

UCF Degree Programs

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>

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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 withdrawals) 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: (3 hrs)

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	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
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
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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
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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
EML 3034C	Modeling Methods in Mechanical and Aerospace Engineering	3 hrs
EML 3303C	Mechanical Engineering Measurements	3 hrs
EGM 3601	Solid Mechanics	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

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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 2045C	Chemistry Fundamentals I or	4 hrs
1CHM 2040	Chemistry Fundamentals IA	3 hrs

¹ Must take CHM 2041 to complete the sequence

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-Statics	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

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Senior Year - Fall	15 hrs
Upper Division Elective	3 hrs
Upper Division Elective	3 hrs
EML 4501C Engineering Design I	3 hrs
EML 4931 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	12 hrs
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/alc/academic_learning_compacts.htm

Equipment Fees

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