

NRSC 1110/ PSYC1110 /BIOL1110
Introduction to Brain and Behavior
Spring 2024
Lecture Tues/Thurs 5:15-6:45pm
Laboratory/Recitation:
Monday/Wednesday Leidy Labs 104 5-6:45pm

Course Director: Judith McLean, Ph.D.

Office: 467 Levin Building

Email: jmclean@sas.upenn.edu

Office Hours: Thursday 3:30-4:30

Lab Coordinator: Dr. Michael Kaplan mkap@sas.upenn.edu

Teaching Assistants:

Grace Digiovanni gracedig@sas.upenn.edu

BIBB 109-602 Monday 5:15-6:45

Jacob Lewin jtlewin@sas.upenn.edu

BIBB 109-603 Wednesday 5:15-6:45

BIBB 109 Workshop Facilitator:

Emily Zhang zhangez@sas.upenn.edu

Review key topics of the week

Group problem solving sessions

Synopsis:

Introduction to the structure and function of the vertebrate nervous system. We begin with the cellular basis of neuronal activities, then discuss the physiological bases of motor control, sensory systems, motivated behaviors, and higher mental processes. This course is intended for students interested in the neurobiology of behavior, ranging from animal behaviors to clinical disorders.

Textbook:

Bear, Connors, Paradiso. Neuroscience: Exploring the Brain (4th ed). Philadelphia, PA. : Wolters Kluwer, 2016

Canvas <https://courseweb.library.upenn.edu/>

Lecture slides, quizzes and announcements will be posted on this site. Please be sure to set your **notifications** so that you receive **Announcements** in a timely manner, as this will be the primary mode of communication in this course.

Readings:

You should read the assigned chapters of the textbook *prior to coming to the lecture*. At certain points during the course, the lectures will coincide closely with the textbook, while at other points the lecture may diverge slightly from the textbook. In the case of divergence, you should consider the lecture as the primary material and that from which all exam questions will be derived; *material contained within textbook chapters that is not covered in lecture will not be included on quizzes or exams.*

Recitations/Labs:

Goals: Answer questions, clarify material. Ask questions during recitation or email TA topics before coming to recitation.

All recitations/labs will meet in room 104 Leidy Labs. Four of these weekly recitations will be a lab. You may not attend a recitation that you are not signed up for without the permission of the TA or the Lab Coordinator.

Labs:

Lab 1: computer simulation

Labs 2 and 3: Sheep brain dissection.

Lab 4: Sensory Perception/Motor reflexes

Recitation/Lab absences: Recitations/labs can only be missed for last minute excused absences, such as illness or severe inclement weather. If you have a conflict with the recitation/lab due to curricular or extracurricular activities, personal obligations, or religious holidays please let the TA and Lab Coordinator know as soon as possible to make arrangements to attend a different section or make up the recitation/lab with your TA

Weekly Problem Sets

Each week a Problem Set consisting of several questions from the material covered in the weekly lectures will be posted to Canvas. Completion of these Problem Sets is **required**. Your grade on these will be determined by effort, not by correctness. You should attempt to answer each question using your notes, textbook, etc...

These questions are representative of the type you will see on each exam. The TAs will go over these Problem Sets during the weekly recitation. **Late submissions will not be accepted for credit.**

Quizzes

For the weekly quizzes you may use your notes, textbook, etc. to complete the quiz. You must complete the quiz **on-time** to receive credit. **There are no make-up or late quizzes.**

Exams:

There are three midterm exams. We will drop the lowest midterm grade during the semester. There will be one cumulative final exam. Each exam is made up of multiple choice and short answer questions. You will **not** be permitted to use notes, textbook, etc. to complete the exams.

Grading:

The final grade will be based on:

Highest two scores on 3 midterm exams. We will drop the lowest midterm grade. Two exams each worth 25%, 1 cumulative final exam 30%

Lab Quiz, Attendance in Recitation, Weekly Quizzes and Problem Sets, each worth 5% (20% total). Lowest quiz grade will be dropped

Cumulative Final Exam	30%
2 Midterm Exams	50%
Lab Quiz	5%
Recitation Attendance	5%
Quizzes	5%
Problem Sets	5%

Important: The grades on canvas do not reflect these weights, so do not consider your canvas grade as your actual grade

The University recognizes religious holidays. If you need to miss an exam for a legitimate reason (e.g., religious holiday) please let the Course Director know within the first week of class or as soon as you know about a conflict. If there are students who have a problem with the schedule date for an exam, they must schedule a make-up exam before the scheduled examination date. No makeup exams will be given unless the student presents a *bona fide* excuse. Regrading – it is within your right to request that an exam question be regraded. Requests for regrades should be given in writing to the Head TA within one week after an exam is returned, explaining why you believe it should be regraded. Any such request will result in the regrading of the entire exam, using scanned copies we will have on file.

