**Animal Behavior - Biology 472 and 532**

**Fall 2023**

**Lecture Instructor:** Dr. Luther

**Office:** Exploratory Hall, Room 1216

**E-mail:** dluther@gmu.edu

***Phone:*** *703-993-5267 –please use email instead of the phone for contacting your instructor*

**Office Hours:** after class and by appointment

**Lecture:**

*I will post a prerecorded lecture at the beginning of each week. There will be*

***2 classroom sessions, in person, Tuesday and Thursday 12:00 – 1:15pm.***

*Students are expended to attend both sessions each week to earn class participation points as well as ask questions from the lectures, and participate in active learning activities to better familiarize themselves with the material from the weekly lectures and that will be on the exams.*

**Lab Instructors:**

Ms. Roberts - erober23@gmu.edu

Section 201 T 09:00 – 11:45am EXPL L509 Instructor Roberts

Section 202 T 1:30 – 4:15pm EXPL L509 Instructor Roberts

*See separate syllabus for BIO 473 lab schedule*

**I. Course Purpose**

This course examines how ecological and evolutionary forces influence the ways in which animals interact with each other and their environment.

**II. Course Aim and Objectives**

**Aim:** In this class, we will survey the field of Animal Behavior from an evolutionary and ecological perspective. We will examine how animals use behavior to respond to the problem of resource limitations and how this influences their ability to find food, habitat, appropriate mates, and reproduce. We will also consider the means by which animals defend those resources. Finally, we will discuss how and when organisms evolve cooperative behavior and live in groups.

**Learning Objectives:** By the end of the course students will:

1. Understand and apply the basic concepts of:

* + natural selection
	+ proximate and ultimate influences on behavior
	+ influences of genes and learning on behavior
	+ the evolution of sexual displays and communication
	+ the evolution of cooperative and competitive behavior
1. Understand, discuss, and implement some of the techniques used to study animal behavior.
2. Be proficient at interpreting scientific research.
3. Present a proposal for original research.

**III. Course Materials**

**Text:** Rubenstein, D.R. and J. Alcock. 2018. Animal Behavior. 11th Edition. Sinauer Associates Print ISBN: 9781605355481

**Supplementary Readings:** Will be announced and made available on Blackboard.

**IV. Faculty Expectations/Course Policies**

**Academic Integrity/Honesty:** I expect you to honor the policies of George Mason University when completing all class assignments and exams.

**Course Format**: Lectures will be prerecorded weekly and posted on blackboard each Monday morning. Live class meetings will take place, ***Tuesday and Thursday 12:00 – 1:15pm***. Students should attend both of these sessions to ask questions about lecture material, participate in active learning exercises, and receive participation points that go toward your final grade. In this course we will emphasize the use of active learning strategies to promote interaction among students and instructor.

**Course Expectations**: Because our class activities are dependent on the readings, each student is expected to watch the lecture and read assigned materials BEFORE the topic is discussed in class. In addition, you will often be expected to participate in class group discussions.

**V. Grading Procedures**

Your grade will be based on a combination of exams and assignments.

**Class Participation:**

Class participation grades will be a combination of answering questions in class, participating in active learning group projects in class, and submitting weekly questions about lectures and reading material to the discussion board on blackboard.

For each required weekly reading, students will prepare two short questions or comments of intellectual depth. These daily questions or comments should be 1-3 sentences in length, should include your name and the date, and should be submitted to the blackboard discussion forum before the start of each class. We will address these as time permits during class discussions. Questions should be posted every week in response to reading material.

Questions are required for the purposes of:

• Increasing the likelihood that required reading will be completed

• Providing practice at critical thinking

• Providing the instructor with feedback on your understanding of the material

• Helping to move classroom focus to topics which students find interesting

A question should indicate some depth of thought, rather than questions such as, "why did the author want to study ABC?" A question could be something you don't understand. Alternatively, a question might be something that seems to contradict our prior knowledge of the subject. On the other hand, a question may be something that was not clarified by the reading.

**Assignments:** All assignments are due ***by noon*** on the date they are due. ***A late penalty of 10% will be assessed for every day past due.***

**Mid-term and Final Exams:** Exams are designed to assess your understanding of the material presented during lectures and assigned readings. Study guides will be provided on blackboard.

**Paper Summaries:** I will assign 3 readings from short (1-7 page) papers from the primary literature that cover material we will be talking about in class. These papers will be posted on Blackboard, and my expectation is that you will read these papers before class and come to class prepared to discuss them. A grading rubric will be provided on blackboard. ***Papers should be emailed to me on the due date before noon. The file name should include your last name and the assignment number, for example LUTHERpaper1.***

**Grading:**

**Assignment Points % of Grade Date**

Midterm Exam 100 25% Sept 28

Class participation 50 12% All semester

*(combination of contributing in class and contributions on the discussion board)*

 Paper summaries (3 25pt each) 75 19%

Final Exam 175 44% Dec 7

 **400 total points**

 **Points Percent Grades**

 360-400 90- 100% A

 352-399 88- 89% B+

 320-351 80-87% B

 312-319 78-79% C+

 280-311 70-77% C

 240-279 60-69% D

 0-239 0-59% F

**BIO 532** **Graduate Students:**

In addition to the assignments for undergraduate students the graduate students will have more rigorous questions on the midterm and final exam as well as a written proposal.

**Written Proposal:** We will have one larger writing assignment that is ***only for the graduate students enrolled in Bio 532.*** Students will develop independent research proposals, that focuses on a novel research question in the field of animal behavior. Proposals can only focus on behaviors of wild animals. The goal is to build a novel, significant research proposal regarding an original question in the field of animal behavior – original in the sense that it is yours, and it has not been asked before, significant in the sense that it addresses a major issue in behavioral ecology. Students will decide which animals and behaviors interest them, learn about the animal and behavior from primary literature, and use the existing literature to pose and defend an original research question in animal behavior. A grading rubric will be provided on blackboard. The written proposal will be worth 100 points. A grading rubric will be provided on blackboard.

**Biology 472 and 532**

**Lecture Schedule – Fall 2022**

**Prerecorded. lectures will be posted weekly before monday morning. students are also expected to participate in in person instruction activities.**

**Schedule Of Topics To Be Covered**

|  |  |  |
| --- | --- | --- |
| **Week of:** | **Lecture Topic** | **Text Chapter(s)** |
| Aug. 22 | Introduction Natural Selection, Hypothesis testing | 1 |
| Aug. 29 | Integrative Study of BehaviorDevelopment of song learning  | 2 |
| Sept. 5 | Avoiding Predators and Finding Food | 3 |
| Sept. 12 | Avoiding Predators and Finding Food | 6 |
| Sept. 19 | Migration, Territoriality, and Habitat Selection | 7 |
| Sept. 26 | Migration, Territoriality, and Habitat Selection**MIDTERM (Sept 28)** | 7 |
| Oct. 3 | Evolution of Communication | 8 |
| Oct. 10 | Reproductive Behavior(***Classes do not meet Tuesday)*** | 9 |
| Oct. 17 | Reproductive Behavior | 9 |
| Oct. 24 | Mating Systems | 10 |
| Oct. 31 | Mating Systems | 10 |
| Nov. 7 | Parental Care | 11 |
| Nov. 14 | Social Behavior**Bio 532 Written Proposal due** | 12 |
| Nov. 21 | ***No class Thanksgiving Break*** | ***No class*** |
| Nov. 28 | Conservation and BehaviorAnd Review for Final Exam | Assigned Reading TBA |

**FINAL EXAM: Dec. 7 10:30-1:15**