

# UCF Degree Programs

## CIVIL ENGINEERING (B.S.C.E.)

**College of Engineering and Computer Science**  
**Civil, Environmental, and Construction Engineering**  
**Department (CECE)**

**ENG2 211, 407-823-2841; Fax: 407-823-3315**

**<http://www.cee.ucf.edu>**

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**Admission Requirements:** none

### Degree Requirements

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.

### 1. UCF General Education Program for Engineering Students (36+2 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 State University/Community College Systems should complete the GEP and the Common Program Prerequisites *before* transferring.

- A. Communication Foundations 9 hrs
  - 1. ENC 1101 & ENC 1102
  - 2. Prefer SPC 1016
- B. Cultural and Historical Foundations 9 hrs
  - 1. Select two courses from Historical Foundations
  - 2. ARH 2050, ARH 2051, MUL 2010, THE 2000, FIL 1000, REL 2300, PHI 2010, LIT 2110, *or* LIT 2120
- C. Mathematical Foundations 7 hrs
  - 1. Select MAC 2311 (PR: MAC 1114 and MAC 1140)
  - 2. Select STA 3032 (PR: MAC 2312)
- D. Social Foundations 6 hrs
  - 1. Prefer ECO 2013 *or* ECO 2023.
  - 2. ANT 2000, PSY 2012, *or* SYG 2000.
- E. Science Foundations 7 hrs
  - 1. Select PHY 2048/48L (PR: MAC 2311).
  - 2. Prefer GEO 1200

### 2. Common Program Prerequisites (CPP's) (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 2311 and PHY 2048/48L also satisfy UCF GEP sub-requirements, as do ENC 1101, ENC 1102, the Humanities courses, and the Social Science courses.

CHM 2045C/45L	Chemistry Fundamentals I with Lab	4 hrs
<i>or</i> CHS 1440	Fund of Chemistry for Engineers	
MAC 2311	Calculus with Analytic Geometry I	4 hrs
MAC 2312	Calculus with Analytic Geometry II	4 hrs
MAC 2313	Calculus with Analytic Geometry III	4 hrs
MAP 2302	Differential Equations	3 hrs
PHY 2048/48L	Physics for Engineers & Scientists I	GEP
PHY 2049/49L	Physics for Engineers & Scientists II	4 hrs
ENC 1101	Composition I	GEP
ENC 1102	Composition II	GEP
	Humanities Courses	GEP
	Social Science Courses	GEP
	Humanities or Social Sciences	GEP

See "Common Prerequisites" in the Transfer and Transitions Services section (pg. 46) for more information.

### 3. Courses Required for the Major (62 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 technical elective courses listed in 4. below and with the senior design courses listed in 5. below. Independent study courses generally do **not** satisfy major requirements. A "C" (2.0) or better is required for those courses in section 3. marked with an asterisk(\*)

EGN 1006C	Intro to the Engineering Profession	1 hr
EGN 1007C	Engineering Concepts & Methods	1 hr
CHM 2045C	Chemistry Fundamentals I	CPP
CHM 2046	Chemistry Fundamentals II	3 hrs

EGN 3310*	Engineering Analysis - Statics	3 hrs
EGN 3321	Engineering Analysis - Dynamics	3 hrs
EGN 3331*	Mechanics of Materials	3 hrs
EGN 3343	Thermodynamics	3 hrs
CGN 3501C	Civil Engineering Materials	3 hrs
<i>or</i> EGN 3365	Structure & Properties of Materials	
EGN 3373	Principles of Electrical Engineering	3 hrs
EGN 3613	Engineering Economic Analysis	2 hrs
CCE 4003	Intro to the Construction Industry	3 hrs
ENV 3001	Intro to Environmental Engineering	3 hrs
STA 3032	Probability & Statistics for Engineers	GEP
CEG 4011C	Geotechnical Engineering I	4 hrs
CES 4100C	Structural Analysis I	4 hrs
CES 4605	Steel Structures	3 hrs
<i>or</i> CES 4702	Reinforced Concrete Structures	
CWR 3201	Engineering Fluid Mechanics	3 hrs
CWR 4101C	Hydrology	3 hrs
CWR 4203C	Hydraulics	3 hrs
ENV 4561	Environment Engrng-Process Design	4 hrs
SUR 2101C	Surveying	3 hrs
TTE 4004	Transportation Engineering	4 hrs

### 4. Approved Technical Electives (3 hrs)

Technical electives are available in the BSCE program to address specific student interests in a variety of technical areas. Students should consult with 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.

