

Earth Science 4450y Course Outline

1. Course Information

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Earth Science 4450y. **Regional Field Geology**

A ten-day field trip to study aspects of the Appalachian Orogen in Nova Scotia and New Brunswick. 1st September to 10th September, 2022.

Prerequisites

Earth Sciences 3350Y and registration in the Honors Specialization in Geology, or the Honors Geology or Honors Environmental Geoscience Programs for Professional Registration, or permission of the Department. Partial cost of the field trip (\$400 in 2022) must be borne by the student. A \$200 deposit is payable by April 30th and the balance by August 1st 2022.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Dr. Guy Plint (Course Coordinator)	gplint@uwo.ca	BGS 1072	519-661-3179	Open door
Dr. Bruce Hart	bhart7@uwo.ca	BGS 1078		Open Door

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

3. Course Syllabus, Schedule, Delivery Mode

The course will be entirely in-person.

Travel & Accommodation. Westjet flights between London and Halifax, car transport between field localities. Motel accommodation & restaurant meals; picnic lunches. Students pay for breakfast and supper; Department pays for picnic lunches.

Syllabus

This Field School is run to Maritime Canada (New Brunswick & Nova Scotia). The trip usually occupies nine working days, with a half day travel at each end. The main elements of the trip are as follows:

The trip involves rocks that record the opening of the Iapetus Ocean in the Late Precambrian, represented by the rift-related, sedimentary and volcanic succession of the Meguma Supergroup. The Acadian Orogeny is represented by regional folding and major granite plutons (South Mountain Batholith) and attendant thermal metamorphic aureole. A post-orogenic Mississippian strike-slip basin is represented by evaporites and limestones of the Windsor Group, and by lacustrine deposits of the Horton Group. A Pennsylvanian strike-slip basin is represented by the Joggins Formation. Late Triassic rift basins related to early opening of the Atlantic Ocean are represented by playa-lacustrine-braided river deposits of the Scots Bay, Wolfville and Blomidon formations. Triassic axial and marginal alluvial fan systems are also seen in New Brunswick in the context of complex compressive-extensional fault reactivation and unconformity development near St. Martins. Earliest Jurassic rift-related basaltic vulcanism is represented by several hundred metres of stacked lava flows of the North Mountain Basalt, seen north of Wolfville N.S. and at Five Islands, N.S. The Minas Geofracture (plate-scale strike-slip fault zone) that separates the N American (Avalon Terrane) from Gondwana (Meguma Terrane) is seen near Parrsboro N.S., including exotic mega-blocks of deep crustal rocks. The effects of strike-slip transpression are also seen in paleo-earthquake features in Pennsylvanian strata and in an inverted stratigraphic succession seen in a flower structure near Saint John N.B., and in recumbent folds and thrusts near Tynemouth Creek, N.B. Precambrian gneissic basement underlying Cambrian sediments are seen in Saint John

Every stop (about 25 in total) involves observation and description of the rocks on hand, followed by local and 'big-picture' interpretations. Mapping and/or stratigraphic exercises are conducted in at least three localities, involving structural/sedimentary relationships, graphic logging and intrusive-host rock mapping.

Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. Synthesize theoretical knowledge of igneous, sedimentary and metamorphic rocks to guide the observation, description and interpretation of a wide range of rocks seen in a field situation.
2. Integrate concepts of plate tectonics and basin-forming mechanisms to interpret varied rock types in their field context.
3. Apply graphic logging techniques to document sedimentary successions in selected outcrop sites, and use that information as a basis for the reconstruction of depositional environments.
4. Construct structural-stratigraphic cross-sections in deformed rocks, from which geological history can be deduced.

4. Course Materials

Text. A custom-prepared field guide will be issued when we depart for Nova Scotia.

All participants must bring a **hand lens** and suitable, hard-back **field notebook**. A convenient size is 4.5 x 7" but a larger format is also suitable. A book with pages less than 4 x 6 inches is too small.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

5. Methods of Evaluation

Attitude & Participation	10%
Quality of Field Notes	30%
Field Mapping Exercises	20%
Final Exam (2 hours, on last day)	40%

6. Student Absences

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

If a student has been able to participate in at least five of the nine scheduled field days (1 to 9 September), but is prevented from attending one or more days, or from completing the final exam due to Covid-19 infection, then their work will be reweighted and assessed on the basis of a minimum of five day's work. If a student is unable to complete a minimum of five days of fieldwork, they will be considered not to have taken the course.

If a student is unable, due to Covid-19 infection, to sit the final exam on September 10th (in Saint John, N.B.) then an arrangement can be made for them to sit the final exam upon their return to UWO.

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

No electronic devices are required or permitted at the final exam.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.