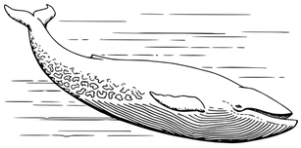

EFB 483: *Diversity of Mammals*

Instructors: **Dr. Camilo Calderon-Acevedo**
cacalder@esf.edu

Dr. Nicole "Nicki" Barbour
barbour@esf.edu

Office Hours: (Dr. Camilo) Illick 244
(Dr. Nicki) Illick 244

TA Contacts:
Katelyn Wehr katelynwehr@gmail.com
Colton Moyer cmoyer@esf.edu

Course Overview

Introduction to the evolutionary development, ecology, behavior, and diversity of mammals world-wide and within New York State. Focuses on mammalian diversity with respect to diagnostic traits, morphology, physiological and behavioral specializations and adaptations, as well as discussion of current mammalian research and conservation efforts.
Laboratory exercises and discussions complement lectures, providing hands-on experience in identification, adaptive morphology, and mammalian research, including field work and quantitative ecology and behavior studies.

Learning Objectives

- Recognize and explain what a mammal is, understand general mammalian evolutionary history, and understand the role of mammals in the tree of life
- Be able to distinguish and identify different mammalian taxonomic groups by their form, function, habitat, biogeography, and life history processes
- Be able to describe general and diverse aspects of mammalian ecology, including behavior, movement, spatial use and occurrence, and population dynamics
- Understand and identify current trends in mammalian research and conservation

Class Schedule

Lecture: Tues/Thurs 12:30 - 1:50 pm, Illick 5
Lab: Gateway 31 ESF; EFB 483-M001 (16102) M 2:15PM - 5:05PM
EFB 483-M002 (16103) Mo 5:15PM - 8:05PM
EFB 483-M003 (16104) Th 2:00PM - 4:50PM
EFB 483-M004 (16105) Th 5:00PM - 7:50PM

Prerequisites

Junior standing in EFB.

Course Content

All course content will be available on Blackboard (https://blackboard.syr.edu/).

Textbooks and Reading Materials

We will use the following textbook as a guide for lecture. While not required to purchase, the textbook will be a useful supplement for lecture and doing the weekly readings is **highly recommended for maintaining a good standing in the course**.

Lab will use both pre-developed materials made available upon the start of the course (no purchase necessary) and an optional laboratory manual. Lab will build on the content presented in each week's lectures.

We will also include a variety of supplemental readings, in the form of journal articles, book chapters, etc. These will be made available to you through Blackboard.

> Lecture Textbook: *Mammalogy*, 5th edition, Feldhamer et al. 2020
> Lab Manual: *A Manual of the Mammalia*, Kelt and Patton 2020

Attendance, Learning Assessments, and Campus Policies

Except for approved/excused absences (illness, death in the family, religious holiday, official University business), attendance to lecture and your assigned lab section is mandatory. Missing 3 or more classes due to unexcused absences will result in you being dropped from the class. If you need to miss class (either excused or unexcused), contact your lecture professor(s) and lab TA ASAP to determine how you can make up for any missed content. The student is responsible for contacting each faculty member in a timely manner to discuss any late assignments/missed work. There is no SUNY ESF college policy related to missed work. This decision belongs to the faculty member. If granted extensions/make-ups/incompletes, it is the responsibility of the student to complete the work in the agreed upon timeframe.

Assessments for **lecture** will be conducted using a combination of exams, quizzes, in-class discussions and polls, and an extra project of each student's choice, consisting of a report summarizing: 1) a literature review on a topic you would like to explore in mammalogy, 2) a field trip, or 3) a small research project that has been approved by the

professors. This extra project will need to be proposed to and approved by the professors by the end of September.

Assessments for **lab** will primarily consist of weekly lab participation, assignments, and a final research project. Questions on lab material and readings may also appear in weekly lecture quizzes. The final research project can be done either individually or in a group of 3 people or less and will take place over the entire course of the semester. Each person or research group will need to formally propose their ideas to their TA's and professors for approval with a written research proposal in the first quarter of the semester. Final research projects can be conducted on mammalian behavior, ecology, or physiology and will need to have a quantitative component. A grading rubric for all research project components will be made available to students via Blackboard in the beginning of the semester. The final project will culminate with a 10 minute research presentation and a formal written report, resembling the format of a primary research article.

