**Mechanical Engineering program**

**Master of Mechanical Engineering (M.M.E.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** February 15

**Spring:**  October 15

**Summer:** ----

**Minimum Total Hours:** 30

**Program Level:** Masters

**CIP Code:** 14.1901

**Dept. Code:** EGR

**Program (Major/College):** EME EN

**Approved:** 1994

**CONTACT INFORMATION**

**College:** Engineering

**Department:** Mechanical Engineering

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**Other Resources:** [www.usf4you.usf.edu](http://www.usf4you/)

**PROGRAM INFORMATION**

The Department offers graduate programs leading to the M.S. and Ph.D. in Mechanical Engineering.

Research opportunities are available in the following areas: Mechanism Design, Kinematics, System Dynamics and Vibrations, Mechanical Controls, Tribology, Mechanical Design, Robotics, Rehabilitation Engineering, Composite Materials, Solid Mechanics, Fluid Dynamics, Thermal Energy Systems, Microelectronic Device Thermal Management, Clean and Renewable Energy Systems, Micro and Nano scale materials and systems, MEMS, Biosensors, Biofluids, Biomedical Engineering, and Engineering Education.

Department facilities include the following laboratories: Computational Fluid Dynamics, Computational Solid Mechanics, Computer-Aided Design, Dynamic Systems, Hydraulics, Rehabilitation Engineering, Robotics, Biofuel cells and Biomimetics, Nanomaterials and Thin Films, Advanced Materials Processing and Characterization, Biofluids and Biosensors, Microelectronic Thermal Management and Heat Transfer, and Compliant Mechanisms.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

* As a rule, only students with a B.S. in Mechanical Engineering or a closely related field from an accredited engineering program will be considered for admission.
* All applicants must take the GRE.
* GRE required, with minimum percentile rank of 50% on the quantitative portion and a minimum average percentile rank of 50% in verbal and quantitative andthe student must have a grade point average (GPA) of 3.00/4.00 for the last two years of coursework from an ABET accredited engineering program for admission to the Master’s Program. Graduates of non-ABET accredited programs are evaluated on a case-by-case basis.
* International students must score a minimum of 550 on the TOEFL paper-based examination, 79 on the internet-based test, or 213 on the computer-based test.
* A one-page Statement of Purpose must also be included in the application package.

##### DEGREE PROGRAM REQUIREMENTS

**Total Minimum Program Hours: 30 credit hours**

**Core – 12 hours**

**Coursework – 18**

**Core Requirements – 12 credit hours**

Specialization areas–9credit hours

All Master’s Program students must complete a total of 9 core credit hours from each of the following specialization areas.

# Fluid and Thermal Science - 3credit hours

EML 6105: Advanced Thermodynamics and Statistical Mechanics

EML 6154: Advanced Conduction Analysis

EML 6713: Advanced Fluid Mechanics

EML 6930: Special Problems I: Convection Heat Transfer

# Mechanics, Manufacturing, and Materials - 3 credit hours

EML 6653: Applied Elasticity

EML 6930: Special Problems I: Advanced Manufacturing

EML 6930: Special Problems I: Advanced Materials

EML 6570: Principles of Fracture Mechanics

EML 6290: Micro and Nano Manufacturing

# Dynamical Systems and Controls - 3credit hours

EML 6273: Advanced Dynamics of Machinery

EML 6930: Special Problems I: Advanced Controls

EML 6930: Special Problems I: Advanced Vibrations

EML 6801: Robotic Systems

All students must also complete either

EML 6931: Special Problems II: Advanced Mathematics or

EML 6930: Special Problems I: Advanced Mathematics II in order to satisfy core requirements.

**Additional Coursework - 18 credit hours**

In addition to the 12 credit hours, the MME degree requires a minimum of 18 credit hours of approved coursework, for a total of 30 semester hours.

**Comprehensive Exam**

MME students must also pass a final Comprehensive Oral Examination.

The Department of Mechanical Engineering has available, on request, the Mechanical Engineering Graduate Program Handbook, which delineates the Department’s entrance requirements, programs of study, supervisory committee formation, and program completion requirements. The M.M.E is a non-thesis program and the M.S.M.E. is a thesis

program.

**Non-Thesis**

This is a non-thesis major.

