"Beneath all the wealth of detail in a geological map lies an elegant, orderly simplicity" -- Tuzo Wilson

Recommended Reading List


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<td>April 22</td>
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<td>24 MDY arrives in Vegas</td>
<td>25 TAs arrive</td>
<td>26 Last day of exams</td>
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<td>2 Panamint Valley; geomorphology &amp; active tectonics</td>
<td>3 Rainbow Gardens exercise</td>
<td>4 Rainbow Gardens exercise &amp; write-up</td>
<td>5 Camp Move (4 hrs) Keystone Thrust, Dantes View Last Walmart</td>
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<td>7</td>
<td>8 Monarch Canyon Exercise</td>
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<td>10 Field Trip; Mine tour or northern DV</td>
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<td>12 Overlook and Poleta Stratigraphy</td>
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<td>15 Little Poleta Mapping and mapping Little Poleta</td>
<td>16 Big Poleta Mapping Groupie: Canoe to Black Hole</td>
<td>17 Big Poleta Mapping Sylvester’s Incubus interviews</td>
<td>18 Big Poleta Mapping section #1 due</td>
<td>19 Long Valley Field Trip</td>
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<td>Break camp; drive to Vegas (6 hrs)</td>
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<td>Field School ends</td>
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April 30: Dalhousie students arrive in Las Vegas; meet at Travelodge, 5075 Koval Ln; depart for Ridgecrest, CA;

May 1-2: Intro to Eastern California Shear Zone, active tectonics and geomorphology, Panamint Valley, California

Stay at motel in Ridgecrest for 2 nights, each person will be responsible for their own food

May 3-4: Intro to Basin & Range, and Rainbow Gardens exercise; stay at Valley of Fire campground, Nevada

Potable water at campsite, pit toilets, no showers, no laundry

May 5-10: Death Valley geology. Includes Monarch Canyon exercise; stay at Furnace Creek campground, Death Valley

Potable water at campsite, flush toilets; showers/pool/laundry at resort 7-minute walk

May 11 to 28: Sierra Nevada, Owens Valley & White Mountains; includes Poleta Folds and Big Pine pendant exercises; stay at Grandview Campground in the White Mountains, California

Pit toilets at camp, no water/showers/laundry. Swimming/showers/laundry 25 min drive away in Big Pine

May 28: Return to Las Vegas; stay at Travelodge, 5075 Koval Ln

Cell phone service is unreliable in most places. No service at any of the camps, and expect to get to town or a gas station once every 3-5 days. Roaming charges can add up quickly, so plan on purchasing a US travel add-on from your cell provider if you wish to text/call/internet.
Map of southern Nevada and eastern California showing major roads and the field school campsites with stars.
Welcome to the 2018 Advanced Field School
Southern Nevada and eastern California

The Advanced Field School mixes remote wilderness camping and rigorous geological training in the desert of southern Nevada and eastern California. During the four-week field school, students will study spectacular geology, see amazing scenery and build long-lasting relationships.

Field geology is the science and technique of recognizing, describing and interpreting geologic features in the field. It comprises more than just putting lines on a map, although lines on a map are necessary, and we will spend a good deal of time doing this. Field geology involves working out

- Stratigraphy, the sequence and conditions of formation of rock units;
- Structure, the three-dimensional geometric arrangement of rock units; and
- Geologic history, the "interpreted story" of geologic events that produced the observed stratigraphy and structure.

The three are closely interrelated, and in the very interesting cases are completely inseparable.

The most successful field geologists are those with a broad knowledge of all aspects of geology and the ability to apply it to specific situations. Field geology teaches a multitude of field techniques and draws upon the skills learned in practically every course in your undergraduate geology curriculum.

The objective of this course is for the student to gain experience in the techniques of field geology by constructing geologic maps, reports and supporting diagrams. The interpretation of the features that are recorded on maps, cross sections and stratigraphic sections are as important as the construction of these diagrams. The field report is the vehicle for expressing interpretations of the origin and evolution of the geology studied.

Watch the 2014 field school videos for more information: http://www.dal.ca/faculty/science/earth-sciences/programs/experientia_learning/field-schools/advanced_geologic_mapping.html
Health & Safety: *Safety is top priority*

- Please read the entire Rules, Regulations and Safety document. Each person will be required to acknowledgement that they have read and agree to the Rules, Regulations and Code of Conduct.
- Any risk you take can endanger the lives of your mapping team or other people in camp. Be very cautious in everything you do. You should not perform any task that you feel you are not qualified to complete or attempt.
- We will begin each day with a safety briefing. Every mapping exercise will be done in at least groups of two. Members of a mapping team must not separate or lose visual contact. Remember to always be checking your surroundings for safety hazards.
- We will ensure everyone knows where the vehicles will be parked and keys will be hidden near the vehicle. Extra first aid equipment and drinking water will be left in the vehicles.
- We will be conducting safety training and practice at the beginning of the field school and provide ongoing updates/refreshers.
- You must wear safety glasses or goggles when sampling an outcrop.
- Sun protection and hydration are the most important safety conditions. It is essential to have and use sunscreen, large brim sun hat, bandana, and at least 3 litres of water in the field. It is very hot and very dry in the desert.
- Check that all appropriate vaccinations are up to date (e.g., Tetanus, Diptheria etc...)
- Everyone will have to read and sign a few documents which will be distributed and explained separately
  - Rules, regulations, code of conduct, and safety procedures for Advanced Field School.
  - A release of liability and waiver of claims form
  - A Health and Safety form
  - An voluntary individual information form including relevant medical conditions
- Further Reading:

**Gear to Bring:**

We will not have much spare time to go shopping. Please plan accordingly and bring the gear listed below with you. The field school does provide communal gear for the kitchen and office.

In addition to a daypack, you are allowed 1 medium-sized duffle bag for personal gear and 1 other duffle bag shared with another student for a tent and sleeping bags/pads. Your daypack must be large enough for your geology kit, hiking equipment, raingear, and 3 liters of water. Note that the maximum size of checked luggage for US bound flights is 50 lbs.

When hiking, you will need to carry a fair bit of this equipment in your day pack. Choose a pack with this in mind. The following is a list of gear that you do need to bring:

**Personal Items**

- 3-4 pr. pants (cargo pants are great)
- 8 sets complete underwear
- 5 pr. heavy wool boot socks (long)
- medium sweater
- warm coat
- belt
- tennis shoes (for camp)
- complete toiletry
- sunglasses
- sunscreen
- flashlight (headlamp)
- battery alarm clock
bathing suit
large bandannas/head covering
brimmed hat (sun protection)
8 T-shirts (cotton is best)
long-sleeved cotton shirts w collar
wool knit hat (for sleeping on cold nights)
1-2 prs. shorts
water bottles (3 litre capacity)
extra contact solution if applicable

small first aid kit
sturdy hiking boots (broken-in)
camera w/ memory card/batteries
gloves (for cold evenings/mornings)
towel(s)
lip balm
tervas/watershoes/flip-flops
moisturizing cream
wet wipes

Note that we will experience extreme temperature variations. From below freezing at night in some camps to above 37°C in the middle of some days. In fact, we may experience these variations in the same day. Plan accordingly and bring hot- and cold-weather clothing.

