**NE 234 Nuclear and Radiation Physics**

**NE 235 Nuclear and Radiation Physics II**

**NE 236 Nuclear Radiation Detection and Instrumentation**

**NE 516 RadioChemistry**

**NE 531 RadioPhysics**

**NE 234 NUCLEAR AND RADIATION PHYSICS**

**NE 235 NUCLEAR AND RADIATION PHYSICS II**

**NE 236 NUCLEAR RADIATION DETECTION AND INSTRUMENTATION**

**Top NE 516 RADIOCHEMISTRY (4)**

**Top NE 531 RADIOPHYSICS (3)**

**Top NE 234 NUCLEAR AND RADIATION PHYSICS I (4) Offered in current or future terms**

Relativistic dynamics; basic nuclear physics; basic quantum mechanics; radioactivity; electromagnetic waves; interaction of ionizing radiation with matter; cross sections; basic atomic structure. CROSSLISTED as RHP 234. PREREQS: MTH 252

**Top NE 235 NUCLEAR AND RADIATION PHYSICS II (4) Offered in current or future terms**

Radioactivity; radioactive decay modes; decay kinetics, interaction of neutrons with matter; nuclear reactions; fission and fusion basics; cross sections. CROSSLISTED as RHP 235. PREREQS: (NE 234 or RHP 234) and MTH 252

**Top NE 236 NUCLEAR RADIATION DETECTION AND INSTRUMENTATION (4)**

Principles and mechanisms underlying nuclear radiation detection and measurements; operation of nuclear electronic laboratory instrumentation; application of gas-filled, scintillation and semiconductor laboratory detectors for measurement of alpha, beta, gamma, and neutron radiation; experimental investigation of interactions of radiation with matter. Lec/lab. CROSSLISTED as RHP 236. PREREQS: (NE 235 or RHP 235)

**Top NE 516 RADIOCHEMISTRY (4)**

Selected methods in radiochemical analysis. Actinide chemistry, activation analysis, radionuclide solvent extraction, and microbial reactions with radionuclides.

**Top NE 531 RADIOPHYSICS (3)**

Expands understanding of concepts and applications of atomic and nuclear physics to enable continued study in nuclear engineering and health physics. Includes fundamental concepts of nuclear and atomic physics, atomic and nuclear shell structure, radioactive decay, radiation interactions, radiation biology, and the characteristics of fission.