

Stern College for Women

Department: Physics, Program Name: Physical Sciences

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Department/Program Mission Statement

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

- Students majoring in physics
- Students majoring in physical sciences
- Students majoring in pre-engineering
- Students minoring in physics
- Students taking service courses as a prerequisite for their majors
- 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 thermodynamics and statistical mechanics. Those students taking concentration in mechanics or electromagnetism should also demonstrate a good understanding of such concepts and techniques in the courses such as classical mechanics, electromagnetism, and/or quantum mechanics.	a. Students will be able to choose relevant theories and research methods for examining a specific quantitative problem. 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. c. Students will be able to solve the typical equations or set of mathematical equations involved in the analysis of a given quantitative problem.
2. Apply measurements skills and modern laboratory techniques, such as using computer models, to perform numerical computations, to simulate physical phenomena and to collect and analyze data	a. Students will be able to use appropriate physical concepts and analysis techniques to analyze the data and fulfill assignments
	b. Become familiar with basic computational methods and basic software
	c. Acquire basic programming skills for scientific computations

<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>
<p>5. Communicate results of research effectively, both orally and in writing, individually and as a part of a team</p>	<p>a. Become experienced in making oral scientific presentations to audience in the field</p>
	<p>b. Become experienced in making written reports on research results, individually and as a member of research team</p>
	<p>c. Present results in the form of a scientific publication (report, paper, and/or oral presentation)</p>