



UNIVERSITY OF
CALGARY

DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. **Course:** **ECOLOGY 413 – FIELD COURSE IN ECOLOGY**

Lab Section(s) B01 AUGUST 18–31, 2018 Fall 2018

This course is at the Barrier Lake Field Station of the Biogeoscience Institute on Highway 40.

Instructor(s): Dr. M. Reid BI 339 220-3033 mreid@ucalgary.ca
 Dr. K. Ruckstuhl BI 258 220-8776 kruckstu@ucalgary.ca
Teaching assistant: Colby Whelan colby.whelan1@ucalgary.ca

Desire 2 Learn (D2L) course name: **ECOL 413 B01 - (Fall 2018) - Field Course In Ecology**

Department of Biological Sciences BI 186 403-220-3140 biosci@ucalgary.ca

2. **Prerequisites:** **BIOLOGY 313 and 315**

3. **Grading:** The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Module I	50%
Module II	50%

There will NOT be a Final Examination.

Passing grades in each module are required if the student is to pass the course as a whole.

Each piece of work (oral presentation, written report, participation) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade, bearing in mind that an F grade will result if the student does not pass (i.e., obtain 50% or higher) both modules.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min % required	95	90	85	80	75	70	65	60	55	53	50

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.3](#) of the University Calendar

5. **Scheduled out-of-class activities:** N/A

6. **Course Materials:** This is a field course – see last two pages of document for items to pack/bring.

7. **Examination Policy:** N/A

8. **Approved Mandatory and Optional Course Supplemental Fees:** The course tuition and supplementary fee are paid directly to the University of Calgary, Registrar's Office. The supplementary fee (field fee), which includes accommodation, meals, laboratory fees and transportation to field sites, is \$763.00. You must pay fees prior to the course. **Bring the receipt** to the course meeting on the first day of classes **on Saturday, August 18.**

9. **Writing across the curriculum statement:** In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

10. **Human studies statement** (see also [Section E.5](#) of the University Calendar):

ETHICS IN THE BIOLOGICAL SCIENCES

Studies in the Biological Sciences involve the use of living and dead organisms. Students taking laboratory- and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students *with Disabilities* available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf.

Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Biological Sciences, Dr. H. Addy by email addy@ucalgary.ca or phone 403 220-3140.

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suypaca@ucalgary.ca
SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: 403 220-6420 Email: ombuds@ucalgary.ca; <http://ucalgary.ca/provost/students/ombuds>

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval: ORIGINAL SIGNED Date _____

Department Approval
for NO FINAL EXAM: ORIGINAL SIGNED Date _____
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COURSE OBJECTIVE To examine ecological principles and techniques through field exercises in terrestrial and/or aquatic ecosystems. Understanding of introductory ecology, study design and data analysis is assumed.

COURSE COORDINATOR Dr. Mary Reid BI 339 mreid@ucalgary.ca

WHEN TO ARRIVE **Saturday, August 18.** Students are encouraged to travel to the field station in the course vans. Those wanting transportation to the field station should inform and coordinate with Dr. Reid prior to **August 18th**. We have rented two vans and will be leaving from the loading docks behind the Biological Sciences Building at **1:00 pm** sharp on Saturday and return to there at the end of the course (mid-afternoon). Anyone who wants transportation should be there at that time. For those who will be driving to the station by themselves, it is important to note that **the course meeting starts before dinner at 3:00 pm in the forestry building** beside the parking lot. All should be present.

SPECIAL RESTRICTIONS: If you have any special medical or eating restrictions please bring these to the attention of the course coordinator **prior to the commencement of the course.**

TUITION, TRANSPORTATION AND BIOGEOSCIENCES INSTITUTE FEES

The course tuition and supplementary fee are paid directly to the University of Calgary, Registrar's Office. The supplementary fee (field fee), which includes accommodation, meals, laboratory fees and transportation to field sites, is \$763.00. You must pay fees prior to the course. **Bring the receipt** to the course meeting **on Saturday, August 18.**

FACILITIES

Accommodation will be in shared rooms with shared bathrooms.

Breakfast and dinner are served in the dining hall, cafeteria style, at 7 - 9 a.m. and 6 - 7:30 p.m. respectively. You will make your own bag lunch at breakfast.

A limited number of computers are available; please bring your own. UCalgary Wi-Fi is available, but cell coverage is spotty.

SAFETY

A brief overview of normal safety precautions will be presented at the initial meeting on Saturday evening. However, remember that you, not the University, are responsible for your personal safety and, through your actions, those around you. Prevention is the key to safety, and all students will come to the course each day prepared with:

- attitudes and behaviours conducive to safe field practices;
- good footwear (no open-toed shoes);
- appropriate clothing for a normal range of local weather, including sun, rain and snow protection;
- medicines for chronic problems such as diabetes and asthma.

While engaged in field-school activities, the following are forbidden: alcohol, non-medicinal drugs, firearms, rough-housing, antagonizing wildlife, boulder rolling, rock-climbing, and hiking or swimming alone. All field-school participants are equally responsible for safety, but faculty and staff are in charge. If you are ever instructed to take an action, or stop one, do so first and ask questions later.

GENERAL ACTIVITY SCHEDULE

Work starts after breakfast and start time will be at the convenience of the instructors, typically at about 8am. Some field trips might require an early start. Lunches will be packed and usually only breakfast and dinner will be taken at the field station. Work may continue through to 10:00 p.m. (or later for nocturnal work), with a break for lunch and for dinner. Most days are spent in the field, and evenings are used for laboratory work, data analysis, and report writing. Students are required to write up reports based on data/observations from each section; time will be made available during each module for this purpose.

