

Physics PhD

COLLEGE OF SCIENCE AND TECHNOLOGY

Learn more about the Doctor of Philosophy in Physics.

About the Program

The objective of the PhD program in Physics is to provide both a broad understanding of foundational areas of Physics and intensive training and experience in an important area of current research. A primary requirement for the degree is an original and significant research contribution, which is presented in the PhD dissertation.

Time Limit for Degree Completion: 7 years

Campus Location: Main

Full-Time/Part-Time Status: The degree program can be completed on a full- or part-time basis.

Job Prospects: The program is intended to produce well-trained physicists, who are qualified for careers as research scientists in government and industrial laboratories or as university faculty members.

Non-Matriculated Student Policy: Non-matriculated students are restricted to taking the following courses:

Code	Title	Credit Hours
PHYS 5101	Analytical Mechanics	
PHYS 5301	Electromagnetic Theory	
PHYS 5501	Mathematical Physics	

If the student applies to and is accepted into the program, the courses taken, up to 9 credits, may be applied toward the degree requirements.

Financing Opportunities: Financial aid is available in the form of Teaching and Research Assistantships. The principal duties of a Teaching Assistant include laboratory instruction, grading of lab reports, and tutoring of students enrolled in introductory physics courses. Research Assistants are assigned to a faculty member, typically the thesis advisor, who is engaged in an externally funded research project and who determines the students' duties. Both Teaching and Research Assistantships provide tuition, a stipend for living expenses, and health insurance.

Admission Requirements and Deadlines

Application Deadline:

Fall: January 15; December 15 international

Spring: September 15; August 15 international

For full consideration, applications must be submitted by the deadline. Late applications may be considered in exceptional cases.

APPLY ONLINE to this graduate program.

Letters of Reference:

Number Required: 3

From Whom: Letters of recommendation should be obtained from college/university faculty members or scientists familiar with the applicant's academic and scientific capabilities.

Coursework Required for Admission Consideration: Applicants should have successfully completed coursework typically required for a bachelor's degree in Physics.

Master's Degree in Discipline/Related Discipline: A master's degree is not required.

Bachelor's Degree in Discipline/Related Discipline: A baccalaureate degree in Physics is typically required. A certified transcript is required from each institution previously attended by the applicant.

Statement of Goals: In one to two pages, address your specific interest in Temple's program, research and career goals, and academic and research achievements.

Standardized Test Scores:

GRE: General Test required. Subject Test in Physics strongly recommended, but not required.

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master's degree at a U.S. institution, must report scores for a standardized test of English that meet these minimums:

- TOEFL iBT: 79
- IELTS Academic: 6.5
- PTE Academic: 53
- Duolingo: 110

Transfer Credit: Graduate credits from an accredited institution may be transferred into the program. The credits must be equivalent to coursework offered at Temple, and the grade must be a "B" or better in order to transfer. The Graduate Program Committee must approve all requests for transfer credit. The maximum number of credits a student may transfer is 6.

Advanced Standing: Students who enter the PhD program in Physics with a master's degree in Physics or a closely related field may be considered for advanced standing. The Graduate Program Committee recommends the awarding of advanced standing on a case-by-case basis. The maximum number of advanced standing credits awarded is 33.

Program Requirements

General Program Requirements:

Number of Credits Required Beyond the Baccalaureate: 38

Required Courses:

Code	Title	Credit Hours
Core Courses		
PHYS 5002	Physics Research and Ethics	1
PHYS 5101	Analytical Mechanics	3
PHYS 5301	Electromagnetic Theory	3
PHYS 5501	Mathematical Physics	3
PHYS 5701	Quantum Mechanics I	3
PHYS 5702	Quantum Mechanics II	3
PHYS 8102	Statistical Mechanics	3
PHYS 8702	Solid State Physics	3
PHYS 8703	Nuclear and Elementary Particle Physics	3
Electives		6
Select two from the following:		
PHYS 5302	Advanced Electromagnetic Theory	
PHYS 5502	Computational and Mathematical Physics	
PHYS 8020	Topical Seminar I	
PHYS 8701	Quantum Field Theory	
PHYS 8704	Many Electron Theory	
PHYS 8705	Advanced Topics in Nuclear and Particle Physics	
or any new course designated as PHYS 870X		
Research Courses ¹		7
PHYS 9994	Preliminary Examination Preparation ²	
PHYS 9998	Pre-Dissertation Research / Elevation to Candidacy	
PHYS 9999	Dissertation Research	
Total Credit Hours		38

¹ The combined number of credits of PHYS 9994, PHYS 9998, and PHYS 9999 must be at least 7, with a minimum of 1 credit of PHYS 9994 and a minimum of 2 credits of PHYS 9999 required.

² Students typically take PHYS 9994 in the fourth academic term of full-time graduate study.

Culminating Events:

Preliminary Examination:

For elevation to candidacy for the PhD degree, the student must pass a written and oral preliminary examination covering undergraduate- and master's-level physics. The written part of the exam is typically taken at the end of the summer of the first year of study on information from six core courses: PHYS 5101, PHYS 5301, PHYS 5501, PHYS 5701, PHYS 5702, and PHYS 8102. The oral part, also known as the Early Research Progress Exam, is given by the student's research committee at the end of the fifth term of study. In the event of failure, the exam may be retaken once six months later. The Department or Graduate Chair is present for the second attempt. Any student who fails a second time is dropped from the graduate program.

Dissertation:

A topic for the PhD dissertation is selected in consultation with a faculty member who agrees to serve as the dissertation supervisor. For elevation to candidacy, the student must submit a dissertation proposal that meets the approval of the Graduate Program Committee and the Graduate School. The completed dissertation is submitted to the department before the final examination, in which the dissertation is presented and defended by the candidate in an oral examination.

Contacts

Department Web Address:

<https://www.temple.edu/academics/degree-programs/physics-phd-st-phys-phd>

Department Information:

Dept. of Physics
406 Science and Education Research Center
1925 N. 12th Street
Philadelphia, PA 19122-1801
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215-204-7634

Submission Address for Application Materials:

<https://cst.temple.edu/academics/graduate-programs/apply-now>

Department Contacts:

Admissions Chair:

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Department Chairperson:

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