**Medication:** If you require any type of medication (allergies or any other type of medical condition, i.e., an effective pain reliever, topical creams for rashes, other prescription medication, etc...) bring what you need for the field school with you.

**Please inform the Instructors if you have a medical condition that requires immediate or constant medication. Also inform the Instructors and Camp Manager if you have food allergies or other dietary preferences.**

**Sleeping Equipment**
Sleeping bag (-5°C or lower -- it gets cold at night)
Self-inflating air mattress or other sleeping pad (this is critical)
Tent – 3 season OK, but you should avoid cheap department store brands. A good combination of quality and price economy.
Small pillow (optional)

**Geological Field Gear**
field trip guidebook (provided)
Brunton compass (provided as rental)
**notebook(s)**
clipboard (8.5x11)
safety glasses
pencil crayons (good set)
sharpies
small day pack
rock hammer
pocket knife (3” blade)
rain gear (light & small, but quality)
belt (to carry Brunton, pocket knife and camera)
Staedtler drawing pens or similar; at least 2 each of 0.20mm and 0.35mm
small first aid kit

journal articles
**hand lens w/ lanyard**
magnet
plastic ruler (small, 6’’)
mechanical pencils 0.5 mm
protractor (Douglas is best)
sample bags (optional)
3 litre min. water bottles or camelback
moisture-proof match case (or lighter)
sandwich box (to hold 2 sandwiches)
roll of masking tape
wrist watch (or other reliable time keeper)
Travel:
Everyone requires a valid passport to travel to the US. Please check that your passport will not expire prior to July, 2018.

Dalhousie students and staff must book and pay for their own flights. We will meet at Travelodge, 5075 Koval Ln at 4:00 PM on April 30th, 2018. We will arrive back to Travelodge, 5075 Koval Ln on May 28th by 4:00PM. Motel rooms are booked for everyone the night of May 28th.

During Field School, we will travel between field sites and camps using two rental vehicles, a pickup truck which will tow a cargo trailer. Only field school staff are permitted to drive these vehicles.

Camp Setup:
Camp life is an integral part of field school. We expect everyone to contribute to a vibrant and well-functioning camp community. To encourage this, we have designed a mobile, fully-equipped camp including an office tent, kitchen tent, generator and water pump system.

Kitchen tent and equipment:
The kitchen tent includes a 10x20 ft awning tent with two 3-burner propane stoves, two upright fridges, a BBQ, and a double sink equipped with running water. We have a 5000 W generator which powers lights, the fridges, coffee makers, and a water pump system. The water pump system includes a ¾ hp pump and pressure tank hooked up to two 70 gallon water tanks and a water heater. We want to ensure a high standard of sanitation for meal preparation and clean up.

Under the supervision of an instructor or teaching assistant, students will take turns with dinner preparation for the entire group, breakfast and lunch preparation, and clean up. Students will divide themselves into groups and a rotating schedule will be posted. The teaching assistants will do the grocery shopping but the cooking groups are encouraged to work with them to set menus and quantities.
Office and Lecture Tent:
The office tent is a 14x24 ft heavy duty canvas long house. Folding tables and chairs are provided as well as lights so that students can work on their maps, cross sections and reports each evening.

Communal areas:
At each campground, there will be designated areas for socializing including fire pits, picnic tables and shade umbrellas. We will provide folding camp chairs for everyone. We will start early and end early in order to work in the cooler part of the day leaving the afternoon prior to dinner for down time. Some students choose to do their work during this time, others will relax and socialize. At some of the campsites lakes, rivers or swimming pools will be available to go swimming. Also, some campsites or nearby towns have shower and laundry facilities. After dinner and cleanup, we will often have a campfire.

All campgrounds have toilet facilities. Some are rudimentary outhouses while others have flush toilets and running water.

Personal Tents:
Personal sleeping tents, sleeping bags and sleeping mats are not supplied and must be brought by each individual. In order to reduce weight we ask that students arrange to share a tent with at least one other person. This will reduce the number of tents and therefore luggage. As mentioned earlier, we will experience extreme temperature variations so it is important to bring a warm sleeping bag and a sleeping pad. Check your tent and other equipment before departing to make sure all of the pieces (poles, pegs, ropes) are included. A lightweight ground sheet/tarp will help prevent rips in the tent when set up on sharp rocks.
Daily Routine:
5:00-5:30am – wake up.
   The breakfast crew will prepare coffee, hot water, porridge, and lay out breakfast and lunch material
6:00am – breakfast and lunch preparation
   Porridge and cereal for breakfast; each person will prepare their own lunch. Dinner leftovers will be available for those who get up early.
7:00am – depart in vehicles for field work
   Mapping pairs or groups will be assigned. Base maps and assignments will be provided and explained. Vehicles will be parked for the entire day in the same location with keys hidden nearby. Extra water and first aid equipment will be left in the vehicles.
7:30am – arrive at field site
   Introductory lecture and safety briefing at field site. Mapping pairs or groups will conduct field work. Instructors and TAs will attempt to visit each group while in the field. Each mapping group will pace themselves during the day including breaks and lunch. Ensure you have enough food and water.
3:00-4:00pm – assemble at vehicles and drive back to camp
4:30-6:00pm – cooking group prepares dinner; downtime for others
   At some camp sites, laundry/shower/swimming shuttles will be organized during this time
6:00-7:00pm – dinner
7:00-7:30pm – clean up crew does dishes and puts away leftovers
7:30-10:00pm – homework, evening lectures, camp fire
   Most evenings students will have homework to do as well as planning for the next day. Usually there is a short lecture in the office tent from 8:00-8:30pm.
9:00-10:00pm – bedtime.
   Check chore rotation list for the next day prior to going to bed in case you are on breakfast duty.
During camp move days, we will wake and have breakfast at the usual time and then as a group we will tear down camp and pack the cargo trailer. Usually this takes 1.5-2 hours. There will be number of field trips usually linked with camp move days. We plan to arrive by mid-afternoon at the next camp in order to set everything up and prepare dinner.
# Emergency Contact Numbers
## April 24th to May 28th 2017

