

PHYSICS EDUCATION PROGRAM

OVERVIEW OF THE PROGRAM:

The science education program is designed to provide a strong content background in one or more science disciplines and extensive practice using constructivist teaching strategies to prepare teacher candidates for today's classroom. Certifications (specializations) are available in biology (9-adult), chemistry (9-adult), physics (9-adult), earth and space science (5-adult), and general science (5-adult). Our program provides early teaching opportunities in middle school classrooms, workshops in association with the NASA IV&V Educator Resource Center, participation in state science teacher conferences, membership in professional organizations, opportunities for international travel and public outreach, and research experiences using radio telescopes at the Green Bank Observatory in Green Bank, WV.

Science education students earn the B.A. Degree in Education with specializations in two or more science areas. Some students choose to double major, earning both a B.S. in a science discipline (e.g., chemistry or biology) and a B.A. in Education.

EMPLOYMENT OPPORTUNITIES:

Students graduating from Fairmont State with science teaching specializations are typically recruited prior to graduation by area schools and/or by school districts in Maryland, Virginia, and North Carolina. The biology, chemistry, earth and space, or physics certification coupled with a general science certification provides the widest range of teaching opportunities. Due to the shortage of science teachers, graduates with the science specialization are heavily recruited.

GRADUATE OPPORTUNITIES:

Many science education graduates eventually continue on in their education to pursue a Master of Education (M.Ed.) degree. The Master of Arts in Teaching (M.A.T.) degree is another option at Fairmont State for those who already have a bachelor's degree or higher with substantial earth science content.



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**FAIRMONT STATE
UNIVERSITY™**

College of Science & Technology

PHYSICS EDUCATION PROGRAM

BACHELOR OF SCIENCE IN EDUCATION WITH PHYSICS/GENERAL SCIENCE CERTIFICATIONS

PHYSICS CONTENT SPECIALIZATIONS

In addition to their area of specialization, science education majors choose another content specialization (physics, chemistry, biology, earth and space science, or general science). Also, they take required education courses and general studies electives. A model schedule for Physics and General Science Certification is shown at right.

PHYSICS CONTENT COURSES (45-48 hours)

PHYS 1105/06 PRINCIPLES OF PHYSICS I, II OR	10
PHYS 1101/02 INTRODUCTION TO PHYSICS I, II	8
PHYS 2202 ASTRONOMY	3
PHYS 3211/12 INTERMEDIATE PHYSICS IA, IB	6
PHYS 3221/22 INTERMEDIATE PHYSICS LABORATORY IIA, IIB	6
PHYS 3230 INTERMEDIATE PHYSICS LABORATORY	2
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE	3
MATH 2502 CALCULUS II	4
BIOL 1105 BIOLOGICAL PRINCIPLES I	4
CHEM 1105/2200 CHEMICAL PRINCIPLES I / FOUNDATIONAL BIOCHEMISTRY	9
OR	
CHEM 1101/02 GENERAL CHEMISTRY I,II	8

EDUCATION CONTENT COURSES (46 hours)

EDUC 2200 INTRO TO EDUCATION	3
EDUC 2200L FIELD EXPERIENCE 1	0
EDUC 2201 INSTRUCTIONAL TECHNOLOGY	3
EDUC 2203 HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
EDUC 2240 HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
EDUC 2241 FIELD EXPERIENCE 2	1
EDUC 2260 INSTRUCTIONAL DESIGN I	3
EDUC 2261 FIELD EXPERIENCE 3	2
EDUC 3331 READING IN THE CONTENT AREAS	3
EDUC 3334 FIELD EXPERIENCE 4	2
EDUC 3340 INSTRUCTIONAL DESIGN II	3
EDUC 3341 RESIDENCY 1	5
EDUC 3351 INCLUSIVE CLASSROOM PRACTICES	3
EDUC 4480 TEACHER PERFORMANCE ASSESSMENT SEMINAR	2
EDUC 4483 RESIDENCY 2 SECONDARY STUDENT TEACHING	10

