

BIOLOGY 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



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BIOLOGY CONTENT SPECIALIZATION

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

BIOLOGY CONTENT COURSES (49 HOURS)

BIOL 1105 BIOLOGICAL PRINCIPLES I	4
BIOL 1106 BIOLOGICAL PRINCIPLES II	4
BIOL 2202 GENERAL BOTANY	4
BIOL 2203 GENERAL ZOOLOGY	4
BIOL 3306 FUNDAMENTALS OF ECOLOGY	4
BIOL 3380 GENETICS	4
CHEM 1105 CHEMICAL PRINCIPLES I	5
CHEM 2200 FOUNDATIONAL BIOCHEMISTRY	4
GEOL 1102 HISTORICAL GEOLOGY	4
PHYS 1001 GENERAL PHYSICS OR 1101 INTRODUCTION TO PHYSICS I	4
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
PHSC 4431 METHODS AND MATERIALS IN TEACHING SCIENCE	3
SCIE 1120 METEOROLOGY	4

EDUCATION CONTENT COURSES (46 HOURS)

EDUC 2200 INTRODUCTION 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: TEACHING PRACTICE AND ASSESSMENT	5
EDUC 3351 INCLUSIVE CLASSROOM PRACTICES	3
EDUC 4480 TEACHER PERFORMANCE ASSESSMENT SEMINAR	2
EDUC 4483 RESIDENCY 2: STUDENT TEACHING FOR SECONDARY	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 1540	3

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

BACHELOR OF ARTS IN EDUCATION WITH BIOLOGY/GENERAL SCIENCE CERTIFICATION

MODEL SCHEDULE

FRESHMAN FIRST SEMESTER

BIOL 1105 BIOLOGICAL PRINCIPLES I	4
EDUC 2200/2200L INTRO TO EDUCATION and FIELD EXPERIENCE 1	3
ENGL 1101 WRITTEN ENGLISH I	3
MATH 1540 TRIGONOMETRY	3
SOAR 1100 FIRST YEAR SEMINAR	1
CORE CURRICULUM(CITIZENSHIP)	3
TOTAL	17

FRESHMAN SECOND SEMESTER

BIOL 1106 BIOLOGICAL PRINCIPLES II	4
COMM 2200 COMMUNICATIONS	3
EDUC 2201 INSTRUCTIONAL TECHNOLOGY	3
ENGL 1102 WRITTEN ENGLISH II	3
SCIE 1120 INTRODUCTION TO METEOROLOGY	4
TOTAL	17

SOPHOMORE FIRST SEMESTER

BIOL 2203 GENERAL ZOOLOGY	4
CHEM 1105 CHEMICAL PRINCIPLES	5
EDUC 2203 HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
PHYS 1001/1101 GENERAL PHYSICS I	4
GEOS 3100 INFORMAL SCIENCE FIELD EXPERIENCE	1
TOTAL	17

SOPHOMORE SECOND SEMESTER

BIOL 2202 GENERAL BOTANY	4
CHEM 2200 FOUNDATIONAL BIOCHEMISTRY	4
EDUC 2240 HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
EDUC 2241 FIELD EXPERIENCE 2	1
PHYS 1002/1102 GENERAL PHYSICS II	4
TOTAL	16

JUNIOR FIRST SEMESTER

BIOL 3306 FUNDAMENTALS OF ECOLOGY	4
BIOL 3380 GENETICS	4
EDUC 2260 INSTRUCTIONAL DESIGN I	3
EDUC 2261 FIELD EXPERIENCE 3	2
GEOL 1101 PHYSICAL GEOLOGY	4
TOTAL	17

JUNIOR SECOND SEMESTER

EDUC 3331 READING IN THE CONTENT AREA	3
EDUC 3334 FIELD EXPERIENCE 4	2
GEOL 1102 HISTORICAL GEOLOGY	4
PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE	3
CORE CURRICULUM (HUMANITIES)	3
CORE CURRICULUM (SOCIAL SCIENCE)	3
TOTAL	18

SENIOR FIRST SEMESTER

EDUC 3340 INSTRUCTIONAL DESIGN II	3
EDUC 3351 INCLUSIVE CLASSROOM PRACTICES	3
EDUC 3341 RESIDENCY 1	5
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
PHYS 2202 ASTRONOMY (even years)	3
CORE CURRICULUM(FINE ARTS)	3
TOTAL	18

SENIOR SECOND SEMESTER

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



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