

## Physics (PHY)

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Within the Division of Science and Mathematics, we seek to provide a broad-based education that prepares graduates to be scientifically and mathematically literate, socially responsible, and professionally successful.

*Within the program in physics, we have established the following goals for our graduates:*

- **Content:** Graduates should have a broad-based understanding of core physical science concepts as well as an understanding of concepts and techniques specific to their specialization.
- **Practice:** Graduates should be able to formulate and solve problems relevant to their area of specialization.
- **Communication:** Graduates should be able to access existing physical science knowledge and effectively communicate their own work to a broader community.
- **Professional Awareness:** Graduates should develop personal and professional goals, the tools to achieve these goals, and an understanding of professional responsibilities.

The foundations of physics can be traced back to the ancient Greeks (600–200 BC), who sought order within the physical events that were understood as either chaotic or mystical. The idea of atoms as the fundamental particles of matter had a major influence over much of the scientific investigation that occurred over the course of the next few millennia.

The laws of physics apply from the subatomic through the cosmic levels, an idea whose development can be traced through the history of the science. The contributions of Democritus, Galileo, Kepler, Newton, Faraday, Maxwell, Planck, Curie, Hubble, Einstein, Heisenberg, Schrödinger, Feynman, Bardeen, Brattain, and Shockley provide insights to pivotal moments in our field. The physics of today is based upon the achievements of the past. Students should appreciate the significance of these accomplishments and teachers should foster this appreciation.

The Engineering Physics minor was designed to prepare students for study in mechanical, civil, or electrical engineering. The curriculum develops a strong foundation of mathematical analysis, scientific inquiry, and engineering design, to pose questions, seek answers, and develop solutions to complex problems.

*To obtain a minor in engineering physics, the student must complete the following courses.*

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### ENGINEERING PHYSICS MINOR REQUIREMENTS 20 crs.

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PHY 221	UNIVERSITY PHYSICS I: MECHANICAL AND THERMAL PHYSICS	(5)
PHY 222	UNIVERSITY PHYSICS II: ELECTRICITY, MAGNETISM, AND QUANTUM PHYSICS	(5)
PHY 301	ENGINEERING MECHANICS I: STATICS	(3)
PHY 302	ENGINEERING MECHANICS II: DYNAMICS	(3)
PHY 303	ELECTRONIC CIRCUITS	(4)

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