CORE CURRICULUM (30+ hours)

BASIC SKILLS

1. FIRST YEAR SEMINAR	SOAR 1100	1
2. WRITTEN COMMUNICATION	ENGL 1101	3
3. WRITTEN COMMUNICATION	ENGL 1102	3
4. ORAL COMMUNICATION	COMM 2200	3
5. MATHEMATICS	MATH 2501	4

CRITICAL REASONING

6. HUMANITIES	elective	3
7. FINE ARTS	elective	3
8. NATURAL SCIENCES	CHEM 1105	5
9. SOCIAL SCIENCE	elective	3

PERSONAL DEVELOPMENT

10. CITIZENSHIP	elective	3
11. TECHNOLOGY	EDUC 2201	3

MODEL SCHEDULE

FRESHMAN FIRST SEMESTER

EDUC 2200/2200L INTRODUCTION TO EDUCATION/FIELD EXPERIENCE 1	3
GEOL 1101 PHYSICAL GEOLOGY	4
ENGL 1101 WRITTEN ENGLISH I	3
MATH 2501 CALCULUS I	4
SOAR 1100 FIRST YEAR SEMINAR	1
CORE CURRICULUM(SOCIAL SCIENCE)	3
TOTAL	18

FRESHMAN SECOND SEMESTER

ENGL 1102 WRITTEN ENGLISH II	3
EDUC 2201 INSTRUCTIONAL TECHNOLOGY	3
MATH 2502 CALCULUS II	4
GEOL 1102 HISTORICAL GEOLOGY	4
BIOL 1106 BIOLOGICAL PRINCIPLES II	4
TOTAL	18

SOPHOMORE FIRST SEMESTER

EDUC 2203 HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
BIOL 1105 BIOLOGICAL PRINCIPLES I	4
CORE CURRICULUM(FINE ARTS)	3
CORE CURRICULUM(CITIZENSHIP)	3
PHYS 1105 OR 1101 PRINCIPLES OF PHYSICS I	4
GEOS 3100 INFORMAL SCIENCE SEMINAR	1
TOTAL	18

SOPHOMORE SECOND SEMESTER

EDUC 2240 HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
EDUC 2241 FIELD EXPERIENCE 2	1
PHYS 1106 OR 1102 INTRO PHYSICS II	4
COMM 2200/1/2 ORAL COMMUNICATION	3
CORE CURRICULUM(HUMANITIES)	3
SCIE 1120 METEOROLOGY	4
TOTAL	18

JUNIOR FIRST SEMESTER

EDUC 2260 INSTRUCTIONAL DESIGN I	3
EDUC 2261 FIELD EXPERIENCE 3	2
CHEM 1105 CHEMICAL PRINCIPLES	5
PHYS 3311 INTERMEDIATE PHYSICS IA	3
PHYS 3312 INTERMEDIATE PHYSICS IB	3
PHYS 2202 ASTRONOMY	3
TOTAL	19

JUNIOR SECOND SEMESTER

EDUC 3331 READING IN THE CONTENT AREAS	3
EDUC 3334 FIELD EXPERIENCE 4	2
CHEM 2200 FOUNDATIONAL BIOCHEMISTRY	4
PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE	3
PHYS 3221 INTERMEDIATE PHYSICS IIA	3
PHYS 3222 INTERMEDIATE PHYSICS IIB	3
TOTAL	18

SENIOR FIRST SEMESTER

EDUC 3351 INCLUSIVE CLASSROOM PRACTICES	3
EDUC 3340 INSTRUCTIONAL DESIGN II	3
EDUC 3341 RESIDENCY I	5
PHYS 3230 INTERMEDIATE PHYSICS LAB	2
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
TOTAL	14

SENIOR SECOND SEMESTER

EDUC 4480 TEACHER PERFORMANCE ASSESSMENT SEMINAR	2
EDUC 4483 RESIDENCY 2 SECONDARY STUDENT TEACHING	10
TOTAL	12



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