



UNIVERSITY OF  
CALGARY

DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE

1. **Course: BIOLOGY 313 – Principles of Ecology**

Lecture Section(s) L01 MWF 13:00-13:50 ST 140 WINTER 2018

<b>Lab Section(s)</b>	<b>B01, 02, 03</b>	<b>Tuesday at 9:00 AM</b>	<b>BI 232, 234, 234A</b>
	<b>B04, 05, 06</b>	<b>Tuesday at 12:00 Noon</b>	<b>BI 232, 234, 234A</b>
	<b>B07, 08, 09</b>	<b>Tuesday at 3:00 PM</b>	<b>BI 232, 234, 234A</b>
	<b>B10, 11, 12</b>	<b>Thursday at 9:00 AM</b>	<b>BI 232, 234, 234A</b>
	<b>B13, 14, 15</b>	<b>Thursday at 12:00 Noon</b>	<b>BI 232, 234, 234A</b>
	<b>B16</b>	<b>Thursday at 3:00 PM</b>	<b>BI 232</b>

**Course Coordinator/Instructor:** Sara Smith BI 465A/B sara.smith@ucalgary.ca

**LAB TECHNICIAN:** Louise Hahn BI 264 lhahn@ucalgary.ca

D2L course name: BIOL 313 L01 - (WINTER 2018) – PRINCIPLES OF ECOLOGY (W2018BIOL313L01)

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

2. **Prerequisites: Completion of at least 24 units (4.0 full-course equivalents), including Biology 233 or any two of Biology 231, 241 and 243**

See section 3.5.C in the Faculty of Science section of the online Calendar  
[www.ucalgary.ca/pubs/calendar/current/sc-3.5.html](http://www.ucalgary.ca/pubs/calendar/current/sc-3.5.html)

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:

**Lab Component**

**Individual Work**

Assignment 1	3%
Assignment 3	5%
Assignment 4	5%
Term Project	12%

**Team Work<sup>1</sup>**

Assignment 2	1%
Assignment 5	5%
Quiz #1	2%
Quiz #2	2%
Quiz #3	2%
Term Project Metadata	3%

**Lecture Component**

**Participation**

Top Hat	3%
Peer Evaluations	2%
Midterm Exam	25%
Final Examination <sup>2</sup>	30%

**Feb. 26 6:30-8:30PM Room: TBA**

**Students must achieve a passing grade on both the lecture portion of the course and the laboratory portion of the course to qualify for a passing grade overall.**

Each piece of work in the categories outlined above submitted by the student will be assigned a percentage score. A student's grade is determined by marks for both individual work and teamwork components (i.e. quizzes and assignments). 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 using the conversion scale provided below.

<sup>1</sup>At the end of the term, each student will evaluate the contributions of the other members of their team (using the IPT Metrics Peer Evaluation tool). All team members will get a peer score based on the final peer evaluation. The peer score for a student is the average rating of the student, divided by overall the average rating for all members of the team. This provides a way to evaluate the relative contributions of each team member to the team's work. Each student's total teamwork mark will be multiplied by their individual peer score to determine their final mark for the teamwork component of the course (15% of final grade).

<sup>2</sup> There will be a final exam scheduled by the Registrar's office

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent 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.6 of the University Calendar

Students who are absent from the midterm exam because of illness or other unforeseen circumstances may be granted an excused absence by the Course Coordinator upon presentation of adequate documentation (a completed Physician/Counselor form [https://www.ucalgary.ca/registrar/files/registrar/physcoun15\\_0.pdf](https://www.ucalgary.ca/registrar/files/registrar/physcoun15_0.pdf) for illness; equivalent documentation for other circumstances). There will be no make-up examinations for excused absences. The weight assigned to the midterm examination will be transferred to the final examination.

Similarly, students who are unable to submit laboratory assignments or complete a lab quiz on time because of similar circumstances will be required to submit the same type of documentation to the Course Coordinator in order to be considered for a time extension. You must provide the completed form, signed by your physician, to the Course Coordinator within **48 hours** from the date that you missed the lab, class or midterm.

5. **Scheduled out-of-class activities:**                      **Feb. 26**                      **6:30-8:30PM**                      **Room: TBA**

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. **Course Materials:**                      **Required** - Ecology: Concepts & Applications, Molles, Cahill & Laursen, McGraw-Hill Ryerson. 4<sup>th</sup> Can. Ed.  
                                                                  **Required** - Biology 313 Laboratory Manual – 2018 – available at University Bookstore under Cartar et al.