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<td>Mike Young</td>
<td>902-789-7519</td>
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<td>902-494-2364</td>
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<td>Bryan Maciag (TA)</td>
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<td>Grant Shortreed (camp mgr)</td>
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<tr>
<td>Earth Sciences</td>
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<td>fax: 902-494-6889</td>
<td>902-494-2358</td>
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<tr>
<td>James Brenan (Chair)</td>
<td>902-220-7593</td>
<td>(work cell)</td>
<td>902-494-2355</td>
</tr>
<tr>
<td>Tom Duffett</td>
<td>902-478-2909</td>
<td></td>
<td>902-494-3777</td>
</tr>
<tr>
<td>National Rental Car</td>
<td>844-393-9989</td>
<td></td>
<td>Vegas: 702-263-8411</td>
</tr>
<tr>
<td>Travelodge 5075 Koval Ln, Las Vegas</td>
<td></td>
<td>(April 24-30; May 28-31)</td>
<td>702-736-3600</td>
</tr>
<tr>
<td>Valley of Fire Campground</td>
<td></td>
<td>(May 3-5)</td>
<td>702-397-2088</td>
</tr>
<tr>
<td>Furnace Creek Campground</td>
<td></td>
<td>(May 5-11)</td>
<td>760-786-2441; 760-786-3249</td>
</tr>
<tr>
<td>Bristlecone Pine Forest Manager</td>
<td></td>
<td>(May 11-28)</td>
<td>760-873-2514</td>
</tr>
<tr>
<td>Inyo National Forest, Visitor Information</td>
<td></td>
<td>(May 11-28)</td>
<td>760-873-2523</td>
</tr>
</tbody>
</table>

## Emergency Response Form, Department of Earth Sciences

<table>
<thead>
<tr>
<th>SAFETY ITEM</th>
<th>INFORMATION FOR THE EXCURSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excursion Date and Time (departure / return)</td>
<td>April 30th to May 28th (Staff will be at site April 24th to May 30th)</td>
</tr>
<tr>
<td>Location of Excursion</td>
<td>Southern Nevada and eastern California</td>
</tr>
<tr>
<td>Field Leaders</td>
<td>Mike Young: <a href="mailto:mike.young@dal.ca">mike.young@dal.ca</a></td>
</tr>
<tr>
<td>Designated Deputy Leaders (TAs)</td>
<td>Bryan Maciag: <a href="mailto:bmaciag@dal.ca">bmaciag@dal.ca</a>; Grant Shortreed: <a href="mailto:gr495368@dal.ca">gr495368@dal.ca</a></td>
</tr>
<tr>
<td>No. of Participants (including Leaders and Assistants)</td>
<td>9 students; 1 faculty; 1 Camp Manager; 1 TA (12 total)</td>
</tr>
<tr>
<td>Charlotte Adams</td>
<td><a href="mailto:charlotte.adams@dal.ca">charlotte.adams@dal.ca</a></td>
</tr>
<tr>
<td>Kelsey Burns</td>
<td><a href="mailto:kburns@dal.ca">kburns@dal.ca</a></td>
</tr>
<tr>
<td>Juan Chavez</td>
<td><a href="mailto:juan.chavez@dal.ca">juan.chavez@dal.ca</a></td>
</tr>
<tr>
<td>Ariel Greenblat</td>
<td><a href="mailto:arielgreenblat@gmail.com">arielgreenblat@gmail.com</a></td>
</tr>
<tr>
<td>Makani Joinville</td>
<td><a href="mailto:mk231756@dal.ca">mk231756@dal.ca</a></td>
</tr>
<tr>
<td>Tanner Milne</td>
<td><a href="mailto:tanner.milne@dal.ca">tanner.milne@dal.ca</a></td>
</tr>
<tr>
<td>Kanwar Multani</td>
<td><a href="mailto:kmultani@dal.ca">kmultani@dal.ca</a></td>
</tr>
<tr>
<td>Ryan Taylor</td>
<td><a href="mailto:ryan.taylor@dal.ca">ryan.taylor@dal.ca</a></td>
</tr>
<tr>
<td>Jacob VanderWal</td>
<td><a href="mailto:jacobvanderwal@gmail.com">jacobvanderwal@gmail.com</a></td>
</tr>
<tr>
<td>Emergency Equipment Present:</td>
<td>Individual and group first aid kits and first aid kits in vehicles</td>
</tr>
<tr>
<td>First aid kit(s) available</td>
<td>Benadryl, ibuprofen, sunscreen, water</td>
</tr>
<tr>
<td>Other equipment (list)</td>
<td>Each person is responsible for camping equipment including tents, sleeping bags, warm/cool clothing, personal first aid kit</td>
</tr>
<tr>
<td>Who has formal First Aid experience</td>
<td>Young,</td>
</tr>
<tr>
<td>Drivers with valid licenses and suitable license classification</td>
<td>Young, Maciag, Shortreed</td>
</tr>
<tr>
<td>Rental vehicle insurance coverage (collision, personal accident, theft)</td>
<td>Full liability coverage on each of the 2 rental vehicles</td>
</tr>
</tbody>
</table>
### Cell phone number(s):
See above

### Local Emergency Telephone Numbers
911;

### Other Emergency Numbers:
See below for medical centre contact info

### Weather Forecasts
None available

### Tidal information
Not applicable

### Nearest Medical Facilities and other contact numbers

#### Las Vegas (April 24-30 & May 28-31; within 50 miles)
- [www.northvistahospital.com](http://www.northvistahospital.com) - 1409 E. Lake Mead Blvd., North Las Vegas (NE) - (702) 649-7711
- [www.springvalleyhospital.com](http://www.springvalleyhospital.com) - 5400 South Rainbow Boulevard, Las Vegas (SW) (702) 853-3000
- [www.valleyhospital.net](http://www.valleyhospital.net) – 620 Shadow Ln, Las Vegas, NV 89106 (Central) (702) 388-4000
- [www.mountainview-hospital.com](http://www.mountainview-hospital.com) - 3100 North Tenaya Way, Las Vegas (NW) (702) 255-5000
- [www.summerlinhospital.com](http://www.summerlinhospital.com) - 657 Town Center Drive, Las Vegas (W) - (702) 233-7000

#### Mesquite, NV (May 2-5)
- [www.mesaviewhospital.com](http://www.mesaviewhospital.com) - 1299 Bertha Howe Ave, Mesquite - (702) 346-8040

#### Valley of Fire Campground, NE Las Vegas, (May 1-5)
- [www.northvistahospital.com](http://www.northvistahospital.com) - 1409 E. Lake Mead Blvd., North Las Vegas (NE) - (702) 649-7711

#### Beatty, NV (May 5-11)

#### Ridgecrest, CA (May 5-11)
- Ridgecrest Regional Hospital; [www.rrh.org](http://www.rrh.org) - 1081 North China Lake Boul., Ridgecrest - (760) 446-3551

#### Lone Pine, CA (May 11-28)
- Southern Inyo Hospital; [www.sihd.org](http://www.sihd.org) - 501 East Locust Street, Lone Pine (760) 876-5501

#### Bishop, CA (May 13-28)
- Northern Inyo Hospital; 150 Pioneer Lane, Bishop, CA, United States 760-873-5811

### University Contact Numbers

**Dalhousie Security:** 902-494-6400
ACADEMIC MATTERS

Text Books (all are optional)
5. ERTH 2000/3001/4002 Field School Manuals

All books are optional and some have been used in other ERTH courses.

