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SYLLABUS

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Biol 455: Behavioral Neuroscience

This syllabus will cover the following topics:

- Introduction to the course
- About your instructors
- Required reading
- Course Assignments
- Grading Policies

INTRODUCTION TO BIOL 455



The goal of the course is to use an integrative and comparative approach to gain an in-depth understanding of selected topics in behavioral neuroscience of vertebrates. We will cover the basics of neurons and brains, sensory and motor systems, plasticity, and cognition. This is an advanced course that requires substantial reading assignments from the text and the scientific literature.

Course Objectives:

By the end of this course, you will be able to define, describe, or explain:

- common terminology in neuroscience
- the neural circuits underlying specific behaviors
- the coding strategies of nervous systems
- key organizing principles of nervous system function and constraints
- key mechanisms (e.g., signaling cascades) underlying nervous system function

- key mechanisms (e.g., signaling cascades) underlying nervous system function
- principles of brain evolution

ABOUT YOUR INSTRUCTOR

Sabrina Burmeister

Dr. Burmeister specializes in the neurobiology of social and spatial cognition. Working within an evolutionary context, her research addresses questions such as *How do animals find their way about? What are the molecular mechanisms that are common to hippocampal plasticity in all vertebrates? How has selection shaped the cognitive phenotype of animals?*

Dr. Burmeister has been teaching Behavioral Neuroscience and related courses for over 13 years. This course is her true teaching passion. When she is not teaching or doing research, Dr. Burmeister enjoys reading, sewing, and studying Aikido.



Appointments & Contact

Please feel free to contact me by email (sburmeister@unc.edu) to address straightforward issues. To ask me questions about course content or for more complex discussions, please schedule an appointment with me.

Brittany Katz (TA)

Brittany Katz is a PhD student in the Neuroscience Curriculum. She works in the laboratory of Yen-Yu Ian Shih where they combine MRI with other neuroscience tools to understand functional neural circuitry in laboratory rodents.

Appointments & Contact

Brittany will hold office hours each Monday 10:30 am - 12:30 pm in the Robert B. House Library. You can also contact Brittany by email (bgd1937@email.unc.edu).



REQUIRED READING

The required textbook is Georg Striedter's **Neurobiology: A Functional Approach**. For some lessons, we have supplementary reading assignments that can be found in [Resources](#). In addition to these resources, we will read and analyze some primary literature papers together during class.

COURSE ASSIGNMENTS & GRADING

Assignments:

Guided Reading Questions (GRQs): Before each class, you will complete the Guided Reading Questions. The questions are designed to help you to focus your attention as you read, give you some insight into the importance of various topics, and to cause you to think a bit more deeply as you engage with the material. The questions should be completed at your own pace (open-book) and are un-graded, but you are expected to bring them to class. You are likely to spend 2-3 hours on each set of GRQs.

Reading quizzes: Following completion of the GRQs, you will complete a closed-book, timed reading quiz to test your knowledge of the reading material. Practicing recall of material is an essential step in learning, even if you make mistakes, so I encourage you to honor the closed-book nature of the assignment because doing so will improve your exam scores. The quizzes will be done on Sakai (Tests & Quizzes) and must be completed by 11:55 pm the day before the corresponding class.

Lesson videos: Each lesson is accompanied by a variety of videos that review and extend the information in the reading assignments. You should watch the accompanying videos before class.

Review, Integrate, and Apply: In class, we will complete a variety of exercises that allow us to review, integrate, and apply our knowledge from the book and lesson videos. Some of this work will be in groups and some on your own. Likewise, some will be graded and some ungraded. The work we do in class is your best preparation for the exams, but coming to class without completing the preparatory assignments will be a poor use of your time.

Midterms and final exam: There will be three exams: two midterms and one cumulative final. The exams will be multiple choice, fill in the blank, and short answer. They are designed to test a range of levels of understanding, from factual recall to the ability to apply your knowledge to novel scenarios (designing experiments, interpreting data, etc.).

Collaborative midterms: We will have two collaborative midterms in which you work in groups to re-take portions of the three midterms. The purpose of the collaborative midterms is to allow you to update your understanding of the material covered on the exams and review together in class to improve learning.

Grading:

All assignments are required but only some are graded. Their contribution to your course grade is as follows:

<u>Assessment</u>	<u>% course grade</u>
Reading quizzes	10%
In-class assignments	10%
Midterm 1	20%

Collaborative midterm 1	5%
Midterm 2	20%
Collaborative midterm 2	5%
Final (cumulative)	30%

Letter grades will be assigned according to the following distribution:

A (93-100), A- (90-92.9),
 B+ (87-89.9), B (83-86.9), B- (80-82.9),
 C+ (77-79.9), C (73-76.9), C- (70-72.9),
 D+ (67-69.9), D (60-66.9),
 F (below 60).

When calculating final semester grades, **I do not round**.

Grading policy:

If at any point you feel you were not evaluated fairly, you must submit a written description of your concern to me within 1 week of receiving the notice of the grade. You must explain why you believe you deserve a different grade than the one you initially received. Concerns expressed after the 72 hour deadline will not be considered.

According to University Policy, grade changes are permissible only when a clerical or calculation error had been made. Grades are not awarded based on a need to graduate, how hard a student works in class, the desire for a higher letter grade, etc, but are based solely on how one meets the requirements of the course. This does not mean that I'm unwilling to work with individual students who are facing extenuating circumstances that interfere with their ability to participate fully in class. Any such situations need to be brought to my attention at their inception. *Any delay to do so will limit my ability to assist you.*

Make-up assignments: There are no make-up reading quizzes, in-class assignments, or collaborative midterms. No exceptions. However, we will drop your lowest reading quiz and your two lowest in-class assignments. If you miss a collaborative midterm, your corresponding midterm score will be weighted as 25% of your final course grade.

Make-up exams: I will offer make-ups for midterms that are missed due to University-authorized travel or urgent, acute illnesses (e.g., emergency room visit) that can be verified with documentation. If such an illness arises, the student must contact me by email on the day of the missed midterm. Make-up midterms are essay exams and students who complete the make-up exams will be ineligible for the collaborative midterm, in which case the corresponding midterm

score will be weighted as 25% of the final course grade. For the final exam, a make-up will only be given if an official “Examination Excuse” is granted by the Dean’s office (see Undergraduate Bulletin).

