solar bowels and atmosphere. Contemporary research on the Sun will also be discussed. Prerequisites: PHYS 406 and 415. **(F;S)**

PHYS 490. Space Radiation **Credit 3(3-0)**

This is a course in space radiation environment, space exploration and radiation protection requirements. The course covers cosmic rays and radiation environment, biological effect induced by space radiation, effects of space radiation on the spacecraft on-board electronics and equipment, space radiation measurement, monitoring and dosimetry, radiation protection for space exploration and shield design. Prerequisite: PHYS 242, MATH 231 **(F;S)**

PHYS 500. Special Topics in Physics **Variable Credit (1-3)**

This is a junior-senior level course on selected topics in physics not covered in other courses. A descriptive title, syllabus and the amount of credit must have received departmental approval before scheduling. Students' records will carry both course number and descriptive title. The course may be repeated to earn a maximum of six credits. **(DEMAND)**

PHYS 510. Physics Seminar **Variable Credit (1-3)**

This is a study of current developments in physics. The topics and the amount of credit will be determined before the beginning of the course. Prerequisite: Senior standing. **(DEMAND)**

PHYS 520. Advanced Laboratory **Credit 2(1-3)**

This is a laboratory course which emphasizes performing selected experiments in classical mechanics, electromagnetism, optics, and atomic, nuclear and condensed matter physics. This course may be repeated to earn a maximum of four credits. Prerequisite: PHYS 242. **(F;S)**

PHYS 530. Computational Techniques in Physics **Credit 3(2-3)**

This course is an application of numerical methods to solve problems in physics. It includes root finding, systems of equations, integration, differentiation, boundary-value problems, and Monte Carlo methods. Prerequisite: PHYS 405. **(DEMAND)**

PHYS 531. Experimental Physics **Credit 3(2-3)**

This course surveys experimental methods in physics. It involves experiment development, including techniques in instrumentation design and data acquisition. Also, it involves oral and written presentations of experimental results. Prerequisite: PHYS 242. **(DEMAND)**

PHYS 550. Undergraduate Research **Variable Credit 1-3**

This course involves student participation in research conducted by faculty. Topics may be analytical and/or experimental and encourage independent study. The amount of credit will be determined before the beginning of the course. Prerequisite: Consent of instructor. **(F;S;SS)**

PHYS 580. Introduction to High Energy Astrophysics **Credit 3(3-0)**

The course will introduce the fundamentals of the subject, with a focus on compact objects such as black holes and neutron stars, and will also survey recent exciting developments in this field. Topics include general relativity, accreting neutron stars and black holes, and gamma-ray bursts. Prerequisite: PHYS 242. **(DEMAND)**

Some Graduate Courses

PHYS 600. Classical Mechanics	Credit 3(3-0)
PHYS 601. Selected Topics in Geophysics	Credit 3(2-2)
PHYS 602. Introduction to Geophysical Research	Credit 3(1-4)
PHYS 605. Mathematical Methods	Credit 3(3-0)
PHYS 615. Electromagnetic Theory I	Credit 3(3-0)
PHYS 620. Quantum Mechanics I	Credit 3(3-0)
PHYS 630. Statistical Mechanics	Credit 3(3-0)

Consult Graduate Programs Catalog