



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. **Course: ZOOL 577, Mammalogy – Winter 2020**

Lecture 01: MWF 13:00-13:50 in SA 119

Lab B01: M 4:00-6:50PM in BI 044

Lab B02: W 4:00-6:50PM in BI 044

Instructor	Email	Phone	Office	Hours
Dr. Robert Barclay	barclay@ucalgary.ca	220-3564	BI 330	TBA

Course Site: D2L: ZOOL 577 L01-(Winter)-Mammalogy

Note: Students must use their U of C account for all course correspondence.

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

2. **Requisites:**

See section [3.5.c](#) in the Faculty of Science section of the online Calendar.

Prerequisite(s): Biology 313 and one of Zoology 379, 403 or 477.01

3. **Grading:**

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

Component(s)	Weighting %	Date
Midterm exam	20%	3 March
Lab Exam	15%	16/18 March
Final Exam	30%	TBD
Term paper	25%	30 March
Oral Presentation	10%	TBD

This course has a registrar scheduled final exam.

Each piece of work (Term paper, Oral Presentation, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component 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.

The conversion between a percentage grade and letter grade is as follows.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	90%	87%	84%	81%	78%	74%	70%	66%	62%	56%	50%

4. **Missed Components Of Term Work:**

In the event that a student misses the midterm or any course work due to illness, supporting documentation, such as a medical note or a statutory declaration will be required (see [Section M.1](#); for more information regarding the use of statutory declaration/medical notes, see [FAQ](#)). Absences must be reported within 48 hours.

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 themselves with these regulations. See also Section E.3 of the University Calendar.

5. **Scheduled Out-of-Class Activities:**

MIDTERM March 3rd 6:00 – 8:30pm ST 131

FIELD TRIP: There will be a voluntary weekend field trip Feb. 8th and 9th to the Kananaskis Field Station during which various aspects of mammalian winter ecology will be studied (e.g. subnival conditions, winter mammal trapping & tracking, adaptations to winter).

6. **Course Materials:**

There are no additional course materials required for this course.

7. **Examination Policy:**

No aids are allowed on tests or examinations.

Students should also read the Calendar, Section G, on Examinations.

8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

9. **Writing Across the Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section E.2 of the University Calendar.

10. **Human & Living Organism Studies Statements:**

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

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 the 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 concerns they might have with the Undergraduate Program Director of the Department.

Students are expected to be familiar with [Section SC.4.1](#) of the University Calendar.

11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course Coordinator/ Instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exams:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

12. **Other Important Information For Students:**

- a. **Mental Health:** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 30, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).
- b. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.
- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208 .
- d. **Misconduct:** 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. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. These are only examples.
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.
- f. **Academic Accommodation Policy:** 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 [procedure-for-accommodations-for-students-with-disabilities.pdf](#).

Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email addy@ucalgary.ca or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than 14 days prior to the date in question. See Section E.4 of the University Calendar.

- g. Safewalk: Campus Security will escort individuals day or night (See the Campus Safewalk website). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. Freedom of Information and Privacy: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). 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 Legal Services website. VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca.
- i. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: ombuds@ucalgary.ca
- j. Internet and Electronic Device Information: Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.
- k. Surveys: At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.
- l. Copyright of Course Materials: All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

Course Outcomes:

- Be able to list and explain the key defining characteristics of mammals
- Be able to identify and explain the key factors responsible for the origin, evolution and radiation of mammals, and the current geographic patterns of their diversity
- Be able to explain the unique aspects of mammalian reproduction and their costs and benefits, and apply understanding of ecology and behaviour to explain the variation in mammalian reproduction
- Be able to apply information from previous Zoology courses to explain the importance of homeothermy to the diversity and success of mammals, and explain the various ways in which mammals reduce the costs of homeothermy, and the trade-offs involved
- Be able to explain the various forms of echolocation amongst mammals, their costs and benefits, and their importance in the radiation of bats and cetaceans
- Be able to identify the native mammals of Alberta using external characteristics
- Be familiar with and comfortable using a variety of methods to study the presence and behaviour of mammals in the field
- Have improved their skills in researching, synthesizing, organizing and writing a critical assessment of scientific literature
- Be more confident in developing and giving oral presentations.

TENTATIVE SCHEDULE

LAB SCHEDULE

Jan. 20, 22	Mammals of Alberta
Jan 27, 29	Mammals of Alberta (continued)
Feb 3, 5	Field techniques - marking, trapping, radiotelemetry
Feb. 10, 12	Field trip data presentation and analysis
Feb. 24, 26	Mammals of Alberta (continued)
Mar 2, 4	No lab
Mar. 9, 11	Mammals of Alberta (continued)
Mar. 16, 18	LAB EXAM
Mar 23/25, 30/1, Apr 6/8	Oral presentations

Tentative Lecture Topics – Zoology 577

1. Origin and evolution of mammals
 - what is a mammal?
 - the three major groups (Monotremes, Marsupials, Eutherians)
2. Monotremes – basic biology and unique aspects, electrolocation
3. Marsupials
 - origin and evolution
 - diversity and taxonomy
 - unique adaptations – reproduction
 - why are there so few large carnivores?
4. Eutherians
 - diversity and classical classification/phylogeny
 - evolution and radiation
 - continued species turnover
 - recent molecular-based relationships/phylogeny
5. Diversity and radiation of bats as an example of eutherians
 - mono- vs di-phyly debate
 - key adaptations - flight
6. Echolocation
 - whales and bats
7. Whale evolution (the confusion!)
8. Reproduction
 - ecology
 - behaviour (mating and parental care systems)
 - why don't male mammals lactate?
 - can females choose the gender of their offspring and why should they?
9. Life history strategies of mammals
 - patterns and anomalies
 - live fast and die young
10. Thermoregulation – torpor and hibernation, adaptations for desert environments
11. Digestion – herbivory in marsupials and eutherians
12. Conservation

Department Approval: ORIGINAL SIGNED Date: _____

Associate Dean's Approval for
out of regular class time Activity: ORIGINAL SIGNED Date: _____

