

UCF Degree Programs

Civil Engineering (B.S.C.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 Civil 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 Civil 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 Civil 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 Civil 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 Systems 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
Suggested	SPC 1603C Fundamentals of Technical Presentations	3 hrs

B: Cultural & Historical Foundations		(9 hrs)
Select two courses from Historical Foundations		6 hrs
Select one course from Cultural Foundations - Suggested		3 hrs
MUL 2010, PHI 2010, or THE 2000		

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 one class from Social Foundation Group 1		3 hrs
Select one class from Social Foundation Group 2		3 hrs

E: Science Foundations		(7 hrs)
Required	PHY 2048C General Physics Using Calculus I	4 hrs

Science Foundation 2		3 hrs
Required	EVR 1001 Introduction to Environmental Science or	3 hrs
Required	GEO 1200 Physical Geography or	3 hrs
Required	GEO 2370 Resources Geography or	3 hrs
Required	GLY 1030 Geology and its Applications	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.

■ 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 all 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
EEN 1007C	Engineering Concepts and Methods	1 hr

Basic Science

EVR 1001	Introduction to Environmental Science or	GEP
GEO 1200	Physical Geography or	GEP
GEO 2370	Resources Geography or	GEP
GLY 1030	Geology and its Applications	GEP

4. Core Requirements: Advanced Level (60 hrs)

¹ EGN 3310	Engineering Analysis-Statics	3 hrs
EGN 3321	Engineering Analysis-Dynamics	3 hrs
¹ EGN 3331C	Mechanics of Materials	3 hrs
¹ EGN 3613	Engineering Economic Analysis	2 hrs
¹ ENV 3001	Environmental Engineering	3 hrs
CCE 4003	Introduction to the Construction Industry	3 hrs
¹ STA 3032	Probability and Statistics for Engineers	GEP
CGN 3700C	Civil Engineering Measurements	2 hrs
CGN 3501C	Civil Engineering Materials	3 hrs
CEG 4011C	Geotechnical Engineering I	4 hrs
¹ CES 4100C	Structural Analysis I and Lab	4 hrs
¹ CWR 3201	Engineering Fluid Mechanics	3 hrs
TTE 3810	Highway Engineering	3 hrs

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CGN 3405	Applied Numerical Methods for Civil Engineering	3 hrs
CWR 4202C	Hydraulics	3 hrs

¹ A "C" (2.0) or better is required in this course.

Civil Engineering Depth Areas 12 hrs

■ Select 2 of the following 5 sequences to complete

Geotechnical: 6 hrs

CEG 4012	Geotechnical Engineering II and	3 hrs
CWR 4124	Hydrogeology	3 hrs

Water Resources: 6 hrs

CWR 4120	Hydrology and	3 hrs
CWR 4124	Hydrogeology	3 hrs

Transportation: 6 hrs

TTE 4274	Transportation Engineering Systems and	3 hrs
TTE 4300	Transportation Analytics	3 hrs

Structures: 6 hrs

CES 4605	Steel Structures and	3 hrs
CES 4702	Reinforced Concrete Structures	3 hrs

Mechanics: 6 hrs

EGN 3343	Thermodynamics and	3 hrs
CES 4205	Structural Mechanics	3 hrs

Civil Engineering Depth Electives 6 hrs

■ Take any of the courses not taken to complete required sequences above OR from the following list:

Environmental:

ENV 4531	Environmental Engineering Unit Operations & Processes or	3 hrs
ENV 4561	Advanced Environmental Engineering Operations & Processes	3 hrs

Construction:

CCE 4034	Construction Estimating and Scheduling or	3 hrs
CCE 4004	Construction Methods	3 hrs

5. Restricted Electives (3 hrs)

■ 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)

■ Senior Design Courses

Design Specialization 3 hrs

¹ CEG 4801C	Geotechnical Engineering Design or	3 hrs
¹ CES 4743C	Structural Design or	3 hrs
¹ CWR 4812C	Water Resources Design or	3 hrs
¹ TTE 4601C	Urban Systems Design	3 hrs
CGN 4808C	CECE Capstone Design	3 hrs

¹ A "C" (2.0) or better is required in this course.

7. Foreign Language Requirements

Admissions

■ Two years of foreign language in high school, or one year of foreign language in college (or equivalent proficiency exam) prior to graduation.

Graduation

■ None

8. Electives

■ None

9. Additional Requirements

■ Civil 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

- Construction Engineering
- Environmental Engineering

Certificates

■ None

Related Minors

- Mathematics
- Engineering Leadership

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 Civil 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 Masters followed by the PhD.

Transfer Notes

■ Courses transferred must be formally evaluated for equivalency credit. The student must provide all supporting information (course syllabus) 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

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Sophomore Year - Spring	16 hrs	
MAP 2302	Ordinary Differential Equations I	3 hrs
PHY 2049C	General Physics Using Calculus II	4 hrs
EGN 3331C	Mechanics of Materials	3 hrs
GEP		3 hrs
CGN 3405	Applied Numerical Methods for Civil Engineering	3 hrs

Sophomore Year - Summer	9 hrs	
GEP		3 hrs
EGN 3321	Engineering Analysis-Dynamics	3 hrs
CWR 3201	Engineering Fluid Mechanics	3 hrs

Junior Year - Fall	16 hrs	
CES 4100C	Structural Analysis I and Lab	4 hrs
CGN 3700C	Civil Engineering Measurements	2 hrs
CEG 4011C	Geotechnical Engineering I	4 hrs
TTE 3810	Highway Engineering	3 hrs
CWR 4202C	Hydraulics	3 hrs

Junior Year - Spring	15 hrs	
GEP		3 hrs
CCE 4003	Introduction to the Construction Industry	3 hrs
CGN 3501C	Civil Engineering Materials	3 hrs
Depth Area 1, Course 1		3 hrs
Depth Area 2, Course 1		3 hrs

Senior Year - Fall	15 hrs	
Approved Project Design Course		3 hrs
Depth Area 1, Course 2		3 hrs
Depth Area 2, Course 2		3 hrs
Depth Elective 1		3 hrs
GEP		3 hrs

Senior Year - Spring	12 hrs	
GEP		3 hrs
CGN 4808C	CECE Capstone Design	3 hrs
Depth Elective 2		3 hrs
Technical Elective		3 hrs

Program Academic Learning Compacts

■ Program Academic Learning Compacts (student learning outcomes) for undergraduate programs are located at:
http://www.oemas.ucf.edu/alc/academic_learning_compacts.htm

Equipment Fees

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