Industrial Engineering (B.S.I.E.)

Department of Industrial Engineering and Management Systems, Engineering II, Room: 312

http://www.iems.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
- Each engineering student is assigned a qualified engineering academic advisor in the department of his/her major. Each student should seek academic advisement before registering for classes each semester to minimize excess hours and to ensure that satisfactory academic progress is being maintained.
- Students in the Industrial 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 Industrial 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 Industrial 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 Industrial 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 section, General Education Program, found 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
- Prefer SPC 1800C Fundamentals of Technical Presentations 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:
  - Prefer ECO 2013 Principles of Macroeconomics or 3 hrs
  - Prefer ECO 2023 Principles of Microeconomics or 3 hrs
- Select one class from Social Foundations Group 2 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. A 2.0 cumulative GPA or better is required for those courses in this section.
- 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 2094C General Physics Using Calculus II 4 hrs
- 1 A 2.0 cumulative GPA or better is required for this course.
- 2 Preferred

3. Core Requirements: Basic Level Engineering Core: Basic (2 hrs)
- The College of Engineering and Computer Science requires all engineering students to achieve a minimum 2.250 GPA in completing the core courses required for the major, together with the 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 Courses Required for the Major (59 hrs)
- The Industrial Engineering and Management Systems department requires all students within the major to achieve a “C” (2.0) GPA or better in all courses in this section with a prefix of EIN, EGS, ESI, STA and MAS.

EGS 4624 Engineering Innovation and Leadership 3 hrs
STA 3032 Probability and Statistics for Engineers 3 hrs
EIN 3314 Work Analysis and Design 3 hrs
ESI 4628 Decision Support Systems for Industrial Engineers 3 hrs
EIN 4243C Human Engineering 3 hrs
EIN 4333 Production and Distribution Systems 3 hrs
EIN 4364 Facilities Planning 3 hrs
EIN 4391 Manufacturing Engineering 3 hrs
ESI 4221 Empirical Methods for Industrial Engineering 3 hrs
ESI 4234 Quality Engineering 3 hrs
ESI 4312 Operations Research 3 hrs
ESI 4523 Systems Simulation 3 hrs
EIN 4517 Systems Engineering 3 hrs
EGN 3310 Engineering Analysis-Statics 3 hrs
1 COP 3233C Introduction to Programming with C 3 hrs
EGN 3321 Engineering Analysis-Dynamics 3 hrs
EGN 3373 Principles of Electrical Engineering 3 hrs
11. Department Exit Requirements (4 hrs)

Select 1:
- EGN 3358 Thermo-Fluids-Heat Transfer or 3 hrs
- EGN 3343 Thermodynamics 3 hrs

1 Courses with significant programming content in C, C++ or Java may be used to satisfy this requirement but must be approved by the IEMS undergraduate coordinator.

5. Restricted Electives (6 hrs)

- Technical electives are available in the BSIE program to address specific student interests in a variety of technical areas. Students should consult with their assigned academic advisor for a list of the approved technical electives and the terms when specific courses of this type are to be offered.

6. Capstone Requirements

- None

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 (4 hrs)

Select 1:
- EGN 4891C Industrial Engineering Senior Design 4 hrs

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

- Mechanical Engineering

Certificates

- None

Related Minors

- None

Advising Notes

- None

Transfer Notes

- Courses transferred must be formally evaluated for equivalency credit. The student must provide all supporting information with his/her petition for this evaluation.
- EGN 1005C and EGN 1007C are required courses for incoming freshmen only. The credits for these two courses (one hour each) may, with prior approval of the department academic advisor, be moved to area 5. Restricted Electives.

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 faculty advisor to develop and maintain an appropriate plan of study.

Freshman Year - Fall
- EIN 1101 Composition I 3 hrs
- EGS 1006C Introduction to the Engineering Profession 1 hr
- MAC 2311C Calculus with Analytic Geometry I 4 hrs
- CHS 1440 Principles of Chemistry 4 hrs

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

Freshman Year - Summer
- COP 3223C Introduction to Programming with C 3 hrs

Select 1:
- ECO 2013 Principles of Macroeconomics or 3 hrs
- ECO 2023 Principles of Microeconomics 3 hrs

Select 1
- SPC 1603C Fundamentals of Technical Presentations or 3 hrs
- SPC 1608 Fundamentals of Oral Communication 3 hrs

Sophomore Year - Fall
- MAC 2313 Calculus with Analytic Geometry III 4 hrs
- STA 3032 Probability and Statistics for Engineers 3 hrs
- EIN 2002 Introduction to Industrial Engineering and Management Systems 1 hr
- GEP 3 hrs
- EGN 3310 Engineering Analysis-Statics 3 hrs

Sophomore Year - Spring
- MAP 2302 Ordinary Differential Equations I 3 hrs
- EGN 3321 Engineering Analysis-Dynamics 3 hrs
- MAS 3105 Matrix and Linear Algebra 4 hrs
- EIN 3351 Engineering Economic Analysis and Cost Engineering 3 hrs

Sophomore Year - Summer
- GEP 3 hrs
- PHY 2049C General Physics Using Calculus II 4 hrs

Junior Year - Fall
- EIN 3314 Work Analysis and Design 3 hrs
- ESI 4312 Operations Research 3 hrs
- ESI 4628 Decision Support Systems for Industrial Engineers 3 hrs
- EGN 3373 Principles of Electrical Engineering 3 hrs

Junior Year - Spring
- ESI 4323 Systems Simulation 3 hrs
- EIN 4333 Production and Distribution Systems 3 hrs
- EIN 4364 Facilities Planning 3 hrs
- EIN 4243C Human Engineering 3 hrs

Junior Year - Summer
- GEP 3 hrs
- GEP 3 hrs
- EGN 3343 Thermodynamics 3 hrs

Senior Year - Fall
- Approved Technical Elective 3 hrs
- EIN 4319 Manufacturing Engineering 3 hrs
- ESI 4234 Quality Engineering 3 hrs
- ESI 4221 Empirical Methods for Industrial Engineering 3 hrs

Senior Year - Spring
- EIN 4891C Industrial Engineering Senior Design 4 hrs

Project
- Approved Technical Elective 3 hrs
- EGS 4624 Engineering Innovation and Leadership 3 hrs
- EIN 4517 Systems Engineering 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: $38 per term
- Full-Time Student: $77 per term