All material submitted by you for a grade will be your independent work. This is not as simple as it sounds, in part because you will be working with at least one field partner during all exercises and projects. We do encourage the free exchange of ideas in the field and back at camp. In practice, “independent work” distills down to this: *All data on your maps and in field notes was observed by you, and all work submitted for a grade was done by you.*

**Example #1:** Suppose that during a discussion with another group in the field, you and your partner(s) become aware of an important structure that you had missed in your mapping. On that basis alone, it would not be appropriate to enter that structure on your map or submit your map with that structure shown. However, it would be appropriate to enter the idea in your field notebook and to acknowledge the source of the idea. You and your partner(s) could then return to the area in question, see the structure, collect your own data, and enter your data on your map (in fact, you may decide that the other group is completely wrong!) What you submit as your work must in fact be your work. We encourage the sharing of ideas and observations (not data) with one another. This is part of the learning experience and process.

**Example #2:** Suppose that you encounter some students measuring the strike and dip of an outcrop. You plan to measure the strike and dip of this formation, but as you approach you hear one partner say to the other, “Strike 238, Dip 72”. **What do you do?**

**Answer:** You do not enter that measurement in your field notes. You inspect the outcrop yourself and make your own measurements. They might have measured a joint instead of bedding, or they may have got the dip in the wrong direction.

**GRADING CRITERIA**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes (2) &amp; photos</td>
<td>10%</td>
</tr>
<tr>
<td>Timescale Quiz:</td>
<td></td>
</tr>
<tr>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Lit review/Field trip Quiz (Day 3):</td>
<td>5%</td>
</tr>
<tr>
<td>Posting photos &amp; captions:</td>
<td>2%</td>
</tr>
<tr>
<td>Field Projects</td>
<td>70%</td>
</tr>
<tr>
<td>Panamint, Big Pine, Owens Valley:</td>
<td>5%</td>
</tr>
<tr>
<td>Rainbow Gardens:</td>
<td>10%</td>
</tr>
<tr>
<td>Monarch Canyon:</td>
<td>20%</td>
</tr>
<tr>
<td>Poleta Folds:</td>
<td>35%</td>
</tr>
<tr>
<td>Field Grade*</td>
<td>20%</td>
</tr>
</tbody>
</table>

**FIELD GRADE CRITERIA**

Field courses are challenging. It is especially tricky to have so many students working together under stressful conditions. In this course you will live in close quarters with a lot of others, work together in various groups for various tasks, and be challenged in many ways. It is essential that we all strive to make our own experience a rewarding and positive one. It is also important to work hard to make and maintain a constructive group experience. A single, consistent irritation to an otherwise positive group environment hurts everyone. In a similar way, a single act of cooperation, generosity or kindness can lift the entire group. Because your own actions heavily determine your ability
to master the subjects of the course as well as influence everyone around you, a field grade will be part of your evaluation in the course. Here are the main subjective criteria used to determine your field grade.

- Independence: shows “attack”, self-motivation and initiative in problem solving
- Attitude: does not complain, helps others, exhibits a positive attitude at all times
- Participation: is punctual, follows directions, demonstrates safety in the field
- Competence: proficient, careful and respectful with field equipment
- Professionalism: respectful of yourself, fellow students, TAs and instructor
- Preparedness: is ready and willing for any situation or changes the field
- Environment and class contingencies may pose

DEADLINES:
We work hard to make the grading in this course fair. In the professional world, "there are no finished products, there are only deadlines." So we require everyone to turn in their reports at the imposed time. To be fair to all, if for any reason you are late in turning in your project, the following criteria will be imposed:

- Late, by any amount of time: deduct 10% of the grade on that exercise.
- Each additional hour late: deduct an additional 10% of the grade on that exercise.

Auxiliary Fees
Students must pay an auxiliary fee of $1500. The auxiliary fee covers food, transport, and lodging expenses while at field school. Transportation to and from the field school location is the responsibility of each student.

ACCOMMODATION POLICY FOR STUDENTS
Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic protected under Canadian Human Rights legislation. The full text of Dalhousie’s Student Accommodation Policy can be accessed here: http://www.dal.ca/dept/university_secretariat/policies/academic/student-accommodation-policy-wef-sep--1--2014.html
Students who require accommodation for classroom participation or the writing of tests and exams should make their request to the Advising and Access Services Centre (AASC) prior to or at the outset of the regular academic year. More information and the Request for Accommodation form are available at www.dal.ca/access.

ACADEMIC INTEGRITY
Academic integrity, with its embodied values, is seen as a foundation of Dalhousie University. It is the responsibility of all students to be familiar with behaviours and practices associated with academic integrity. Instructors are required to forward any suspected cases of plagiarism or other forms of academic cheating to the Academic Integrity Officer for their Faculty.
The Academic Integrity website (http://academicintegrity.dal.ca) provides students and faculty with information on plagiarism and other forms of academic dishonesty, and has resources to help students succeed honestly. The full text of Dalhousie’s Policy on Intellectual Honesty and Faculty Discipline Procedures is available here: http://www.dal.ca/dept/university_secretariat/academic-integrity/academic-policies.html

STUDENT CODE OF CONDUCT
Dalhousie University has a student code of conduct, and it is expected that students will adhere to the code during their participation in lectures and other activities associated with this course. In general:
“The University treats students as adults free to organize their own personal lives, behaviour and associations subject only to the law, and to University regulations that are necessary to protect
- the integrity and proper functioning of the academic and non-academic programs and activities of the University or its faculties, schools or departments;
- the peaceful and safe enjoyment of University facilities by other members of the University and the public;
- the freedom of members of the University to participate reasonably in the programs of the University and in activities on the University's premises;
- the property of the University or its members.”
The full text of the code can be found here: http://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html
INTRODUCTION

The principal objective of Earth Sciences field trips is to expose students to geology in the natural setting and to teach them to make accurate observations and interpretations based on field relationships. These rules and regulations are designed to maximize the learning environment and maintain the highest safety standards possible for yourself and others. Our field trip rules and guidelines have evolved over a period of many years and we maintain that there are sound reasons for all of them. The instructor(s) will be happy to explain the reasoning behind any of the rules should you have any questions. While we have no wish to unnecessarily limit your personal freedom and/or enjoyment of our field excursions, one of our goals is to maintain a high level and safe field school program for decades to come. Please try to remember this when a rule seems arbitrary, unreasonable or inconvenient. Students who violate rules can be dismissed from field trips or field camp and may face disciplinary action at Dalhousie University upon return. While on a field trip you are bound by all the rules and regulations in the “Dalhousie University Calendar” and by the rules below which are more specifically formulated for field trips in general and ERTH 4002 Advanced Field School in particular. Because a number of people will be traveling in close quarters, special efforts must be made to exercise due regard for the rights and feelings of others. As long as everyone uses a reasonable amount of common sense, there will be no problems.

