

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.

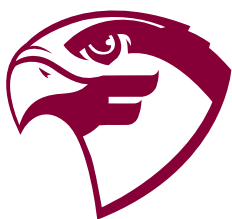
EMPLOYMENT OPPORTUNITIES:

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 new 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 and
Technology**



CONTACT INFORMATION

Dr. Deb Hemler
Science Education Coordinator
Department of Natural Sciences

315 Hunt-Haught Hall

dhemler@fairmontstate.edu

Phone: (304) 367-4393

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 (48 HOURS)

BIOL 1105	BIOLOGICAL PRINCIPLES I	4
CHEM 1105	CHEMICAL PRINCIPLES I	5
PHYS 1101	INTRODUCTION TO PHYSICS I	4
PHYS 2202	ASTRONOMY	3
GEOL 1101	PHYSICAL GEOLOGY	4
GEOL 1102	HISTORICAL GEOLOGY	4
SCIE 2200	OCEAN ISSUES AND SOCIETY	4
GEOL 1103	ENVIRONMENTAL GEOLOGY	4
SCIE 1120	INTRODUCTION TO METEOROLOGY	4
SCIE 1107	GIS	4
SCIE 1105	ENVIRONMENTAL SCIENCE	4
PHSC 4430	SCIENCE INTEGRATION SEMINAR	1
PHSC 4431	METHODS & MATERIALS IN TEACHING SCIENCE	3

EDUCATION CONTENT COURSES (39 hours)

EDUC 2200	INTRODUCTION TO EDUCATION	3
EDUC 2201	INSTRUCTIONAL TECHNOLOGY	3
EDUC 2203	HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
EDUC 2240	HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
EDUC 2260	INSTRUCTIONAL DESIGN I	3
EDUC 2265	FIELD EXPERIENCE II	1
EDUC 3331	READING IN THE CONTENT AREAS	3
EDUC 3340	INSTRUCTIONAL DESIGN II	3
EDUC 3351	INCLUSIVE CLASSROOM PRACTICES	3
EDUC 3365	FIELD EXPERIENCE III	2
EDUC 4485	ACTION RESEARCH	1
EDUC 4486	PORTFOLIO	1
EDUC 4496	SECONDARY STUDENT TEACHING	10

GENERAL STUDIES (30+ hours)

CRITICAL ANALYSIS - ENGL 1102	3
QUANTITATIVE LITERACY - MATH 1540	4
WRITTEN COMMUNICATION - ENGL 1101 (REQUIRED)	3
TEAM WORK - COMM 2201 OR ANY OTHER ATTRIBUTE 4	3
INFORMATION LITERACY - ENGL 1102 (REQUIRED)	*
TECHNOLOGY LITERACY - EDUC 2201	*
ORAL COMMUNICATION - COMM 2201 OR ANY OTHER ATTRIBUTE 7	*
CITIZENSHIP - POLI 1103 OR ANY OTHER ATTRIBUTE 8	3
ETHICS - SOCY 2205 OR ANY OTHER ATTRIBUTE 9	3
HEALTH - EDUC 2203 OR ANY OTHER ATTRIBUTE 10	*
INTERDISCIPLINARY - GEOG 2210 OR ANY OTHER ATTRIBUTE 11	3
FINE ARTS - ANY COURSE IN ATTRIBUTE 12	3
HUMANITIES - ENGL 2220 OR ANY OTHER ATTRIBUTE 13	3
SOCIAL SCIENCES - PSYC 1101 OR ANY OTHER ATTRIBUTE 14	3
NATURAL SCIENCE - CHEM 1105	*
CULTURAL AWARENESS - ENGL 2220 OR ANY COURSE IN ATTRIBUTE 16	*
FREE ELECTIVES	3

*MET BY EXISTING COURSE WORK

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

MODEL SCHEDULE

FRESHMAN FIRST SEMESTER

BIOL 1105	BIOLOGICAL PRINCIPLES I	4
EDUC 2200	INTRO TO EDUCATION	3
ENGL 1101	WRITTEN ENGLISH I	3
MATH 1540	TRIGONOMETRY	3
GEOL 1101	PHYSICAL GEOLOGY	4
		17

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 1107	GIS	4
		18

SOPHOMORE FIRST SEMESTER

CHEM 1105	CHEMICAL PRINCIPLES	5
GEOL 1103	ENVIRONMENTAL GEOLOGY	4
EDUC 2203	HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
COMM 2200 OR 2201 OR 2202		3
G.S. ELECTIVE		3
		18

SOPHOMORE SECOND SEMESTER

CHEM 2200	FOUNDATIONAL BIOCHEMISTRY	4
SCIE 1105	ENVIRONMENTAL SCIENCE	4
SCIE 1120	INTRODUCTION TO METEOROLOGY	4
EDUC 2240	HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
G.S. ELECTIVE		3
		18

JUNIOR FIRST SEMESTER

PHYS 1101	INTRODUCTION TO PHYSICS I	4
EDUC 2260	INSTRUCTIONAL DESIGN I	3
EDUC 2265	FIELD EXPERIENCE II	1
SCIE 2200	OCEAN ISSUES AND SOCIETY	4
G.S. ELECTIVE		3
		15

JUNIOR SECOND SEMESTER

EDUC 3331	READING IN THE CONTENT AREA	3
PHYS 1102	INTRODUCTION TO PHYSICS II	4
PHSC 4431	METHODS & MATERIALS IN TEACHING SCIENCE	3
G.S. ELECTIVE		3
G.S. ELECTIVE		3
		16

SENIOR FIRST SEMESTER

EDUC 3340	INSTRUCTIONAL DESIGN II	3
EDUC 3351	INCLUSIVE CLASSROOM PRACTICES	3
EDUC 3365	FIELD EXPERIENCE III	2
PHSC 4430	SCIENCE INTEGRATION SEMINAR	1
PHYS 2202	ASTRONOMY (EVEN YRS)	3
G.S. ELECTIVE		3
		15

SENIOR SECOND SEMESTER

EDUC 4485	ACTION RESEARCH	1
EDUC 4486	PORTFOLIO	1
EDUC 4496	SECONDARY STUDENT TEACHING	10
		12