MASTER OF SCIENCE IN MECHANICAL ENGINEERING

Department: Mechanical Engineering (https://catalog.bradley.edu/graduate/engineering-technology/mechanical-engineering/)

MSME Program Admission

TAdmission into the MSME program requires a bachelor's degree in mechanical engineering. Students with undergraduate degrees in mechanical engineering from institutions other than Bradley University may be required to take undergraduate coursework if their transcripts do not show a satisfactory level of preparation in certain areas. Qualified graduates from other engineering or related fields may be considered for admission, but may be required to take undergraduate coursework.

Details on admission requirements and categories of admission can be found in the Graduate Catalog under the Admissions (https://catalog.bradley.edu/graduate/education/admissions/) section.

Master's Degree Curriculum Requirements

In order to graduate, students must complete 30 graduate credit hours with at least 24 graduate credit hours of coursework and a minimum of 3 graduate credit hours of research by taking M E 681 Research, M E 682 Research, or M E 699 Thesis. Students can appeal the research requirement to the graduate coordinator by documenting prior experience. All students are required to pass the Masters comprehensive assessment. For students taking the thesis option, comprehensive assessment will be their thesis and presentation. For students taking the non-thesis option the comprehensive assessment is their project presentation, and report.

- For all students, the total graduate credit hours must include one engineering graduate mathematics course (IME 511 , M E 573, or other courses in statistics, numerical methods, and engineering analysis offered by engineering) approved by the student's advisor.
- Students have the option to take up to 6 credit hours courses (500 level and above) approved by the advisor that can be outside of the department.
- Each student must choose to focus on one specialty area out of the following: Mechanical Systems Design and Thermal Sciences.

Mechanical Systems Design students must take:

Code	Title	Hours
Mechanical Systems Design (select 9 credit hours)		**9.0**
M E 502	Problems in Advanced Dynamics	
M E 540	Advanced Mechanical Vibrations	
M E 544	Mechanical Systems Analysis	
M E 547	Fluid Power Control Systems	
M E 548	Optimization of Mechanical Systems	
M E 549	Microprocessor Interfacing in Mechanical Systems	
M E 554	Fracture of Solids	
M E 556	Mechanics of Composite Materials	
M E 557	Advanced Design of Machine Elements	
M E 561	Introduction to Robotics	
M E 562	Dynamics, Modeling, and Control of Robots	
M E 564	Sensor, Actuators, and Computer Vision	
M E 577	Finite Element Methods in Engineering	
Other relevant 500 level Mechanical Systems Design M E courses approved by the advisor		
Thermal Science Course		**3.0**
Select one of the following:		
M E 501	Advanced Thermodynamics	
M E 515	Intermediate Heat Transfer	
M E 521	Intermediate Fluid Mechanics	

Thermal Science students must take:

Code	Title	Hours
Thermal Science Courses (select 9 credit hours):		**9.0**
M E 501	Advanced Thermodynamics	
M E 503	Internal Combustion Engines	
M E 507		
M E 509	Solar Engineering	
M E 515	Intermediate Heat Transfer	
M E 520	Gas Dynamics	
M E 521	Intermediate Fluid Mechanics	
M E 533	Propulsion Systems	
M E 534	Environmental Engineering-Air Conditioning	
M E 535	Environmental Engineering-Refrigeration	
M E 536	Industrial Pollution Prevention	
M E 537	Building Energy Management	
Other relevant 500 level Thermal Science M E courses approved by the advisor		
Mechanical Systems Design Course		**3.0**
Select one of the following:		
M E 502	Problems in Advanced Dynamics	
M E 540	Advanced Mechanical Vibrations	
M E 557	Advanced Design of Machine Elements	

The student's advisor must approve the Program of Study, including any subsequent changes.