

Mammalogy (CEL): BIOL 5370

Syllabus for Fall 2022

Class is in-person and meets:

Tuesdays and Thursdays, 9:10 – 10:30 am, in ASB 210

This is also a Community Engaged Learning (CEL) class. More on that below.

Objective: This lecture course provides an overview of the evolution, diversity, structure, function, and ecology of mammals. It will introduce you to the major groups of mammals and the interplay between structure and function over evolutionary time. Students will get hands-on experience applying scientific principles and practice by engaging in community science projects.

Instructor: Dr. Lucas Moyer-Horner,
Email- Lucas.M.Horner@utah.edu
(please do not message me through Canvas)
Office hours by appointment

Teaching Assistants: TBA
Office Hours: TBA

Inclusive Learning Policy: I am committed to making our classroom, canvas discussions, and other interactions as inclusive as possible. Mutual respect, civility, and the ability to listen to others are crucial for making our time together productive and engaging. I view the diversity of backgrounds and perspectives that students bring to this class as a resource, strength and benefit. I encourage and appreciate your suggestions and observations. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

* Use proper email etiquette in correspondence as follows:

- Begin emails with a salutation such as “Dear Dr. Horner”, or “Dear Emily”, etc.
- Conclude your email with a closing statement such as “Thank you,” or “Sincerely,” and include your full name
- Please include the course name and topic in the subject of the message such as “Mammalogy: Digestion question”

* We will stop responding to emails at 7:00 PM each weekday evening, and we are unlikely to respond during weekends. You can generally expect a reply to an email question within one business day (weekday 24-hr period).

Lectures: Tu/Th: 9:10am-10:30pm, ASB 210

Textbook: Mammalogy: Adaptation, Diversity, and Ecology. Feldhamer. 3rd, 4th, and 5th edition all work fine
Book is strongly recommended, though not required. Some copies can be located in the Open Reserve on the 3rd floor of the Marriott Library.

Prerequisites: Evolution and Diversity of Life BIOL 2010 or Fundamentals of Biology II BIOL 1620. *In addition, you should have completed at LEAST ONE of the following classes prior to taking this class:* Principles of Cell Biology BIOL 2020, Genetics BIOL 2030, Developmental Biology BIOL 3230, Comparative Vertebrate Morphology BIOL 3310, Comparative Physiology BIOL 3320, and/or Ecology and Evolution BIOL 3410. If you have not met these prerequisites, see the instructor.

Course Outcomes

By the end of this course, you will be able to:

- Identify the unique characteristics of mammals and mammalian precursors

- Discriminate mammal species into their respective orders and practice identifying mammal orders through participation in community science projects
- Articulate the broad evolutionary strokes that have altered morphological, physiological, and behavioral traits of mammals
- Connect the science of mammalogy to other, seemingly disparate areas of study and to broader issues connecting with the public purpose of this discipline: why are mammals important to study?
- Design and critique research studies
- Participate in scientific research through collaboration with community partners (Community Engaged Learning: CEL)

Teaching and Learning Methods: This course will utilize multiple methods including lectures, in-class problem-sets, take-home multimedia assignments, hands-on, experiential learning, and discussion concerning selected readings from the primary literature. The course Canvas page will be the primary mode of communication. Lecture slides, class assignments, dates of exams, community engaged learning opportunities, grades, etc. will be posted on Canvas. You are expected to check the site regularly and stay up to date.

Attendance and Lecture Notes: You are responsible for lecture material and taking your own notes during lecture. Slides will be posted on Canvas.

Grading: The final grade is based on a total of 500 points. Your grade will be based on the percentage of these points that you earn as follows: A ($\geq 93\%$), A- (92 – 90%), B+ (89 – 87%), B (86 – 83%), etc.