***Lecture and Lab Assessments*:**

Category	**Number**	**Points Each**	**Total Points**	**Weight**
Lecture				
Class Participation	25	2	50	5%
Quizzes	10	30	300	30%
Tests	3	100	300	30%
Extra Project	1	100	100	10%
		Lecture Totals	**750**	**75%**
Lab				
Class Participation	12	2	24	2.4%
Assignments	10	5	50	5%
Research Project Proposal	1	26	26	2.6%
Research Project Presentation	1	50	50	5%
Research Project Report	1	100	100	10%
		Lab Totals	**250**	**25%**

<u>*Grading Scale*</u> (based on percentage of total points earned):

A= 100% - 95%; A-= 94% - 90%; B+= 89% - 85%; B-= 84% - 80%; C+= 79% - 75%; C-= 74% - 70%; D+= 69% - 65%; D-= 64% - 60%; E < 60%.

Clery Act/Title IX Reporting

We expect all students to respect each other AND us (professors and TA's), with regards to self-identity, including gender, race, class, sexuality, religion, and disability.

SUNY ESF is committed to enhancing the safety and security of the campus for all its members. In support of this, faculty may be required to report their knowledge of certain crimes or harassment. Reportable incidents include harassment on the basis of sex or gender prohibited by Title IX and crimes covered by the Clery Act. For more information about Title IX protections, go to the Title IX website, or contact the Title IX Coordinator, Rebecca Hoda-Kearse,220 Bray Hall, titleix@esf.edu, 315-565-3012. For more information about the Clery Act and campus reporting, go to the University Police Annual Report.

STUDENTS WITH LEARNING AND PHYSICAL DISABILITIES

SUNY-ESF works with the Center for Disability Services (CDR) at Syracuse University, who is responsible for coordinating disability-related accommodations. CDR is responsible for coordinating disability-related academic accommodations and will work with the student to develop an access plan. Since academic accommodations may require early planning and generally are not provided retroactively, please contact CDR as soon as possible to begin this process. To discuss disability-accommodations or register with ODS, please visit their website at https://disabilityresources.syr.edu. Please call (315) 443-4498 or email CDRaccommodate@syr.edu for more detailed information.

ACADEMIC DISHONESTY

Academic dishonesty is a breach of trust between a student, one's fellow students, or the instructor(s). Examples of academic dishonesty include but are not limited to plagiarism and cheating, and other forms of academic misconduct. By registering for courses at ESF you acknowledge your awareness of the ESF Code of Student Conduct. More information regarding Academic Integrity, including the process for resolving alleged violations, can be found in the Student Handbook.

INCLUSIVE EXCELLENCE STATEMENT

As an institution, we embrace inclusive excellence and the strengths of a diverse and inclusive community. During classroom discussions, we may be challenged by ideas different from our lived experiences and cultures. Understanding individual differences and broader social differences will deepen our understanding of each other and the world around us. In this course, all people (including but not limited to, people of all races, ethnicities, sexual orientation, gender, gender identity and expression, students undergoing transition, religions, ages, abilities, socioeconomic backgrounds, veteran status, regions and nationalities, intellectual perspectives and political persuasion) are

strongly encouraged to respectfully share their unique perspectives and experiences. This statement is intended to help cultivate a respectful environment, and it should not be used in a way that limits expression or restricts academic freedom at ESF.

RELIGIOUS HOLIDAY OBSERVANCE
All students have a right under NYS law and ESF college policy to observe the religious holidays of their choice, according to their individual faith. If students wish to observe a religious holiday, they should provide written notification to the instructor and/or TA (via email) of their intent to observe a particular religious holiday within the first two weeks of the semester, and prior to missing any required course meetings or activities. Reasonable requests for absence from course meetings or activities will be accommodated whenever possible, though students may be responsible for independently making up missed materials or activities on their own time, and in a timely fashion.

