Mechanical Engineering (B.S.M.E.)

College of Engineering and Computer Science
Department of Mechanical and Aerospace Engineering
Engineering I, Room: 381
http://www.mae.ucf.edu
Email: mmaeugen@udf.edu
Dr. HyoJeong "Joe" Cho, hjcho@ucf.edu, 407-823-8014
Lynn Grabenhorst, Lynn.Grabenhorst@ucf.edu, 407-823-5448
Phone: 407-823-5448

Admission Requirements
- Students wanting to declare a major in an engineering discipline must be in good academic standing and must have a “C” (2.0) or better in each of the following courses or their equivalents: MAC 2311C, MAC 2312, PHY 2048C, and CHM 2045C or CHS 1440.
- Students wanting to declare a major in an engineering discipline must complete a course in completion of the final pending prerequisite course(s) listed above.

Degree Requirements
- Students in the Mechanical Engineering major may not accumulate five or more grades of W, WP, or WF at UCF and remain enrolled in, or eligible for, any major in the College of Engineering and Computer Science (CECS) or the College of Optics and Photonics (COP). Therefore, any student majoring in Mechanical Engineering who accumulates three grades of W, WP, or WF at UCF will be placed on W Probation and will remain on W Probation as long as the student is enrolled in a CECS or COP major. If a student on W Probation receives a fifth grade of W, WP, or WF, the student will be excluded from all CECS and COP majors.
- Students in the Mechanical Engineering major are expected to make consistent good progress toward their degrees to remain enrolled in, or eligible for, any major in the College of Engineering and Computer Science (CECS) or the College of Optics and Photonics (COP). Therefore, any student majoring in Mechanical Engineering who repeats any UCF course and does not earn a grade of “C” (2.0) or better on the second attempt will be placed on Lack of Progress Probation and remain on Lack of Progress Probation as long as the student is enrolled in a CECS or COP major. If a student on Lack of Progress Probation does not receive a grade of “C” (2.0) or better by the third attempt in the same UCF course, the student will be excluded from all CECS and COP majors. Any student majoring in Mechanical Engineering who has accumulated 7 or more withdrawals (i.e., grades below “C” (2.0) and course level) over all courses taken at UCF will be placed on Lack of Progress Probation and remain on Lack of Progress Probation as long as the student is enrolled in a CECS or COP major. If a student on Lack of Progress Probation has a tenth unsuccessful attempt over all courses taken at UCF, the student will be excluded from all CECS and COP majors.

1. UCF General Education Program (GEP) (38 hrs)
   - The UCF General Education Program (GEP) is described in the General Education Program section, located elsewhere in this catalog. Engineering students should closely study the requirements of the UCF GEP and the allowable substitutions detailed in paragraphs A. through E. below to minimize excess hours. Students transferring to UCF from within the Florida College System or State University System should complete the GEP and the Common Program Prerequisites before transferring.

   A: Communication Foundations (9 hrs)
   - Required ENC 1101 Composition I 3 hrs
   - Required ENC 1102 Composition II 3 hrs
   - Select 1: 3 hrs
     - Prefer SPC 1603C Fundamentals of Technical Presentations or
     - Suggested SPC 1608 Fundamentals of Oral Communication 3 hrs

   B: Cultural & Historical Foundations (9 hrs)
   - Select two courses from Historical Foundations 6 hrs
   - Select one class from Cultural Foundations 3 hrs

   C: Mathematical Foundations (7 hrs)
   - Required MAC 2311C Calculus with Analytic Geometry I 4 hrs
   - Required STA 3032 Probability and Statistics for Engineers 3 hrs

   D: Social Foundations (6 hrs)
   - Select 1: 3 hrs
     - Prefer ECO 2013 Principles of Macroeconomics or 3 hrs
     - Prefer ECO 2023 Principles of Microeconomics or 3 hrs
   - Select one class from Social Foundations 3 hrs

   E: Science Foundations (7 hrs)
   - Required PHY 2048C Physics for Engineers & Scientists I 4 hrs
   - Select one class from Science Foundations 3 hrs

2. Common Program Prerequisites (CPP) (19 hrs)
   - These courses are specifically required for all engineering students of the Florida State University System. CPP courses are also available at other Florida post-secondary schools and may be transferred directly to UCF programs.
   - See “Common Prerequisites” in the Transfer and Transitions Services section for more information.

   1. MAC 2311C Calculus with Analytic Geometry I GEP
   2. MAC 2312 Calculus with Analytic Geometry II 4 hrs
   3. MAC 2313 Calculus with Analytic Geometry III 4 hrs
   4. MAP 2302 Ordinary Differential Equations I 3 hrs
   5. PHY 2048C Physics for Engineers & Scientists I GEP
   6. PHY 2049C Physics for Engineers and Scientists II 4 hrs

   1 A “C” (2.0) or better is required in this course.

Select one of the following sequences of courses:

-Preferred course
  - CHS 1440 Principles of Chemistry 4 hrs

-First alternative: Select all of the following: 6 hrs
  - CHM 2040 Chemistry Fundamentals IA and 3 hrs
  - CHM 2041 Chemistry Fundamentals IB 3 hrs

-Second alternative
  - CHM 2045 Chemistry Fundamentals I 4 hrs

3. Core Requirements: Basic Level (2 hrs)
   - Required Courses: Basic 2 hrs
   - The College of Engineering and Computer Science requires all engineering students to achieve a minimum 2.25 GPA in completing these courses, together with the core requirements, restricted electives, and senior design courses listed below.