All rules and regulation apply to both students and staff of Dalhousie / Earth Sciences field trips.

Failure to comply with the rules, regulations and code of conduct may result in immediate dismissal from field school. Less severe infractions will result in verbal warnings. Multiple verbal warnings will indicate a lack of compliance and may result in dismissal from field school. If dismissed, all travel arrangement and costs will be the responsibility of the dismissed party.

All field school participants (faculty, staff, TAs, students) are required to acknowledge, in writing, that they have read and agree to the rules, regulations, code of conduct, and safety procedures

PROCEDURES IN THE EVENT OF AN EMERGENCY

If you are involved in an emergency of any kind, you are to:

1. Stop what you are doing.
2. Check / clear the situation.
3. Call for help, use 911 if a phone is available. Begin a chain of communication that moves both ways from the individual, passed next to your partner, passed next to a TA, then finally to the supervising faculty. During an emergency, you should remain in the same geographic location to allow information to pass efficiently along this chain.
4. If you are qualified or have been trained by the Red Cross or similar accrediting organization, apply appropriate medical treatment. At the very least, keep the victim comfortable, warm, and conscious.

GENERAL RULES

1. Smoking in Dalhousie owned or rented vehicles or lecture tents is not permitted.
2. Everyone must make a special effort to be prepared to leave for the field and other destinations at the appointed time. One person who opts to sleep in, grab a last minute sandwich, or makes a long phone call will hold up the group or possibly get left behind. You should always ride in your assigned vehicle so it will be obvious if you are missing when we leave stop or outcrop.
3. Radios, CD players, IPods, MP3 players, bull sessions, song feasts, and the like are permitted only as long as they don't infringe upon the rights of others to study, sleep, etc. or impair the concentration of the driver to operate the vehicle safely. CD players without earphones are not allowed in the vans--they block out instructions or geology descriptions given and limit meaningful conversations. CD/MP3 players (even with earphones) should not be used during active instruction.
4. Efforts should be made to ensure that all equipment is properly cared for. Careless treatment of tents, trailers, electrical and plumbing equipment, personal gear, etc. can result in other members of the group becoming cold, wet, or inconvenienced in some other manner.

5. At all times you should respect the ecology of the areas we visit and show a respect for nature. Do not intentionally damage vegetation or other natural features. Do not pollute lakes and streams and do not deface natural or manmade objects. Do not throw stones or roll boulders down hillslopes. If you have permission to walk through a gate, leave the gate as you found it (closed, locked, or open).

6. During free time you are welcome to pursue your personal interests and activities. Reading, hiking, jogging, fishing (if licensed). However, if you leave camp during free time you do so under your personal responsibility and at your own risk. Always leave notice with some of the staff regarding where you are going and consider the safety of your environment, especially if you are conducting your activity alone. You must be back on time for the next planned activity. The Field School will not wait for you so plan accordingly.

RULES OF CONDUCT

1. Rules of personal conduct are designed to foster a healthy and prosperous educational environment. Violation of any of the rules listed below constitutes grounds for immediate dismissal from a field trip or field camp.

2. Belligerent-intimidating or harassment-type of activity will not be tolerated. Any violation of this rule should be reported immediately to a member of the staff. Again, we, as a Dalhousie class, are bound by all the rules and regulations concerning harassment laid out in Procedures Rules & Regulations. This includes joke-telling, name-calling, or other verbal abuse which may not be intended to be racially or sexually demeaning but which could generate an uncomfortable environment or cause a student to feel insulted. We rely on the morals and values of the group to challenge and cease any such activity. If peer pressure does not prevent a repetition of the activity, use the chain of command to report the event.

3. As a co-educational group we must be particularly careful to avoid any behavior or activity that might be considered sexual harassment. Even though such behavior may be unintentional or offered in jest, it cannot be tolerated. A jest for one person can be a deep injury to another. If anyone feels that such a situation is developing or has occurred, they are asked to report it immediately to a faculty or staff member. If it involves a staff member, report it to one of the faculty members. We ask that you err on the side of caution.

4. No means no. There are no exceptions. No only needs to be said once and there is nothing to explain. No means no.

5. The use of illegal drugs is strictly forbidden; this includes recreational drugs. All controlled substances are forbidden in camps, hotels or in the field. Anyone caught using drugs will be dismissed from the course.

6. Fireworks are not permitted on field trips

7. Students may not possess firearms of any type; violators will be dismissed from the program.

POLICIES CONCERNING ALCOHOL

1. Dalhousie does not encourage the use of alcoholic beverages by students. It recognizes that students need to make individual choices concerning the use of alcohol. The university supports the choice not to drink and actively discourages the misuse of alcohol. Intoxication in no way releases a student from full responsibility for their behavior and its consequences.

2. Alcohol consumption is not allowed during instruction.

3. Alcohol consumption is not allowed during the work day seven days a week. Alcohol consumption is allowed after the work day is complete. At no times either within or outside of the normal workday hours when a student or staff is conducting trip or camp activities (like running the kitchen or erecting camp equipment) is alcohol to be consumed.

4. No hard liquor including hard cider, vodka, whiskey, etc. is allowed – in vehicles, in our camps, in hotels, or in town.

5. Beer and wine are the only alcoholic beverages that are allowed to be consumed by those who are of legal age in the state or province we are camping, and then only in moderation and only at appropriate times and places. Public rowdiness and/or drunkenness will not be tolerated. When in camp, beer can only be consumed in the evening, after dinner, and in the area designated for social gathering.

6. Mixed drinks, shots, chugging, and drinking games are not permitted at any time during field trips, even during free time in town.
7. Students are allowed to buy and consume beer and wine only in moderation. Students are limited to a maximum possession of six 12-ounce cans of beer or 1 bottle of wine. Pooling resources to purchase beer for a larger group is not allowed. Students may not provide alcohol to others – whether they are of legal age or not.

8. Consumption of beer or wine in the vehicles, even when parked, is strictly forbidden.

9. Beer or wine can only be transported in the rear of the vehicle in unopened and unbroken units (6 pack, 12 pack, etc.). Broken units in a vehicle will be considered as evidence of consumption in the vehicles and violators will be dismissed. Transportation of broken units must therefore be in a trailer or the pickup bed.

10. Failure to comply with these rules will have consequences. If a student is considered to be intoxicated by a field school instructor or fails to comply with these rules more than once, the student can be dismissed from ERTH4002 Advanced Field School and sent home as soon as possible. Any costs involved in transportation home are the student’s responsibility.

