

EARTH AND SPACE SCIENCE

College of Science, Health & Engineering • Department of Geology

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BAE	Minor	General Science Endorsement
<i>Faculty:</i> varies		

UNDERGRADUATE PROGRAMS

The BAE in Earth and Space Science is for prospective secondary school science teachers.

The Earth and Space Science major and minor are interdisciplinary, with required courses from geography, geology, physics, chemistry and biology.

General Admissions Requirements for Earth and Space Science

High school students who plan to enter this program are encouraged to take three or four years of both science and mathematics in high school. University students should generally complete their GEGR requirements, particularly in the Natural Sciences, prior to entering the program. Students are encouraged to contact the Earth and Space Science advisor to aid them in selecting these GEGR courses.

General Degree Completion Requirements for Earth and Space Science

Grade Requirement for BAE

- 2.5 cumulative average
- 2.0 in each course

Generally Earth and Space Science is taught in the junior high school or middle school. Also, it is occasionally taught as a high school elective or in the upper elementary grades.

Required courses in the following programs 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 communication skills necessary to teach earth and space science safely and effectively to students;
- learn the principles and concepts of earth science in order to be able to teach earth and space science to middle school and high school students;
- be able to explain earth science using modern plate tectonics theory to integrate physical and historical geological knowledge.

EARTH AND SPACE SCIENCE/SECONDARY MAJOR (64–65 CREDITS)

Required Courses (60 credits)

- CHEM 151 General Chemistry (5)
- GEOG 305 Introduction to Oceanography (5)
- GEOG 410 Geomorphology (5)
- GEOG 314 Weather and Climate (5)
- GEOL 120 Physical Geology–The Solid Earth (5)
- GEOL 121 Physical Geology–Surficial Processes (5)
- GEOL 122 Historical Geology (5)
- GEOL 220 Environmental Geology (4)
 - or GEOL 360 Geologic Hazards (4)
- GEOL 311 Earth Materials (4)
- GEOG/GEOG 390 Earth Science Teaching Methods (1)
- MATH 106 Precalculus II (5)
- PHYS 121 Descriptive Astronomy (5)
- PHYS 131 Introductory Physics I (4)
- PHYS 161 Mechanics Laboratory (1)
- SCED 390 Secondary Science Teaching Methods (1)

Electives (4–5 credits)

Students must take 4–5 credits of field-oriented coursework. Select from the list below, or from special field courses in Geography or Geology approved by the Earth and Space Science advisor.

- GEOG 201 Introduction to Field Research (5)
- GEOG/BIOG 312 Fundamentals of Soil Science (4)
- GEOG 315 Surface Hydrology (4)
- GEOG 325 Wetland Science I (4)
- GEOL 455 Colorado Plateau Geology (4)
- GEOL 496 Experimental (Geology Field Trip) (3–5)

Required credits

60 credits

Elective credits

4–5 credits

Minimum total credits for above major

64 credits

Professional education requirements/secondary education: 46–47 credits
See the Department of Education section of this catalog. Prerequisites may also apply.

Minimum total credits for above major and professional education

110 credits

Note: The above is an interdisciplinary major. See an advisor to determine if courses required by this major may be taken in partial fulfillment of the GEGRs. A minor is not required, but highly recommended.

Note: the above major takes more than 12 quarters at 15–16 credits a quarter.

MINOR

EARTH AND SPACE SCIENCE/SECONDARY MINOR (32 CREDITS)

This minor satisfies the endorsement for grades 5–12.

Required Courses

- GEOG 305 Introduction to Oceanography (5)
- GEOG 314 Weather and Climate (5)
- GEOL 120 Physical Geology–The Solid Earth (5)
- GEOL 121 Physical Geology–Surficial Processes (5)
- GEOL 122 Historical Geology (5)
- GEOG/GEOG 390 Earth Science Teaching Methods (1)
- PHYS 121 Descriptive Astronomy (5)
- SCED 390 Secondary Science Teaching Methods (1)

Total credits for above minor

32 credits

Course Requirements for Teacher Certification/Add-on Endorsements
(For students who currently possess a Washington State Teaching Certificate)

GENERAL SCIENCE/ADD-ON ENDORSEMENT (65 CREDITS)

To improve the marketability of the science teacher, students may wish to complete this option in addition to their BAE in Biology, Chemistry, Earth and Space Science or Physics. This add-on satisfies the endorsement and allows teachers to teach any science for grades 5–12.

Required Courses

- BIOG 171 Biology I (4)
- BIOG 172 Biology II (4)
- BIOG 173 Biology III (4)
- BIOG 270 Biological Investigation (3)
- BIOG 390 Biology Teaching Methods (1)
- CHEM 151 General Chemistry (5)
- CHEM 152 General Chemistry (5)
- CHEM 153 General Chemistry (5)
- CHEM 390 Chemistry Methods for the Secondary School (1)
- GEOG 314 Weather and Climate (5)
- GEOL 120 Physical Geology–The Solid Earth (5)
- GEOL 121 Physical Geology–Surficial Processes (5)
- GEOG/GEOG 390 Earth Science Teaching Methods (1)
- PHYS 121 Descriptive Astronomy (5)
- PHYS 131 Introductory Physics I (4)
- PHYS 132 Introductory Physics II (4)
- PHYS 161 Mechanics Lab (1)
- PHYS 162 Heat and Optics Lab (1)
- PHYS 390 Physics Teaching Methods (1)
- SCED 390 Secondary Science Teaching Methods (1)

Total credits for above add-on endorsement

65 credits

Courses

See Course Descriptions listed under the participating programs and departments: Biology, Chemistry and Biochemistry, Geography, Geology, Mathematics and Physics.