



## EAS 333 ADVANCED GEOLOGY FIELD SCHOOL 2010 COURSE OUTLINE AND PRACTICAL INFORMATION

*University Policy about course outlines can be found in Section 23.4(2) of the Calendar (GFC 29 SEP 2003)*

|   |  |   |     |   |     |
|---|--|---|-----|---|-----|
| EAS 333   | Advanced Geology Field School, from April 28 to May 9, 2010, or May 3 to May 14, 2010 (choice of 2 sections available, advance sign up required in Department); off-campus field work after second-term examination period.  |   |     |   |     |
| Course objectives                                     | To study in the field a wide variety of igneous and metamorphic rock types, structures, metamorphic grades, and field relations. To provide experience in the geologic mapping of structurally complex rocks. To become familiar with some large-scale tectonic elements of mountain belts, and the regional geology of the southeastern Canadian Cordillera in Alberta and British Columbia.  |   |     |   |     |
| Description   | The field school consists of 12 days spent in the field in Alberta and southeastern British Columbia, during which bedrock areas are mapped, outcrops examined, assignments carried out and reports submitted daily. Work takes place in teams of three geologists.  |   |     |   |     |
| Prerequisites   | EAS 234 (2 <sup>nd</sup> year Geology Field School), 321 (Structural), 331 (Igneous), and 332 (Metamorphic). All prerequisites are required by departure date.   |   |     |   |     |
| Textbooks   | There are no required textbooks. In the course of viewing the regional geology at outcrops and roadside stops, the two following publications will be used during the field school: (1) EAS 333 Field Guidebook, and (2) Wheeler, J.O., and McFeely, P.A., 1991, Tectonic assemblage map of the Canadian Cordillera and adjacent parts of the United States of America: Geological Survey of Canada Map 1712A, scale 1:2 000 000. The first will be provided to you. The second is available from the GSC publication sales on the Web or at the GSC Calgary office; a copy is displayed on the wall near the ESB 1-23 seminar room. |   |     |   |     |
| Grade distribution                                    | <table><tr><td>1. Field assignment reports (team work)</td><td>90%</td></tr><tr><td>2. Individual effort (participation, questions, etc.)</td><td>10%</td></tr></table> <p>Grades are based on a combination of absolute performance and performance relative to the class, with absolute performance having the most weight.</p>  | 1. Field assignment reports (team work) | 90% | 2. Individual effort (participation, questions, etc.) | 10% |
| 1. Field assignment reports (team work)               | 90%  |   |     |   |     |
| 2. Individual effort (participation, questions, etc.) | 10%  |   |     |   |     |
| Conduct   | Professional conduct is expected at all times while off campus, as well as within your team. Attendance at the entire field school is required for credit.   |   |     |   |     |

*The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to follow policies of the University in this respect. Students are also advised to familiarize themselves with the provisions of the Code of Student Behaviour (online at [www.ualberta.ca/secretariat/appeals.htm](http://www.ualberta.ca/secretariat/appeals.htm)) and avoid any behaviour which could result in suspicion of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University. (GFC 29 SEP 2003)*

Assignments These consist of field maps with marginal notes, outcrop description, stereographic or equal-area projections of structural data, description of the hand-specimen petrography of various rock types. In order to give you feedback during the course, assignments that are due throughout the field school on each day will be graded at the field school, with grades returned the next day if possible.

What to bring Field note book, geological hammer, hand lens, protractor, centimetre scale or ruler, HB and 2H pencils, assorted colour pencils, eraser, writing paper, thick indelible black felt marker or paint-pen for marking samples, sample bags for rocks, your stereonets.  
Outdoor gear: Field boots, rain gear, warm clothes (tuque + mitts; snow is possible) and long socks, shorts/swim suit, sun cream, hat, backpack or day pack, water bottle(s), camera, teddy bear. Note that we will be working in wood tick habitat and that these insects carry serious infectious diseases. Appropriate preventative measures should be taken; ask if you need prevention tips.

You will be supplied with all necessary aerial photographs, Brunton compass, acid bottle, stereoscope, mylar (drafting film) to cover aerial photos, clipboard, base maps, assignment handouts, and GPS receiver.