SAFETY IN CAMP
1. Propane lanterns, stoves, kitchen gear etc. can be a serious hazard.
   a. Proper usage, care, and maintenance of the stoves and lanterns will be presented to everyone during the early days of field camp; however, using common sense will be the most important accident prevention policy.
   b. NEVER take a lighted lantern into your tent.
   c. If a lantern or stove is not working properly, inform a staff member immediately.
   d. Only the staff members will operate the gasoline-powered generators.

2. For reasons of safety and insurance, only staff members are permitted to operate gas-powered equipment (vehicles, generators, heaters).

3. At times, large quantities of firewood must be prepared:
   a. A staff member must approve any student use of firewood cutting equipment (hand saws and axes). Always exercise extreme caution when using these tools.
   b. Do not chop wood in an area where there are people nearby who might be struck by an axe, flying wood, or dislodged axe head.
   c. If you have never had any experience with an axe, check with a T.A. prior to using one.
   d. Do not saw or chop into the ground, rocks, nails, etc., a dull axe can be dangerous.
   e. Make every effort to maintain a neat woodpile. Tripping over an outlying log or branch (common at night) may lead to serious injury.

4. Never go barefoot in camp. Rusty nails, broken glass, cacti, etc. are a hazard in any campground and a geologist who can’t walk, can’t map.

5. Open-toed shoes or sandals are not allowed in the camp kitchen.

6. Ground squirrels and other animals occupy our campsites—Do not keep food in your tent – animals will eat through your tent to get “treats”. Unless absolutely necessary, do not trap or kill animals as they can carry disease.

SAFETY IN THE FIELD
1. Always wear boots in the field. Tennis shoes and similar footwear are not recommended for fieldwork, as they do not provide adequate ankle support.

2. Use extreme caution in, and when possible stay out of, particularly precipitous areas. Climbing in dangerous areas is not permitted. If you have doubts about whether working/visiting an area could be potentially dangerous "don't do it" (no area, however interesting and/or spectacular, is worth placing your safety at risk). The staff will attempt to identify dangerous (forbidden) areas but you must use good judgment.

3. When climbing, be careful to avoid dislodging loose materials. A rolling rock can be extremely dangerous to the people below.

4. Avoid climbing directly above another person or group. If you must pass above them on a slope, always warn the people below of what you intend to do and wait until they get out of the way. If you dislodge a rock, yell, "rock, look out below". If you are below, seek shelter and look upslope for the projectile.
5. Do not place yourself in jeopardy by moving directly below another person or group. If you must traverse a slope below another person, ask them to remain still until you are safely out of the way.

6. **DO NOT ROLL BOULDERS**; there could be other people, animals, etc. out of sight down slope and a rapidly moving boulder can be fatal.

7. Exercise *extreme* caution if you smoke in the field. Forest or sage brush fires are an ever-present hazard. Make doubly sure that matches and cigarette butts are extinguished. Better still - don't smoke. This is an opportunity to cut down on a bad habit. There may be times during drought when public lands are posted prohibiting fires of all kinds including smoking. You *must* honor these special regulations and **not smoke**.

8. If you become lost when in the field, do not wander looking for the group; that will just make you more lost. Stay where you are. Position yourself near a path or open ground. Do not stay near a raging stream as the noise makes it difficult to hear and be heard. A search party will find you. Take the time to find or acquire the appropriate shelter and water for a night's stay should that be necessary.

9. You should never be alone when in the field. If you or your partner becomes injured when in the field, do not panic. Check the scene; ensure there is no further chance for injury. Determine the extent of the injury. Call for/find help. Do not offer to treat the injury unless you have been trained to do so. Do not move an injured person, especially if the injury involves broken bones. The best course of action is to find help in the form of an instructor or TA as quickly and efficiently as possible.

10. Be careful when crossing fences that you don't break them down (bad for the fence) or cut yourself on the barbed wire (bad for you). Also, **ALWAYS** leave gates as you found them. If they are open, leave them open. If they are closed, make sure they are closed after you pass through.

11. When you leave for the field be certain you have: 1) a raincoat, 2) warm clothing, and 3) dry matches properly housed. If you have to spend a night in the mountains, even in a desert, these materials are critical.

12. The chain of communication in the field begins with the individual, passed next to your partner, passed next to a TA, then finally to the supervising faculty. During an emergency, you should remain in the same geographic location allowing information to pass efficiently along this chain.

**WEATHER SAFETY**

1. Field work is to end and students are to seek shelter when extreme heat, cold, precipitation, or wind descends.

2. Lightning is a particularly serious danger when working at high elevations and in exposed regions. Students are to exercise **NO DELAY** in seeking shelter and moving from high, exposed regions when thunderstorms are approaching.

3. Hypothermia is a serious life-threatening condition. Students are to dress appropriately for weather conditions, but if faced with hypothermia, are to stop working and do what is necessary to conserve heat. This includes removing wet clothing, seeking shelter, and curling up in a ball to retain body heat.

4. Heat stroke is a similarly serious life-threatening condition. Students are to always have not less than 2 liters of water when they depart for a day in the field. At least 4 L is recommended. Seeking shelter from the sun, allowing the body to periodically cool off, and being continually hydrated are the best defenses against heat stroke.

5. Sun poisoning occurs all too often, particularly on fair-skinned people. Stay covered with clothing and 30 SPF sun block during field work. **Always wear a hat in the field.**

6. Become aware of the signs of heat stroke and dehydration in yourself and your field partner. Early signs of dehydration include dark yellow urine, chapped lips, and no desire to void in a 4-hour period during the day. Dehydration prevents a person from properly sweating and therefore from regulating her temperature. This can lead to heat stroke. **Heat stroke is a form of hyperthermia and is a medical emergency condition.** Signs of heat stroke include cool, pale, clammy skin, muscle cramps, headache, nausea, fatigue and weakness, dizziness or lightheadedness, possible fainting. Stop any physical exertion, immediately get the person to shade, and try different methods to slowly but efficiently cool the person.

**HEAT STROKE: SYMPTOMS AND TREATMENT**

Heat stroke is the most serious form of heat injury and is a medical emergency. If you suspect that someone has heat stroke -- also known as sunstroke -- you should call 911 immediately and render first aid until paramedics arrive. **Heat stroke can kill or cause**
damage to the brain and other internal organs. Although heat stroke mainly affects people over age 50, it also takes a toll on healthy young athletes. Heat stroke often occurs as a progression from milder heat-related illnesses such as heat cramps, heat syncope (fainting), and heat exhaustion. But it can strike even if you have no previous signs of heat injury.

Heat stroke results from prolonged exposure to high temperatures -- usually in combination with dehydration -- which leads to failure of the body's temperature control system. The medical definition of heat stroke is a core body temperature greater than 105 degrees Fahrenheit, with complications involving the central nervous system that occur after exposure to high temperatures. Other common symptoms include nausea, seizures, confusion, disorientation, and sometimes loss of consciousness or coma.

