

**TOBACCO ROOT MOUNTAINS
MONTANA**

*one of the best places in the
world to learn geology in the field*

here's how to reach us

CONTACT INFORMATION FOR ENROLLMENT:
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JUDSON MEAD
GEOLOGIC FIELD STATION
2023 summer
courses

<https://iugfs.indiana.edu>

 EARTH AND ATMOSPHERIC SCIENCES

 GEOLOGIC FIELD STATION

advantages of our courses

More than 3.5 Ga of geologic history exposed

- Cambrian through Pleistocene sedimentary rocks
- Mesozoic and Cenozoic igneous rocks
- Precambrian metamorphic, igneous and sedimentary rocks
- Exquisite exposures of three major structural styles plus evidence for several other tectonic events

World-class curriculum and faculty

- Projects refined and improved throughout a 70-year history, with more than 7,000 students from over 300 universities
- Diverse faculty, typically from at least 6 different universities

Field Station facilities and staff are focused on optimizing the student learning experience

- All meals are prepared for you
- Climate controlled classroom with computers and WiFi
- Comfortable dorms
- Numerous recreational opportunities

Successful alumni

- Global academic geoscience leaders
- State Geologists
- Geoscience industry leaders (CEOs, senior executives, chief geologists, corporate research leaders, etc.)
- Leaders in non-geoscience industries
- NAGT-USGS interns - all three 2018 X429 nominees received 2019 internships

WE HAVE SCHOLARSHIPS AVAILABLE FOR 2023

more flexible course options

All of these courses are open to upper division undergraduates and graduate students

EAS X429 Field Geology in the Rocky Mountains

6 CREDIT, 6-WEEK CAPSTONE FIELD COURSE June 12 - July 25, 2023

This course is designed to prepare students to be successful in a geoscience job or graduate school. It focuses on integration of geology, geochemistry and geophysics to solve 4-dimensional geoscience problems and includes a deep-dive into a subdiscipline concentration of your choosing.

- 3 weeks of intensive outcrop scale field mapping with different objectives each week
- 1 week of regional mapping, incorporating your field work with other data
- 1 week concentration in a subdiscipline of your choice
- 1 week studying classic geology localities across Montana, Wyoming and South Dakota

EAS X428 Field Geology Fundamentals in Montana and Wyoming

5 CREDIT, 5-WEEK June 12 - July 19 2023

This is the first 5 weeks of X429, without the concentration. It provides a lower cost option for students who do not want a subdiscipline concentration.

EAS X498 Subdiscipline Concentration Courses

1 CREDIT, 1-WEEK July 21 - July 25 2023

Each concentration is a 5-day deep-dive into a subdiscipline of your choice. In 2022 we will offer five subdiscipline concentrations. The concentration of your choice is included in X429, but these courses are now open to any student who wants to enroll and meets the prerequisites. You should note that the concentrations will include students from both X429 and X498. Field experience is a prerequisite.

E432 Field Geology Fundamentals in Montana and Wyoming

3 CREDIT, 5 WEEK VIRTUAL COURSE July 10 - July 29 2023

The virtual, online version of Field Geology Fundamentals in Montana and Wyoming is designed to teach students field geology skills, thought processes and workflows without requiring them to actually go into the field. It is recommended for students who are unable to participate in a rigorous field experience.

concentration descriptions

X429c/498c Igneous Extrusive and Intrusive Systems uses field relationships and geochemistry to unravel the geologic history and petrogenesis of a Late Cretaceous igneous intrusive complex.

X429e/498e Environmental Geology and Hydrology studies the impact of mining and other human activity on water, rock, and soil systems.

X429t/498t Quantitative Structural Geology uses balanced cross sections to validate possible geometries and quantify shortening in contractional orogenic belts.

X429s/498s Sequence Stratigraphy, Depositional Facies, and Paleoclimate studies the relationships of depositional facies, sedimentary structures, fossil assemblages, and geochemistry to untangle depositional environment and paleoclimate interpretations.

X429g/498g Digital Mapping Techniques uses quantitative methods to validate possible geometries and quantify shortening in cross sections through a contractional orogenic belt.

Prerequisites

X429, X428, and E432 require a minimum of two years of a standard undergraduate curriculum including one introductory course plus at least two courses from the following:

- sedimentology and/or stratigraphy
- mineralogy and/or petrology
- structural geology and/or tectonics.

Some X498 concentrations have specific prerequisites. Please check the IUGFS website.

Daily Schedule

These courses are physically demanding. The typical week is six 10-hour field days. It is normal to hike 6 to 12 miles each day in terrain with more than 1,500' of vertical relief. Average daily temperatures can range from 40° F at night to 90° F during the day. The SW Montana climate is generally dry, but we can experience rain and even snow any day during the summer.

contact us

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