COUNSELING CENTER: 105 Bray Hall (315) 470-4716

Weekly Course Schedule

Lecture

Module	Instructor	Dates	Activities/Readings
Class Introduction - What is a Mammal, Meet Your Professors, Class Schedule	Dr. Nicki and Dr. Camilo	Aug 29th	1. Intros/Syllabus 2. Class Introduction 3. Group Activity, *What's your favorite mammal* Feldhamer et al, *Chap 1*
Introduction to Mammals – Mammalian Origins, Mammalian Characteristics I	Dr. Camilo	Aug 31st	Evolution of Mammals Feldhamer et al, *Chap 4* Feldhamer et al, *Chap 6*
Introduction to Mammals – Mammalian Characteristics II	Dr. Camilo	Sept 5th	Evolution of Mammals

			Feldhamer et al, *Chap 8* ***Quiz 1 due: midnight***
Introduction to Phylogenetics	Dr. Camilo	Sept 7th	Phylogenies, what are they? How to read, and more importantly, what they are not. Feldhamer et al, *Chap 3*
Mammalian Diversity – Why do we study it, different groups/number of groups, biogeography, diversity patterns **Mammalian Diversity –** Monotremes and Marsupials	Dr. Camilo	Sept 12th	Feldhamer et al, *Chap 5* Feldhamer et al, *Chap 10* ***Quiz 2 due: midnight***
Mammalian Diversity – Intro to Placental Mammals **Mammalian Diversity –** Aquatic and Marine Mammals, Part 1	Dr. Nicki	Sept 14th	Feldhamer et al, *Chap 12* Feldhamer et al, *Chap 20*
Mammalian Diversity – Afrosoricida, Macroscelidia, Tubulidentata, Paenungulata	Dr. Camilo	Sept 19th	Feldhamer et al, *Chap 11* Feldhamer et al, *Chap 12* ***Quiz 3 due: midnight***
Mammalian Diversity – Cingulata, Pilosa, Dermoptera & Scandentia	Dr. Camilo	Sept 21st	Feldhamer et al, *Chap 13* Feldhamer et al, *Chap 14*
EXAM 1: ***Mammal characteristics, evolution, phylogeny, and some taxonomic groups***	Dr. Nicki	Sept 26th	***Quiz 4 due: midnight***
Mammal Diversity - Aquatic and Marine Mammals, Part 2 Extra Project Deadline: Approval by Professors Due	Dr. Nicki	Sept 28th	

Mammalian Diversity – Primates	Dr. Nicki	Oct 3rd	Feldhamer et al, *Chap 15* ***Quiz 5 due: midnight***
Mammalian Diversity – Chiroptera	Dr. Camilo	Oct 5th	Feldhamer et al, *Chap 21*
NO CLASS - FALL BREAK	-	Oct 10th	**No Lab this week**
Mammalian Diversity - Carnivora, Pholidota	Dr. Nicki	Oct 12th	Feldhamer et al, *Chap 18*
Mammalian Diversity – Perissodactyla & Artiodactyla	Dr. Nicki	Oct 17th	Feldhamer et al, *Chap 19* ***Quiz 6 due: midnight***
Mammalian Diversity – Rodentia, Lagomorpha,	Dr. Camilo	Oct 19th	Feldhamer et al, *Chap 16*
Mammalian Diversity – Eulipotyphla and recap of mammal diversity	Dr. Camilo	Oct 24st	Feldhamer et al, *Chap 17*
Mammalian Function and Structure – Biogeography	Dr. Camilo	Oct 26th	Feldhamer et al, *Chap 5*

Mammalian Function and Structure – Reproduction	Dr. Nicki	Oct 31st	Feldhamer et al, *Chap 9* ***Quiz 7 due: midnight***
EXAM 2: Mammal Diversity and Taxonomic Groups: Aquatic and marine mammals, primates, bats, carnivorans, rodents, and eulipotyphlans	Dr. Camilo	Nov 2nd	
Mammalian Function and Structure – Echolocation Readings and Open Class Day	Dr. Nicki and Dr. Camilo	Nov 7th	Feldhamer et al, *Chap 7*
Ecology, Behavior and Conservation – *Social and communicative complexity in baleen whales*	Julia Zeh, Dr Dana Cusano	Nov 9th	Feldhamer et al, *Chap 24* Feldhamer et al, *Chap 25*
Ecology, Behavior and Conservation – *Population management of game species*	Dr Nate Wehr	Nov 14th	Feldhamer et al, *Chap 26* Feldhamer et al, *Chap 27* ***Quiz 8 due: midnight***
Ecology, Behavior and Conservation – *Research on bat vocalizations and the "State of the Bats" project*	Dr Vanessa Rojas	Nov 16th	Feldhamer et al, *Chap 22* Feldhamer et al, *Chap 23*
NO CLASS - THANKSGIVING BREAK	-	Nov 21st	**No Lecture/Lab this week**
NO CLASS - THANKSGIVING BREAK	-	Nov 23rd	**No Lecture/Lab this week**
Ecology, Behavior and Conservation – *Intersection of wildlife research and social sciences*	Dr Ophelie Couriot	Nov 28th	***Quiz 9 due: midnight***
Ecology, Behavior and Conservation – *Effects of chronic wasting disease on white-tailed deer and grey wolf predation*	Katya Khadonova	Nov 30th	Feldhamer et al, *Chap 27* Feldhamer et al, *Chap 28*

