Department of Physics

Contact Information

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Introduction

The Physics Department boasts a strong faculty team, consisting of 15 full professors, 10 associate professors, and 2 assistant professors. Each year, more than 20 research projects are funded by the National Science and Technology Council, with an annual funding amount of approximately NT$30 million. Our research achievements are outstanding, with around 70 papers published annually in internationally renowned SCI journals.

In recent years, the Physics Department has initiated curriculum reforms to meet the diverse career plans and needs of our students. We have strengthened career counseling and professional skill development, introduced courses related to high-tech industries, and offered specialized programs in solar energy and engineering, semiconductor physics, device fabrication technology of semiconductors, condensed matter physics, optoelectronics, surface physics and nanotechnology, high-energy and theoretical physics, biophysics, and applied physics. In line with the direct PhD admission policy, undergraduate students can obtain a master's degree in as little as five years (through the master's program's early admission) and a PhD within eight years. This initiative enhances the Physics Department's capacity in both fundamental and applied research and development, preparing students for careers in academic research institutions and high-tech industry sectors, including optoelectronics, semiconductor manufacturing, and computer peripherals.

The Physics Department also promotes online resources and digital science research to strengthen the support for scientific teaching and learning platforms. In addition to the existing education programs, we have enhanced students' English teaching abilities, connected with global science teacher systems, and cultivated world-class physics educators to extend our educational influence.

Instructional Objectives

In response to the changing times and the different needs and career plans of students, this department is constantly making adjustments to our courses. In addition to the improvements in the core physics courses and secondary school teacher training program, we are emphasizing career counseling and professional skills, adding more applied science courses such as the Electro-Optical program to foster semiconductor, modern optics, and photonics science and technology professionals. To enhance the research manpower and also help nurture academic and high-tech experts in Taiwan, through the pre-master degree program and direct-admissions Ph.D. program, undergraduate students in this department have the opportunity to obtain a master's degree in five years and a Ph.D. in eight years.

Degree Requirements

Undergraduate

General Compulsory Credits	Compulsory Department Course Credits	Electives Credits		Minimum Requirements for Graduation
		Minimum Department Course Credit Requirement	Optional Credits	
32	56	19	21	128

Master of Science (Taught in English)

compulsory courses

Quantum Mechanics (I), (II) 6 credits in total
Statistical Mechanics (I) 3 credits
Classical Electrodynamics (I) 3 credits
Graduate Colloquium (I), (II), (III) 3 credits in total
Two field-specific courses 6 credits in total

Optional courses (at least 3 points)

Statistical Mechanics (II) 3 credits
Classical Electrodynamics (II) 3 credits
Classical Mechanics 3 credits

Doctor of Philosophy (Ph.D.)

compulsory courses

Quantum Mechanics (I), (II) 6 credits in total
Statistical Mechanics (I) 3 credits
Classical Electrodynamics (I), (II) 6 credits in total
Classical Mechanics 3 credits

Feature of the Curriculum

Undergraduate

- Research Internship
- Overseas Internship
- Industrial Internship
- Teaching Practicum Physics

Graduate

Major research fields conducted by our faculty members include:

- Condensed-matter physics
- Surface Science, spintronics, and nanoscience
- High-energy physics
- String theory
- Astrophysics and cosmology
- Biophysics and soft-matter physics
- Atomic, molecular, and optics physics
- Science education
- Overseas Internship, Industrial Internship

Career Prospects

Physics serves as a gateway to various fields of science, semiconductor-related industries, engineering, and the technology sector. Approximately 50% of our graduates enter high-tech industries, 20% pursue careers in high school education, 10% continue with academic research, and 20% move into other fields. The curriculum of the Physics Department at National Taiwan Normal University combines fundamental courses, internship programs (in research, industry, overseas, and teaching), and practical courses. This comprehensive approach provides our students with a diverse range of career options, including positions such as semiconductor engineers, researchers, data analysts, design engineers, IT consultants, laboratory technicians, laser engineers, optical engineers, software developers, system analysts, web developers, and high school teachers.