

ZOO4926 – Special Topics: Introductory Neuroscience (Spring 2025)

Contact Information

Instructors:

Zepeng Yao
Office: Bartram Hall 521
zepengyao@ufl.edu

Hua Yan
Office: Carr Hall 511A
hua.yan@ufl.edu

Teaching Assistant (TA):

Kayli R. Marcum
kayli.sieber@ufl.edu

Office Hours:

Office hours will be announced in Canvas.

For questions about course content, your grade, or other personal issues, please use the Canvas mail tool. If you email directly, please include the course code in the subject and your full name in the body of the email. Expect a response within 48 hours on weekdays.

Course Description

This is a 3-credit course that introduces the basic concepts and foundational knowledge in neuroscience, the study of the nervous system. This course is organized into four units: Unit 1 focuses on the molecular and cellular mechanisms of neural signaling; Unit 2 on sensation and sensory processing; Unit 3 on movement and motor control; and Unit 4 on neural development and complex brain functions. This course will provide students with a fundamental understanding of the structure, function, and development of the nervous system, as well as certain associated neurological disorders.

Course Objectives

By the end of this course, students should be able to:

- Describe the structure and function of neurons, glial cells, and the molecular mechanisms underlying neural signaling.
- Explain sensory detection, sensory processing, and motor control mechanisms, and describe their roles in maintaining coordinated responses to the environment.
- Integrate knowledge of neural development and brain functions to explain how alterations in neural systems can influence behavior and cognition.
- Apply fundamental neuroscience concepts to understand how disruptions in neural signaling and circuit function can lead to neurological disorders.
- Evaluate experimental approaches and findings in neuroscience, and interpret how they contribute to our understanding of brain structure and function.

Course Requirements

Required Textbook

Augustine et al. *Neuroscience* (7th edition). Oxford University Press. ISBN: 9780197616680

Prerequisites

Integrated Principles of Biology II (BSC 2011) and Integrated Principles of Biology II Laboratory (BSC 2011L), or equivalent, with minimum grades of C.

Minimum Technology Requirements

To complete this course, you will need Internet access and an electronic device (laptop, iPad, etc) to access Canvas, use [iClicker Cloud](#) for lecture participation, and use [Zoom](#) to attend office hours.

Course Schedule

Please note that this schedule is tentative and subject to change. For the most detailed and up-to-date schedule, please refer to the "Schedule" tab in Canvas.

Little Hall 237: Tuesdays (T) 12:50 – 1:40 pm, Thursdays (R): 12:50 – 2:45 pm

Week	Dates	Lecture Schedule (Topics/Chapters)
1	1/14T	Class Intro and Ch.1 Studying the Nervous System
	1/16R	Ch.2 Electrical Signals of Nerve Cells
	1/16R	Ch.3 Voltage-Dependent Membrane Permeability
2	1/21T	Ch.4 Ion Channels and Transporters
	1/23R	Ch.5 Synaptic Transmission
	1/23R	Ch.5 + Ch.6
3	1/28T	Ch.6 Neurotransmitters and Their Receptors
	1/30R	Ch.7 Molecular Signaling within Neurons
	1/30R	Ch.8 Synaptic Plasticity
4	2/4T	Review
	2/6R	Exam 1
	2/6R	
5	2/11T	Ch.9 Vision
	2/13R	Ch.9 + Ch.10
	2/13R	Ch.10 Hearing
6	2/18T	Ch.11 The Vestibular System
	2/20R	Ch.12 Touch and Proprioception
	2/20R	Ch.13 Pain and Temperature
7	2/25T	Ch.14 Olfaction
	2/27R	Ch.15 Taste
	2/27R	Review
8	3/4T	Exam 2
	3/6R	Ch.16 Lower Motor Neuron Circuits and Motor Control

	3/6R	Ch.16 Lower Motor Neuron Circuits and Motor Control
9	3/11T	Ch.17 Upper Motor Neuron Control of the Brainstem and Spinal Cord
	3/13R	Ch.18 Modulation of Movement by the Basal Ganglia
	3/13R	Ch.19 Modulation of Movement by the Cerebellum
10	3/18T	No class – Spring Break
	3/20R	No class – Spring Break
	3/20R	No class – Spring Break
11	3/25T	Ch.21 The Visceral Motor System
	3/27R	Review
	3/27R	Ch.22 Early Brain Development
12	4/1T	Exam 3
	4/3R	Ch.22 + Ch.23
	4/3R	Ch.23 Construction of Neural Circuits
13	4/8T	Ch.24 Experience-Dependent Plasticity in the Developing Brain
	4/10R	Ch.26 Repair and Regeneration in the Nervous System
	4/10R	Ch.28 Cortical States
14	4/15T	Ch.30 Memory
	4/17R	Ch.33 Thinking, Planning, and Deciding
	4/17R	Review
15	4/22T	Exam 4
	4/24R	No class – Reading Day
	4/24R	No class – Reading Day

Course Policies

Late Work

There is **no credit** for late work in this class. There are drops for some assignment categories to give grace for off-weeks, forgetting an assignment, inexcusable events, etc.

Make-Up Policies

Requirements for make-up exams, assignments, and other work in this course are consistent with university policies that can be found in [Attendance Policies](#).

No make-up exams or assignments will be given without prior permission or documentation of illness. Students who will be missing an exam due to a pre-arranged university-approved excused absence (sports, etc.) should let the TA know **a minimum of two weeks in advance**. The TA will administer make-up exams.

In case of illness or personal emergency, students must submit documentation to the Dean of Students office and [request an instructor notification to be sent](#).

For exams, these notes must be received by the TA **within five business days** after the exam. Make-up exams may be short-answer and essay questions and may not be multiple-choice questions. All assignments other than exams will have no make-ups without excused absences for 3 consecutive days during the week of the due date, including the due date.

