



Faculty Qualifications: Discipline Description

Physics

ACTIVE TEACHING DISCIPLINES		
For Administrative Use Only – Please do <u>not</u> edit federal NCES information below		
CIP Code	Description	NCES Definition
40.0801	Physics, General	A general program that focuses on the scientific study of matter and energy, and the formulation and testing of the laws governing the behavior of the matter-energy continuum. Includes instruction in classical and modern physics, electricity and magnetism, thermodynamics, mechanics, wave properties, nuclear processes, relativity and quantum theory, quantitative methods, and laboratory methods.

The qualifications described below represent commonly accepted good practices for teaching in the discipline(s) included in this unit. [1]

Please provide a general description of unit, including programs and course offerings [2]

Departmental programs:

- Physics B.S. with specialization in general physics, astronomy, materials, optics and lasers, and computational physics.
- Physics with planetary science track
- Physics minor
- Astronomy minor
- Physics M.S.
- Physics M.S. with planetary science track
- Physics Ph.D
- Physics Ph.D with planetary science track

Undergraduate and graduate students are actively engaged in the many research programs of the faculty, including nanophysics, surface science, atomic and molecular physics, and physics education research.

Terminal degree(s) for each discipline taught in the unit [3]

A terminal degree in the teaching discipline qualifies a person to teach throughout the broad scope of the teaching discipline at the undergraduate and graduate levels. [4]

Ph.D. or Doctor of Natural Sciences in

- Physics
- Theoretical Physics
- Applied Physics
- Chemical Physics
- Mathematical Physics
- Astrophysics
- Astronomy
- Planetary Science

Broadly related discipline(s) for each discipline taught in the department

Specialization qualifies a person to teach throughout the broad scope of teaching discipline (approximately five or more courses on distinct topics)

Physical and mathematical sciences
Optics
Physical Chemistry

Selectively related discipline(s) for each discipline taught in the department

Specialization does not qualify a person to teach distinct topics throughout the broad scope of the teaching discipline but does qualify to teach a more restrictive set of courses in the discipline (approximately four or fewer courses on distinct topics)

Geological science
Electrical engineering
Chemistry
Material Science and Engineering

Justification for use of faculty with 'other' teaching qualifications and additional faculty teaching qualifications information [5] [6]

N/A

[1] The unit chair/director, in consultation with unit faculty, has responsibility for identifying and articulating commonly accepted good practices in each teaching discipline taught in the unit 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 provided as necessary to substantiate the claims made.

[2] Please provide a general description of the unit course and program offerings at the undergraduate and graduate levels (e.g., degree and certificate programs, minors, departmental contribution 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] List those degrees for each discipline taught in the unit 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 both 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, Master of Social Work). Note that terminal degrees from other disciplines may be appropriate for teaching in the discipline as well, but such credentials should be listed as broadly or selectively related degrees, as appropriate.

[4] A non-terminal master's degree in the teaching discipline qualifies a person to teach throughout the broad scope of the teaching discipline at the undergraduate level, 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 your unit including the use of faculty qualified to teach by 'other' qualifications and other special situations. Typically the statements provided in this section should be of a general nature, and not address specific individuals. (Justification for specific individuals is typically handled separately during the teaching certification process.) As appropriate, please cite to appropriate authorities to justify departmental practices (e.g., discipline accreditation guidelines, state regulations).

[6] When a faculty member cannot be qualified to teach on the basis of academic credentials (degree(s) and course work) alone, qualifications other than academic credentials (or combined with credentials) may be appropriate for teaching particular courses. Consideration of other teaching qualifications either in conjunction with or in lieu of academic credentials must be made on a case-by-case basis. Such cases should be exceptional and the evidence of other demonstrated competencies and achievements provided must be compelling. It should also show substantial and significant evidence of professional progress as related to the faculty member's teaching assignment.