



UNIVERSITY OF  
CALGARY

DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE

1. **Course:** ECOLOGY 429 – ECOLOGY OF INDIVIDUALS

|                       |                    |     |         |          |                     |
|-----------------------|--------------------|-----|---------|----------|---------------------|
| Lecture Section(s)    | L01                | MWF | 13:00   | PF114    | Fall 2014           |
| <b>Instructor(s):</b> | Dr. L.D. Harder    |     | BI 276A | 220-6489 | harder@ucalgary.ca  |
|                       | Dr. R.M.R. Barclay |     | BI 330  | 220-3564 | barclay@ucalgary.ca |
|                       | Dr. R.V. Cartar    |     | BI 355  | 220-3640 | cartar@ucalgary.ca  |

Desire 2 Learn (D2L) course name <https://d2l.ucalgary.ca/d2l/home/53709>

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

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

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:

|   |                  |                |            |
|---|------------------|----------------|------------|
| <b>Midterm Exam I Wednesday, October 8</b>              | <b>6:30-8:30</b> | <b>ICT 122</b> | <b>20%</b> |
| <b>Midterm Exam II Thursday, November 13</b>            | <b>6:30-8:30</b> | <b>ICT 122</b> | <b>20%</b> |
| <b>Lab Reports</b>                                      |                  |                | <b>35%</b> |
| <b>Final Exam (Scheduled by the Registrar's office)</b> |                  |                | <b>25%</b> |

\* There will be a final exam scheduled by the Registrar's office

**Passing grades in both the laboratory components and two examinations is required for a student to pass the course as a whole.**

Each piece of work (assignment, laboratory report, midterm test or final examination) 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 the overall lab OR the overall lecture component.

Tentative grade breakdown (thresholds may be lowered slightly, but will not be raised):

|    |       |
|----|-------|
| A+ | ≥ 90% |
| A  | 86%   |
| A- | 82%   |
| B+ | 79%   |
| B  | 76%   |
| B- | 73%   |
| C+ | 70%   |
| C  | 66%   |
| C- | 62%   |
| D+ | 59%   |
| D  | 50%   |
| F  | < 50% |

Percentages will be rounded to the nearest 0.1 (e.g., 72.45 → 72.5%, 72.44 → 72.4%)

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

5. **Scheduled out-of-class activities:** Dates and times of approved class activities held outside of class hours.

|  |                  |                |            |
|--|------------------|----------------|------------|
| <b>Midterm Exam I Wednesday, October 8</b>   | <b>6:30-8:30</b> | <b>ICT 122</b> | <b>20%</b> |
| <b>Midterm Exam II Thursday, November 13</b> | <b>6:30-8:30</b> | <b>ICT 122</b> | <b>20%</b> |

**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:** No textbook. Laboratory manual available via Desire 2 Learn
7. **Examination Policy:** Wireless access devices, including cell phones, **cannot** be used during the examination. Calculators can be used with permission of the Instructor. See also [Section G](#) of the University Calendar.
8. **Writing across the curriculum statement:** "In this course, the quality of the student's writing in laboratory reports will 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) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: [Calendar entry on students with disabilities](#) and [Student Accessibility Services](#).
- (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
- (f) <http://www.ucalgary.ca/secretariat/privacy>.
- (g) **Student Union Information:** VP Academic Phone: 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).  
SU Faculty Rep. Phone: 220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca); [Student Ombudsman](#)
- (h) **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.
- (i) 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: \_\_\_\_\_  
E429 F14; 9/4/2014 3:29 PM

UNIVERSITY OF CALGARY  
DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE  
ECOLOGY 429  
ECOLOGY OF INDIVIDUALS

TERM: Fall 2014 SECTION NO: L01

PREREQUISITE(S): Biology 313 and Biology 315

A student may not register in a course unless he/she has a grade of at least C- in each prerequisite course.

**COURSE COORDINATOR:** Dr. L. D. Harder BI 276A 220-6489 harder@ucalgary.ca

**LECTURERS:** Dr. L. D. Harder BI 276A 220-6489 harder@ucalgary.ca  
Dr. R.M.R. Barclay BI 330 220-3564 barclay@ucalgary.ca  
Dr. R.V. Cartar BI 355 220-3640 cartar@ucalgary.ca

LECTURES: MWF 13:00 PF 114

LABS: B01/02 T 09:00/12:00 BI 234A  
B03 R 15:00 BI 234A

TEXT: Required: None.

RESERVE READING ROOM: See attached list.

MARK DISTRIBUTION:

A. Composition of Final Grade

|                 |                                       |         |     |
|-----------------|---------------------------------------|---------|-----|
| Midterm Exam I  | Wednesday, October 8                  | ICT 122 | 20% |
| Midterm Exam II | Thursday, November 13                 | ICT 122 | 20% |
| Lab Reports     |                                       |         | 35% |
| Final Exam      | (Scheduled by the Registrar's office) |         | 25% |

B. Final Exam

There will be a Final Examination scheduled by the Registrar's Office.

C. Components of course for which a passing grade is essential

A passing grade is required for at least two examinations and the laboratory reports.

**ECOLOGY 429 – FALL 2014 TENTATIVE LECTURE SCHEDULE**

| <b>Date</b>  |    | <b>Topic</b>  |
|--|----|---|
| September  | 8  | Ecology of individuals and evolutionary ecology         |
| <b>Section I Physiological and Morphological Ecology – Barclay</b> |    |   |
| September  | 10 | Introduction to Physiological and Morphological Ecology |
|  | 12 | The importance of body size                             |
|  | 15 | Isometry and allometry                                  |
|  | 17 | Body size, metabolism and metabolic rates               |
|  | 19 | Locomotion, movement, home range size                   |
|  | 22 | Energetics – energy allocation                          |
|  | 24 | Phenotypic plasticity and flexibility                   |
|  | 26 | Thermoregulation  |
|  | 29 | Avoiding versus tolerating extremes                     |
| October  | 1  | Torpor and hibernation                                  |
|  | 3  | Photosynthesis and land plants                          |
|  | 6  | C3, C4 and CAM photosynthesis                           |
| <b>Section II Behavioural Ecology – Cartar</b>                     |    |   |
| October  | 8  | Introduction to behavioural ecology                     |
|  | 10 | Foraging behaviour I                                    |
|  | 13 | <b>THANKSGIVING – NO LECTURE</b>                        |
|  | 15 | Foraging behaviour II                                   |
|  | 17 | Foraging behaviour III                                  |
|  | 20 | Foraging behaviour IV                                   |
|  | 22 | Spatial competition                                     |
|  | 24 | Anti-predator behaviour I                               |
|  | 27 | Anti-predator II  |
|  | 29 | Social behaviour  |
|  | 31 | Reproductive behaviour I                                |
| November   | 3  | Reproductive behaviour II                               |
|  | 5  | Reproductive behaviour III                              |
| <b>Section III Life History Ecology – Harder</b>                   |    |   |
| November   | 7  | What is a life history?                                 |
|  | 10 | <b>READING DAYS – NO LECTURES</b>                       |
|  | 12 | Tradeoffs and optimal life histories                    |
|  | 14 | Quality – quantity compromises                          |
|  | 17 | Allocation to competing functions                       |
|  | 19 | Costs of reproduction                                   |
|  | 21 | Reproductive intensity                                  |
|  | 24 | Longevity and senescence                                |
|  | 26 | Body size   |
|  | 28 | Growth  |
| December   | 1  | Complex life cycles                                     |
|  | 3  | Clonality   |
|  | 5  | Population consequences                                 |