DEPARTMENT OF PHYSICS
COLLEGE OF ARTS AND SCIENCES

Faculty

William Nettles (2006). University Professor of Physics,Tm (Faculty)Tj ET EMC /Span <</Lang (en-US)4 0 ¿E®ìªìÑ I‘,

  - The remaining nine credit hours of upper-division honors contract must be above PHY 311 and have a minimum prerequisite of PHY 232.
  - Honors contract work will consist of writing a review article on a relevant topic, preparing and giving one or more presentations on relevant topics, completing additional homework of a particularly advanced and challenging nature, designing a physical or computational experiment for a course that does not include a lab component, or a similarly demanding project approved by the department.
  - PHY 498 (Seminar) may be taken for 3 hours of honors contact. Only honors students may take this course for more than 1 credit hour.
- Physics DSH students must attend at least four regularly scheduled honors colloquia during each of the student's

Course Offerings in Physics (PHY)

( ) Hours Credit; F-Fall; W-Winter; S-Spring; Su-Summer

111. Principles of the Physical Sciences (4) F, W, S
Introduction to physics and chemistry for non-science majors including their historical, philosophical, and social significance. Exercises are indicative of various scientific methods. Knowledge of basic algebra is assumed. Science credit will not be given after completion of a course in CHE or a PHY course numbered 200 or higher. Three lectures, one 2-hour laboratory/week.

112. Earth and Space Science (4) F, W, Su–As Needed
Reciprocal credit: GEO 112.
Earth science and astronomy: their nature, history, divisions, and relation to other sciences. The physical laws of nature will be examined as they apply to physical geography, meteorology, and astronomy. Three lectures, one 2-hour laboratory/week.

213-4. Introduction to Physics (4) 213—F, Su; 214—S, Su
Prerequisite: MAT 111 and 112, or 116.
The first semester involves the study of classical mechanics, wave motion, fluid flow, sound, temperature, and heat. The second involves the study of electricity, magnetism, light, optics, and modern physics. Cannot be used as a PHY Elective toward majors/minors. Three lectures, one 3-hour laboratory/week.

231-2. University Physics I, II with Calculus (5) 231—F, S; 232—F, S
Prerequisite to 231: MAT 211. Pre- or Corequisite to 232: MAT 212.
The first semester involves the study of classical mechanics, wave motion, fluid flow and sound. The second involves the study of temperature and heat, electricity, magnetism, light and optics. Four lectures, one laboratory/week.

262. Electrical and Electronic Circuits (4)
Prerequisite: PHY 232 and MAT 212. Reciprocal credit: EGR 262. See EGR 262 for description.

301. Perspectives in Science (4)
Prerequisite: PHY 111-2. Reciprocal credit: CHE 301.
The study of science from a historical and philosophical perspective in an interdisciplinary manner, exploring the complementarity of physical and biological sciences, while addressing relationships to other disciplines such as art, religion, and politics. Examines the role of science in global issues and life issues. Three lecture, 2 lab hours/week.

310. Energy, Environment, and Society (4)
Prerequisite: PHY 111.

410. Nuclear Physics (3)
Prerequisites: MAT 213 and PHY 311.
A study of the atomic nucleus, including its constituents, interactions and energies. Radiative processes, angular momentum, and practical applications such as astrophysics, medical physics, energy production, and environmental physics.

417. Introduction to Condensed Matter Physics (3)
Pre-requisite: PHY 311
An introduction to properties of various phases of matter from the macroscopic scale down to the atomic. The topics covered in this course will include crystal structure, the reciprocal lattice, structural analysis techniques (wave diffraction), the historical progression and theories of various models of electrical conduction, energy bands, semiconductors, metals, and Fermi surfaces.

420. Quantum Mechanics (3)
Prerequisites: PHY 311 and MAT 314.
Fundamental principles of quantum mechanics, methods of calculation, and solutions to Schrodinger's equation. Applications to atomic, molecular, and nuclear physics with an introduction to operator notation. Three lecture hours/week.

424-425. Physics Research (1-3) F, S
Prerequisite: PHY 311.
Application of a simple physical principle to include a literature search and summary paper on a topic of current interest.