**Symptoms of Heat Stroke**
The hallmark symptom of heat stroke is a core body temperature above 105 degrees Fahrenheit. But fainting may be the first sign. Other symptoms may include:
- Throbbing headache
- Dizziness and light-headedness
- Lack of sweating despite the heat
- Red, hot, and dry skin
- Muscle weakness or cramps
- Nausea and vomiting
- Rapid heartbeat, which may be either strong or weak
- Rapid, shallow breathing
- Behavioral changes such as confusion, disorientation, or staggering
- Seizures
- Unconsciousness

**First Aid for Heat Stroke**
If you suspect that someone has a heat stroke, immediately call 911 or transport the person to a hospital. Any delay seeking medical help can be fatal. While waiting for the paramedics to arrive, initiate first aid. Move the person to an air-conditioned environment -- or at least a cool, shady area -- and remove any unnecessary clothing. If possible, take the person's core body temperature and initiate first aid to cool it to 101 to 102 degrees Fahrenheit. If no thermometers are available, don't hesitate to initiate first aid. You may also try these cooling strategies:
- Fan air over the patient while wetting his or her skin with water from a sponge or garden hose.
- Apply ice packs to the patient's armpits, groin, neck, and back. Because these areas are rich with blood vessels close to the skin, cooling them may reduce body temperature.
- Immerse the patient in a shower or tub of cool water, or an ice bath.

If emergency response is delayed, call the hospital emergency room for additional instructions.

After you've recovered from heat stroke, you'll probably be more sensitive to high temperatures during the following week. So, it's best to avoid hot weather and heavy exercise until your doctor tells you that it's safe to resume your normal activities.

**Risk Factors for Heat Stroke**
Heat stroke is most likely to affect older people who live in apartments or homes lacking air-conditioning or good airflow. Other high-risk groups include people of any age who don't drink enough water, have chronic diseases, or who drink excessive amounts of alcohol.

Heat stroke is strongly related to the heat index, which is a measurement of how hot you feel when the effects of relative humidity and air temperature are combined. A relative humidity of 60% or more hampers sweat evaporation, which hinders your body's ability to cool itself.
The risk of heat-related illness dramatically increases when the heat index climbs to 90 degrees or more. So it's important -- especially during heat waves -- to pay attention to the reported heat index, and also to remember that exposure to full sunshine can increase the reported heat index by 15 degrees.

If you live in an urban area, you may be especially prone to develop heat stroke during a prolonged heat wave, particularly if there are stagnant atmospheric conditions and poor air quality. In what is known as the "heat island effect," asphalt and concrete store heat during the day and only gradually release it at night, resulting in higher nighttime temperatures.

Other risk factors associated with heat-related illness include:

**Age.** Infants and children up to age 4, and adults over age 65, are particularly vulnerable because they adjust to heat more slowly than other people.

**Health conditions.** These include heart, lung, or kidney disease, obesity or underweight, high blood pressure, diabetes, mental illness, sickle cell trait, alcoholism, sunburn, and any conditions that cause fever.

**Medications.** These include antihistamines, diet pills, diuretics, sedatives, tranquilizers, stimulants, seizure medications (anticonvulsants), heart and blood pressure medications such as beta-blockers and vasoconstrictors, and medications for psychiatric illnesses such as antidepressants and antipsychotics. Illegal drugs such as cocaine and methamphetamine also are associated with increased risk of heat stroke.

People with diabetes - who are at increased risk of emergency room visits, hospitalization, and death from heat-related illness - may be especially likely to underestimate their risk during heat waves, according to a recent study presented at the Endocrine Society's annual meeting by researchers from the Mayo Clinic in Arizona, the National Ocean and Atmospheric Administration, and the National Weather Service.

Check with your doctor to see if your health conditions and medications are likely to affect your ability to cope with extreme heat and humidity.

**Preventing Heat Stroke**

When the heat index is high, it's best to stay in an air-conditioned environment. If you must go outdoors, you can prevent heat stroke by taking these steps:

- Wear lightweight, light-colored, loose-fitting clothing, and a wide-brimmed hat.
- Use a sunscreen with a sun protection factor (SPF) of 30 or more.
- Drink extra fluids. To prevent dehydration, it's generally recommended to drink at least eight glasses of water, fruit juice, or vegetable juice per day. Because heat-related illness also can result from salt depletion, it may be advisable to substitute an electrolyte-rich sports drink for water during periods of extreme heat and humidity.
- Take additional precautions when exercising or working outdoors. The general recommendation is to drink 24 ounces of fluid two hours before exercise, and consider adding another 8 ounces of water or sports drink right before exercise. During exercise, you should consume another 8 ounces of water every 20 minutes, even if you don't feel thirsty.
- Reschedule or cancel outdoor activity. If possible, shift your time outdoors to the coolest times of the day, either early morning or after sunset.

**Other strategies for preventing heat stroke include:**

- Monitoring the color of your urine. Darker urine is a sign of dehydration. Be sure to drink enough fluids to maintain very light-colored urine.
- Measuring your weight before and after physical activity. Monitoring lost water weight can help you determine how much fluid you need to drink.

Avoid fluids containing caffeine or alcohol, because both substances can make you lose more fluids and worsen heat-related illness. Also, do not take salt tablets unless your doctor has told you to do so. The easiest and safest way to replace salt and other electrolytes during heat waves is to drink sports beverages or fruit juice.
Check with your doctor before increasing liquid intake if you have epilepsy or heart, kidney, or liver disease; are on fluid-restricted diets; or have a problem with fluid retention.

