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: MAEdvising@ucf.edu

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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 change of major in the term of completion of the final pending prerequisite course(s) listed above.

Degree Requirements

- 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 unsuccessful attempts (i.e., grades below "C" (2.0) and withdraws) 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.
- A student who is excluded from CECS and COP majors may seek readmission to a major in CECS or COP after at least one full year has passed since exclusion. Readmission is not automatic and is dependent upon a high probability of success after readmission. Any student who is readmitted to the Mechanical Engineering major will be subject to all probation conditions that applied at the time of exclusion.

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:

- Prefer SPC 1603C Fundamentals of Technical Presentations or 3 hrs
- 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 General Physics Using Calculus 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
1 MAC 2312 Calculus with Analytic Geometry II  4 hrs
1 MAC 2313 Calculus with Analytic Geometry III  4 hrs
1 MAP 2302 Ordinary Differential Equations I  3 hrs
1 PHY 2048C General Physics Using Calculus I  GEP
1 PHY 2049C General Physics Using Calculus 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

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

or- Second alternative
  - CHM 2045C 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.

EGN 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 3 hrs
- EML 3034C Modeling Methods in Mechanical and Aerospace Engineering 3 hrs
- EML 3303C Mechanical Engineering Measurements 3 hrs
- EGM 3601 Solid Mechanics I 3 hrs
- EML 3701 Fluid Mechanics I 3 hrs
- EML 4142 Heat Transfer 3 hrs
- EGN 3321 Engineering Analysis-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

Related Programs  
- Aerospace Engineering  
- Certificates  
- None

Related Minors  
- Intelligent Robotic Systems (IRS) - Interdisciplinary  
- Engineering Leadership

Advising Notes  
- Double Degree/Double Major requirements listed under the college section of the catalog.

Career and Academic Advising  
- The department requires all students in the program meet with a faculty member for advising on career and academic issues. These courses must be taken in sequence during the 3rd and 4th year.

EML 3933 Mechanical Career and Academic Faculty Advising I 0 hrs  
EML 4931 Mechanical Career and Academic Faculty Advising II 0 hrs

Transfer Notes  
- EGS 1006C and EGN 1007C are required courses for incoming freshmen only. The two credit hours for these courses will be substituted by an approved Mechanical Engineering technical elective for transfer students.
- Courses transferred must be formally evaluated for equivalency credit. The student must provide all supporting information with his/her petition for this evaluation.

Acceptable Substitutes for Transfer Courses  
- None

Plan of Study (128 hrs)  
- Tentative Course Schedule for Entering Freshmen: The tentative course schedule listed below is a guide for those students who plan on completing their degree in four years. All engineering students should meet with their Department to develop and maintain an appropriate plan of study.

Freshman Year - Fall 12 hrs  
- EGS 1006C Introduction to the Engineering Profession 1 hr  
- ENC 1101 Composition I 3 hrs  
- MAC 2311C Calculus with Analytic Geometry I 4 hrs

Select 1: 4 hrs  
- CHS 1440 Principles of Chemistry or 4 hrs  
- CHM 2040 Chemistry Fundamentals IA or 4 hrs  
- CHM 2041 Chemistry Fundamentals IA 3 hrs

Freshman Year - Spring 15 hrs  
- EGN 1007C Engineering Concepts and Methods 1 hr  
- ENC 1102 Composition II 3 hrs  
- MAC 2312 Calculus with Analytic Geometry II 4 hrs  
- PHY 2048C General Physics Using Calculus I 4 hrs  
- GEP 3 hrs

Freshman Year - Summer 10 hrs  
- MAC 2313 Calculus with Analytic Geometry III 4 hrs  
- GEP 3 hrs  
- EGN 3365 Structure and Properties of Materials 3 hrs

Sophomore Year - Fall 13 hrs  
- MAP 2302 Ordinary Differential Equations I 3 hrs  
- EGN 3310 Engineering Analysis-Statistics 3 hrs  
- STA 3032 Probability and Statistics for Engineers 3 hrs  
- PHY 2049C General Physics Using Calculus II 4 hrs

Sophomore Year - Spring 12 hrs  
- EGN 3343 Thermodynamics 3 hrs  
- EGM 3601 Solid Mechanics 3 hrs  
- EGN 3373 Principles of Electrical Engineering 3 hrs  
- EGN 3321 Engineering Analysis-Dynamics 3 hrs

Sophomore Year - Summer 9 hrs  
- GEP 3 hrs  
- GEP 3 hrs  
- GEP 3 hrs

Junior Year - Fall 15 hrs  
- 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 3 hrs  
- EML 3933 Mechanical Career and Academic Faculty Advising I 0 hrs  
- EML 3500 Design and Analysis of Machine Components 3 hrs

Junior Year - Spring 15 hrs  
- 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

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<tr>
<td>EML 4501C</td>
<td>Engineering Design I</td>
<td>3 hrs</td>
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<tr>
<td>EML 4931</td>
<td>Mechanical Career and Academic Faculty Advising II</td>
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<tr>
<td>EML 3101</td>
<td>Thermodynamics of Mechanical Systems or Controls or Fluid Mechanics II or Design &amp; Analysis of Machine Components II</td>
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<td>EML 4143</td>
<td>Heat Transfer II or Intermediate System Dynamics and Controls or Fluid Mechanics II or Design &amp; Analysis of Machine Components II</td>
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### Senior Year - Spring

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<td>Engineering Design II</td>
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<td>Upper Division Elective</td>
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#### Select 1

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<tr>
<td>EML 4301C</td>
<td>Mechanical Systems Lab or Energy Systems Lab</td>
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### Program Academic Learning Compacts

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

### Equipment Fees

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