# UCF Degree Programs

## Electrical Engineering (B.S.E.E.)

**College of Engineering and Computer Science**  
Department of Electrical Engineering and Computer Science, Harris Corp. Engineering Center, Room: 346  
http://www.eecs.ucf.edu  
Email: undergraduate@eecs.ucf.edu  
Dr. Samuel Richie  
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 may not accumulate five or more grades of W, WP, or WF at UCF and 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 accumulates three grades of W, WP, or WF at UCF will be placed on W Probation and will remain on W Probation as long as the student is enrolled in a CECS or COP major. If a student on W Probation receives a fifth grade of W, WP, or WF, the student will be excluded from all CECS and COP majors.
- 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 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. If 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.
- A student who is excluded from CECS and COP majors in Electrical Engineering major who has accumulated five or more grades of W, WP, or WF at UCF and 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) 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.

<table>
<thead>
<tr>
<th>1. UCF General Education Program (GEP) (38 hrs)</th>
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<tbody>
<tr>
<td>A: Communication Foundations (9 hrs)</td>
</tr>
<tr>
<td>Required ENC 1101 Composition I 3 hrs</td>
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<tr>
<td>Required ENC 1102 Composition II 3 hrs</td>
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<tr>
<td>Select 1: 3 hrs</td>
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<tr>
<td>Prefer SPC 1603C Fundamentals of Technical Presentations or 3 hrs</td>
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<tr>
<td>Suggested SPC 1608 Fundamentals of Oral Communication 3 hrs</td>
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<tr>
<td>B: Cultural &amp; Historical Foundations (9 hrs)</td>
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<tr>
<td>Select two courses from Historical Foundations 6 hrs</td>
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<tr>
<td>Select one course from Cultural Foundations 3 hrs</td>
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<tr>
<td>C: Mathematical Foundations (7 hrs)</td>
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<tr>
<td>Required MAC 2311C Calculus with Analytic Geometry I 4 hrs</td>
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<tr>
<td>Required STA 3032 Probability and Statistics for Engineers 3 hrs</td>
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<tr>
<td>D: Social Foundations (6 hrs)</td>
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<tr>
<td>Select 1: 3 hrs</td>
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<tr>
<td>Prefer ECO 2013 Principles of Macroeconomics or 3 hrs</td>
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<tr>
<td>Prefer ECO 2023 Principles of Microeconomics 3 hrs</td>
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<tr>
<td>Select one course from Social Foundations 3 hrs</td>
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<tr>
<td>E: Science Foundations (7 hrs)</td>
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<tr>
<td>Required PHY 2048C Physics for Engineers &amp; Scientists I 4 hrs</td>
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<tr>
<td>Select one course from Science Foundations 3 hrs</td>
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<tr>
<th>2. Common Program Prerequisites (CPP) (19 hrs)</th>
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<tr>
<td>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 EE major courses, a 2.0 (C or better) in each course is required for those courses indicated.</td>
</tr>
<tr>
<td>1 MAC 2311C Calculus with Analytic Geometry I GEP</td>
</tr>
<tr>
<td>1 MAC 2312 Calculus with Analytic Geometry II 4 hrs</td>
</tr>
<tr>
<td>1 MAC 2313 Calculus with Analytic Geometry III 4 hrs</td>
</tr>
<tr>
<td>1 PHY 2048C Physics for Engineers &amp; Scientists I GEP</td>
</tr>
<tr>
<td>1 PHY 2049C Physics for Engineers &amp; Scientists II 4 hrs</td>
</tr>
<tr>
<td>1 MAP 2302 Ordinary Differential Equations I 3 hrs</td>
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<tr>
<td>Select 1: 4 hrs</td>
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<tr>
<td>1 CHS 1440 Principles of Chemistry or 4 hrs</td>
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<tr>
<td>CHM 2045C Chemistry Fundamentals I 4 hrs</td>
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<tr>
<td>1 A “C” (2.0) or better is required in this course.</td>
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<tr>
<td>2 Preferred</td>
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### 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.

| EGS 1006C Introduction to the Engineering Profession 1 hr |
| EGN 1007C Engineering Concepts and Methods 1 hr |