**Online Course Components:** Students will use **Top Hat** (TH; <https://tophat.com/>) in class to enhance learning in the classroom. If a student completes 75% or more of the in-class participation activities, they will receive the full 3% of the participation mark. **If the student completes less than 75% of the in-class participation activities, they will receive 0% for the Participation mark.** It is the student's responsibility to ensure that their participation is being recorded by the TH system, and any discrepancies must be brought to the attention of the Instructor by 1600 on April 6, 2018 at the latest (but we encourage doing so at the earliest opportunity), as we will be unable to modify participation grades after this time. If a student is unable/unwilling to use the TH system, they must contact the Instructor within the first two weeks of class to make alternate arrangements. Some teamwork resources are provided by **ITP Metrics**, a system of secure web-based tools for forming teams and conducting Peer Evaluations and assigning student to teams at the University of Calgary. This tool is free to all students. Students will be invited by email to create an ITP Metrics account in the first week of the course.

7. **Examination Policy:** Non-programmable calculators will be allowed for the midterm but NOT the final exam. Students should also read the Calendar, Section G, on Examinations.
8. **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.
9. **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.

**10. 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](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](mailto: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 (FOIPP). 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: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)  
SU Faculty Rep. Phone: 403 220-3913 Email: [science1@su.ucalgary.ca](mailto:science1@su.ucalgary.ca), [science2@su.ucalgary.ca](mailto:science2@su.ucalgary.ca) and [science3@su.ucalgary.ca](mailto:science3@su.ucalgary.ca);  
Student Ombuds Office: 403 220-6420 Email: [ombuds@ucalgary.ca](mailto: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](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.

Department Approval \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date \_\_\_\_\_

Associate Dean's Approval for  
out of regular class-time activity: \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date: \_\_\_\_\_  
B313 W18; 12/18/2017 10:41 AM

## OVERVIEW OF THE COURSE:

In this course, you will explore questions, such as:

- 1) How do environmental factors dictate the distribution of organisms?
- 2) How do individuals make decisions in choosing mates and acquiring resources?
- 3) What controls the size of a population?
- 4) How do anthropogenic factors - such as habitat fragmentation - impact populations?
- 5) How do we make decisions in managing populations? How do we control invasive species? How do we conserve declining species?

In the labs, you will develop some fundamental skills that apply to any discipline in biology, including how to design an experiment, write a scientific paper, and perform some basic statistical analyses, all while exploring current issues in Ecology. We are excited this semester to be utilizing Team Based Learning to the labs! You will be working in teams to conduct your own term research project on a question you develop (with lots of support from TAs and us).

The course is broken into 5 big 'themes' each with a series of topics:

### Theme 1 (week 1): Introduction to Ecology

- *Ecology in the context of evolution*

### Theme 2 (weeks 2-4): Ecology of Individuals

- *How do organisms deal with environmental variability? How does this influence the distribution of a species?*
- *How do organisms deal with limited resources/nutrients/energy?*
- *How do organisms choose mates?*
- *Life histories and Trade-offs*

### Theme 3 (weeks 4-6): Ecology of Populations

- *How do vital rates and intraspecific interactions of populations influence the rate of change of a population?*
- *Population structure, age, stage & sex*
- *Spatial population dynamics (meta-populations) & applications*

### Theme 4 (weeks 7-10): Ecology of Species Interactions

- *Competition*
- *Predation & herbivory*
- *Parasitism*
- *Mutualism*

### Theme 5 (weeks 10-13): Ecology of Communities and Ecosystems

- *Species diversity*
- *Community assembly & ecosystem function*
- *Landscape ecology & macroecology*

## RESPONSIBILITIES and EXPECTATIONS

My philosophy is that it is my responsibility to set the stage for learning. It is my job to ensure that the classroom environment, support materials, and assessment tools all support the conditions that allow you to learn. Feedback from students is very important in this so that we will know how well the course is going and where problems are arising. In addition to a mid-semester and an end-of-semester course evaluation, we will also have **Peer Mentors** who will provide feedback about how the course is going based on what they are hearing from you or observing in class. Please feel free to contact the peer mentors and/or myself about the course at any time. It is also my goal that, as much as possible, students will spend class time actively working with course material and applying what has been learned from the readings and lectures. This means coming to class prepared and willing to participate.

### My expectations of you:

- treat others in class with respect. This means:
  - no talking when I am teaching
  - turn off cell phones in class (unless we are doing Top Hat)
  - restrict your use of laptops and other electronic devices to only those activities directly related to class. If you violate this policy or disturb other students you may be asked to leave the classroom
  - be on time & come prepared; participate actively in class and lab activities

### What you can expect from me:

- treat all students with respect
- start and end classes on time
- available outside of class time to discuss course content or any other course concerns
- prepare reading guides and organize review sessions for exams
- post materials for lecture and labs on D2L in a timely manner
- reply to emails within 24 h (except weekends)