Any technical issues should be reported to the Help Desk immediately. See "Technical Difficulties" under "Getting Help" for the full policy and more information.

You are responsible for observing all posted due dates and are encouraged to be self-directed and take responsibility for your learning.

Grading Discrepancies

Any grade disputes or requests for re-grading, grade changes, etc. must be submitted **within 24 hours** of receiving the final score for the homework, quiz, etc. This does not guarantee a change in grade, but rather a review of the grade. Requests or disputes submitted past this time period will not be addressed.

Communication Policy

All emails and online communication should be respectful and kind. Emails will receive a response within 48 hours on weekdays.

Grading Policy

We will make every effort to have each assignment graded and posted within one week of the due date. Turnaround time is subject to change by instructor announcement.

Course Grading Policy

Assignment Type	Grade Percentage	Drops
Homework Questions	20%	2
Quizzes	20%	2
Exams	60%	0

Grading Scale

Percent	Grade	Grade Points
≥ 90.00	A	4.00
86.66 – 89.99	A-	3.67
83.33 – 86.65	B+	3.33
80.00 – 83.32	B	3.00
76.66 – 79.99	B-	2.67
73.33 – 76.65	C+	2.33
70.00 – 73.32	C	2.00
66.66 – 69.99	C-	1.67
63.33 – 66.65	D+	1.33
60.00 – 63.32	D	1.00
56.66 – 59.99	D-	0.67
≤ 56.65	E	0.00

Lectures

Lecture attendance is NOT required. However, students who attend lectures generally perform better in this class. Please note that lectures will not be video-recorded. Students are welcome to audio record lectures for personal review, but may NOT publish recorded lectures without the instructor's consent.

Exams

There will be **four noncumulative midterm exams**: All will be held in person. These will consist mostly of multiple-choice, fill-in-the-blank, ordering and numeric (calculation) questions, and some short-answer questions. Each midterm will consist of ~30-40 questions.

All exams will be **closed-book**, except that you may bring and use notes on a single piece of US letter paper (8.5 by 11 inches), which can be hand-written or printed on both sides. You will also be allowed to use blank scratch paper and a scientific calculator. However, you will **NOT** be allowed to use phones, tablets, computers, or other electronic devices, and you will **NOT** be allowed to collaborate with others. [Disability Resource Center](#) accommodations regarding test time will be upheld, and we will do our best to accommodate any other needs.

Quizzes

Quizzes will be administered through Canvas. You may use your notes and textbook. However, you **may not** collaborate with others, and you **may not** use other online resources, including but not limited to search engines (e.g., Google), AI tools (e.g., ChatGPT), Chegg, CourseHero, and Quizlet. Utilizing these resources will constitute an honor code violation (see course policies).

There will be no more than one quiz each week, and your **two lowest** quiz scores will be dropped. Therefore, no make-up quizzes will be offered. It is your responsibility to plan for potential absences due to illnesses, post-graduate school interviews, events, etc.

Homework Questions

You will be asked to answer questions and solve problems as homework. You are allowed to use your textbook and notes and allowed to collaborate with others, but you should ensure that you can answer similar questions on the exam on your own. Additionally, your **two lowest** homework scores will be dropped.

UF Policies

University Policy on Accommodating Students with Disabilities

Students with disabilities requesting accommodations should first register with the [Disability Resource Center](#) (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

University Policy on Academic Conduct

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty

and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The [Student Honor Code and Student Conduct Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor(s) or TA(s) in this class.

Etiquette and Communication Courtesy

All class members are expected to follow common courtesy rules in all email messages, threaded discussions, and chats.

Getting Help

Technical Difficulties

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- <http://helpdesk.ufl.edu>
- (352) 392-HELP (4357)
- Walk-in: HUB 132

Any requests for make-ups due to technical issues should be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You should email your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Health and Wellness

- **U Matter, We Care:** If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter We Care](#) to refer or report a concern and a team member will reach out to the student in distress.
- **Counseling and Wellness Center:** Visit [UF Counseling & Wellness Center](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- **Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit [UF Student Health Care Center](#).
- **University Police Department:** Visit [UF Police Department](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room/Trauma Center:** For immediate medical care in Gainesville, call 352-733-0111, or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [UF Health Shands Emergency Room/Trauma Center](#).
- **GatorWell Health Promotion Services:** For prevention services focused on optimal well-being, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-273-4450.

Academic and Student Support

- **Career Connections Center:** 352-392-1601. Career assistance and counseling services [UF Career Connections Center](#).
- **Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources. [UF George A. Smathers Libraries Ask-A-Librarian](#).
- **Teaching Center:** 352-392-2010. General study skills and tutoring: [UF Academic Resources](#).
- **Writing Studio:** 352-846-1138. Help with brainstorming, formatting, and writing papers: [University Writing Program](#).

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [Providing Constructive Feedback](#). Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via [GatorEvals](#). Summaries of course evaluation results are available to students at [GatorEvals Public Results](#). More information about UF's course evaluation system can be found at [GatorEvals – UF's Course Evaluation System](#).

Privacy and Accessibility Policies

For information about the privacy and accessibility policies of the tools used in this course, see the links below:

- Instructure (Canvas)
 - [Instructure Privacy Policy](#)
 - [Instructure Accessibility](#)
- Zoom
 - [Zoom Privacy Policy](#)
 - [Zoom Accessibility](#)
- iClicker
 - [iClicker Privacy Policy](#)
 - [iClicker Accessibility](#)
- Microsoft
 - [Microsoft Privacy Policy](#)
 - [Microsoft Accessibility](#)
- Adobe
 - [Adobe Privacy Policy](#)
 - [Adobe Accessibility](#)