BS in the Teaching of Physics

Program Codes:
20FT0241BS

NOTE: The Bachelor of Science in the Teaching of Physics was suspended effective Fall 2015. Contact the department for more information.

Degree Requirements
To earn a Bachelor of Science in the Teaching of Physics degree from UIC, students must complete university, college, and department degree requirements. The Department of Physics degree requirements are outlined below. Students should consult the College of Liberal Arts and Sciences section for additional degree requirements and college academic policies.

Summary of Requirements
Required Prerequisite and Collateral Courses 26
Major Requirements 39-40
General Education and Electives to reach Minimum Total Hours 54-55
Total Hours 120

Note: Teacher education students must fulfill certain other requirements. Please see below and consult the Council on Teacher Education (http://catalog.uic.edu/ucat/colleges-depts/council-teacher-education) section of the catalog for more information.

General Education
See General Education and Writing-in-the-Discipline in the College of Liberal Arts and Sciences (http://catalog.uic.edu/ucat/colleges-depts/liberal-arts-sciences) section for information on meeting these requirements. Students should consult the course lists below and their advisors to determine which courses are counted toward the General Education and Writing-in-the-Discipline requirements.

Teaching of Math Endorsement
Students who intend to obtain an endorsement in the teaching of mathematics in addition to licensure in the teaching of physics should pay special attention to the footnotes throughout this section. Additionally, students should complete 39 hours for the physics major, the requirements for the Minor in Mathematics, and additional course work that is specific to the endorsement in mathematics as described below.

Required Prerequisite and Collateral Courses
Required Courses
MATH 180 Calculus I 5
MATH 181 Calculus II 5
MATH 210 Calculus III 3
CHEM 112 See advisor 5
Select one of the following: 5
   BIOS 100 Biology of Cells and Organisms
   CHEM 114 See advisor
Select one of the following: 3

Major Requirements
Required Courses
PHYS 141 General Physics I (Mechanics) 4
PHYS 142 General Physics II (Electricity and Magnetism) b
PHYS 215 Computational and Mathematical Methods for the Physical Sciences 4
PHYS 244 See advisor 3
PHYS 245 Introduction to Vibrations, Waves, and Thermal Physics 4
PHYS 481 Modern Experimental Physics I c,e 4
PHYS 499 Survey of Physics Problems d,e 1
Select four of the following with at least three in physics: 15-16
PHYS 401 Electromagnetism I
PHYS 411 Quantum Mechanics I
PHYS 425 Modern Optics
PHYS 441 Theoretical Mechanics
PHYS 450 Molecular Biophysics of the Cell
PHYS 481 Thermal and Statistical Physics
PHYS 482 Modern Experimental Physics II
MATH 310 Applied Linear Algebra
or MATH 320 Linear Algebra I
Total Hours 39-40

Note: Students must earn a grade of C or better in all physics major requirement course work to be eligible for an Illinois teaching license in secondary physics.

Minor in Mathematics
A Minor in Mathematics requires MATH 180, MATH 181, and MATH 210 (already taken in the prerequisites for the Physics major) and 8 additional hours of MATH, MCS, or STAT electives at the 200-, 300-, or 400-level (with one in the MATH rubric with the exception of MATH 205).

To earn an endorsement in the teaching of math, students should complete the requirements for the Minor in Mathematics and the specific courses listed below.

Required Courses
Select one of the following:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 381</td>
<td>Applied Statistical Methods I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 401</td>
<td>Introduction to Probability</td>
<td>3</td>
</tr>
<tr>
<td>MTHT 411</td>
<td>Advanced Euclidean Geometry</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:  

<table>
<thead>
<tr>
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<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTHT 435</td>
<td>Abstract Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MATH 330</td>
<td>Abstract Algebra</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours: 9

- **a** Students must earn a grade of C or better to earn an endorsement in mathematics teaching.
- **b** Course has a prerequisite of a grade of C or better in MATH 210
- **c** Course has a prerequisite of a grade of C or better in MATH 215
- **d** Course has a prerequisite MATH 210 and MATH 215.

Students who intend to apply for the Master of Education in Instructional Leadership degree in order to obtain licensure in secondary science: physics with a math endorsement must complete a Minor in Mathematics that includes courses required for state teacher licensure.

### Additional Requirements for Teacher Education

In addition to the specified course work in the major field, teacher education students must fulfill certain professional education course requirements, which are mandated by the State of Illinois:

#### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED 200</td>
<td>Education Policy Foundations</td>
<td>3</td>
</tr>
<tr>
<td>ED 210</td>
<td>Principles of Learning and Instruction Across the Lifespan</td>
<td>3</td>
</tr>
<tr>
<td>SPED 410</td>
<td>Exceptional Learners</td>
<td>3</td>
</tr>
<tr>
<td>CI 414</td>
<td>Middle and High School Literacy</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 469</td>
<td>The Learning and Teaching of Physics</td>
<td>4</td>
</tr>
<tr>
<td>ED 425</td>
<td>Curriculum, Instruction, and Assessment in the Urban Secondary Classroom</td>
<td>4</td>
</tr>
<tr>
<td>ED 470</td>
<td>Educational Practice with Seminar I</td>
<td>6</td>
</tr>
<tr>
<td>ED 471</td>
<td>Educational Practice with Seminar II</td>
<td>6</td>
</tr>
</tbody>
</table>

Grades in the above courses must average at least 3.00 with no grade lower than C. Overall, students must maintain a minimum cumulative GPA of 2.50/4.00. For detailed information, see the Program Guide for Teacher Education in Physics, which is available from the secondary education coordinator in the Department of Physics.

The teaching license is not automatically awarded upon successful completion of licensure and degree requirements. Before the license is issued, the candidate must file an application for the Illinois teaching license with the Council on Teacher Education. The candidate must also pass a series of examinations required by the Illinois State Board of Education. The Test of Academic Proficiency must be passed prior to applying for candidacy with the Council on Teacher Education. The Conten Area Test(s) must be passed before the candidate is allowed to student teach. The Assessment of Professional Teaching must be passed prior to licensure. For information on application procedures, contact the Council on Teacher Education located in 3015 ETMSW. See the Council on Teacher Education (http://catalog.uic.edu/ucat/colleges-depts/council-teacher-education) section of the catalog.