Exams (best scores of 3 exams out of 4):	300 points
Take-home assignments (announced):	25 points
In-class problem sets (unannounced, 1 drop):	50 points
CEL attendance and presentations:	125 points
Extra credit opportunities (announced):	5-10 points each

Exams will be based on material discussed in class. The best study guide for the exams is your own lecture notes, along with the slides and the textbook. Exams will include short essay, data analysis, multiple choice, and problem-solving questions. There will be four mid-term exams, one of which will be scheduled during the final exam period. Make-up exams will ONLY be allowed for university-sanctioned absences (i.e., band, debate, student government, and athletics) or cases of sudden illness/injury. If you know you will be missing an exam due to a university-sanctioned absence, you MUST make arrangements to take the exam prior to the scheduled exam date. If you miss an exam because of a sudden illness/injury, you must provide a doctor's note to make up the exam.

Take home assignments will be announced throughout the semester, at least a week before the due date. These assignments will require you to conduct research outside of class, synthesize information, and present information in various formats (e.g., written reports, videos, or online media). No take home assignments can be dropped.

NOTE about Late assignment policy: Late assignments will be accepted for up to a week and will receive a 10% reduction in the final grade for each calendar day that they are late.

In-class problem sets will comprise a variety of formats. A likely scenario is the presentation of data from a paper in the primary literature. Students will discuss questions related to the data set in small groups. The assignment will consist of individually written responses to the data. There will be roughly one in-class assignment per week. At least one assignment will be dropped.

Group CEL project work will allow you the opportunity to get hands-on experience applying scientific skill by collaborating on a community science project.

- Your group will conduct background research on your chosen project and give a <10 minute presentation to the class on it
- We'll have two in-class CEL reflection discussions during the semester
- Your group will create a documentary-style film, related in some way to your CEL work and research topic, and present it during the CEL film festival.

Mammalogy, BIOL 5370 - Fall 2022
Community Engaged Learning Component

Community Engaged Learning (CEL) Coordinator for Biology – Dr. Amanda Hoepfner

Email –amanda.hoepfner@utah.edu

Office Hours – Wed. 12:30-1:30pm, Bldg 44 Rm 221, drop in anytime during my office hours listed or email to make an appointment for a different time

CEL-TA for Mammalogy: TBA

COMMUNITY ENGAGED LEARNING DEFINITION:

CEL involves students, faculty and community partners working together to apply knowledge in authentic settings in order to address community needs and course learning objectives. CEL enhances and deepens students' understanding of an academic discipline by facilitating the integration of theory and practice. It provides students with experiences that develop life skills, with opportunities to engage in critical reflection, and with the intellectual space to understand and contribute to the public purpose of their chosen discipline.

Engaging in mammal-focused community science projects will allow you the opportunity to get hands-on experience applying scientific skills while contributing to our increased understanding of mammals around the world. The CEL projects you will have the option to participate in will be presented to you on the first day of class.

CEL OVERVIEW

CEL Grading: Out of 125 points, 25% of your class grade

CEL Assignments:

- 1) **CEL Project Work:** 35 points, graded on completed time log, **due Dec 8th**
- 2) **Group CEL Research Presentation:** 30 points; graded on quality, professionalism, and peer feedback;
Dates: Oct 18, Oct 20, & Oct 25
- 3) **CEL Work days and Reflection Discussion:** 10 points each (30 total); graded on attendance and participation; **Dates: Sep 13, Sep 29, Dec 6**
- 4) **CEL Film Festival:** 30 points; graded on attendance, quality of film submittal and peer feedback; **Due Nov 29**, (will be viewed by the class Dec 1)

CEL project work:

- 1) The class will be split into groups of ~4 students each, based on shared interest in one of the Community Science projects, which will be presented to you on the first day of class
 - a. Students will indicate their preference on which Community Science project they would like to work on by **Sept 1st**
- 2) Every student in class will spend around 20 hours working towards their Community Science project, logged on a time log (download from Canvas files)
- 3) Each student will turn in a completed CEL time log by the last day of class: **Dec 8**

Group CEL Research Presentation:

- Student CEL groups will each choose a research question closely related to their CEL project, conduct background research, and present a 10 min powerpoint presentation of their CEL project background and research findings to the class (as well as upload the slides or google slides link to Canvas).
- Sample questions:

