

# 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.

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

**Note:** Teacher education students must fulfill certain other requirements. Please see below and consult the [Council on 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](#) 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

Code	Title	Hours
<b>Required Courses</b>		
MATH 180	Calculus I <sup>a,b</sup>	4
MATH 181	Calculus II <sup>a</sup>	4
MATH 210	Calculus III <sup>a</sup>	3
CHEM 112	See advisor	5
Select one of the following:		5
BIOS 100	See advisor	
CHEM 114	See advisor	
Select one of the following:		3

MATH 215	Introduction to Advanced Mathematics
MATH 220	Introduction to Differential Equations

**Total Hours** **24**

- a *This course is approved for the Analyzing the Natural World General Education category.*
- b *MATH 180 fulfills the LAS Quantitative Reasoning requirement.*
- c *This course is required to obtain an endorsement in the teaching of mathematics.*

## Major Requirements <sup>a</sup>

Code	Title	Hours
<b>Required Courses</b>		
PHYS 141	General Physics I (Mechanics) <sup>b</sup>	4
PHYS 142	General Physics II (Electricity and Magnetism) <sup>b</sup>	4
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 <sup>c,e</sup>	4
PHYS 499	Survey of Physics Problems <sup>d,e</sup>	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 461	Thermal and Statistical Physics	
PHYS 482	Modern Experimental Physics II	
MATH 310	Applied Linear Algebra	
or MATH 320	Linear Algebra I	
<b>Total Hours</b>		<b>39-40</b>

- a *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.*
- b *This course is approved for the Analyzing the Natural World General Education category.*
- c *PHYS 481 fulfills the Writing-in-the-Discipline requirement.*
- d *Students must earn a grade of C or better in PHYS 499*
- e *Concurrent registration in PHYS 481 and PHYS 499 is required.*
- f *MATH 310 or MATH 320 is required to obtain an endorsement in the teaching of math.*

## 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.

Code	Title	Hours
<b>Required Courses <sup>a</sup></b>		
Select one of the following:		3
STAT 381	Applied Statistical Methods I <sup>b</sup>	
STAT 401	Introduction to Probability <sup>b</sup>	
MTHT 411	Advanced Euclidean Geometry <sup>c</sup>	3
Select one of the following:		3
MTHT 435	Abstract Algebra <sup>d</sup>	
MATH 330	Abstract Algebra I <sup>d</sup>	
<b>Total Hours</b>		<b>9</b>

located in 3015 ETMSW. See the [Council on Teacher Education](#) section of the catalog.

<sup>a</sup> Students must earn a grade of C or better to earn an endorsement in mathematics teaching.

<sup>b</sup> Course has a prerequisite of a grade of C or better in MATH 210

<sup>c</sup> Course has a prerequisite of a grade of C or better in MATH 215

<sup>d</sup> 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:

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

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 Content 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