   EGS 1006C Introduction to the Engineering Profession 1 hr
   EGN 1007C Engineering Concepts and Methods 1 hr
4. Core Requirements: Advanced Level  (63 hrs)
Required Courses: Advanced  36 hrs
EGN 3310  Engineering Analysis-Statics  3 hrs
EGN 3343  Thermodynamics  3 hrs
EGN 3365  Structure and Properties of Materials  3 hrs
EGN 3373  Principles of Electrical Engineering  3 hrs
STA 3032  Probability and Statistics for Engineers  GEP 3 hrs
EML 3034C  Modeling Methods in Mechanical and Aerospace Engineering  3 hrs
EML 3300C  Mechanical Engineering Measurements  3 hrs
EGM 3601  Solid Mechanics  3 hrs
EML 3701  Fluid Mechanics I  3 hrs
EML 4142  Heat Transfer II or  3 hrs
EML 3217  Engineering Mechanics - Dynamics  3 hrs
EML 4225  Introduction to Vibrations and Controls  3 hrs
EML 3500  Design and Analysis of Machine Components  3 hrs
Select 2 of the Following:  6 hrs
EML 3101  Thermodynamics of Mechanical Systems or  3 hrs
EML 4143  Heat Transfer II or  3 hrs
EML 4313  Intermediate System Dynamics and Controls or  3 hrs
EML 4703  Fluid Mechanics II or  3 hrs
EML 4504  Design & Analysis of Machine Components II  3 hrs
Select 1 of the Following:  3 hrs
EML 4301C  Mechanical Systems Lab or  3 hrs
EML 4306C  Energy Systems Lab  3 hrs
5. Restricted Electives
Approved Electives  18 hrs
- Technical electives are available in the BSME program to address specific student interests in a variety of technical areas. Students should consult with their Department for a list of approved restricted technical electives and the terms when specific courses of this type are offered.
6. Capstone Requirements  (6 hrs)
- These courses are a capstone experience to your engineering program and should be completed in your last 2 major semesters of study.
- CECS encourages all engineering students to take the Fundamentals Exam during their senior year.
EML 4501C  Engineering Design I  3 hrs
EML 4502C  Engineering Design II  3 hrs
7. Foreign Language Requirements
Admissions
- Two years of one foreign language in high school, or one year of one foreign language in college (or equivalent proficiency exam) prior to graduation.
Graduation
- None
8. Electives
- None
9. Additional Requirements
- None
10. Required Minors
- None
11. Departmental Exit Requirements
- None
12. University Minimum Exit Requirements
- A 2.0 UCF GPA
- 60 semester hours earned after CLEP awarded
- 48 semester hours of upper division credit completed
- 30 of the last 39 hours of course work must be completed in residency at UCF.
- A maximum of 45 hours of extension, correspondence, CLEP, Credit by Exam, and Armed Forces credits permitted.
- Complete the General Education Program, the Gordon Rule, and nine hours of Summer credit.
Total Semester Hours Required
- 128
Honors In Major
- None
### UCF Degree Programs

#### Junior Year - Fall

- **EML 3701**  Fluid Mechanics I  3 hrs
- **EML 3034C**  Modeling Methods in Mechanical and Aerospace Engineering  3 hrs
- **EML 3303C**  Mechanical Engineering Measurements  3 hrs
- **GEP**
- **EML 3990**  Mechanical Career and Academic Faculty Advising I  0 hrs
- **EML 3500**  Design and Analysis of Machine Components  3 hrs

#### Junior Year - Spring

- **EML 4142**  Heat Transfer  3 hrs
- **EML 4225**  Introduction to Vibrations and Controls  3 hrs
- **Upper Division Elective**  3 hrs
- **Upper Division Elective**  3 hrs
- **GEP**  3 hrs

#### Senior Year - Fall

- **Upper Division Elective**  3 hrs
- **Upper Division Elective**  3 hrs
- **EML 4501C**  Engineering Design I  3 hrs
- **EML 4991**  Mechanical Career and Academic Faculty Advising II  0 hrs
- **Select 2**  6 hrs
  - **EML 3101**  Thermodynamics of Mechanical Systems or  3 hrs
  - **EML 4143**  Heat Transfer II or  3 hrs
  - **EML 4313**  Intermediate System Dynamics and Controls or  3 hrs
  - **EML 4703**  Fluid Mechanics II or  3 hrs
  - **EML 4504**  Design & Analysis of Machine Components II  3 hrs

#### Senior Year - Spring

- **EML 4502C**  Engineering Design II  3 hrs
- **Upper Division Elective**  3 hrs
- **Upper Division Elective**  3 hrs
- **Select 1**  3 hrs
  - **EML 4301C**  Mechanical Systems Lab or  3 hrs
  - **EML 4306C**  Energy Systems Lab  3 hrs

### Program Academic Learning Compacts

- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at: [http://www.oeas.ucf.edu/academiclearningcompacts.html](http://www.oeas.ucf.edu/academiclearningcompacts.html)

### Equipment Fees

- Part-Time Student: $45 per term
- Full-Time Student: $90 per term