

## UCF Degree Programs

### Construction Engineering (B.S.Con.E.) College of Engineering and Computer Science Department of Civil, Environmental, and Construction Engineering, Engineering II, Room: 211

<http://www.cece.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 or CHM 2040 AND CHM 2041.

■ 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 (128 hrs)

■ The College of Engineering and Computer Science requires all engineering students to achieve a minimum 2.25 GPA in completing the courses from section 3 Basic Core Requirements, section 4 Advanced Core Requirements, section 5 Restricted Electives and section 6 Capstone Requirements listed below. Independent study courses generally do not satisfy major requirements.

■ A "C" (2.0) or better is required in each pre-requisite course in section 2 Common Program Prerequisites, section 4 Advanced Core Requirements, and section 6 Capstone Requirements.

■ Students in the Construction 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 Construction 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 Construction 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 Construction 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.

<b>A: Communication Foundations (9 hrs)</b>		
Required	ENC 1101	Composition I 3 hrs
Required	ENC 1102	Composition II 3 hrs
Suggested	SPC 1603C	Fundamentals of Technical Presentations 3 hrs

<b>B: Cultural &amp; Historical Foundations (9 hrs)</b>		
Select two courses from Historical Foundations 6 hrs		
Select one class from MUL 2010, PHI 2010 or THE 2000 3 hrs		

<b>C: Mathematical Foundations (7 hrs)</b>		
Required	MAC 2311C	Calculus with Analytic Geometry I 4 hrs
Required	STA 3032	Probability and Statistics for Engineers 3 hrs

<b>D: Social Foundations (6 hrs)</b>		
Select one class from Social Foundation Group 1 3 hrs		
Select one course from Social Foundation Group 2 3 hrs		

<b>E: Science Foundations (7 hrs)</b>		
Required	PHY 2048C	General Physics Using Calculus I 4 hrs
Prefer	GEO 1200	Physical Geography 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. Note: MAC 2311C and PHY 2048/48L also satisfy UCF GEP.

■ See "Common Prerequisites" in the Transfer and Transitions Services section for more information.

■ A grade of "C" (2.0) or better is required in each course in this section.

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 one of the following sequences of courses:

- Preferred course  
CHS 1440 Principles of Chemistry 4 hrs

or - First alternative: Select both of the following:  
CHM 2040 Chemistry Fundamentals IA and 3 hrs  
CHM 2041 Chemistry Fundamentals IB 3 hrs

or - Second alternative  
CHM 2045C Chemistry Fundamentals I 4 hrs

#### 3. Core Requirements: Basic Level (2 hrs)

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

#### 4. Core Requirements: Advanced Level (55 hrs)

<sup>1</sup> EGN 3310	Engineering Analysis-Statics	3 hrs
EGN 3321	Engineering Analysis-Dynamics	3 hrs
<sup>1</sup> EGN 3331C	Mechanics of Materials	3 hrs
<sup>1</sup> STA 3032	Probability and Statistics for Engineers	GEP
<sup>1</sup> EGN 3613	Engineering Economic Analysis	2 hrs
<sup>1</sup> ENV 3001	Environmental Engineering	3 hrs
<sup>1</sup> CWR 3201	Engineering Fluid Mechanics	3 hrs
<sup>1</sup> CCE 4003	Introduction to the Construction Industry	3 hrs
<sup>1</sup> CCE 4034	Construction Estimating and Scheduling	3 hrs
<sup>1</sup> CCE 4813	Mechanical and Electrical Systems for Buildings	4 hrs
CCE 4402	Construction Equipment and Productivity	3 hrs
<sup>1</sup> CCE 4004	Construction Methods	3 hrs
CEG 4011C	Geotechnical Engineering I	4 hrs
CGN 3501C	Civil Engineering Materials	3 hrs
CGN 3700C	Civil Engineering Measurements	2 hrs
ACG 2071	Principles of Managerial Accounting	3 hrs
<sup>1</sup> CES 4100C	Structural Analysis I and Lab	4 hrs
CGN 3405	Applied Numerical Methods for Civil Engineering	3 hrs
CWR 4202C	Hydraulics	3 hrs

<sup>1</sup> A "C" (2.0) or better is required in this course.

