UCF Degree Programs

Computer Engineering (B.S.Cp.E.)

College of Engineering and Computer Science

Department of Electrical and Computer Engineering,

Harris Corp. Engineering Center, Room: 346

http://www.eecs.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 CHS 1440 or CHM 2045C.
- 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 Computer 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 Optical and Photonics (COP). Therefore, any student majoring in Computer 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 Computer 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 Computer 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 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
Suggested 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 Microeconomics or 3 hrs
Prefer ECO 2023 Principles of Macroeconomics 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 1: 4 hrs
1 CHS 1440 Principles of Chemistry or 4 hrs
1 CHM 2045C Chemistry Fundamentals I 4 hrs

1 Preferred

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. To enroll in CPP major courses, a 2.0 (C or better) in each course is required.
- See “Common Prerequisites” in the Transfer and Transitions Services section for more information.

MAC 2311C Calculus with Analytic Geometry I GEP
MAC 2312 Calculus with Analytic Geometry II 4 hrs
MAC 2313 Calculus with Analytic Geometry III 4 hrs
MAP 2302 Ordinary Differential Equations I 3 hrs
PHY 2048C General Physics Using Calculus I GEP
PHY 2049C General Physics Using Calculus II 4 hrs

Select 1: 4 hrs
1 CHS 1440 Principles of Chemistry or 4 hrs
1 CHM 2045C Chemistry Fundamentals I 4 hrs

1 Preferred

3. Core Requirements: Basic Level (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 courses required for the major in section 4 below, technical elective courses listed in section 5 below and with the senior design courses listed in section 6 below. Independent study courses generally do not satisfy major requirements.

EGS 1000C Introduction to the Engineering Profession 1 hr
EGN 1007C Engineering Concepts and Methods 1 hr

4. Core Requirements: Advanced Level (57 hrs)

Engineering Core 6 hrs
EGN 3310 Engineering Analysis-Statics 3 hrs
STA 3032 Probability and Statistics for Engineers GEP

Select 1: 3 hrs
EGN 3321 Engineering Analysis-Dynamics or 3 hrs
EGN 3358 Thermo-Fluids-Heat Transfer 3 hrs

Courses Required for the Major 48 hrs

COT 3100C Introduction to Discrete Structures 3 hrs
COP 3502C Computer Science I 3 hrs
COP 3503C Computer Science II 3 hrs
COP 3330 Object Oriented Programming 3 hrs
COP 4331C Processes for Object-Oriented Software Development 3 hrs
EEL 3004C Electrical Networks 3 hrs
EEL 3123C Networks and Systems 4 hrs
EEE 3307C Electronics I 4 hrs
EEL 3342C Digital Systems 3 hrs
1 EEL 3801C Computer Organization 3 hrs
1 EEL 4742C Embedded Systems 4 hrs
EEL 4768 Computer Architecture 3 hrs
EEL 4781 Computer Communication Networks 3 hrs
COP 4600 Operating Systems 3 hrs
1 EGN 3211 Engineering Analysis and Computation 3 hrs

1 A “C” (2.0) or better is required in this course.
5. Restricted Electives (9 hrs)
- Technical electives are available in the BSCpE program to address specific student interests and areas such as Software Engineering. Students should consult with their academic advisor for the identification of courses which are approved technical electives and the terms when specific courses of this type are to be offered.

6. Capstone Requirements (6 hrs)
- EEL 4914 Senior Design I 3 hrs
- EEL 4915L Senior 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
- Computer engineering students must earn at least 32 hours in residence at UCF.
- 24 of the 32 Residency hours must be at the 3000-5000 level courses taken from the EECS Department at UCF and applicable to the degree program.

10. Required Minors
- None

11. Departmental Exit Requirements
- CECS encourages all engineering students to take the Fundamentals Exam during their senior year.

