WVUteach

Physics 9-Adult

Teaching changes lives. It is a rewarding profession that makes a difference. Well-prepared science and mathematics teachers are some of the most sought after in our state and nation's middle and high schools and are vital to making a positive impact for future generations.

The Secondary STEM Education teacher preparation pathway at WVU is designed to give undergraduate students the opportunity to explore the profession of teaching in science and/or mathematics, improve their practice as educators, and earn a secondary (middle and/or high school) teaching certification—all while pursuing a 4-year degree in a STEM field. This gives graduates the flexibility to pursue a career in middle or high school teaching, or to pursue non-teaching jobs or graduate programs in their field.

Students in the Secondary STEM Education pathway as part of their STEM degree will take coursework in education and field-based experiences in school classrooms, some of which helps satisfy General Education Foundations (GEF) requirements and other degree requirements. Students will continue to take the courses and other requirements as part of their STEM degree, though with some slight variations.

Advisors in the STEM degrees will be able to support students who are interested in the Secondary STEM Education pathway. Students should also contact the WVU School of Education in the College of Applied Human Sciences for more information on the pathway and its requirements.

Students seeking Physics 9-Adult teaching certification complete the Physics B.A. or B.S. major requirements and the following courses (27 hours). The Secondary STEM Education curriculum can be completed within the 120 hours required for graduation with a B.A. or B.S. in Physics. Physics B.S. students are advised to select the Physics Teaching Area of Emphasis to facilitate appropriate course choices.

WVUTEACH: PHYSICS 9-ADULT

Code	Title	Hours
ARSC 120	Inquiry Approaches to Teaching	1
ARSC 220	Inquiry-Based Lesson Design	1
UTCH 221	Knowing and Learning in Mathematics and Science (GEF 4)	3
UTCH 322	Classroom Interactions in Math and Science	3
UTCH 420	Project-Based Instruction in Mathematics and Science	3
UTCH 430	Apprentice Teaching in Math and Science	10
MATH 318	Perspectives on Mathematics and Science (GEF 5)	3
PHYS 376L	Research Methods Laboratory *	3
Total Hours		27

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All WVUteach students need to select PHYS 376L instead of PHYS 341L Advanced Physics 1 Laboratory for their research requirement.

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A second area of licensure is recommended. WVUteach students should discuss second area licensure requirements with their advisor to best support their interests. Completion of a second area of licensure can normally fit within 120 hours required for graduation for the B.A. or B.S. in Physics.

ADDITIONAL COURSEWORK FOR NON-PHYSICS MAJORS

Code	Title	Hours
Core Coursework		**12**
PHYS 111 & 111L	General Physics 1 and General Physics 1 Laboratory	
PHYS 112 & 112L	General Physics 2 and General Physics 2 Laboratory	
PHYS 314	Introductory Modern Physics	
Physics Electives		**9**
CE 321	Fluid Mechanics for Civil Engineers	
CHE 310	Process Fluid Mechanics	
CHE 320	Chemical Engineering Thermodynamics	
EE 223	Electrical Circuits	
EE 345	Engineering Electromagnetics	
MAE 241	Statics	

MAE 242	Dynamics	
MAE 320	Thermodynamics	
MAE 331	Fluid Mechanics	
MAE 423	Heat Transfer	
MINE 382	Mine Power Systems	
PHYS 211	Introduction to Mathematical Physics	
PHYS 321	Optics	
PHYS 331	Theoretical Mechanics 1	
PHYS 333	Electricity and Magnetism 1	
PHYS 461	Thermodynamics and Statistical Mechanics	
PHYS 490	Teaching Practicum	
Additional Coursework		**24**
Mathematics		
MATH 155	Calculus 1	
MATH 156	Calculus 2	
Chemistry		
CHEM 115 & 115L	Fundamentals of Chemistry 1 and Fundamentals of Chemistry 1 Laboratory	
CHEM 116 & 116L	Fundamentals of Chemistry 2 and Fundamentals of Chemistry 2 Laboratory	
Biology		
Select one of the following sequences:		
BIOL 101 & 101L	General Biology 1 and General Biology 1 Laboratory	
BIOL 115 & 115L	Principles of Biology and Principles of Biology Laboratory	
Geology		
Select one of the following sequences:		
GEOL 101 & 101L	Planet Earth and Planet Earth Laboratory	
GEOL 103 & 103L	Earth Through Time and Earth Through Time Laboratory	