**COURSES**

 See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)

**Mechanical Engineering program**

**Master of Science in Mechanical Engineering (M.S.M.E.) Degree**

**DEGREE INFORMATION**

**Program Admission Deadlines:**

**Fall:** February 15

**Spring:**  October 15

**Summer:** February 15

**Minimum Total Hours:** 30

**Program Level:** Masters

**CIP Code:** 14.1901

**Dept. Code:** EGR

**Program (Major/College):** EME EN

**Approved:** 1981

**CONTACT INFORMATION**

**College:** Engineering

**Department:** Mechanical Engineering

**Contact Information:** [www.grad.usf.edu](http://www.grad.usf.edu/)

**PROGRAM INFORMATION**

The Department offers graduate programs leading to the M.S. and Ph.D. in Mechanical Engineering.

Research opportunities are available in the following areas: Mechanism Design, Kinematics, System Dynamics and Vibrations, Mechanical Controls, Tribology, Mechanical Design, Robotics, Rehabilitation Engineering, Composite Materials, Solid Mechanics, Fluid Dynamics, Thermal Energy Systems, Microelectronic Device Thermal Management, Clean and Renewable Energy Systems, Micro and Nano scale materials and systems, MEMS, Biosensors, Biofluids, Biomedical Engineering, and Engineering Education.

Department facilities include the following laboratories: Computational Fluid Dynamics, Computational Solid Mechanics, Computer-Aided Design, Dynamic Systems, Hydraulics, Rehabilitation Engineering, Robotics, Biofuel cells and Biomimetics, Nanomaterials and Thin Films, Advanced Materials Processing and Characterization, Biofluids and Biosensors, Microelectronic Thermal Management and Heat Transfer, and Compliant Mechanisms.

**Accreditation:**

Accredited by the Commission on Colleges of the Southern Association of College and Schools

**ADMISSION INFORMATION**

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

**Program Admission Requirements**

* As a rule, only students with a B.S. in Mechanical Engineering or a closely related field from an accredited engineering program will be considered for admission.
* All applicants must take the GRE.
* GRE required, with minimum percentile rank of 50% on the quantitative portion and a minimum average percentile rank of 50% in verbal and quantitative and the student must have a grade point average (GPA) of 3.00/4.00 for the last two years of coursework from an ABET accredited engineering program for admission to the Master’s Program. Graduates of non-ABET accredited programs are evaluated on a case-by-case basis.
* International students must score a minimum of 550 on the TOEFL paper-based examination, 79 on the internet-based test, or 213 on the computer-based test.
* A one-page Statement of Purpose/Research Interest must also be included in the application package.

**DEGREE PROGRAM REQUIREMENTS**

**Total Minimum Program Hours: 30 credit hours**

**Core Requirements – 12 credit hours**

Specialization – 9 hours

All Master’s Program students must complete a total of 9 core credit hours from two categories. Students should choose 3 credit hours of course work from each of the following specialization areas:

# Fluid and Thermal Science - 3 credit hours

EML 6105: Advanced Thermodynamics and Statistical Mechanics

EML 6154: Advanced Conduction Analysis

EML 6713: Advanced Fluid Mechanics

EML 6930: Special Problems I: Convection Heat Transfer

# Mechanics, Manufacturing, and Materials -3 credit hours

EML 6653: Applied Elasticity

EML 6930: Special Problems I: Advanced Manufacturing

EML 6930: Special Problems I: Advanced Materials

EML 6570: Fracture Mechanics

EML 6290: Micro and Nano Manufacturing

# Dynamical Systems and Controls - 3credit hours

EML 6273: Advanced Dynamics of Machinery

EML 6930: Special Problems I: Advanced Controls

EML 6930: Special Problems I: Advanced Vibrations

EML 6801: Robotic Systems

All students must also complete either

EML 6931: Special Problems II: Advanced Mathematics or

EML 6930: Special Problems I: Advanced Mathematics II in order to satisfy core requirements.

**Additional Coursework 12 credit hours**

In addition to these 12 credit hours, the MSME degree requires a minimum of 12 credit hours of approved coursework and a minimum of 6 thesis hours for a total of 30 semester hours. MSME students must present a typed final draft to the Supervisory Committee and Graduate Advisor one week before the final oral examination.

**Comprehensive Exam**

A student must pass the final Oral Comprehensive Examination after the student has presented his/her thesis to the Supervisory Committee.

**Thesis 6 credit hours**

EML 6971 Thesis: Master’s

The Department of Mechanical Engineering has available, on request, the Mechanical Engineering Graduate Program Handbook, which delineates the Department’s entrance requirements, programs of study, supervisory committee formation, and program completion requirements. The M.M.E. is a non-thesis program and the M.S.M.E. is a thesis program.

**COURSES**

 See [http://ugs.usf.edu/course-inventory](http://www.ugs.usf.edu/sab/sabs.cfm)