

CHEMISTRY 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

CHEMISTRY EDUCATION PROGRAM

BACHELOR OF ARTS IN EDUCATION WITH CHEMISTRY/GENERAL SCIENCE CERTIFICATIONS

CHEMISTRY 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 Chemistry and General Science certifications is shown at right.

CHEMISTRY CONTENT COURSES (48-50 HOURS)

BIOL 1105 BIOLOGICAL PRINCIPLES I	4
CHEM 1105 CHEMICAL PRINCIPLES I	5
CHEM 2200 FOUNDATIONAL BIOCHEMISTRY	4
CHEM 2201 ORGANIC CHEMISTRY I	4
CHEM 3304 INORGANIC CHEMISTRY	4
CHEM 3301 PHYSICAL CHEMISTRY I	4
GEOL 1101 PHYSICAL GEOLOGY	4
MATH 1540 TRIGONOMETRY	3
MATH 2501 CALCULUS	4
PHYS 1101/02 INTRODUCTION TO PHYSICS I, II	8
-OR-	
PHYS 1105/06 PRINCIPLES OF PHYSICS I, II	10
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
PHSC 4431 METHODS AND MATERIALS IN TEACHING SCIENCE	3

**STUDENTS WHO DO NOT MEET THE PREREQUISITES FOR MATH 2501 WILL BE REQUIRED TO TAKE MATH 1430 AND/OR MATH 1530.

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 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

MODEL SCHEDULE

FRESHMAN FIRST SEMESTER

CHEM 1105 CHEMICAL PRINCIPLES	5
EDUC 2200/2200L INTRODUCTION TO EDUCATION/ 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	18

FRESHMAN SECOND SEMESTER

CHEM 2200 FOUNDATIONAL BIOCHEMISTRY	4
COMM 2200 INTRODUCTION TO HUMAN COMMUNICATION	3
EDUC 2201 INSTRUCTIONAL TECHNOLOGY	3
ENGL 1102 WRITTEN ENGLISH II	3
MATH 2501 CALCULUS I	4
TOTAL	17

SOPHOMORE FIRST SEMESTER

BIOL 1105 BIOLOGICAL PRINCIPLES I	4
CHEM 2201 ORGANIC CHEMISTRY I	4
PHYS 1101 OR 1105 PRINCIPLES OF PHYSICS I	4
EDUC 2203 HUMAN DEVELOPMENT, LEARNING AND TEACHING	3
GEOS 3100 INFORMAL SCIENCE FIELD EXPERIENCE	1
TOTAL	16

SOPHOMORE SECOND SEMESTER

BIOL 1106 BIOLOGICAL PRINCIPLES II	4
EDUC 2240 HIGH INCIDENCE DISABILITIES FOR EDUCATORS	3
EDUC 2241 FIELD EXPERIENCE 2	1
PHYS 1102 INTRODUCTION TO PHYSICS II	4
CORE CURRICULUM(SOCIAL SCIENCE)	3
CORE CURRICULUM(HUMANITIES)	3
TOTAL	18

JUNIOR FIRST SEMESTER

CHEM 3304 INORGANIC CHEMISTRY	4
EDUC 2260 INSTRUCTIONAL DESIGN I	3
EDUC 2261 FIELD EXPERIENCE 3	2
PHYS 2202 ASTRONOMY (EVEN YRS)	3
GEOL 1101 PHYSICAL GEOLOGY	4
TOTAL	16

JUNIOR SECOND SEMESTER

GEOL 1102 HISTORICAL GEOLOGY	4
PHSC 4431 METHODS & MATERIALS IN TEACHING SCIENCE	3
SCIE 1120 INTRODUCTION TO METEOROLOGY	4
EDUC 3331 READING IN THE CONTENT AREAS	3
EDUC 3334 FIELD EXPERIENCE 4	2
CORE CURRICULUM(FINE ARTS)	3
TOTAL	19

SENIOR FIRST SEMESTER

CHEM 3301 PHYSICAL CHEMISTRY	4
EDUC 3340 INSTRUCTIONAL DESIGN I	3
EDUC 3341 RESIDENCY 1	5
EDUC 3351 INCLUSIVE CLASSROOM PRACTICES	3
PHSC 4430 SCIENCE INTEGRATION SEMINAR	1
TOTAL	16

SENIOR SECOND SEMESTER

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



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CONTACT INFORMATION

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