PHYSICS@WAGNER

Physics majors receive a **broad but rigorous education in basic scientific principles** that govern the behavior of matter and energy in nature. The program provides hands-on experience in electronics, optics, nuclear physics, astronomy and solar energy. Students also take courses in chemistry, mathematics, computer science, and the liberal arts. Senior students pursue research projects. The College's planetarium provides a rich enhancement to the program. Most graduates pursue graduate study or enter highly competitive positions in industry and education.

Wagner College is a competitive, four-year private college founded in 1883. The broad liberal arts curriculum is enhanced by a rich array of internship and other professional and cultural opportunities readily available in New York City.

For more information, contact the Admissions Office at (800) 221-1010 or visit our website at www.Wagner.edu

REQUIREMENTS

A minimum of 16 units with the following distribution:

- *Core requirements* - 7 units of Physics
  Physics 141, 142, 211, 212, 222, 411, 511
- *Elective requirements* - 2 units of Physics chosen from the following:
  Physics 221, 251, 311, 312, 361, 412, 512,531, 541, 542, 491
- *Reflective Tutorial* - 1 unit
  The senior year Learning Community consists of Physics 411 or 511, coupled with another lecture course or individualized research, and the Reflective Tutorial includes two presentations in the physics seminar or a senior thesis (Physics 543).
- *Cognate requirements*-4 units of Math
  Mathematics 121, 122, 223, 233
- *Cognate electives* - 2 units of Chemistry , Mathematics, or Computer Applications. The courses must be chosen from Chemistry 111 or higher, and Mathematics 230 or higher, or Computer Applications 130 or higher.

It is recommended that students who plan to go to graduate school in physics take Physics 311, 361, at least one other physics elective, Math 232 and one year of French or German.

SAMPLE CLASSES

Statics
The study of equivalent force systems using vector algebra. Emphasis on analysis of structures, stresses and bending moments. Method of virtual work.

Physics Research for Elementary School Teachers
Supervised research experience open to dual majors in Childhood Education and Natural Science. Four hours per week researching, designing and possibly testing pedagogical tools that enhance teaching and learning of concepts in matter and energy to be taught in elementary schools by the New York State Department of Education.

Astronomy I: The Solar System
A nonmathematical survey of astronomy is presented. Topics discussed are the solar system, including the planets, their moons, comets, meteors, asteroids, the formation of the solar system, and the evaluation of the sun; Kepler's and Newton's Laws; telescopes; and spacecraft.

Electromagnetic Waves
Study of propagation of electromagnetic waves in conducting and non-conducting media. Solutions to wave equation. Introduction to quantum mechanics.

FIRST YEAR LEARNING COMMUNITY EXAMPLE

CARBON DATING: Our Relationship with the Environment
This LC will explore the application of chemistry and mathematics in our environment through a study of pollution in the air, water and soil. Students will investigate local environmental issues of current interest, and participate in community efforts.

INTERNSHIP EXAMPLES

Walgreen's Pharmacy
Comprehensive Pediatrics
Morgan Stanley

RESEARCH TOPICS

- *"Evaporative Cooling"*
- *"The Need for Creativity in the Physics Lab"*

CONTACTS

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WAGNER COLLEGE