

NATURAL SCIENCE

College of Science, Health & Engineering

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BAE	Minor	
<i>Faculty:</i> varies		

UNDERGRADUATE PROGRAM

The Natural Science major is recommended for those students seeking K-8 certification who are particularly interested in teaching science at the 5-8 level. The coursework in this major provides a foundation of scientific principles required to teach the Washington Essential Academic Learning Requirements for grades 5-9. This major leads to a Middle School Science Endorsement.

Required courses in the following program of study may have prerequisites. Reference the course description section for clarification.

BACHELOR OF ARTS IN EDUCATION (BAE)

STUDENT LEARNING OUTCOMES – STUDENTS WILL:

- understand the process of science;
- understand how energy and matter flow through physical, life and earth systems;
- understand the evolution of natural systems and factors that result in evolution or equilibrium;
- understand how systems are organized;
- understand the process of learning science through inquiry.

NATURAL SCIENCE ELEMENTARY MAJOR AND MIDDLE LEVEL ENDORSEMENT (46 CREDITS)

Completion of this major, the General Degree Completion Requirements for Education, Elementary, and a minor field of study satisfies the state requirements for an Elementary Education teaching endorsement and a Middle Level Science teaching endorsement (grade levels 5-9).

Required Courses (31 credits)

- EDUC 417 Culture of Middle Level School (3)
- MATH 211 Structure of Elementary Mathematics I (5)
- NTSC 301 Middle Level Earth Science Inquiry (5)*
- NTSC 302 Middle Level Life Science Inquiry (5)*
- NTSC 390 Middle Level Science Methods (3)*
- PHYS 115 Investigating Physical Science (5)
- PHYS 121 Descriptive Astronomy (5)

Electives (15 credits)

Select one course from each area listed below for a total of 15 credits. (Other courses can be approved by a Natural Science Advisor)

Biological Sciences

- BIOL 100 Introduction to Biology (5)
- BIOL 115 Investigating Biology (5)

Chemistry

- CHEM 100 Introduction to Chemistry (5)
- CHEM 161 General Chemistry for the Health Sciences (5)

Earth Sciences

- GEOG 100 Fundamentals of the Physical Environment (5)
- GEOL 100 Discovering Geology (5)
- GEOG/GEOL 115 Investigating Earth Science (5)

Required program credits	31 credits
Biology elective	5 credits
Chemistry elective	5 credits
Earth Science elective	5 credits
Total credits for above major	46 credits
Professional education requirements elementary education	73-74 credits
Minimum total credits for above major and elementary professional education	119 credits

See the Department of Education section of this catalog. Prerequisites may also apply.

Note: prerequisites may also apply. * NTSC 301 and NTSC 302 require prerequisites of CHEM 100 or CHEM 161, BIOL 100 or BIOL 115, GEOL 100 or GEOL 115 or GEOG 100, and MATH 211. *NTSC 390 has prerequisites of NTSC 301 and NTSC 302. The above Major and Middle Level Endorsement requires the completion of a minor.

MINOR

The Natural Science minor is recommended for those students seeking K-8 certification who are particularly interested in teaching science at the K-5 level. The coursework in this minor provides a foundation of scientific principles required to teach the Washington Essential Academic Learning Requirements for grades K-5.

Required courses in the following program of study may have prerequisites.

NATURAL SCIENCE ELEMENTARY MINOR (29-30 CREDITS)

Completion of this minor, the General Degree Completion Requirements for Education, Elementary, and a major field of study satisfies the state requirements for an Elementary Education teaching endorsement. This minor does not fulfill the state middle level science endorsement.

Required Courses (15 credits)

- BIOL 115 Investigating Biology (5)
- GEOG/GEOL 115 Investigating Earth Science (5)
- PHYS 115 Investigating Physical Science (5)

Electives—select one course from each area listed below (14-15 credits)

(Other courses can be approved by a Natural Science Advisor)

Biology

- BIOL 100 Introduction to Biology (5)
- BIOL 171 Biology I (4)

Earth Science:

- GEOG 100 Fundamentals of the Physical Environment (5)
- GEOG 305 Introduction to Oceanography (5)
- GEOL 100 Discovering Geology (5)

Physical Science:

- CHEM 121 Chemistry and Its Role in Society (5)
- CHEM 161 General Chemistry for the Health Sciences (5)
- PHYS 100 Physical Science I (5)
- PHYS 121 Descriptive Astronomy (5)

Required program credits	15 credits
Biology elective	4-5 credits
Earth Science elective	5 credits
Physical Science elective	5 credits
Total minimum credits for above minor	29 credits

See the Department of Education section of this catalog. Prerequisites may also apply.

Natural Science Courses

Terms offered: fall, winter, spring, summer (FWSU). If no terms are indicated check with the department or EagleNET.

- NTSC 299 Individual Study (1-5) FWS**
Prerequisite: permission of the instructor.
 Individual studies in natural science or planetarium operations.
- NTSC 301 Middle Level Earth Science Inquiry (5)**
Prerequisite: GEOG 100 or GEOL 100 or GEOL 115; CHEM 100 or CHEM 161; MATH 211.
 This is a required class for students planning to teach middle school science. Emphasis will be on laboratory and inquiry based earth science investigations the contents of which support instruction of the National Science Education Standards and Washington Essential Academic Learning Requirements (EALRs).
- NTSC 302 Middle Level Life Science Inquiry (5)**
Prerequisite: BIOL 100 or BIOL 115; CHEM 100 or CHEM 161; MATH 211.
 This course is designed for students seeking the Middle Level Science Endorsement. Emphasis is placed on understanding the life science principles underlying the 5-9 grade level expectations of the Washington State Essential Academic Learning Requirements. Students will construct knowledge of these principles through inquiry.
- NTSC 390 Middle Level Science Methods (3)**
Prerequisite: NTSC 301 and NTSC 302
 This science methods course is designed for students seeking endorsement to teach middle school science. The class includes information and strategies for teaching the Washington State science standards. The focus will be on addressing commonly held misconceptions, lab safety as well as techniques and activities for teaching life, earth and physical sciences at the middle school level.