### 5. Departmental Graduation Requirements (6 hrs)

- Approved CE Project Design Course I 3 hrs
- Approved CE Project Design Course II 3 hrs
- Civil engineering students must take the Fundamentals Exam during their Senior year.
- Earn a minimum graduating GPA of 2.25 in the major courses from item 3. above, the technical electives in item 4. above, and the approved CE project design courses.

### 6. Foreign Language Requirements (0-8 hrs)

**Admission:** 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

### 7. University Minimum Graduation Requirements

- A 2.0 UCF GPA.
- 60 semester hours earned after any CLEP award.
- 48 semester hours of upper division credit completed.
- 30 of the last 36 hours of course work must be completed in residency at UCF.
- 25% 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, the CLAST, and nine semester hours of Summer credit (if applicable).

**Total Semester Hours Required:** 128 hrs

**Related Programs:** Construction Engineering, Environmental Engineering

**Related Minors:** Mathematics, Engineering Leadership.

### Transfer Notes:

- Courses taken from Community Colleges do not substitute for Upper Division Courses unless part of an articulated pre-engineering degree program.
- Courses transferred must be formally evaluated for equivalency credit. The student must provide all supporting information with his/her petition for this evaluation.

### 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](http://www.oemas.ucf.edu/alc/academic_learning_compacts.htm)

### Equipment Fee

- Full-time Student .....\$76 per term
- Part-time Student .....\$38 per term

**Tentative Course Schedule for Entering Freshmen**

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.

**Civil Engineering - 128 semester hours required****FIRST YEAR**

Fall	14 hrs <sup>1</sup>	Spring	14 hrs <sup>1</sup>
*ENC 1101 English Comp I	3	*ENC 1102 English Comp II	3
*MAC 2311 Calc w/Analy Geo I	4	*MAC 2312 Calc w/Analy Geo II	4
*ANT/PSY/SYG	3	*PHY 2048/L Phys Engr I w/lab	4
*ECO 2013 Macroeconomics	3	EGN 3613 Eng Econ Anal	2
or ECO 2023 Microeconomics		EGN 1007C Eng Con & Meth	1
EGN 1006C Intro To Eng Prof	1		

**SECOND YEAR**

Fall	14 hrs <sup>1</sup>	Spring	16 hrs <sup>1</sup>
*MAC 2313 Calc w/Analy Geo III	4	*MAP 2302 Diff Equations	3
*CHM 2045C/L Chem Funds I	4	*CHM 2046 Chemistry Funds II	3
*HUM/AMH/EUH - I	3	*PHY 2049/L Phys Eng II w/lab	4
EGN 3310 Engr Anal - Statics	3	*GEO/GLY/BSC	3
		EGN 3321 Engr Anal-Dynamic	3

**Summer**

	9 hrs
*SUR 2101C Surveying	3
EGN 3331 Mech of Materials	3
ENV 3001 Intro to Environ Eng	3

**THIRD YEAR**

Fall	16 hrs	Spring	16 hrs <sup>1</sup>
CWR 3201 Eng Fluid Mechanics	3	CWR 4101C Hydrology	3
CCE 4003 Intro to Const Indus	3	CWR 4203C Hydraulics	3
*SPC 1016 Tech Presentations	3	EGN 3373 Prin Elec Eng	3
CES 4100C Structural Analysis I	4	*HUM/AMH/EUH - II	3
STA 3032 Prob/Stats for Engrs	3	TTE 4004 Transportation Eng	4

**FOURTH YEAR**

Fall	14 hrs	Spring	15 hrs
ENV 4561 Env Eng-Proc Desgn	4	Approved Project Design Course	3
CEG 4011C Geotechnical Engr	4	CES 4702 Reinfrcd Concre Strctrs	3
CES 4605 Steel Structures	3	or Technical Elective	
or Technical Elective		CGN 3501C Civil Engrg Materials	3
Approved Project Design Course	3	or EGN 3365 Str. & Prop Matls	3
		EGN 3343 Thermodynamics	3
		*Cultural Elective	3

**Notes:**

1. Courses marked with an asterisk (\*) are also available from most Community Colleges and are often part of their Pre-Engineering AA programs. Most of these courses are part of the UCF General Education Program; see the section on the GEP elsewhere in this catalog for further information.
2. Either CES 4605 Steel Structures or CES 4702 Reinforced Concrete Structures is required for all students.
3. EGN 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 area 4. Approved Technical Electives.
4. Students must earn a minimum grade of "C" (2.0) in EGN 3310 or its equivalent before registering for subsequent courses.
5. Students must earn a minimum grade of "C" (2.0) in EGN 3331 or its equivalent before registering for subsequent courses.

**BS to PhD Program**

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 Master's followed by the PhD.