

EARTH AND SPACE SCIENCE 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.

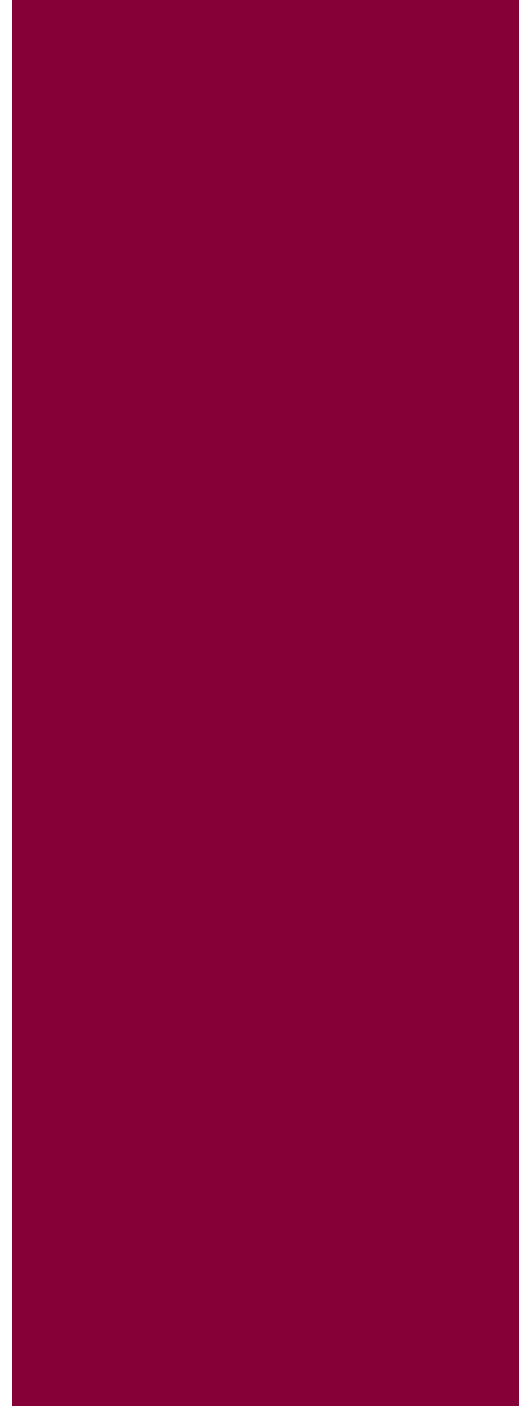
Science education students earn the B.A. Degree in Education with specializations in two or more science areas. Some students choose to double major, earning both a B.S. in a science discipline (e.g., chemistry or biology) and a B.A. in Education.

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.



FAIRMONTSTATE.EDU/collegeofscitech



**FAIRMONT STATE
UNIVERSITY™**

College of Science & Technology

EARTH AND SPACE SCIENCE EDUCATION PROGRAM

SCIENCE CONTENT SPECIALIZATION

Science education majors choose at least two of the following content specializations, plus required Education courses and the remaining liberal studies requirements. A sample model schedule for General Science and Earth and Space Science is shown at right.

EARTH AND SPACE SCIENCE CONTENT COURSES (49 HOURS)

| | |
|---|---|
| BIOL 1105 BIOLOGICAL PRINCIPLES I | 4 |
| CHEM 1105 CHEMICAL PRINCIPLES I | 5 |
| PHYS 1001 GENERAL PHYSICS I | 4 |
| -OR- | |
| PHYS 1101 INTRODUCTION TO PHYSICS I | 4 |
| PHYS 2202 ASTRONOMY | 3 |
| GEOL 1101 PHYSICAL GEOLOGY | 4 |
| GEOL 1102 HISTORICAL GEOLOGY | 4 |
| GEOL 2300 ENVIRONMENTAL GEOLOGY | 4 |
| GEOS 2200 OCEANS AND CLIMATE | 4 |
| GEOS 3100 INFORMAL SCIENCE FIELD EXPERIENCE | 1 |
| SCIE 1120 INTRODUCTION TO METEOROLOGY | 4 |
| SCIE 1107 GEOGRAPHIC INFORMATION SYSTEMS | 4 |
| SCIE 1105 ENVIRONMENTAL SCIENCE | 4 |
| PHSC 4430 SCIENCE INTEGRATION SEMINAR | 1 |
| PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE | 3 |

