M.S. degree is also generally acceptable as a prerequisite for study toward the doctorate. In line with the department's approach to its graduate programs, a student has considerable flexibility, in consultation with his or her program adviser, in formulating an M.S. program.

The master of science degree requires completion of a minimum of 32 credit hours of approved work, which includes 6-8 credit hours of thesis research. Before completion of the first semester of graduate study, full-time students should select an area of specialization and 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 must approve this program, as well as the department's graduate studies committee, the department chair, and the Graduate College.

After completion of the thesis, the student is required to pass an oral comprehensive examination on his or her 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.

Curriculum

Materials Science and Engineering Emphasis

Required Courses		(15)
MMAE 547	Computer-Integrated Manufacturing Technologies	3
MMAE 560	Statistical Quality and Process Control	3
Select a minimum of one course from the following:		3
MMAE 445	Computer-Aided Design	3
MMAE 545	Advanced CAD/CAM	3
MMAE 546	Advanced Manufacturing Engineering	3
MMAE 576	Materials and Process Selection	3
Select a minimum of one course from the following:		3
MMAE 574	Ferrous Transformations	3
MMAE 585	Engineering Optics and Laser-Based Manufacturing	3
Select a minimum of one course from the following numerical methods courses:		3
MMAE 451	Finite Element Methods in Engineering	3
MMAE 517	Computational Fluid Dynamics	3
MMAE 532	Advanced Finite Element Methods	3
MMAE 544	Design Optimization	3
MMAE 570	Computational Methods in Materials Science and Engineering	3
Elective Courses		(9-11)
Select 9 to 11 credit hours		9-11
Thesis Research		(6-8)
MMAE 591	Research and Thesis M.S.	6-8

Minimum degree credits required: 32

Mechanical and Aerospace Engineering Emphasis

Required Courses		(18)
MMAE 545	Advanced CAD/CAM	3
MMAE 546	Advanced Manufacturing Engineering	3
MMAE 547	Computer-Integrated Manufacturing Technologies	3
MMAE 560	Statistical Quality and Process Control	3
Select a minimum of one course from the following:		3
MMAE 445	Computer-Aided Design	3
MMAE 574	Ferrous Transformations	3
MMAE 576	Materials and Process Selection	3
MMAE 585	Engineering Optics and Laser-Based Manufacturing	3

Select a minimum of one course from the following:		3
MMAE 451	Finite Element Methods in Engineering	3
MMAE 517	Computational Fluid Dynamics	3
MMAE 532	Advanced Finite Element Methods	3
MMAE 544	Design Optimization	3
MMAE 570	Computational Methods in Materials Science and Engineering	3
Elective Courses		(6-8)
Select 8 to 11 credits		6-8
Thesis Research		(6-8)
MMAE 591	Research and Thesis M.S.	6-8

Minimum degree credits required: 32