Physics, Ph.D.

COLLEGE OF SCIENCE AND TECHNOLOGY (http://cst.temple.edu)

About the Program

The objective of the Ph.D. 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 Ph.D. 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:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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</thead>
<tbody>
<tr>
<td>PHYS 5101</td>
<td>Analytical Mechanics I</td>
</tr>
<tr>
<td>PHYS 5301</td>
<td>Electromagnetic Theory</td>
</tr>
<tr>
<td>PHYS 5501</td>
<td>Mathematical Physics I</td>
</tr>
</tbody>
</table>

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 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: March 1; December 15 international
Spring: November 1; August 1 international

Applications are reviewed as they are received throughout the year. Late applications may be considered for admission.

APPLY ONLINE to this graduate program.

Letters of Reference:

Number Required: 2

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: One to two pages address the applicant's 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.

For applicants whose native language is not English, the TOEFL, IELTS, or PTE Academic exam is required.
TOEFL: 79 iBT or 550 PBT minimum
IELTS: 6.5 minimum
PTE Academic: 53 minimum

**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 Ph.D. 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: 45*

#### Required Courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>PHYS 5101</td>
<td>Analytical Mechanics I</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 5301</td>
<td>Electromagnetic Theory</td>
<td>3</td>
</tr>
<tr>
<td>&amp; PHYS 5302</td>
<td>and Electromagnetic Theory</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 5501</td>
<td>Mathematical Physics I</td>
<td>3</td>
</tr>
<tr>
<td>&amp; PHYS 5502</td>
<td>and Mathematical Physics II</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 5701</td>
<td>Quantum Mechanics I</td>
<td>6</td>
</tr>
<tr>
<td>&amp; PHYS 5702</td>
<td>and Quantum Mechanics II</td>
<td>6</td>
</tr>
<tr>
<td>PHYS 8102</td>
<td>Statistical Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 8701</td>
<td>Advanced Quantum Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 8702</td>
<td>Solid State Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 8703</td>
<td>Introduction to Elementary Particles Physics</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 9999</td>
<td>Ph.D. Dissertation</td>
<td>6</td>
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#### Additional Coursework

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

1  A minimum of 6 credits of PHYS 9999 Ph.D. Dissertation is required.

2  The balance of coursework is identified in consultation with the graduate advisor and subject to the approval of the Graduate Program Committee.

#### Culminating Events:

**Preliminary Examination:**
For elevation to candidacy for the Ph.D. degree, the student must pass a written and oral preliminary examination covering undergraduate and master’s level physics. Students are required to take the examination by the end of their second year of full-time graduate study. The exam is offered twice a year. In the event of failure, the exam may be retaken once. If the student fails a second time, s/he is dropped from the graduate program.

**Dissertation:**
A topic for the Ph.D. 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://phys.cst.temple.edu

**Department Information:**
Dept. of Physics
406 SERC
1925 N. 12th Street
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Mailing Address for Application Materials:

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