DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. **Course:** **ECOLOGY 425 - QUANTITATIVE BIOLOGY II**

Lecture Section(s)	L01	MWF	10:00	MS 211	Fall 2015

Instructor(s):	Dr. L. Harder	BI 276A	220-6489	harder@ucalgary.ca
	Dr. J.R. Post	BI 262	220-6937	jrpost@ucalgary.ca

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
wwww.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:

Midterm Examination (October 22, 2015)	**30 %**	**EEEL 210**
Laboratory Assignments	**40 %**	
Final Examination	**30 %**	

There will be a final examination scheduled by the Registrar's office.

Passing grades in both the lab and lecture components are essential if the student is 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.

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.

Mid Term Exam: October 22, 2015 6:30-8:30pm EEEL 210

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:** None Required

7. **Examination Policy**: Calculators will be permitted on examinations Students should also read the Calendar, Section G, on Examinations.

8. **Writing across the curriculum statement:** e.g. "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. 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 (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: 403 220-3911 Email: suvpaca@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

(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). 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:_____
E425 F15; 7/9/2015 2:36 PM

UNIVERSITY OF CALGARY
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

ECOLOGY 425
QUANTITATIVE BIOLOGY II

TERM: Fall 2015 SECTION NO: 01

PREREQUISITES: Biology 313 and Biology 315

Students may not register in the course unless they have a grade of at least C- in each prerequisite course.

COURSE COORDINATOR: Dr. L. Harder

LECTURERS:			
Dr. L. Harder	BI 276A	220-6489	harder@ucalgary.ca
Dr. J.R. Post	BI 262	220-6937	jrpost@ucalgary.ca

LECTURES: MWF 10:00 MS 211

LABS:

01	R	0900	BI 182
02	R	1200	BI 182

MARK DISTRIBUTION:

A. Composition of Final Grade

Midterm Examination Oct. 22/15	30 %
Laboratory Assignments	40 %
Final Examination	30 %

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

Students must achieve a passing grade (minimum of D) for at least one of the midterm and final exams, and for the laboratory portion of the course to qualify for a passing grade overall.

D. Grading Scheme

A+	95 %
A	86 %
A-	80 %
B+	77 %
B	73 %
B-	70 %
C+	67 %
C	63 %
C-	60 %
D+	55 %
D	50 %
F	<50%

ECOLOGY 425
FALL 2015

LECTURE TOPICS AND SCHEDULE

Dr. JR Post (September 9-October 22)
- Aims and objectives of course, lecture and lab schedules and assignments
- Models in Ecology – 12 lectures
- Model Selection – 5 lectures

Midterm Examination (Oct. 22/15 6:30-8:30p.m. EEEL 210)

Dr. LD Harder (October 23-December 8)
- Introduction to linear models
- Hypothesis tests for linear models I
- Hypothesis tests for linear models II & Interactions
- Perspectives in hypothesis testing – Types 1, 2 and 3 hypotheses
- Model selection
- Interpretation of categorical effects
- "Least-squares" means
- Generalized linear models I Introduction (Poisson example)
- Generalized linear models II Binomial distribution
- Generalized linear models III Overdispersion and presentation of categorical results
- Introduction to study design
- Completely randomized designs
- Dealing with nuisance variables
- Nested designs
- Design conclusion
- Fixed and random effects

LABORATORY ASSIGNMENTS AND SCHEDULE

Modelling & Model Selection (20 marks)
- Sep 17, 24
- Oct 1, 8, 15

Generalized Linear Models (20 marks)
- Oct 29
- Nov 5, 19, 26

EXAMS

Midterm Examination: October 22, 2015 6:30-8:30p.m. EEEL 210 (2 hours)
Final Examination: Scheduled in Final Exam Period (2 hours)