

Earth Sciences 4450y

Instructors: Dr. A. Guy Plint; Dr. Burns A. Cheadle

A ten-day field trip to study aspects of the Appalachian Orogen in Nova Scotia and New Brunswick. 1st September to 10th September, 2013.

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 2013) must be borne by the student, and is payable to the Department by August 15th 2013.

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 requisites.

Travel & Accommodation. Flights between London and Halifax, with minivan transport between localities. Motel accommodation & restaurant meals; picnic lunches. Students pay for breakfast and supper; Department pays for picnic lunches.

Syllabus

Currently 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 points of the trip are as follows:

In **Maritime Canada**, the trip involves rocks that record the Opening of Iapetus Ocean, represented by the passive margin succession of the Meguma Group, and including various island arc volcano-sedimentary successions. The Acadian Orogeny is represented by 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 volcanism 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.

Evaluation:

- 10% Attitude & Participation
- 30% Quality of Field Notes
- 20% Field Mapping Exercises
- 40% Final Exam (2 hours, held in Saint John on the last morning).

Text. A custom-prepared field guide will be issued.

Statement on Academic Offences: *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/handbook/appeals/scholoff.pdf>

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x.82147 for any specific question regarding an accommodation.