ILLNESS OR INJURY
1. Only the individuals involved can make a rational decision about their physical condition and whether or not they should seek medical help. Several courses of action are available.
2. For minor illnesses or injuries such as colds, blisters, minor sprains, etc. the individual must decide whether to "tough it out" or to stay in camp for the day and recover. It should be kept in mind that if you are unable to continue your work in the field, your entire group must stop mapping in order to get you back to camp since mapping groups are not permitted to split up. This must also be weighed against the loss of mapping time you yourself suffer if you choose to remain in camp.
3. Some injuries (e.g. twisted knees, sprained ankles and the like) make it impossible for you to keep up with your group. In this case a decision must be made about whether one or two days’ rest will get you back on your feet, whether you require medical attention, or whether you will be unable to continue with Field School.
4. Any student who feels that he or she should take a "sick day" should report this to the staff. Students are encouraged not to "malinger", but will never be forced into the field. In general, treatment of minor injuries such as small cuts and blisters is the responsibility of the individual.
5. If you need medical attention, every effort will be made to get you to a doctor as quickly as possible. It should be kept in mind that in some cases the nearest doctor could be more than 100 kilometers away and decisions to get medical help should not be postponed until the situation is critical.
6. In the event of serious illness or injury in the field, the following procedure should be followed if the victim can move under his/her own power:
   a. Use your VHF radio or phone to report the problem to other groups and to the staff.
   b. The entire group is to leave the field along the easiest route available.
   c. Once the group has reached a road, it may be necessary for the group to split up (the only conditions under which this is permitted).
   d. The injured person should be made as comfortable as possible and at least one person should remain with him/her.
   e. The remaining person(s) should proceed as quickly as possible to a van (if one is available) or to camp.
   f. If a van is available in the field, return to camp with the victim unless common sense dictates that you should go directly to the hospital (e.g., very severe bleeding). A road map and driving instructions to local health clinics will be left in the center console of each vehicle. Keys will be left near the vehicles and the location will be made clear to everyone at the beginning of each day.
   g. DO NOT SPEED! An accident only compounds an emergency.
7. In the event of serious illness or injury in the field, the following procedure should be followed if the victim is immobile
   a. Use a VHF radio or phone to report the problem to other groups and to the staff
   b. Make the victim as comfortable and warm as possible. At least one person should remain with the victim.
   c. Part of the group should return to camp for help as quickly as possible (Again: DO NOT SPEED! If you don't make it to camp you are no help to anyone).
   d. NOTE: If there is a suspicion of a back or neck injury, DO NOT ATTEMPT TO MOVE THE VICTIM.
8. Because there is an assumed responsibility of the individuals and partners to keep safe and aware of unsafe conditions and to conduct proper first aid treatments, we recommend (but do not require) that all students take standard and emergency first aid training prior to field school. We will also review some common safety issues that may be encountered on Field School in the first few days of field school.

OPERATION OF VEHICLES IN THE FIELD
1. In general, only staff members will drive the field school vehicles (owned or rented by Dalhousie). The driver of a vehicle is responsible for the safety of at least 7 individuals. For this reason, special efforts will be required to maintain safe driving habits. Reckless or inept driving should be reported to one of the field school faculty members.
2. Any non-staff person who operates a university-owned vehicle must receive permission (each time) from a faculty member.

3. At all times, vehicles are to be driven at reasonable speeds as dictated by road, weather, and traffic conditions, etc. AT NO TIME are vehicles to be operated in excess of existing speed limits. Speeding tickets and any other violations are the responsibility of the driver—neither Dalhousie University nor the field camp will pay fines resulting from violations.

4. No open or broken-unit alcoholic beverages or other drugs are permitted in the vans—violation will result in dismissal from the course. This regulation will be enforced!

5. No one is allowed to operate a vehicle if their blood alcohol content exceeds the state or provincial limit.

6. Even if this limit is not exceeded, no one is permitted to operate a vehicle after having consumed more than one alcoholic beverage (glass of beer or wine) or other intoxicating substance (legal drugs) within 5 hours of driving.

7. Vehicles are to be kept neat and in good repair. (Throw out trash at each opportunity.) Report all mechanical problems immediately and treat the vehicles with respect. Do not force or slam doors and keep your feet on the floor.

8. No activity is permitted in the vans that could interfere with, or infringe on, the rights of other passengers.

9. The person to the right of the driver (co-pilot) is to stay awake and alert at all times. This person is the assistant driver and should handle map reading, tolls, etc. for the driver.

10. No driver is permitted to drive to the point of fatigue.

11. When traveling, all vehicles are to maintain a reasonable spacing—do not lag behind—do not tailgate. Except under emergency conditions, no vehicle is EVER to pass another vehicle in the caravan. If you want to report a problem, use the radio. If it is inoperative, flash your headlights until the caravan pulls over.

12. It is the driver’s responsibility to check oil, water, tires, etc. at each gas stop.

13. Drivers should ALWAYS show the credit card to the station attendant before gassing the van to make certain that it will be accepted. If the tanks are filled and the credit card is rejected, you will have to "front the bill" until you can be reimbursed at a later date.

14. The two-way radios are for business communications only. No excessive chatter and no CB jargon are permitted. The radio must be left on at all times so that you can be contacted in the event of an emergency. The AM/FM stereo or other noise in the van must be kept low enough so that any radio transmission can be heard.

15. The western states in particular are overrun with a rodent population such as ground squirrels, prairie dogs, etc. Drivers should NEVER jeopardize the lives of your passengers by swerving or braking to avoid one of these small animals.

16. Always ride in your assigned vehicle. Always check to make certain your vehicle has all its passengers when we leave stop so that we don’t drive off and leave someone.

17. Do not ride in the trunk of any car or van. If a van is full, wait for the next one.

18. Vehicles are never to be run or idled to provide music, heat, or air conditioning unless directed to by a staff member.

CARE OF EQUIPMENT

1. In an effort to minimize the cost of field camp and ensure safety, we provide equipment that must be used year after year. You are responsible for its safekeeping and proper use.

2. Students are provided with a Brunton compass and carrying case, and other expensive equipment. When issued, the equipment is in perfect working condition (do not accept it if it’s not). We expect to receive the equipment in good shape at the end of the course. Normal wear is expected. If you lose equipment you will be charged its fair market value for replacement. If you damage it due to carelessness, you will be charged the cost of its repair. Always check to be certain the belt strap on the case is secure for any equipment you carry that way.

3. During each project, each mapping group is issued imagery coverage of the area. If any photo or image is lost or damaged, the mapping group will be charged for loss (for instance, black and white air photos, $2 each; color photos, $11.75 each).

4. Care of your own equipment is also critical to your comfort. Never leave your sleeping bag where it can get wet or blow away. Remember that afternoon wind and thunder storms are common even on the nicest days. If your gear gets wet, take action as soon as possible to dry it.

COOKING, CLEANUP, and MEAL ETIQUETTE
1. Early on field camp you will be assigned to a cook crew. Each cook crew will have a crew leader who is responsible for the smooth operation of that cook crew. The camp manager will ultimately be in charge of cooking related details.

2. The time for breakfast and dinner will be established by the camp manager and may vary depending on the camp site, weather, daily schedule, or type of food.

3. On normal days, the crew leader is responsible for waking his/her crew early enough to have breakfast finished by 6:30 AM sharp. This will allow the cleanup crew one half hour for cleanup prior to our 7:00 AM departure for the field. The details of cooking and cleanup are too extensive to review here. They will be reviewed in detail early in the program; however, a few important points are reviewed next.

4. The cook-crew leader will ring the dinner bell when the meal is ready to be served. The cook crew dishes out food to each student and serves themselves after the others are served. The COOK CREW announces "seconds" after they have finished eating.

5. Unless you are cooking, stay out of the cooking area. No one is allowed to eat in the cooking area.

6. Reasonable table manners and rules of etiquette are expected of all persons at all times.

HONESTY

1. ERTH 4002 is a formal University class and you are bound by all rules pertaining to academic honesty. This includes exams and map preparation. Published geologic maps of the study areas (including copies and photos of same) or student’s maps from previous years are not to be brought on field camp, doing so will likely result in dismissal.