### UCF Degree Programs

#### Computer Engineering - Comprehensive Track

**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](http://www.eecs.ucf.edu)

**Email:** undergraduate@ece.ucf.edu

Dr. Parveen Wahid
Charlese Hilton-Brown
Diane D’Avanzo

**Phone:** 407-823-3327

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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 Optics 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.

<table>
<thead>
<tr>
<th>A: Communication Foundations (9 hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required ENC 1101 Composition I 3 hrs</td>
</tr>
<tr>
<td>Required ENC 1102 Composition II 3 hrs</td>
</tr>
<tr>
<td>Select 1: Suggested SPC 1603C Fundamentals of Technical Presentations or Fundamentals of Oral Communication 3 hrs</td>
</tr>
</tbody>
</table>

#### 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:**
- Preferred ECO 2023 Principles of Microeconomics or ECO 2013 Principles of Macroeconomics 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 PHY 2049C General Physics Using Calculus II GEP 4 hrs |
| Select one course 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. To enroll in CpE 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.

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC 2311C Calculus with Analytic Geometry I</td>
<td></td>
</tr>
<tr>
<td>MAC 2312 Calculus with Analytic Geometry II</td>
<td>4 hrs</td>
</tr>
<tr>
<td>MAC 2313 Calculus with Analytic Geometry III</td>
<td>4 hrs</td>
</tr>
<tr>
<td>MAP 2302 Ordinary Differential Equations</td>
<td>3 hrs</td>
</tr>
<tr>
<td>PHY 2048C General Physics Using Calculus I GEP</td>
<td></td>
</tr>
<tr>
<td>PHY 2049C General Physics Using Calculus II GEP</td>
<td></td>
</tr>
</tbody>
</table>

**Select 1:**
- 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.

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGS 1006C Introduction to the Engineering Profession</td>
<td>1 hr</td>
</tr>
<tr>
<td>EGN 1007C Engineering Concepts and Methods</td>
<td>1 hr</td>
</tr>
</tbody>
</table>

##### 4. Core Requirements: Advanced Level (48 hrs)

**Engineering Core**

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>STA 3032 Probability and Statistics for Engineers GEP</td>
<td></td>
</tr>
</tbody>
</table>

**Courses Required for the Major**

<table>
<thead>
<tr>
<th>REQUIRED</th>
<th>GEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 EGN 3211 Engineering Analysis and Computation</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 3001C Introduction to Discrete Structures</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 COP 3302C Computer Science I</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 COP 3303C Computer Science II</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 COP 3330 Object Oriented Programming</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 COP 4331C Processes for Object-Oriented Software Development</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 3504C Electrical Networks</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 3123C Networks and Systems</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEC 3307C Electronics I</td>
<td>4 hrs</td>
</tr>
<tr>
<td>1 EEC 3342C Digital Systems</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 3801C Computer Organization</td>
<td>4 hrs</td>
</tr>
<tr>
<td>1 EEL 4742C Embedded Systems</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 4768 Computer Architecture</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 EEL 4781 Computer Communication Networks</td>
<td>3 hrs</td>
</tr>
<tr>
<td>1 COP 4600 Operating Systems</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

1 A “C” (2.0) or better is required in this course.
5. Restricted Electives

- Technical electives are available in the BScpE program to address specific student interests in a variety of technical areas such as Software Engineering. 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 - 15 hrs

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

6. Capstone Requirements

EEL 4915L 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 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 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

Junior Year - Spring

16 hrs

ECE 3013C Linear Systems I - 3 hrs

ECE 3032C Signals and Systems 4 hrs

ECE 3332C Digital Logic Design 3 hrs

2 Preferred

Select 1: 3 hrs

Junior Year - Fall

16 hrs

ECE 3150C Introduction to Digital Logic 3 hrs

ECE 3350C Introduction to Analog Circuits 3 hrs

2 Preferred

Select 1: 3 hrs

Senior Year - Spring

16 hrs

ECS 4634C Internship - 3 hrs

ECS 4914C Senior Design II - 3 hrs

2 Preferred

Select 1: 3 hrs

Senior Year - Fall

16 hrs

ECS 4634C Internship - 3 hrs

ECS 4914C Senior Design II - 3 hrs

2 Preferred

Select 1: 3 hrs

Graduation Notes

- 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.

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

- 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

Freshman Year - Spring

15 hrs

EGN 1007C Engineering Concepts and Methods - 1 hr

ENC 1101 Composition I - 3 hrs

MAC 2312 Calculus with Analytic Geometry II - 4 hrs

PHY 2048C General Physics Using Calculus I - 4 hrs

COT 3100C Introduction to Discrete Structures - 3 hrs

Sophomore Year - Fall

14 hrs

PHY 2049C General Physics Using Calculus II - 4 hrs

EGN 3211 Engineering Analysis and Computation - 3 hrs

MAC 2313 Calculus with Analytic Geometry III - 4 hrs

GEP- Historical Foundation - 3 hrs

Sophomore Year - Spring

15 hrs

EEL 3004C Electrical Networks - 3 hrs

ECE 3342C 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 - 3 hrs

EEL 3801C Computer Organization - 4 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

ECE 3337C Electronics I - 4 hrs

GEP- Social Foundation - 3 hrs

Junior Year - Spring

16 hrs

COP 3503C Computer Science II - 3 hrs

EEL 4742C Embedded Systems - 3 hrs

EEL 4788 Computer Architecture - 3 hrs

Technical Elective - 3 hrs

EEL 3925L Junior Design - 1 hr

Select 1: 3 hrs

ECO 2013 Principles of Macroeconomics or

ECO 2023 Principles of Microeconomics - 3 hrs
### Senior Year - Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>COP 4331C</td>
<td>Processes for Object-Oriented Software</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Development</td>
<td></td>
</tr>
<tr>
<td>EEL 4914</td>
<td>Senior Design I</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

**Senior Year - Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>COP 4600</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>EEL 4915L</td>
<td>Senior Design II</td>
<td>3</td>
</tr>
<tr>
<td>EEL 4781</td>
<td>Computer Communication Networks</td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

### 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)

### Equipment Fees

- Part-Time Student: $42 per term
- Full-Time Student: $84 per term