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### 5. Restricted Electives (8 hrs)

■ Technical electives are available in the BSConE program to address specific student interests in a variety of technical areas. Students should consult the CECE website and 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 (6 hrs)

■ Required Senior Design Courses  
<sup>1</sup> CCE 4810C Construction Design Project 3 hrs  
 CGN 4808C CECE Capstone Design 3 hrs

<sup>1</sup> A "C" (2.0) or better is required in this course.

### 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

■ Construction engineering students must take the Fundamentals of Engineering (FE) Exam during their Senior year. Applications must be received by the Florida Board of Professional Engineers approximately 6 months in advance of your exam date.

### 10. Required Minors

■ None

### 11. Departmental Exit Requirements

■ None

### 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

■ Civil Engineering  
 ■ Environmental Engineering

### Certificates

■ None

### Related Minors

■ Mathematics  
 ■ Engineering Leadership  
 ■ Business

### Advising Notes

■ 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.

■ The Construction Engineering program offers the opportunity for exceptionally well qualified undergraduates to enter directly into the PhD program after completion of an appropriate BS degree. This option allows outstanding undergraduates to begin planning a research program with a specific faculty advisor even before finishing the BS, and may allow completion of the PhD in a shorter time period than by taking a separate Master's followed by the PhD.

### 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 for 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 (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 departmental academic advisor to develop and maintain an appropriate plan of study.

#### Freshman Year - Fall 15 hrs

ENC 1101 Composition I 3 hrs  
 GEP 3 hrs

MAC 2311C Calculus with Analytic Geometry I 4 hrs  
 EGS 1006C Introduction to the Engineering Profession 1 hr  
 CHS 1440 Principles of Chemistry 4 hrs

#### Freshman Year - Spring 14 hrs

ENC 1102 Composition II 3 hrs  
 MAC 2312 Calculus with Analytic Geometry II 4 hrs  
 PHY 2048C General Physics Using Calculus I 4 hrs  
 EGN 1007C Engineering Concepts and Methods 1 hr  
 EGN 3613 Engineering Economic Analysis 2 hrs

#### Sophomore Year - Fall 16 hrs

MAC 2313 Calculus with Analytic Geometry III 4 hrs  
 EGN 3310 Engineering Analysis-Statics 3 hrs  
 GEP 3 hrs  
 ENV 3001 Environmental Engineering 3 hrs  
 STA 3032 Probability and Statistics for Engineers 3 hrs

#### Sophomore Year - Spring 16 hrs

MAP 2302 Ordinary Differential Equations I 3 hrs  
 EGN 3331C Mechanics of Materials 3 hrs  
 PHY 2049C General Physics Using Calculus II 4 hrs  
 EGN 3321 Engineering Analysis-Dynamics 3 hrs  
 CGN 3405 Applied Numerical Methods for Civil Engineering 3 hrs

#### Sophomore Year - Summer 9 hrs

CCE 4003 Introduction to the Construction Industry 3 hrs  
 CWR 3201 Engineering Fluid Mechanics 3 hrs  
 GEP 3 hrs

#### Junior Year - Fall 16 hrs

CES 4100C Structural Analysis I and Lab 4 hrs  
 GEP 3 hrs  
 CCE 4034 Construction Estimating and Scheduling 3 hrs  
 CCE 4813 Mechanical and Electrical Systems for Buildings 4 hrs  
 CGN 3700C Civil Engineering Measurements 2 hrs

#### Junior Year - Spring 16 hrs

CCE 4004 Construction Methods 3 hrs  
 CCE 4402 Construction Equipment and Productivity 3 hrs  
 CCE 4810C Construction Design Project 3 hrs  
 CEG 4011C Geotechnical Engineering I 4 hrs  
 GEP 3 hrs

#### Senior Year - Fall 14 hrs

CGN 3501C Civil Engineering Materials 3 hrs  
 Approved Technical Elective 2 hrs  
 ACG 2071 Principles of Managerial Accounting 3 hrs  
 CWR 4202C Hydraulics 3 hrs  
 GEP 3 hrs

#### Senior Year - Spring 12 hrs

CGN 4808C CECE Capstone Design 3 hrs  
 GEP 3 hrs  
 Technical Electives 6 hrs

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### **Program Academic Learning Compacts**

■ Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at:  
[http://www.oas.ucf.edu/alc/academic\\_learning\\_compacts.htm](http://www.oas.ucf.edu/alc/academic_learning_compacts.htm)

### **Equipment Fees**

- Part-Time Student: \$43 per term
- Full-Time Student: \$85 per term