DISCIPLINE DESCRIPTION

INDUSTRIAL ENGINEERING AND MANAGEMENT SYSTEMS

ACTIVE TEACHING DISCIPLINES

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

CIP Code	Title	Definition
14.3501	Industrial Engineering.	A program that prepares individuals to apply scientific and mathematical principles to the design, improvement, and installation of integrated systems of people, material, information, and energy. Includes instruction in applied mathematics, physical sciences, the social sciences, engineering analysis, systems design, computer applications, and forecasting and evaluation methodology.

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.[1]

Section 1. General description of the unit, including academic programs and course offerings[2]

The Department of Industrial Engineering and Management Systems offers baccalaureate, master's, and doctoral degree programs in industrial engineering, master's degree programs in engineering management and systems engineering, and a series of graduate certificates in a range of related disciplines, including project engineering, quality assurance, and systems engineering. The undergraduate program is accredited by the Engineering Accreditation Commission of ABET. Students are served by departmental members with expertise in such areas as human systems engineering and ergonomics; operations research; quality systems engineering; simulation modeling and analysis; big data analytics; applications of machine learning and artificial intelligence; and systems engineering. The department is home to the university's Applied Operations Research Laboratory, Complex Adaptive Systems Laboratory, Institute for Advanced Systems Engineering, and the UCF Quality Institute. The department also benefits from close ties to the university's Barry S. Miller College of Business and the Institute for Simulation and Training.

Section 2. Qualifying degree(s) for each discipline taught in the unit[3]

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.[4]

The doctoral degree (e.g., PhD) with a major in industrial engineering represents the terminal degree in the discipline.

Section 3. 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).

Faculty members with degrees in any of the following disciplines may be qualified to teach throughout the broad scope of the department's offerings, according to the level of their degree (master's for undergraduate, doctoral for graduate):

- Computer science
- Engineering/industrial management
- Manufacturing engineering
- Mechanical engineering
- Modeling, virtual environments, and simulation
- Operations research
- Psychology
- Systems engineering

Section 4. 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).

Faculty members with degrees in any of the following disciplines may be qualified to teach courses related to their area of expertise, according to the level of their degree (master's for undergraduate, doctoral for graduate):

- Computer engineering
- Electrical and electronics engineering
- Statistics

Section 5. Justification for use of faculty members with "other" teaching qualifications and additional information[5]

The department 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. For example, some industrial engineering courses are best taught by instructors with extensive professional or management experience or with a professional engineering license.

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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 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.