
COURSE OUTLINE

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Field Camp provides an introduction to Earth Sciences field methods. The one week course focuses on the development of hands-on skills in geological field mapping, stratigraphic analysis and the identification and geological interpretation of rocks in the field. Earth Sc 3FE3 is a required course for all students in the Honours Earth and Environmental Sciences Program and is a prescribed course for registration as a Professional Geoscientist (P. Geo.) in Ontario.

Field Camp is held at Whitefish Falls, Ontario with field trips to Sudbury and nearby Manitoulin Island, where we will examine a rock record spanning more than 2-billion years of Earth’s history. Students will examine geological evidence for the earliest known (Paleoproterozoic) glaciation, Paleozoic reef environments and a catastrophic meteorite impact that formed the Sudbury Basin.

Course Registration:
Students register in 3FE3 in June as a regular fall term course. All field and course work will be completed during the field camp and submitted prior to our return to McMaster. NOTE: All students must be officially registered and must have paid their course fees in full before field camp begins (see below).

Learning Objectives:
Upon completion of Earth Sc 3FE3 you should have the ability to:
  1. navigate using a compass and hand-held GPS,
  2. read and interpret topographic and geological maps and air photos,
  3. identify rocks and minerals in hand sample and in outcrop,
  4. describe and measure the orientation of geologic structures (e.g. bedding, faults, folds, foliations) using strike and dip, azimuth and plunge, pitch etc.
  5. plot and analyze structural orientation data on a stereonet,
  6. construct detailed outcrop lithofacies logs and use lithofacies and fossils to correlate rock units and to reconstruct past changes in geological environments
  7. construct detailed geological maps and cross-sections.

Prerequisites
One of EARTH SC 2E03, ENVIR SC 2E03, ISCI 2A18; and one of EARTH SC 2I03, ENVIR SC 2I03; and registration in Level III or above of Honours Earth and Environmental Sciences; and permission of the instructor.
Textbook
There is no required textbook for the course. You will receive a 3FE3 Field Guide at the introductory meeting. The field guide contains detailed information on the field methods and the geological background of the field areas.

Avenue Website
Course information and a PDF copy of the 3FE3 Field Guide can be found on Avenue. If you have registered in 3FE3 you should have access to the online course materials. If for some reason you cannot access the online materials contact Haley Spennato.

Evaluation
All assignments will be completed during the field camp and must be submitted by the deadline indicated on the assignment. Late work will receive an automatic penalty of 25% or zero if handed in more than 2 days beyond the deadline.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assignment #1 - Field notebooks</td>
<td>5%</td>
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<tr>
<td>Assignment #2 – Whitefish Falls geological mapping</td>
<td>40%</td>
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<td>Assignment #3 - Manitoulin stratigraphic logging</td>
<td>25%</td>
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<td>Final exam</td>
<td>30%</td>
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Itinerary and Field Activities (see course schedule for details)
- Wed. Aug. 23rd 9:30-11:30 AM, McMaster campus (BSB/345) – Introduction to the course, overview of 3FE3 field activities, field safety briefing. **Attendance at the introductory meeting is mandatory.**
- Thurs. Aug. 24th - Depart from campus for Whitefish Falls at 7:30 am sharp – meet at vans at Mary Keyes traffic circle (west side of GSB)
  - Whitefish Falls: field mapping of Huronian Supergroup, interpretation of geological structures, depositional environments, tectonic history
  - Manitoulin Island: stratigraphic studies of Paleozoic rocks, analysis of reef environments, fossils
  - field trip to the Sudbury Basin impact crater and nickel mining district
- Aug. 31st - Complete assignments, final exam. Group BBQ (5-8 pm).
- Sept. 1st - Return to McMaster University. Leave 7:00 am, arrive 3-4 pm McMaster campus.

Dates for field work/trips may change, depending on the weather.

Costs
The cost of the 3FE3 Field Camp is paid in part by the School of Geography and Earth Sciences (approx. 50%). The student cost for 2017 is $475 per student. This includes your accommodation at Whitefish Falls and transport to field sites. Your food costs (groceries) are not included in this amount, so you need to budget for this separately. Note that your tuition fees (payable to Registrar’s Office) are separate and not included in the field trip cost.
Transport/Accommodations
We will be traveling in three 11-passenger vans with limited luggage space. Each person has a baggage allowance of one medium-size duffel bag or one small carry-on size suitcase plus a small daypack. Pack lightly and bring only what you will need. See the field equipment handout for information on what to pack.

We will be staying at Forbes Holiday Resort in Whitefish Falls. The cabins are fully equipped with complete kitchens and sleep 4-5 people each. Bedding (sheets, blankets, pillows) is provided but bath towels are not supplied. Bring a single medium sized towel. Coin-operated laundry facilities are available onsite. Do not bring pillows or bedding as there is no room in the vehicles for these items.

We will make a stop in Espanola on the way to Whitefish for groceries and mid-week on the way back from the Sudbury field trip.

Further information can be found on the Forbes Resort website:
http://www.forbesholidayresort.ca/
Forbes Holiday Resort, P.O. Box 67
Whitefish Falls, Ontario P0P 2H0
Tel: (705) 285-4251
e-mail: holiday@forbesholidayresort.ca

Equipment
A list of the required field equipment was distributed by email and is also available on Avenue. These items can be purchased from the McMaster bookstore or from camping supply stores. The essential field equipment items include:

1) Compass—Silva Ranger CL 515 (No substitutions – compass must be this Silva model)
2) Field notebook (hard cover 5 x 7” e.g. Rite in the Rain or similar)
3) Hand lens (geology loupe 5x to 10x)
4) Dropper bottle
5) Safety Vest
6) Magnet
7) Nail
8) Clipboard (8.5 x 11”)
9) Whistle
10) Grain size card
11) Ruler
12) Pencils, eraser, geometry kit
13) Day pack, water bottle

If you have any questions regarding field equipment or personal gear you need to bring to field camp contact Haley Spennato (spennahm@mcmaster.ca).
**Academic Dishonesty**

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university. The following illustrates only three forms of academic dishonesty:

- **Plagiarism**, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
- **Improper collaboration in group work.**
- **Copying or using unauthorized aids in tests and examinations.**

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any change.