

Teaching Specialty - Physics

Major Requirements

Major: Physics Education

Degree Type: B.A. or B.S.

Required Degree Credits to Graduate: 148

General Education Requirements

First Year Experience (F):

HD&E 189	Skills for Academic Success (Students transferring in 24 or more credits do not need to take HD&E 189.)	1
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Communication (C):

ENGL 110	College Composition I	3
ENGL 120	College Composition II	3
ENGL 324	Writing in the Sciences	3
COMM 110	Fundamentals of Public Speaking	3

Quantitative Reasoning (R):

STAT 330	Introductory Statistics	3
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Science & Technology (S):

BIOL 124 & 124L	Environmental Science and Environmental Science Laboratory	4
CHEM 150 or CHEM 121	Principles of Chemistry I General Chemistry I	3
CHEM 151 or CHEM 122	Principles of Chemistry II General Chemistry II	3

Humanities & Fine Arts (A): Select from current general education list 6

Social & Behavioral Sciences (B): Select from current general education list 6

Wellness (W): Select from current general education list 2

Cultural Diversity (D): Select from current general education list

Global Perspectives (G):

GEOL 105	Physical Geology	3
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Total Credits 40

Bachelor of Arts (BA) Degree – An additional 6 credits of Humanities and Social Sciences and proficiency at the second year in a modern foreign language are required.

Major Requirements

General Education Requirements 40

Teaching Specialty Requirements

CHEM 160 or CHEM 121L	Principles of Chemistry Laboratory I General Chemistry I Laboratory	1
CHEM 161 or CHEM 122L	Principles of Chemistry Laboratory II General Chemistry II Laboratory	1
CHEM Elective	300/400-Level Elective Course & Lab	4
CSCI 114 or CSCI 116 or CSCI 160	Microcomputer Packages Business Use of Computers Computer Science I	3-4
GEOL 105 & 105L	Physical Geology and Physical Geology Lab	4
GEOL 106 & 106L	The Earth Through Time and The Earth Through Time Lab	4
MATH 129	Basic Linear Algebra *	2
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 215	Research For Undergraduates	1
PHYS 251 & 251L	University Physics I and University Physics I Laboratory	5
PHYS 251R	University Physics I Recitation	1
PHYS 252 & 252L	University Physics II and University Physics II Laboratory	5
PHYS 252R	University Physics II Recitation	1
PHYS Elective	300/400-Level Elective Course	3
PHYS 350	Modern Physics	3
PHYS 360	Modern Physics II	3
PHYS 361	Electromagnetic Theory	3-4
or PHYS 370: Electromagnetic Theory		
PHYS 411 & 411L	Optics for Scientists & Engineers and Optics for Scientists and Engineers Lab	4
PHYS 455	Classical Mechanics	3-4
or PHYS 330: Intermediate Mechanics		
PHYS 462	Heat & Thermodynamics	3
PHYS 485	Quantum Mechanics I	3
PHYS 491	Seminar	1
Professional Education Requirements		
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 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
Total Credits		148-151

* MATH 429 Linear Algebra may substitute for MATH 129 Basic Linear Algebra.

Degree Requirements and Notes

- A GPA of 2.75 or better in the teaching specialty is required for placement in student teaching and exit from the program.
- A GPA of 2.75 or better in the professional education requirements as well as passing the appropriate Praxis II exam are required to exit the program. A grade of 'C' or better is required in all Professional Education Requirement courses.
- Courses taken *Pass/Fail* will not be used to satisfy any requirements other than total credits.
- See School of Education (<https://www.ndsu.edu/education>) for admission requirements.