Grades will be distributed as follows:

Percent (min)	Grade
0	F
60	D-
63.3	D
66.7	D+
70	C-
73.3	C
76.7	C+
80	B-
83.3	B
86.7	B+
90	A-
93.3	A
96.7	A+

Students with Disabilities:

Students with a documented disability from Student Disability Services will receive all necessary accommodations. Students should make an exam request to the SDS office. They need to be notified at least 7 days prior to the exam.

Academic Integrity:

I expect you to act with academic integrity in accordance with the University of Pennsylvania's Code of Academic Integrity

<https://provost.upenn.edu/policies/pennbook/2013/02/13/code-of-academic-integrity>

Any act of academic dishonesty will be reported to the Office of Student Conduct

Email Etiquette:

Your TA and I will do our best to respond to emails within 24 hours, although over the weekends and holidays it may be longer. Course content questions are best asked in recitation, at office hours, or in tutoring, not through email.

How to do well in this course:

Do the reading (skim for the big ideas and read for important details after class)

Participate in class and recitations

Use weekly quizzes to identify what you don't understand

Test yourself. There are many online resources for self-assessment from the book

Come to office hours

Go to tutoring at the Tutoring Center and weekly sessions

Seek academic support at the Weingarten Resource Center

Study with a partner

Keep up! Don't fall behind, there is a lot of information.

Week		Lecture	Chapters	Recitation/Assignments
1	1/18	Introduction		No Recitations
2	1/23	Neurons and Glia	2	No Recitations
	1/25	Membrane Potential	3	Quiz and Problem Set 1 due 1/22
3	1/30	Membrane Potential/Action Potential	4	Recitation 1/29, 1/31
	2/1	Action Potential		
4	2/6	Synaptic Transmission I	5	Quiz and Problem Set 2 due 1/29
	2/8	Synaptic TransmissionII	6	Recitation 2/5, 2/7 LAB Exercise 1
5	2/13	Organization of the Nervous System	7	Quiz and Problem Set 3 due 2/5
	2/15	EXAM 1(Chapters 2-6)		Recitation 2/12, 2/14
6	2/20	Chemical Senses	8	Quiz and Problem Set 4 due 2/12
	2/22	Vision I	9	Recitation 2/19, 2/21
		DROP PERIOD ENDS 2/27		
7	2/27	Vision II	10	Recitation 2/26, 2/28
	2/29	Vision III/Auditory I	11	LAB Exercise 2
8	3/4	SPRING BREAK – NO CLASSES		
9	3/12	Auditory II	11	Quiz and Problem Set 5 due 2/19
	3/14	Vestibular	11	Recitation 2/26, 2/28 LAB Exercise 3
10	3/19	Somatosensory	12	Quiz and Problem Set 6 due 2/26
	3/21	Spinal Cord	13	Recitation 2/27,3/1 LAB Practical Exam 3/13, 3/15
11	3/26	Brain control of Movement	14	Quiz and Problem Set 7 due 3/12
	3/28	Hypothalamus/Motivation	15,16	Recitation 3/13, 3/15
11	4/2	Emotion	18	Quiz and Problem Set 8 due 3/19
	4/4	EXAM 2 (Chapters 7-14)		Recitation 3/20, 3/22 Lab Exercise 4

12	4/9	Brain Rhythms and Sleep	19	Quiz and Problem Set 9 due 3/26 Recitation 3/27, 3/29
	4/11	Language	20	

LAST DAY TO WITHDRAW FROM A COURSE 4/2

13	4/16	Visual Attention	21	Quiz and Problem Set 10 due 4/2 Recitation 4/3, 4/5
	4/18	Mental Illness	22	

14	4/23	Synaptic Plasticity	23,24	Quiz and Problem Set 11 due 4/9 Recitation 4/10, 4/12
	4/25	Learning and Memory	25	

15	4/30	Summary and Conclusions		Recitation 4/17, 4/19
	5/2	EXAM 3 (Chapters 15-25)		

TBD **FINAL EXAM (cumulative)**