- What human and ecological factors are contributing to increased coyote numbers in urban U.S.?
- What is the life history and current conservation status of Chimpanzees?
- What is the impact of pandemic-reduced ship traffic on marine mammals in the Puget Sound?
- Presentations will be during class on **Oct 18, Oct 20, & Oct 25**
- Graded on quality and professionalism of your group's presentation and peer feedback

CEL Work Days and Reflection Discussion

- Part of two days are set aside to give groups time to meet, coordinate, and work on their CEL projects and presentations. In addition, one CEL reflection discussion will occur at the end of the semester to discuss the relevance of CEL work to course topics, relationship to the public purpose of the field of biology, and reflect on what we've done.
- Graded on attendance and participation (**Dates: Sep 13, Sep 29, Dec 6**)

CEL Film Festival

- Each CEL Group will be asked to prepare a ~5 min David Attenborough-style narrated nature film about their CEL work. We encourage:
 - Fake British accents
 - Parody
 - Drama
 - Bad biology jokes
 - Having fun with this!
- Videos must be **uploaded or links shared to Canvas by midnight on Nov 29**, and they will be viewed during class on Dec 1
- Graded on attendance, quality of film submittal, and peer feedback
- Prizes will also be awarded!

Course Policies

Regrade request policy. Questions regarding grading of assignments will be considered **ONLY** if received ***in writing***, within one week of return. Regrade requests are to be submitted to the TA.

Attendance. Regular attendance in class is **strongly** encouraged. Because the lowest score of each category is dropped, no make-ups are available even for excused absences. Furthermore, *attending class is the ONLY way to get points for in-class problem sets.*

Plagiarism Policy. Any assignment in which plagiarism is found will be given a zero. Assignments cannot be "prorated" to take into account the "extent" of plagiarism. The University of Utah Student Handbook defines plagiarism as: "the intentional unacknowledged use or incorporation of any other person's work in, or as a basis for, one's own work offered for academic consideration or credit or for public presentation. Plagiarism includes, but is not limited to, representing as one's own, without attribution, any other individual's words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression. "

Course Drop Policy. The withdrawal policy is the University of Utah policy described in the Class Schedule. Check the academic calendar for the last day to drop with no tuition and no notation on one's transcript and for the last day students can elect the CR/NC or audit option. Also check for the last day students can withdraw, but tuition will be assessed and you will receive a W on your transcript. Please verify with the registrar, as these dates are subject to change.

Withdrawal from the course after the University's designated date requires special permission from the instructors. It will NOT be allowed except in cases of significant medical or personal emergency that must be documented by a medical professional or other relevant person. This is a University of Utah policy.

University of Utah Policies

Drop, Withdrawal or Incomplete: The University of Utah drop and withdrawal dates are on the class schedule. Also see <http://registrar.utah.edu/academic-calendars/index.php>. University policy allows assignment of a grade of incomplete (I) if 80% or more of the course work has been completed. We will consider assigning an “incomplete (I)” only under EXCEPTIONAL circumstances unrelated to academic performance, and only if a student is passing the course with a C or better when the “Incomplete” is requested.

Academic misconduct: All suspected cases of academic misconduct including cheating, answering clicker questions for someone else, and plagiarizing will be dealt with according to rules in the Code of Student’s Rights and Responsibility: <http://regulations.utah.edu/academics/6-400.php> Take note of B 2 a, b, and c. Cheating and plagiarism are serious offenses and can result in getting a zero on the assignment, failing a class, a note in your record or being expelled. Please know that looking at someone else’s exam is cheating and will be dealt with seriously as stated above. By accepting admission to the University, you have agreed to abide by the University rules provided to you in the student handbook.

The Americans with Disabilities Act: The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services. If you would like to request academic accommodations due to a disability, please contact the Center for Disability Services. If you have a letter from CDS indicating you have a disability that requires academic accommodations, please present the letter to the instructor and discuss the accommodations.

University Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Discrimination and Harassment policies: The University of Utah has zero tolerance for any discriminatory or harassing behavior. Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS). For support and confidential consultation, contact Student Wellness 426 SSB, 801-581-7776.

Veterans Center: If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/> Please also let me know if you need any additional support in this class for any reason.

English Language Learners: If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program <http://writing-program.utah.edu/> the English Language Institute <http://continue.utah.edu/eli/> Please let your instructor know if there is any additional support you would like to discuss for this class.

Wellness: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student’s ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness; www.wellness.utah.edu 801-581-7776.

Note: *This syllabus is meant to serve as an outline and guide for this course, and might be modified in response to the needs of the class. All changes will be announced in class and posted on Canvas under Announcements.*

TENTATIVE Lecture Schedule

DATE	TOPIC	BOOK CHAPTERS	
23 Aug	Intro & Mammalian characteristics	3 rd Ed: 1-3	4 th Ed: 1-3
25 Aug	Evolution of mammals	3 rd Ed: 4,11	4 th Ed: 4,5,12
30 Aug	Monotremes Biogeography Marsupials	3 rd Ed: 5 3 rd Ed: 11	4 th Ed: 6 4 th Ed: 12
1 Sep	Integument, Support, Locomotion The “messy mammals”	3 rd Ed: 6 3 rd Ed: 12	4 th Ed: 7 4 th Ed: 13
6 Sep	Chiroptera Echolocation	3 rd Ed: 13	4 th Ed: 14
8 Sep	EXAM 1	(23 Aug – 6 Sep)	
13 Sep	Primate Evolution and Ecology CEL work day	3 rd Ed: 14	4 th Ed: 15
15 Sep	Xenarthra (Cingulata & Pilosa), Cetacea, Tubulidentata, Pholidota	3 rd Ed: 15,17	4 th Ed: 16,21
20 Sep	Rodents & Lagomorphs	3 rd Ed: 18	4 th Ed: 18
22 Sep	Carnivora, Proboscidea, Hyracoidea, Sirenia	3 rd Ed: 16,19	4 th Ed: 17,19
27 Sep	Ungulates	3 rd Ed: 20	4 th Ed: 20
29 Sep	Feeding & Nutritional Ecology CEL work day	3 rd Ed: 7	4 th Ed: 8
2 Oct	Metabolism & Thermoregulation	3 rd Ed: 9	4 th Ed: 10
4 Oct	EXAM 2	(13 Sep – 2 Oct)	
10-14 Oct: <i>Fall break</i>			
18 Oct	CEL research presentations		
20 Oct	CEL research presentations		
25 Oct	CEL research presentations		
27 Oct	Adaptation to Extreme Environments	3 rd Ed: 9	4 th Ed: 10
1 Nov	Reproduction- Physiology	3 rd Ed: 10	4 th Ed: 11
3 Nov	Reproduction- Sexual Selection & Mating Systems	3 rd Ed: 22	4 th Ed: 23
8 Nov	Social Behavior	3 rd Ed: 23	4 th Ed: 24

10 Nov	Life History, Habitat Selection, & Migration	3 rd Ed: 24	4 th Ed: 25,26
15 Nov	EXAM 3	(27 Oct – 10 Nov)	
17 Nov	Community Ecology & Species Interactions	3 rd Ed: 21,26	4 th Ed: 22,27
22 Nov	Domestication Disease Ecology	3 rd Ed: 28 3 rd Ed: 27	4 th Ed: 29 4 th Ed: 28
24 Nov	Global Climate Change	3 rd Ed: 29	4 th Ed: 30
29 Nov	Conservation Biology (CEL film upload/link due)	3 rd Ed: 29	4 th Ed: 30
1 Dec	2021 Mammalogy CEL Film Festival		
6 Dec	CEL reflection discussion and wrap-up		
8 Dec	FINAL EXAM (during class)	(Comprehensive, but biased for lectures 17 – 29 Nov)	