MODULES

Please note that all reports are due by midnight Monday September 17, 2018 via the course D2L Dropbox.

August 18 - 24: Dr. Mary Reid

Forests change with stand age due to changes in trees and other forest processes, and these changes are variously viewed as positive ("old-growth") or negative ("over-mature"). We will discuss possible effects of reducing forest age through clear-cutting or other disturbances and use standard forest mensuration methods to quantify differences among trees and stands of different ages. A particular focus will be carbon storage and sequestration. Based on these investigations as a class, students will work in groups to develop an independent study. We will also spend one day collecting and identifying stream invertebrates. By the end of this module, students will be able to visually identify the common trees, shrubs, herbaceous plants and aquatic invertebrates in Kananaskis, know how to quantify their abundance, collect excellent field notes, develop a research question and design a sampling protocol, manage data, and present ecological ideas in oral and written form. Students will be evaluated in part on their fieldbooks, so bring one that can be submitted. (Also bring your curiosity of course!)

August 25 – 31: Dr. Kathreen Ruckstuhl

This section introduces students to the different theoretical and practical aspects of studying animal behaviour in the field. This includes all aspects needed to conceive a research project, collect data and analyse it, and to present it in oral (powerpoint presentation) and written (draft of a research paper) form. The first day we will visit potential study sites and learn about the different mammals who make the Rocky Mountains their home. We will then cover some of the pioneering work, and the tools, methods used to study animal behaviour/behavioural ecology. Students will be asked to carry a field book with them for detailed note taking. At the end of the day students will decide who to partner with for their projects and to come up with a rough idea of a research question they would like to address. The second day is a preliminary data collection day, which gives students the opportunity to test out different ideas using different methods, such as, focal animal sampling, scan sampling or instantenous sampling. The remaining days will be spent on refining individual projects, and further data collection.

Suggested List of Personal Effects to Bring

- personal toiletries (toothbrush, toothpaste, floss, etc. but no perfume/cologne)
- hiking boots (minimally, sturdy walking shoes)
- jacket (windproof/waterproof)
- raingear: jacket, hat, trousers (courses go out in rain, snow or sunshine)
- shoes/sandals for use in laboratory and dormitory (leave muddy boots in entrance way)
- shower shoes (optional)
- several pairs of socks
- pants suitable for outdoor use
- shirts/blouses
- sweater (woolen or fleece are best) (Note: clothing layers are more versatile than a heavy jacket)
- mitts/gloves, toque (we hike to alpine zone in some exercises; snow may happen)
- sunglasses, sun hat, sun block
- insect repellent
- small packsack to carry extra clothing, lunch, note-taking materials in the field
- re-usable lunch bag
- water bottle (at least 1L)
- **field notebook**
- pens, pencils, eraser, ruler, calculator
- laptop (a few computers are available at the field station), flash drive
- laundry soap and loonies for washing machine and dryer
- camera
- **binoculars (if available)**
- alarm clock (note: smartphones can cover this, the camera, the calculator and more)
- bathing suit for the glacier-fed lakes (highly weather dependent)
- bear spray if available
- GPS if available
- field guides, e.g. general: Ben Gadd's "Handbook of the Canadian Rockies"; plants: Lone Pine Publishers "Plants of the Rocky Mountains" or "Plants of the Western Boreal Forest and Aspen Parkland"

Do not bring your own rubber boots if you have worn them previously, to avoid spreading whirling disease or other alien species.

Note: It can snow any month of the year so prepare yourself accordingly. There are no nearby stores so bring what you need when you come.

After Hours Security

Security is provided by G4S outside the regular BGI business hours. They will be stationed in the library in the main science building, although do routine site checks hourly. Security will be able to assist with emergencies, room/duplex access, and phone access.

Field Research Manager: Adrienne Cunnings

amcunnin@ucalgary.ca; Phone: (403) 673-3662 or (403) 220-5355

BARRIER LAKE FIELD STATION: Guest Information

Upon arrival at the Field Station there will be a safety presentation by a staff member.



Website: bgs.ucalgary.ca

1. Linens, pillows, blankets and towels are provided.
2. Cell phone reception is extremely patchy at the station. A staff member can assist you if a long distance call is required during stay.
3. Internet access is available with a combination of wireless/wired connections. Wireless can be accessed in most buildings. UofC students can connect through AirUC as on the main campus.
4. Pets are not allowed at the Field Station.
5. **Outside campfires are not permitted.**
6. Please park your personal vehicle in the main parking lot.
7. Hiking boots and dirty, wet footwear are not to be worn in the Lodge, Lab or duplexes.
8. Meals are served in the Main Lodge. Please note the Main Lodge is a **NUT FREE BUILDING**. Contact your instructor/leader if you have any food allergies, are a vegetarian or have cultural or medical restrictions that we should be aware of.
9. Please use the recycling bins in the Lodge for your empty beverage containers.
10. A laundry room is available in the North Shop. Washing machines are \$2.00/load and dryers are \$1.00/load. Please bring your own laundry detergent.
11. Please do not store any food in the sleeping accommodations. Appropriate cupboard space is available in both lodges.
12. Enjoy your stay! Let a staff member know if there are any maintenance issues (broken light bulb, plumbing issues, etc.)