## **ACCOMMODATION DETAILS AND CONTACT PHONE NUMBERS. COST ESTIMATE BASED ON SHARED ROOMS AND SHARED DOUBLE BED, PER PERSON**

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| Wed. April 28, 2010<br>(Second section:<br>Mon. May 3, 2010) | Coach departs at 07:00 from Earth Sciences building.<br>Rocky Mountain Lodge, 1711 Bow Valley Trail, Canmore, T1W 2T8<br>(403) 678-5445<br>Cooking facilities (kitchens). Groceries and eats in walking distance.          |
| Thu. April 29<br>(Tues. May 4)                               | Revelstoke Lodge, 601 First Street West, Revelstoke, BC, V0E 2S0<br>(250) 837-2009, toll free 1-888-559-1979<br>Most rooms will have cooking facilities. A few may have to share cooking. Restaurants in walking distance. |
| 5 nights:<br>April 30, May 1,2,3,4<br>(May 5,6,7,8,9)        | Balfour Beach Inn, Box 37, Balfour, BC, V0G 1C0<br>(250) 229-4235<br>Cooking facilities in all rooms. No ovens, but there is a large patio BBQ (briquettes). No real restaurants in walking distance.                      |
| 4 nights:<br>May 5,6,7,8<br>(May 10,11,12,13)                | Nomad Inn, 910 Cranbrook Street North, Cranbrook, BC, V1C 3S3<br>(250) 426-6266<br>Cooking facilities in most rooms. Many restaurants in walking distance.   |
| Sun. May 9, 2010<br>(Fri. May 14)                            | Departure at 07:30 from Cranbrook.<br>Planned 17:00 arrival in Edmonton.   |

Total travel and accommodation cost for 12 days estimated at \$ 350.00 pending final quotes. This includes guidebook and Park passes. Please remember to budget for this end-of-term expense. Cost is payable at time of waiver signing at end of term; watch for posted notice about date of waiver signing.

## DAILY PROGRAM SUMMARY

Daily departure is at 08:00, or earlier as specified below. You will need a packed lunch every day except two days as specified (Days 6 and 12; you may pack lunch for those two days also, if you prefer).

Assignment and activity list below:  
(=10% ) indicates weight in final mark of the exercise to be completed that day.

- Day 1. (=5%) Departure 07:00. Travel Edmonton to Canmore, study Foothills & Front Ranges. Student pick up in Canmore can be arranged.
2. (=10%) Travel to Revelstoke on TCH. Enter Pacific time zone in p.m. (set watch back one hour). Rockies and Rocky Mountain Trench, Selkirk “allochthon”, Monashee mylonite, Revelstoke dam site geology.
3. (=5%) Travel to Balfour. Monashee gneisses, Kootenay pericratonic succession, Kootenay Arc. Shop for groceries for 5 nights in Nakusp in pm.
4. (=10%) Woodbury Creek metamorphic traverse. Walking all day.
5. (=10%) Bus leaves 07:45 (Ferry is at 08:10). Pilot Bay lakeshore metamorphic traverse. Walking all day.
6. Bus leaves 08:00: igneous petrology field trip; lunch at Trail (McDonalds and other choices). No assignment today. Rest of afternoon is free time at Balfour: swim, beach frisbee, golf, or snooze.
7. (=10%) Bus leaves 07:45 (Ferry at 08:10) Bluebell Mine ore, and Kootenay Point metamorphic mapping.
8. (=10%) Travel to Cranbrook: Black Bluff fault and Purcell Anticlinorium. Leave Pacific time in p.m. (set watch forward one hour, to Alberta time).

9, 10, 11. Eager Hill: 3 days of mapping in Rocky Mountain Trench (=30%; due on morning of Day 12).

12. Departure 07:30. Geology stops in Rocky Mountains along Hwy 3; late lunch at Cochrane (will stop at DQ); travel to Edmonton. Arrive on campus by 17:00.

## TEACHING STAFF:

Faculty: P. Erdmer, M. Bowerman

TAs: Catherine Johnson, Greg Melton, more names to be announced