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
- Computer Science
- Electrical Engineering
- Information Technology
- Mathematics - Engineering/Physics Track
- Physics

Certificates
- None

Related Minors
- Information Technology
- Intelligent Robotic Systems (IRS) - Interdisciplinary
- Engineering Leadership
- Mathematics
- Physics

Advising Notes
- Each engineering student should meet regularly with an academic advisor in the major department.
- The Computer Engineering program offers the Accelerated BS/MS Program to students of high academic standing. This program allows up to twelve hours to be shared between the BS and MS degrees. See your department or the Accelerated program section in the back of this catalog for more information.
- Each student should seek academic advisment before registering for classes each semester to minimize excess hours and to ensure that satisfactory academic progress is being maintained.

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.
- EGS 1006C 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 and academic advisor, be moved to the Restricted Elective area.

Acceptable Substitutes for Transfer Courses
- None

Plan of Study (128 hrs)
- 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 15 hrs
- EGS 1006C Introduction to the Engineering Profession 1 hr
- MAC 2311C Calculus with Analytic Geometry I 4 hrs
- GEP - Historical Foundation 3 hrs

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

Select 1: 4 hrs
- CHS 1440 Principles of Chemistry or
- CHM 2454C Chemistry Fundamentals I 4 hrs

Freshman Year - Spring 15 hrs
- EGN 1007C Engineering Concepts and Methods 1 hr
- ENC 1101 Composition I 3 hrs
- MAC 2312C Calculus with Analytic Geometry II 4 hrs
- PHY 2048C General Physics I 4 hrs
- EEL 3123C Networks and Systems 4 hrs
- MAC 2313C Calculus with Analytic Geometry III 4 hrs
- MAC 2314C Calculus with Analytic Geometry IV 3 hrs
- GEP - Historical Foundation 3 hrs

Sophomore Year - Fall 17 hrs
- PHY 2049C General Physics II 4 hrs
- ENC 3110 Engineering Analysis and Computation 3 hrs
- EGN 3310 Engineering Analysis-Statics 3 hrs
- EGN 2313C Calculus with Analytic Geometry I 4 hrs
- CHM 2454C Chemistry Fundamentals II 4 hrs

Sophomore Year - Spring 15 hrs
- EEL 3304C Electrical Networks 3 hrs
- EEE 3347C Digital Systems 3 hrs
- MAP 2302 Ordinary Differential Equations I 3 hrs
- ENC 1102 Composition II 3 hrs
- GEP - Science Foundation 3 hrs

Sophomore Year - Summer 10 hrs
- EEL 3123C Networks and Systems 4 hrs
- EEL 3801C Computer Organization 3 hrs
- GEP - Cultural Foundation 3 hrs

Junior Year - Fall 16 hrs
- COP 3330 Object Oriented Programming 3 hrs
- COP 3502C Computer Science I 3 hrs
- STA 3032 Probability and Statistics for Engineers 3 hrs
- EEE 3307C Electronics I 4 hrs

Select 1: 3 hrs
- EGN 3321 Engineering Analysis-Dynamics or
- EGN 3358 Thermodynamics 3 hrs

Junior Year - Spring 13 hrs
- COP 3503C Computer Science II 3 hrs
- EEL 4742C Embedded Systems 4 hrs
- EEL 4768 Computer Architecture 3 hrs
- GEP - Social Foundation 3 hrs

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#### Senior Year - Fall
- COP 4331C  Processes for Object-Oriented Software Development  3 hrs
- EEL 4914  Senior Design I  3 hrs
- Restricted Elective  3 hrs
- Restricted Elective  3 hrs

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

**Senior Year - Spring**
- COP 4600  Operating Systems  3 hrs
- EEL 4915L  Senior Design II  3 hrs
- EEL 4781  Computer Communication Networks  3 hrs
- Restricted Elective  3 hrs

**15 hrs**

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

#### Equipment Fees
- Part-Time Student: $42 per term
- Full-Time Student: $84 per term