PHYSICS TEACHING CONCENTRATION

https://physics.illinois.edu/academics/undergraduates/curricula-and-programs

For the Degree of Bachelor of Science in Liberal Arts and Sciences

Major in Physics (Sciences and Letters), Physics Teaching Concentration

E-mail: undergrad-info@physics.illinois.edu

Web address for department: http://physics.illinois.edu

General education: Students must complete the Campus General Education (https://courses.illinois.edu) requirements including the campus general education language requirement.

Twelve hours of 300- and 400-level courses in the major must be taken on this campus.

A Major Plan of Study Form must be completed and submitted to the LAS Student Affairs Office before the end of the fifth semester (60-75 hours). Please see your adviser.

Minimum hours required for graduation: 120 hours

This concentration fulfills state certification requirements to teach high school physics (grades 9-12) through the AP/honors level and general science (high school biology, chemistry, earth and space science, and environmental science up to but not including the AP/honors level).

Students in this concentration must complete the Teacher Education Minor in Secondary School Teaching. See the College of Education section for requirements of the minor (http://catalog.illinois.edu/undergraduate/education/secondary) (39 hours).

Time to degree completion varies. Minimum time to completion is 8 semesters, some students may require 10 semesters. Transfer students may need 10 total semesters combined to complete the program. Please see the LAS section in the transfer handbook for more information.

To remain in good standing in this program and be recommended for certification, candidates are required to maintain UIUC, cumulative, content area, and professional education, grade-point averages of 2.5 (A=4.0). Candidates should consult their advisor or the Council on Teacher Education for the list of courses used to compute these grade-point averages. http://www.cote.illinois.edu/

Departmental distinction: Distinction is determined by a combination of grade point average and achievement in student teaching. The student’s practice teaching experience will be evaluated by the departmental honors adviser and the teaching supervisor. Distinction requires a 3.2 grade point average; high distinction, 3.4; highest distinction, 3.6. Students desiring distinction should consult with the departmental honors adviser during the junior year.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>or MATH 220 Calculus</td>
<td></td>
</tr>
<tr>
<td>MATH</td>
<td>Calculus II</td>
<td>3</td>
</tr>
<tr>
<td>MATH</td>
<td>Calculus III</td>
<td>4</td>
</tr>
<tr>
<td>MATH</td>
<td>Intro Differential Equations</td>
<td>3</td>
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<tr>
<td></td>
<td>or MATH 281 Intro to Differential Eq Plus</td>
<td></td>
</tr>
<tr>
<td>PHYS</td>
<td>University Physics: Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>University Physics: Elec &amp; Mag</td>
<td>4</td>
</tr>
<tr>
<td>PHYS</td>
<td>Univ Physics: Thermal Physics</td>
<td>2</td>
</tr>
<tr>
<td>PHYS</td>
<td>Univ Physics: Quantum Physics</td>
<td>2</td>
</tr>
<tr>
<td>CHEM</td>
<td>General Chemistry I &amp; General Chemistry Lab I</td>
<td>4-5</td>
</tr>
<tr>
<td>CHEM</td>
<td>Accelerated Chemistry I &amp; Accelerated Chemistry Lab I</td>
<td></td>
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</tbody>
</table>

Select one group of Chemistry courses:

- CHEM 102 General Chemistry I
- CHEM 102 General Chemistry Lab I
- CHEM 202 Accelerated Chemistry I
- CHEM 202 Accelerated Chemistry Lab I

**Additional required coursework**

Teacher Education Minor in Secondary School Teaching (http://catalog.illinois.edu/undergraduate/education/secondary) 39 hours

**Physics Core**

- PHYS 110 Physics Careers 0 hours
- PHYS 325 Classical Mechanics I 3 hours
- PHYS 435 Electromagnetic Fields I 3 hours
- PHYS 485 Atomic Phys & Quantum Theory 3 hours
- PHYS 486 Quantum Physics I 3 hours

Choose at least three courses from List A and List B below. At least one course must come from List B.

**A**

- PHYS 326 Classical Mechanics II
- PHYS 436 Electromagnetic Fields II
- PHYS 427 Thermal & Statistical Physics
- PHYS 470 Subatomic Physics
- PHYS 487 Quantum Physics II
- PHYS 460 Condensed Matter Physics
- PHYS 475 Introduction to Biophysics

**B**

- PHYS 401 Classical Physics Lab
- PHYS 403 Modern Experimental Physics
- PHYS 404 Electronic Circuits
- PHYS 406 Acoustical Physics of Music

**Additional Technical Courses**

- IB 100 Biology in Today’s World 3 hours
- GEOL 107 Physical Geology 4 hours
- ASTR 210 Introduction to Astrophysics 3 hours

1 MATH 220 may be substituted with four of the five credit hours applying toward the degree. MATH 220 is appropriate for students with no background in calculus.