## UCF Degree Programs

### Electrical Engineering - Communications and Signal Processing Track (B.S.E.E.)

**College of Engineering and Computer Science**  
**Department of Electrical and Computer Engineering**  
**Harris Corp. Engineering Center, Room: 346**  
**Email: undergraduate@ece.ucf.edu**  
**Dr. Parveen Wahid**  
**Charlese Hilton-Brown**  
**Phone: 407-823-3327**

### 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 Electrical 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 Electrical 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 Electrical 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 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 Electrical 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  
- 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 or 3 hrs  
- Select one class from Social Foundations 3 hrs

#### E: Science Foundations (7 hrs)

- Required PHY 2048C General Physics Using Calculus I GEP 4 hrs  
- Required MAP 2302 Ordinary Differential Equations I 3 hrs

- Select 1: 4 hrs  
  - 1 CHS 1440 Principles of Chemistry or 4 hrs  
  - 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 2.250 GPA in completing these courses, together with the courses required for the major, technical elective courses, and with the senior design courses. Independent study courses generally do not satisfy major requirements.

#### 4. Core Requirements: Advanced Level (53 hrs)

- Required PHY 3101 General Physics Using Calculus III 3 hrs

#### Courses Required for the Engineering Core

- Required PHY 2048C General Physics Using Calculus I GEP 4 hrs
- Required PHY 2048C General Physics Using Calculus II GEP 4 hrs
- Required PHY 2048C General Physics Using Calculus III GEP 4 hrs
- Required MAP 2302 Ordinary Differential Equations I 3 hrs

#### Courses Required for the Major

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

#### Junior Level Electives

- Required EEL 3123C Networks and Systems 3 hrs  
- Required EEL 3342C Digital Systems 3 hrs  
- Required EEL 3801C Computer Organization 4 hrs  
- Required EEL 3926L Junior Design 1 hr  
- Required EEL 3950C Digital Signal Processing Fundamentals 3 hrs  
- Required EEL 4515C Fundamentals of Digital Communication 4 hrs  
- Required EEL 4742C Embedded Systems 3 hrs

#### Senior Level Electives

- Required EEL 4140C Analog Filter Design or 4 hrs  
- Required EEL 4518 Satellite Communications or 3 hrs  
- Required EEL 4781 Computer Communication Networks or 3 hrs  
- Required EEL 5513 Digital Signal Processing Applications or 3 hrs  
- Required EEL 5542 Random Processes I or 3 hrs

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**UNIVERSITY OF CENTRAL FLORIDA**

Undergraduate Catalog 2017-2018
5. Restricted Electives
- Technical electives are available in the BSEE program to address specific student interests in a variety of technical areas. Students should consult their academic advisor for the identification of courses that are approved technical electives and the terms when specific courses of this type are to be offered.

Technical Electives 10 hrs
- Technical elective courses are to be selected by the student from department approved courses.

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
- Electrical 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 ECE 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 Engineering
- Computer Science
- Mathematics - Engineering/Physics Track
- Physics

Certificates
- None

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

Advising Notes
- Each engineering student should meet with their academic advisor in the department of their major regularly.

- 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.
- The Electrical 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.

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 academic advisor, be moved to the Restricted Elective area.

Acceptable Substitutes for Transfer Courses
- None

Plan of Study

Freshman Year - Fall
- 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:
- 1 SPC 1603C  Fundamentals of Technical Presentations  3 hrs

Freshman Year - Spring
- 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
- ENC 1101  Composition I  3 hrs

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

Sophomore Year - Fall
- ENC 1102  Composition II  3 hrs
- PHY 2049C  General Physics Using Calculus II  4 hrs
- MAC 2313  Calculus with Analytic Geometry III  4 hrs
- EGN 3211  Engineering Analysis and Computation  3 hrs

Sophomore Year - Spring
- PHY 3101  General Physics Using Calculus III  3 hrs
- EEL 3004C  Electrical Networks  3 hrs
- MAP 2302  Ordinary Differential Equations I  3 hrs
- EEE 3342C  Digital Systems  3 hrs
- GEP- Cultural Foundation  3 hrs

Sophomore Year - Summer
- EEL 3123C  Networks and Systems  3 hrs
- STA 3032  Probability and Statistics for Engineers  3 hrs
- GEP- Social Foundation  3 hrs

Junior Year - Fall
- EEL 3801C  Computer Organization  4 hrs
- GEP- Science Foundation  3 hrs
- EEL 3552C  Signal Analysis and Analog Communication  4 hrs
- Junior Level Elective  3 hrs
- Junior Level Elective  3 hrs

Junior Year - Spring
- EEE 3307C  Fundamentals of Wire Communications  3 hrs
- EEL 4750  Digital Signal Processing Fundamentals  3 hrs
- EEL 4742C  Embedded Systems  3 hrs
- EEL 3922L  Junior Design  1 hr
- EEL 3021  Introduction to Applied Randomness for Engineers  3 hrs
- GEP- Historical Foundation  3 hrs
### UCF Degree Programs

#### Senior Year - Fall

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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)