



## DISCIPLINE DESCRIPTION

# ENGINEERING AND COMPUTER SCIENCE DEAN'S OFFICE

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### ACTIVE TEACHING DISCIPLINES

For administrative use only; please do *not* edit federal NCES information below.

CIP Code	Title	Definition
14.0101	Engineering, General.	A program that generally prepares individuals to apply mathematical and scientific principles to solve a wide variety of practical problems in industry, social organization, public works, and commerce. Includes instruction in undifferentiated and individualized programs in engineering.

Note: More information on the National Center for Education Statistics (NCES) Classification of Instructional Programs (CIP) taxonomy is available at <https://nces.ed.gov/ipeds/cipcode/>.

The qualifications described below represent commonly accepted good practices for teaching in the discipline(s) represented in the unit.<sup>1</sup>

### General description of the unit, including academic programs and course offerings<sup>2</sup>

The following undergraduate courses are housed in the dean's office in the College of Engineering and Computer Science as they apply broadly to all disciplines represented in the college.

#### Introduction to Engineering

The following course sequence is offered as an introduction to all engineering disciplines in the college and is taken by all incoming FTIC students. EGS1006C Introduction to the Engineering Profession provides an overview of academic and professional requirements for the engineering disciplines and covers topics such as engineering ethics, team building skills, and technical presentations. EGN1007C Engineering Concepts and Methods introduces students to the use of computer applications and software for solving engineering problems. Exposure to basic engineering design and project-based design competitions are included to build teamwork and networking skills.

#### Engineering Leadership and Innovation Institute at UCF (eli<sup>2</sup>)

The need for engineering and computer technology leaders is echoed universally by private industry, government agencies, academic institutions, and engineering professional societies. To be competitive, engineering and computer science students need opportunities to build professional skills such as communication, collaboration, presentation skills, and global thinking. To this end, the Engineering Leadership and Innovation Institute at UCF (eli<sup>2</sup>) was established with financial support from Duke Energy. The following series of courses were developed to enhance students' engineering leadership skills and capabilities and to foster creativity, innovation, collaboration, and accountability: EGS3030 Leadership in Engineering I, EGS3031 Leadership in Engineering II, EGS4950 Engineering Leadership Capstone.

#### Engineering Entrepreneurship

In EGN4641C Engineering Entrepreneurship, students work in teams and use the Lean Startup Methodology to learn how to launch a new product or service into the global marketplace. Students gain direct exposure to both the theory and practice of

entrepreneurship from serial entrepreneurs, focusing on customer discovery and establishing product-market fit, with the goal of defining sustainable new technology ventures.

### **Energy and Society**

With the increasing importance of finding sustainable energy sources, engineers continue to explore solutions to these critical issues with their technical skill set. EGS4710 Energy and Society is an investigation of available energy forms, energy resources versus requirements in an increasingly complex technological society, and possible solutions and future predictions.

### **Qualifying degree(s) for each discipline taught in the unit<sup>3</sup>**

*A terminal degree in the teaching discipline qualifies a faculty member to teach throughout the broad scope of the teaching discipline at the undergraduate and graduate levels.<sup>4</sup>*

A master's degree or higher in any of the college's engineering or computer science disciplines qualifies a faculty member to teach any and/or all of these courses.

### **Broadly related discipline(s) for each discipline taught in the unit**

*Specialization qualifies a faculty member to teach throughout the broad scope of the teaching discipline (typically five or more courses on distinct topics).*

N/A

### **Selectively related discipline(s) for each discipline taught in the unit**

*Specialization qualifies a faculty member to teach a restricted set of courses in the teaching discipline (typically four or fewer courses on distinct topics).*

N/A

### **Justification for use of faculty members with "other" teaching qualifications and additional information<sup>5</sup>**

The college considers other teaching qualifications in conjunction with or in lieu of academic credentials on a case-by-case basis. This is acceptable in special cases in which evidence of a faculty member's exceptional industry experience, research, or other qualifications can be documented, and in which those qualifications are directly applicable to the course or courses being taught.

**1.** The unit chair or director, in consultation with unit faculty members, is responsible for identifying and articulating commonly accepted good practices in each of the unit's teaching disciplines and for providing appropriate justification as needed. In the case of an emerging discipline for which common collegiate practice has not yet been established, a compelling case must be made, as necessary, to substantiate the claims presented.

**2.** Please provide a general description of the unit's course and program offerings at the undergraduate and graduate levels (e.g., degree and certificate programs, minors, unit contributions to interdisciplinary core courses). This section may also be used to provide other pertinent information about the unit and the discipline(s) it represents (e.g., discipline accreditation, faculty research emphases).

**3.** For each discipline taught in the unit, please list those degrees that are regarded by the respective disciplinary community as terminal degrees in the discipline and thus qualify a faculty member to teach throughout the broad scope of that discipline at the undergraduate and graduate levels. In

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most fields, a terminal degree is the commonly accepted highest degree in the given field of study. In such instances, the terminal degree is usually considered to be the academic (or research) doctorate (e.g., Doctor of Philosophy). However, some academic fields have, through custom, recognized terminal degrees that are not doctorates (e.g., Master of Fine Arts). Note that terminal degrees in other disciplines may also be appropriate for teaching in the discipline, but such credentials should be listed as broadly or selectively related degrees, as appropriate.

**4.** A nonterminal master's degree in the teaching discipline qualifies a faculty member to teach throughout the broad scope of the teaching discipline at the undergraduate level but not at the graduate level.

**5.** Please use this section to provide justification that helps to make the case for special circumstances that apply to the unit, including the use of faculty members qualified to teach by "other" means. Typically, the statements provided in this section should be of a general nature and should not address specific individuals. (Justification for specific individuals is typically handled separately during the teaching certification process.) Please cite appropriate authorities as needed to justify the unit's practices (e.g., discipline accreditation guidelines, governmental regulations).

When a faculty member cannot be qualified to teach on the basis of academic credentials (i.e., degrees, coursework) alone, qualifications other than academic credentials (or combined with academic credentials) that are appropriate for teaching particular courses may be taken into consideration. Such consideration of other teaching qualifications in conjunction with or in lieu of academic credentials must be made on a case-by-case basis. These cases should be exceptional, and the evidence provided of other demonstrated competencies and achievements must be compelling. They should also show significant evidence of professional progress as related to the faculty member's teaching assignment.