Ecology, Behavior and Conservation – *Ecological physiology of mammals*	Dr Cynthia Downs	Dec 5th	***Quiz 10 due: midnight***
Careers in Mammalogy - What Does It Look Like?	Dr. Nicki and Dr. Camilo	Dec 7th	Discussion based
Last Day of Classes: "Open Class" Study Day Extra Project Report DUE	Dr. Nicki and Dr. Camilo	Dec 12th	
EXAM 3 (FINAL): Function and Structure, Mammal Ecology, Behavior, and Conservation	Dr. Nicki and Dr. Camilo	Dec 14th	

Laboratory

Module	Instructors	Dates	Activities/ Readings
Lab 1 - Introduction to Mammals, Syllabus and Lab Schedule, Skulls and Teeth	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Aug 28th / 31st	*Familiarize Yourself with Blackboard and the Syllabus* *Assignment 1*, Skulls and Teeth Kelt and Patton Manual, pp 3-21
------ No Lab ----------	***----------***	Sep 4th / 7th	Labor day holiday - no lab this week
Lab 2 - Comparative Anatomy, Museum Collections Tour	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Sep 11th / 14th	*Assignment 2*, Comparative Anatomy
Lab 3 - Final Project Introduction, Phylogenies	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Sep 18th / 21st	*Assignment 3*, Phylogenies Kelt and Patton Manual, pp 3-21
Lab 4 - Scientific Writing and Statistics Workshop	M_16102: Kate, Dr Nicki M_16103: Colton, Dr Nicki Th_16104: Colton, Dr Nicki Th_16105: Dr Nicki	Sep 25th / 28th	**Be sure to bring your computers to class!**

Lab 5 - Integument, Horns and Antlers	M_16102: Dr Nicki M_16103: Dr Nicki Th_16104: Colton Th_16105: Colton	Oct 2nd / 5th	*Assignment 4*, Integument, Horns and Antlers Kelt and Patton Manual, pp 3-21
NO LAB - FALL BREAK	----------	Oct 9th / 12th	***Research Project Proposal Due***
Lab 6 - Behavior	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Oct 16th / 19th	*Assignment 5*, Behavior
Lab 7 - Field Techniques	M_16102: Kate, Dr Camilo M_16103: Colton, Dr Camilo Th_16104: Colton, Dr Camilo Th_16105: Kate, Dr Camilo	Oct 23rd / 26th	*Assignment 6*, Field Techniques
Lab 8 - Limbs and Locomotion	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Oct 30th / Nov 2nd	*Assignment 7*, Limbs and Locomotion
Open Lab - Final Project Help and Work Day	M_16102: Dr Nicki M_16103: Colton, Dr Nicki Th_16104: Colton, Dr Nicki Th_16105: Dr Nicki	Nov 6th / 9th	*Bring questions about your project, data to analyze, plan out project work or report with your group, etc!*
Lab 9 - Spatial Distributions, Movement Ecology	M_16102: Dr Nicki, Kate M_16103: Colton, Dr Nicki Th_16104: Colton, Dr Nicki Th_16105: Kate, Dr Nicki	Nov 13th / 16th	*Assignment 8*, Spatial Distributions, Movement Ecology
NO LAB - THANKSGIVING BREAK	----------	Nov 20th / 23th	**No Lab this week**

Lab 10 - Populations, Conservation Final Project Help	M_16102: Kate M_16103: Colton Th_16104: Colton Th_16105: Kate	Nov 27th / 30th	*Assignment 9*, Populations, Conservation *Bring questions about your project, data to analyze, plan out project work or report with your group, etc!*
FINAL PROJECT PRESENTATIONS	M_16102: Kate, Dr Nicki, Dr Camilo M_16103: Colton, Dr Nicki, Dr Camilo Th_16104: Colton, Dr Nicki, Dr Camilo Th_16105: Kate, Dr Nicki, Dr Camilo	Dec 4th / 7th	***Final Project Presentations due***
NO LAB - FINAL PROJECT REPORT DUE	----------	Dec 11th / 14th	***Final Report due***