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 | |
| EDUC 2260 INSTRUCTIONAL DESIGN I | 3 |
| EDUC 2261 FIELD EXPERIENCE 3 | 1 |
| EDUC 3331 READING IN THE CONTENT AREAS | 3 |
| EDUC 3340 INSTRUCTIONAL DESIGN II | 3 |
| EDUC 3341 RESIDENCY 1 | 5 |
| EDUC 3351 INCLUSIVE CLASSROOM PRACTICES | 2 |
| 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 1540 | 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 |

BACHELOR OF ARTS IN EDUCATION WITH EARTH AND SPACE SCIENCE / GENERAL SCIENCE CERTIFICATIONS

FRESHMAN FIRST SEMESTER

| | |
|---|-----------|
| BIOL 1105 BIOLOGICAL PRINCIPLES I | 4 |
| EDUC 2200/2200L INTRO TO EDUCATION/FIELD EXPERIENCE 1 | 3 |
| ENGL 1101 WRITTEN ENGLISH I | 3 |
| MATH 1540 TRIGONOMETRY | 3 |
| GEOL 1101 PHYSICAL GEOLOGY | 4 |
| SOAR 1100 FIRST YEAR SEMINAR | 1 |
| TOTAL | 18 |

FRESHMAN SECOND SEMESTER

| | |
|------------------------------------|-----------|
| BIOL 1106 BIOLOGICAL PRINCIPLES II | 4 |
| GEOL 1102 HISTORICAL GEOLOGY | 4 |
| EDUC 2201 INSTRUCTIONAL TECHNOLOGY | 3 |
| ENGL 1102 WRITTEN ENGLISH II | 3 |
| SCIE 1105 ENVIRONMENTAL SCIENCE | 4 |
| TOTAL | 18 |

SOPHOMORE FIRST SEMESTER

| | |
|--|-----------|
| CHEM 1105 CHEMISTRY PRINCIPLES | 5 |
| GEOL 2300 ENVIRONMENTAL GEOLOGY | 4 |
| EDUC 2203 HUMAN DEVELOPMENT, LEARNING AND TEACHING | 3 |
| COMM 2200 COMMUNICATIONS | 3 |
| CORE CURRICULUM(HUMANITIES) | 3 |
| TOTAL | 18 |

SOPHOMORE SECOND SEMESTER

| | |
|---|-----------|
| CHEM 2200 FOUNDATIONAL BIOCHEMISTRY | 4 |
| SCIE 1107 GEOGRAPHIC INFORMATION SYSTEMS | 4 |
| SCIE 1120 INTRODUCTION TO METEOROLOGY | 4 |
| EDUC 2240 HIGH INCIDENCE DISABILITIES FOR EDUCATORS | 3 |
| EDUC 2241 FIELD EXPERIENCE 2 | 1 |
| TOTAL | 16 |

JUNIOR FIRST SEMESTER

| | |
|---|-----------|
| PHYS 1001/1101 GENERAL PHYSICS I | 4 |
| EDUC 2260 INSTRUCTIONAL DESIGN I | 3 |
| EDUC 2261 FIELD EXPERIENCE 3 | 2 |
| GEOS 2200 OCEANS AND CLIMATE | 4 |
| GEOS 3100 INFORMAL SCIENCE FIELD EXPERIENCE | 1 |
| CORE CURRICULUM(SOCIAL SCIENCE) | 3 |
| TOTAL | 17 |

JUNIOR SECOND SEMESTER

| | |
|---|-----------|
| EDUC 3331 READING IN THE CONTENT AREA | 3 |
| EDUC 3334 FIELD EXPERIENCE 4 | 2 |
| PHYS 1002/1102 GENERAL PHYSICS II | 4 |
| PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE | 3 |
| CORE CURRICULUM(CITIZENSHIP) | 3 |
| CORE CURRICULUM(FINE ARTS) | 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 YRS) | 3 |
| TOTAL | 15 |

SENIOR SECOND SEMESTER

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



FAIRMONT STATE UNIVERSITY™
College of Science & Technology

FAIRMONTSTATE.EDU/collegeofscitech

Fairmont State University is an Equal Opportunity, Affirmative Action Institution.

CONTACT INFORMATION

Dr. Deb Hemler
Science Education Coordinator
Department of Natural Sciences
328A Hunt-Haught Hall
dhemler@fairmontstate.edu
Phone: (304) 367-4393