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

<table>
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<tr>
<th>Courses Required for the Engineering Core (9 hrs)</th>
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<tbody>
<tr>
<td>EGN 3310 Engineering Analysis-Statics 3 hrs</td>
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<tr>
<td>STA 3032 Probability and Statistics for Engineers GEP</td>
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<tr>
<td>PHY 3011 Physics for Engineers and Scientists III 3 hrs</td>
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<tr>
<td>Select 1: 3 hrs</td>
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<tr>
<td>EGN 3321 Engineering Analysis-Dynamics or 3 hrs</td>
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<tr>
<td>EGN 3358 Thermo-Fluids-Heat Transfer 3 hrs</td>
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</table>
Courses Required for the Major  44 hrs
EEL 3004C  Electrical Networks  3 hrs
EEL 3123C  Networks and Systems  4 hrs
EEE 3350  Semiconductor Devices I  3 hrs
EEE 3307C  Electronics I  4 hrs
EEE 3342C  Digital Systems  3 hrs
EEL 3470  Electromagnetic Fields  3 hrs
EEL 3552C  Analog and Digital Communication Fundamentals  4 hrs
EEL 3657  Linear Control Systems  3 hrs
EEL 3801C  Computer Organization  3 hrs
EEE 4309C  Electronics II  4 hrs
EEL 4750  Digital Signal Processing Fundamentals  3 hrs
EEL 4742C  Embedded Systems  4 hrs
EGN 3211  Engineering Analysis and Computation  3 hrs

5. Restricted Electives  (10 hrs)
- Technical electives are available in the BSEE program to address specific student interests in a variety of technical areas such as microelectronics, wireless communication, and photonics. Students should consult with 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 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 residence 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  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
SPC 1603C  Fundamentals of Technical Presentations  3 hrs
or
SPC 1608  Fundamentals of Oral Communication  3 hrs

Select 1:  4 hrs
CHS 1440  Principles of Chemistry or  4 hrs

Preferred
Freshman Year - Spring  15 hrs
EGN 1007C  Engineering Concepts and Methods  1 hr
MAC 2312  Calculus with Analytic Geometry II  4 hrs
PHY 2049C  Physics for Engineers and Scientists II  4 hrs
ENC 1101  Composition I  3 hrs
Select 1:  3 hrs
ECO 2013  Principles of Macroeconomics or  3 hrs
ECO 2023  Principles of Microeconomics  3 hrs

Sophomore Year - Fall  14 hrs
ENC 1102  Composition II  3 hrs
PHY 2048C  Physics for Engineers & Scientists II  4 hrs
EGN 3310  Engineering Analysis-Statics  3 hrs
MAC 2313  Calculus with Analytic Geometry III  4 hrs

Sophomore Year - Spring  15 hrs
PHY 3101  Physics for Engineers and Scientists 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  10 hrs
EGN 3211  Engineering Analysis and Computation  3 hrs
EEL 3123C  Networks and Systems  4 hrs
GEP-Social Foundation  3 hrs

Junior Year - Fall  13 hrs
EEE 3350  Semiconductor Devices I  3 hrs
EEL 3552C  Analog and Digital Communication Fundamentals  4 hrs
GEP-Science Foundation  3 hrs

UNIVERSITY OF CENTRAL FLORIDA
Undergraduate Catalog 2015-2016
## UCF Degree Programs

**Junior Year - Spring**  
17 hrs  
- EEE 3307C  Electronics I  4 hrs  
- EEL 3657  Linear Control Systems  3 hrs  
- EEL 4742C  Embedded Systems  4 hrs  
- STA 3032  Probability and Statistics for Engineers  3 hrs  

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

**Senior Year - Fall**  
16 hrs  
- EEL 4750  Digital Signal Processing Fundamentals  3 hrs  
- EEL 3470  Electromagnetic Fields  3 hrs  
- EEL 4914  Senior Design I  3 hrs  
- Approved Technical Elective  4 hrs  
- GEP-Historical Foundation  3 hrs

**Senior Year - Spring**  
13 hrs  
- EEL 4915L  Senior Design II  3 hrs  
- EEE 4309C  Electronics II  4 hrs  
- Approved Technical Elective  3 hrs  
- Approved Technical Elective  3 hrs

## Program Academic Learning Compacts

- Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at:  

## Equipment Fees

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