William Nettles (2006). University Professor of Physics,

( ) 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.

130. The World of Water (3) S
Prerequisites: CHE 105 or higher OR PHY 111 or higher.
Reciprocal credit: ICS 130.
This course is a survey of water, its nature and properties, its role in the physical worldTETT36.(orldTTe e)4.5 (x)-11.3 umanal si (t) and7 (, div0.5 (r)12.e (ic5TTETEMC /P <</Lang (en-US)/MCID 13301 >>2C

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 piece of original work to include a literature search and summary paper on a topic of current interest in physics. Under faculty supervision, this work may be done off site at a national laboratory or comparable research facility.

430. Experimental Physics Laboratory (3)
Prerequisites: PHY 311 and MAT 213.
Modern experimentation, research, data acquisition and analysis. The theory, practice and reporting of research in a scientific format are demonstrated through experiments in atomic, nuclear, solid state, thermodynamics, and optics. One lecture, 4 lab hours/week.

498. Seminar (1-3) S
Prerequisite: 20 hours of physics and junior/senior standing.
Skills in scientific and technical presentations, written and oral, will be polished. To be used at the discretion of the department for majors/minors only.

179-279-379-479. External Domestic Study Programs (1-3) As Needed
All courses and their applications must be defined and approved prior to registering.

179PF-279PF-379PF-479PF. External Domestic Study Programs (Pass/Fail) As Needed
All courses and their applications must be defined and approved prior to registering.

180-280-380-480. Study Abroad Programs (1-4) As Needed
All courses and their application must be defined and approved prior to travel.

180PF-280PF-380PF-480PF. Study Abroad Programs (Pass/Fail) As Needed
All courses and their applications must be defined and approved prior to travel.

195-6-7. Special Studies (1-4) On Demand
295-6-7. Special Studies (1-4) On Demand
Lower-level group studies which do not appear in the regular departmental offerings.

395-6-7. Special Studies (1-4) On Demand
Upper-level group studies which do not appear in the regular departmental offerings.

495-6-7. Independent Study (1-4) On Demand
Individual study under the guidance of a faculty member(s).

498-9. Seminar (1-3) As Needed
To be used at the discretion of the department.