

UCF Degree Programs

INDUSTRIAL ENGINEERING (B.S.I.E.)

College of Engineering and Computer Science

Industrial Engineering & Management Systems (IEMS)

Department

ENG2 312, 407-823-2204; Fax: 407-823-3413

<http://www.iems.ucf.edu/>

Contact: TBA

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 the section, **General Education Program**, found elsewhere 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.

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| A. Communication Foundations | 9 hrs |
| 1. Select 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) | |
| 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. ANT 2511, BSC 1005, BSC 1050, GLY 1030, GEO 1200, or MCB 1310 | |

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. A 2.0 cumulative GPA or better is required for those courses in section 2. marked with an asterisk (*). **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.

CHS 1440	Fundamentals of Chemistry for Eng* (CHM 2045C/45L will substitute)	4 hr
MAC 2311	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	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 Engineering Core (22 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 for the major listed in 4., the technical elective courses listed in 5. below and with the senior design courses listed in 6. below. Independent study courses generally do **not** satisfy major requirements.

EGN 1006C	Intro to the Engineering Profession	1 hr
EGN 1111C	Engineering Computer Graphics	2 hrs
EGN 1007C	Engineering Concepts & Methods	1 hr
COP 3223	Introduction to C Programming	3 hrs

EGN 3310	Engineering Analysis - Statics	3 hrs
EGN 3321	Engineering Analysis - Dynamics	3 hrs
EGN 3358	Thermo-Fluids-Heat Transfer	3 hrs
or EGN 3343	Thermodynamics	
EGN 3365	Structure & Properties of Materials	3 hrs
EGN 3373	Principles of Electrical Engineering	3 hrs

4. Courses Required for the Major (40 hrs)

The Industrial Engineering and Management Systems department requires all students within the major to achieve a 2.0 GPA or better in each course listed in sections 4., 5., and 6.

EGN 3613	Engineering Economic Analysis	2 hrs
EGN 4624	Engineering Administration	3 hrs
STA 3032	Probability & Statistics for Engineers	GEP
EIN 3000	Introduction to IE & MS	2 hrs
EIN 3314C	Work Measurement & Design	3 hrs
EIN 3354	Principles of Cost Engineering	3 hrs
ESI 4628C	IE Applications of Computers	3 hrs
EIN 4243C	Human Engineering	3 hrs
EIN 4333C	Industrial Control Systems	3 hrs
EIN 4364C	Industrial Planning & Design	3 hrs
EIN 4391C	Manufacturing Engineering	3 hrs
ESI 4221	Empirical Methods for IE	3 hrs
ESI 4234	Quality Engineering	3 hrs
ESI 4312	Operations Research	3 hrs
ESI 4523C	Systems Simulation	3 hrs

5. Approved Technical Electives (3 hrs)

Technical electives are available in the BSIE 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.

6. Departmental Graduation Requirements (6 hrs)

EIN 4516C	Systems Analysis & Design	3 hrs
EIN 4891C	IE Senior Design Project	3 hrs

- Take the Fundamentals Exam during the Senior year.

7. 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

8. 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: Mechanical Engineering.

Related Minors: 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.o eas.ucf.edu/aic/academic_learning_compacts.htm

Equipment Fee

- Full-time Student\$75 per term
- Part-time Student\$37.50 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 faculty advisor to develop and maintain an appropriate plan of study.

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

Fall	12 hrs ^{1,2}	Spring	12 hrs ^{1,2}
*CHS 1440 Fund of Chm/Engrs	4	*ENC 1102 English Comp II	3
*ENC 1101 English Comp I	3	*MAC 2312 Calc with Analy Geo II	4
*MAC 2311 Calc with Analytic Geol	4	EGN 1007C Eng Conc&Meth	1
EGN 1006C Intro to Eng	1	*PHY 2048/L Phys Engr/Sci I	4

Summer 9 hrs¹

COP 3223 Intro to C Programming	3
*SPC 1016 Tech Presentations	3
*ECO 2013 Macroeconomics <i>or</i>	3
ECO 2023 Microeconomics	

SECOND YEAR

Fall	13 hrs ¹	Spring	12 hrs ¹
*PHY 2049/L Phys Engr/Sci II	4	EGN 3321 Engr Anal-Dynamics	3
EGN 3310 Engr Anal-Statics	3	*MAP 2302 Diff Equations	3
EIN 3000 Intro to IE & Mgt Sys	2	STA 3032 Prob & Stats Engrs	3
*MAC 2313 Calc with Analytic Geo III	4	EGN 3373 Prin of Elec Eng	3

Summer 10 hrs¹

EGN 3365 Strctr & Prop Matls	3
EGN 3613 Engineering Econ Anal	2
*Social Foundations II	3
*EGN 1111C Cmptr Graphics	2

THIRD YEAR

Fall	12 hrs	Spring	15 hrs ¹
EIN 3314C Work Meas & Dsgn	3	EIN 4364C Indus Fcty Pln/Dsgn	3
EIN 4391C Mfg. Engr.	3	ESI 4221 Empirical Mthds - IE	3
EIN 3354 Princ of Cost Engrng	3	ESI 4523C Systems Simulation	3
ESI 4312 Operations Research	3	EIN 4243C Human Engrng	3
		EIN 4333C Industrial Cont Sys	3

Summer 9 hrs¹

EGN 4624 Engineering Admin	3
EGN 3358 Therm-Flds-Ht Trans	
<i>or</i> EGN 3343 Thermodynamics	3
*Historical Foundations	3

FOURTH YEAR

Fall	12 hrs	Spring	12 hrs
ESI 4628C IE Computer Appl	3	EIN 4891C IE Sr. Design Proj	3
EIN 4516C Sys Anal & Dsgn	3	Technical Elective	3
ESI 4234 Quality Engineering	3	*Cultural Foundation	3
*Historical Foundation	3	*Science Foundation II	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. EGN 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 area 5. Approved Technical Electives.

Accelerated BS/MS Degree Program

The Industrial Engineering & Management Systems Department 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.