DISCIPLINE DESCRIPTION

DATA, MATHEMATICAL, AND STATISTICAL SCIENCES

ACTIVE TEACHING DISCIPLINES

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

CIP Code	Title	Definition
27.0101	Mathematics, General.	A general program that focuses on the analysis of quantities, magnitudes, forms, and their relationships, using symbolic logic and language. Includes instruction in algebra, calculus, functional analysis, geometry, number theory, logic, topology and other mathematical specializations.
27.0501	Statistics, General.	A general program that focuses on the relationships between groups of measurements, and similarities and differences, using probability theory and techniques derived from it. Includes instruction in the principles in probability theory, binomial distribution, regression analysis, standard deviation, stochastic processes, Monte Carlo method, Bayesian statistics, non-parametric statistics, sampling theory, and statistical techniques.

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 School of Data, Mathematical, and Statistical Sciences' undergraduate programs provide students with a strong foundation in mathematics, statistics, and data science, preparing them for success in a wide range of high-demand careers. Rooted in a commitment to academic excellence, these programs emphasize both theoretical knowledge and practical, technology-driven skills that are essential for today's rapidly evolving workforce. Students gain the analytical and problem-solving expertise needed to contribute to Florida's growing high-technology economy and beyond.

The school also offers a range of graduate programs designed to help students deepen their expertise and expand their career opportunities. With doctoral and master's degrees as well as specialized graduate certificates in areas such as data science, big data analytics, mathematics, and statistics, students can tailor their education to align with their professional goals. Guided by accomplished faculty members who are leaders in their fields, these programs provide rigorous, real-world training that equips graduates with highly applicable skills. Whether advancing in their current roles or pivoting into high-demand fields, students gain the knowledge and experience needed to be competitive and successful in today's data-driven workforce.

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]

Mathematics
The doctoral degree (e.g., PhD) with a major in mathematics or a related subdiscipline (e.g., applied mathematics, computational mathematics, financial mathematics, mathematical statistics and probability) represents the terminal degree in the discipline.

Statistics
The doctoral degree (e.g., PhD) with a major in statistics or a related subdiscipline (e.g., applied statistics, mathematical statistics and probability, mathematics and statistics) 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).

Mathematics
Faculty members with degrees in any of the following disciplines, with at least 18 successfully completed graduate semester hours in mathematics, may be qualified to teach throughout the broad scope of the discipline, according to the level of their degree (master's for undergraduate, doctoral for graduate):

- Algorithms, combinatorics, and optimization
- Computational science
- Computer science
- Data science
- Electrical and electronics engineering
- Industrial engineering
- Physics
- Statistics

Statistics
Faculty members with degrees in the following disciplines, with at least 18 successfully completed graduate semester hours in statistics, may be qualified to teach throughout the broad scope of the discipline, according to the level of their degree (master's for undergraduate, doctoral for graduate).

- Biostatistics
- Computational and applied mathematics
- Computational science
- Data science
- Educational statistics and research methods
- Industrial engineering
- Mathematics
- Operations research
- Research methodology and quantitative methods

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).

Mathematics
Faculty members with degrees in any of the following disciplines, with at least 18 successfully completed graduate semester hours in mathematics, may be qualified to teach a restricted set of courses related to their area of expertise, according to the level of their degree (master's for undergraduate, doctoral for graduate):

- Economics
- Engineering science
- Finance
- Higher education/higher education administration
- Mathematics teacher education

Generally, faculty members with specializations in these fields may be qualified to teach introductory mathematics courses at the undergraduate level as well as some highly specialized graduate-level courses.

Statistics
Faculty members with a master's degree or higher in a quantitative discipline (e.g., genetics) with at least 18 successfully completed graduate semester hours in statistics may be qualified to teach the department's undergraduate courses.

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

The school 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.

The school participates in UCF's EXCEL program, which supports student success in STEM during the transition to university life. In support of this program, the school offers two courses: ISC2054 STEM Seminar I and ISC 2055 STEM Seminar II. This course sequence focuses on (1) resources to aid in the transition to university life, (2) tools for establishing a strong academic foundation, (3) an introduction to undergraduate research and other high-impact practices, (4) exposure to STEM faculty, researchers, and labs on campus, and (4) soft skills to make students competitive in STEM fields. These are true seminar courses where individual class sessions are taught by academics and working professionals in a variety of STEM fields. The instructor of record for these courses serves as a facilitator, coordinating guest speakers and covering general student success material. A master's degree or higher in education or a STEM discipline qualifies an individual to serve as instructor of record for these courses.

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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.