

Stern College for Women

Department: Physics, Program Name Physical Sciences

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Department/Program Mission Statement

The mission of the undergraduate physical sciences and engineering programs is to provide the highest possible educational experience in physics and the physical sciences for

- o Students majoring in physics
- o Students majoring in physical sciences
- o Students majoring in engineering
- o Students minoring in physics
- o Students taking service courses as a prerequisite for their majors
- o Students fulfilling general education requirements

Department/Program Student Learning Goals & Objectives

| Department/Program Goal  | Objectives   |
|--|--|
| I. Demonstrate a good understanding of both the theoretical concepts and mathematical techniques of the foundational physics courses such as calculus-based physics and quantum mechanics.     | <p>a. Students will be able to choose relevant theories and research methods for examining a specific quantitative problem.</p> <p>b. They will be able to derive and prove equations that describe the physics of the universe. They should be able to understand the meaning and limitations of these equations.</p> <p>c. Students will be able to solve the typical equations or set of mathematical equations involved in the analysis of a given quantitative problem.</p> |
| 2. Apply measurement skills and modern laboratory techniques, such as using computer models, to perform numerical computations, to simulate physical phenomena and to collect and analyze data | <p>a. Students will be able to use appropriate physical concepts and analysis techniques to analyze the data and fulfill assignments</p> <p>b. Become familiar with basic computational methods and basic software</p> <p>c. Acquire basic programming skills for scientific computations</p>  |

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| <p>4. Move successfully into schools of engineering or architecture or other professions where strong analytical and problem solving skills are required</p> | <p>a. Gain physics knowledge to qualify for admission to schools of engineering or architecture</p>   |
|  | <p>b. Gain physics knowledge, analytical and other quantitative skills to qualify for other professions such as school teachers, science associates and research assistants</p> |

5. Communicate results of research effectively, both orally and in writing, individually and as part of a team

a. Become experienced in making oral scientific presentations to audience in the field