

## Mechanical Engineering, MS

Effective 2020-2021

College of Engineering

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The Mechanical Engineering master's program provides advanced level study in distinct areas of specialization such as mechanics and materials, energy and thermal/fluid systems, design and manufacturing, and aerospace. The program prepares the graduate student for doctoral level studies or for advanced mechanical engineering practice in industry, consulting or government service.

### **Unconditional Admission**

An applicant may be given unconditional admission to the MSME Program if he/she possesses a Bachelor of Science in Mechanical Engineering degree from an accredited institution with an overall GPA of 3.0 or better on a 4.0 scale. Students admitted on an unconditional basis are expected to have completed “key fundamental courses” as part of their undergraduate program.

### **Conditional Admission**

An applicant may be granted conditional admission if he/she falls under one of the following situations:

- a. Applicant has a Bachelor of Science in Mechanical Engineering degree with a GPA of less than 3.0 but has a major GPA of at least 3.0 in the last four semesters of undergraduate study. The overall GPA must not be less than 2.8
- b. Applicant has a Bachelor of Science degree in an engineering discipline with a 3.0 GPA or better on a 4.0 scale but is deficient in key fundamental courses as listed in the previous section. These deficiencies must not exceed 12 credit hours.
- c. Applicant has a Bachelor of Science degree in a non-engineering discipline but a closely related undergraduate degree with a substantial and relevant engineering science and mathematics content and a GPA of 3.0 or higher. Background deficiencies should not exceed 12 credit hours.
- d. Students entering the MS program with conditional status will have two semesters to finish undergraduate courses.

### **Additional Admission Requirements**

- Unconditional admission requires an engineering undergraduate degree from an ABET accredited mechanical engineering program

### **Program Outcomes**

- Students will develop advanced critical thinking skills by solving complex and challenging problems in mechanical engineering, mathematics and the physical sciences
- Students will communicate effectively by conveying their ideas, both orally and in written form, in accordance with acceptable published standards
- Students will demonstrate their ability to perform research by generating a thesis of an original idea and publishing technical papers under the guidance of an academic advisor
- Graduates will engage in professional activities by attending conferences, presenting papers and serving various roles in professional organizations

### **Degree Requirements**

Total credit hours: 30

- Core courses (9 credits): MEEN 613, 631, 716

#### Thesis option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (3 credits): Take additional 3 credit hours with approval of advisor and department
- Thesis (MEEN 797: 6 credits)
- Pass thesis defense

#### Project option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor

- Technical electives (6 credits): Take additional 6 credit hours with approval of advisor and department
- Project (MEEN 796: 3 credits)

Course option

- MATH electives (3 credits): Take 3 credit hours from MATH 650, 651, 652
- MEEN electives (9 credits): Take 9 credits of additional MEEN 600-899 courses with approval of advisor
- Technical electives (9 credits): Take additional 9 credit hours with approval of advisor and department
- Pass comprehensive exam