

# Physics Education Major

## Major Requirements

Degree Type: B.A. or B.S.  
Minimum Credits Required: 120

### University Degree Requirements

For complete details on these and other university degree requirements, refer to the Degree and Graduation Requirements (<http://catalog.ndsu.edu/academic-policies/undergraduate-policies/degree-and-graduation/>) section in the University Catalog.

1. Minimum of 120 semester credits (some programs may exceed this minimum).
2. Complete the University General Education requirements.
3. Minimum institutional GPA of 2.00 based on work taken at NDSU.
4. Minimum of 30 credits in resident at NDSU.
5. Minimum of 36 upper level credits (courses numbered 300 or higher).
6. Students with transfer credit must meet the NDSU 30 credits in residence (#4). Of these 30 credits in residence, a minimum of 15 credits must be in courses numbered 300 or above, and 15 credits must be in the student's declared major curricula.

### University General Education Requirements

A list of university approved general education courses along with the administrative policies governing the requirement and the categories is available here (<http://catalog.ndsu.edu/academic-policies/undergraduate-policies/general-education/>).

Code	Title	Credits
<b>Category C: Communication</b>		<b>12</b>
<b>Category R: Quantitative Reasoning</b>		<b>3</b>
<b>Category S: Science and Technology</b>		<b>10</b>
<b>Category A: Humanities and Fine Arts</b>		<b>6</b>
<b>Category B: Social and Behavioral Sciences</b>		<b>6</b>
<b>Category W: Wellness</b>		<b>2</b>
<b>Category D: Cultural Diversity</b>		
<b>Category G: Global Perspectives</b>		
<b>Category L: Digital Literacy</b>		
<b>Total Credits</b>		<b>39</b>

### Major Requirements

Code	Title	Credits
<b>Teaching Specialty Requirements</b>		
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
Pick an introductory chemistry sequence (A or B):		8
Sequence A:		
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory	
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory	
Sequence B:		
CHEM 150 & CHEM 160	Principles of Chemistry I and Principles of Chemistry Laboratory I	
CHEM 151 & CHEM 161	Principles of Chemistry II and Principles of Chemistry Laboratory II	
ENGL 324	Writing in the Sciences	3
Select one of the following geology courses and lab:		4
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	

GEOL 106 & 106L	The Earth Through Time and The Earth Through Time Lab	
Select one of the following algebra courses:		3
MATH 129	Basic Linear Algebra	
MATH 329	Intermediate Linear Algebra	
MATH 165	Calculus I	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4
MATH 266	Introduction to Differential Equations	3
PHYS 110	Introductory Astronomy	3
PHYS 171	Introductory Projects in Physics	1
PHYS 251 & 251L	University Physics I and University Physics I Laboratory	5
PHYS 252 & 252L	University Physics II and University Physics II Laboratory	5
PHYS 350	Modern Physics	3
PHYS 355	Classical Mechanics (or PHYS 330: Intermediate Mechanics (MSUM))	3
PHYS 361	Electromagnetic Theory (or PHYS370: Electromagnetic Theory (MSUM))	3
PHYS 411 & 411L	Optics for Scientists & Engineers and Optics for Scientists and Engineers Lab	4
PHYS 462	Thermal and Statistical Physics	3
<b>Professional Education Requirements</b>		
EDUC 321	Introduction to Teaching	3
EDUC 322	Educational Psychology	3
EDUC 451	Instructional Planning, Methods and Assessment	3
EDUC 481	Classroom Practice Methods of Teaching I: (Science)	3
EDUC 482	Classroom Practice/Methods of Teaching II: (Science)	3
EDUC 485	Student Teaching Seminar	1
EDUC 486	Classroom Management for Diverse Learners	3
EDUC 487	Student Teaching	9
EDUC 488	Applied Student Teaching	3
EDUC 489	Teaching Students of Diverse Backgrounds	3
<b>Total Credits</b>		<b>101</b>

## Degree Requirements and Notes

- See School of Education (<https://www.ndsu.edu/education/>) for admission requirements.
- Courses taken P/F may not be used to satisfy any requirements.
- A grade of 'C' or better is required in all professional education courses.
- To be placed in student teaching, a 2.75 cumulative GPA and a 2.75 GPA in professional education coursework is required.
- To exit the program, a 2.75 cumulative GPA and a 2.75 GPA in professional education coursework is required as well as completing the Praxis Subject test and the Principles of Learning and Teaching test.
- Adding Mathematics as an additional teacher licensure area can be accomplished with 6 additional credit hours. See your academic advisor for details.