NEUR 101_001: Introduction to Neuroscience, Spring 2025
Monday/Wednesday 1:30pm-2:45pm

Instructor: Patricia Sinclair, Ph.D. **Office:** Krasnow 217
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Office Hours: Tuesdays 10am – 12pm or by appointment.

Course Overview
This course is intended to be an introduction to the study of the neuroscience for students for all majors. We will explore basic concepts necessary to understand the nervous system including different cell types, their electrical activity, synapses, the function of neurotransmitters, brain development, and diseases. We will discuss how the nervous system is studied and explore the societal implications of neuroscience.

Mason Core: Natural Science Overview, Non-lab
Lectures, activities, and assignments target these 4 learning outcomes specifically as they relate to the nervous system:

1. Understand how scientific inquiry is based on investigation of evidence from the natural world, and that scientific knowledge and understanding: a) evolves based on new evidence, and b) differs from personal and cultural beliefs.
2. Recognize the scope and limits of science.
3. Recognize and articulate the relationship between the natural sciences and society and the application of science to societal challenges (e.g., health, conservation, sustainability, energy, natural disasters, etc.).
4. Evaluate scientific information (e.g., distinguish primary and secondary sources, assess credibility and validity of information)

Textbook
No textbook is required. Some material has been adapted from: Larimore, Jennifer L. *Neuroscience Basics: A guide to the brain's involvement in everyday activities.* Elsevier. 2017. ISBN: 0128110163, 978-0128110164 and from Dingman, Marc, *Your Brain, Explained.* "ISBN 978-1-47369-655-6". Open educational resources may be provided from other sources.

Grading and Assessment*

Quizzes (~12, drop 2 lowest)	10%	
Activity Participation	10%	
Assignments	5%	
Neuro-Disorders Project	10%	
3 Exams: 2 midterms and 1 final	65%	(20% each midterm, 25% for final)
Total	100%	

Grading Scheme

A+ 98 –100%	B+ 88 – 89%	C+ 78 – 79.9%	D 60 – 69.9%
A 90 – 97.9%	B 80 – 87.9%	C 70 – 77.9%	F 0 – 59.9%

**Rounding up will be considered upon student request at the end of the semester if the final grade is within 0.5% of the next letter grade. Granting an increase will be influenced by qualitative aspects of the student's performance in including but not limited to attention during attendance, contribution to class discussions, and attitude.*

Quizzes and Exams

There will be 12 **quizzes** throughout the semester to ensure learning goals are being met. The 2 lowest quiz grades will be dropped. Quizzes will be given on paper during the first 15 minutes of the class. There will be 3 **exams** to assess your knowledge of the topics covered including information from the class lecture slides as well as from discussions, activities and project presentations. The final exam will be cumulative.

Late and Make-up Work

Quizzes and participation (in-class activities) *cannot* be made-up. Missed quizzes will be recorded as a "0" and the 2 lowest quiz grades will be dropped. Make-up exams will be allowed in case of emergency or illness **ONLY** and will require documentation ***prior*** to the missed exam. Please submit a request **BEFORE** the exam (i.e., on or before the morning of the exam). Participation activities during class are essential to your learning experience and will be missed and recorded as a "0" if not present. Missed assignments will incur a deduction of 10% of the earned grade per day missed. This is programmed into Canvas and calculated automatically.

Communication

1. We are using the Canvas (lms.gmu.edu) learning management system. Use your Mason credentials to log in and navigate to this class (NEUR101_001).
2. Lecture slides will be posted to Canvas after class. Unfortunately, missed discussions and activities cannot be posted on Canvas but will be included on exams and quizzes, therefore class attendance is paramount to your success.
3. I will use Canvas to communicate about the course and ***you*** are responsible for checking announcements. If you need assistance with Canvas settings please reach out for more guidance or resources on navigating Canvas. Not checking announcements will not be an accepted excuse for missing an assignment or exam.

NOTE: The following course schedule is subject to change at any time. Students are responsible for all announcements and syllabus modifications posted to Canvas. Check your Mason email and Canvas announcements daily.

Course Schedule

Date	Lesson	Activity/Due Before Class
Jan. 22	Syllabus/Introductions	
Jan. 27	Nervous system overview and organization	Quiz: Syllabus
Jan. 29	No Class	
Feb. 3	Neural cell biology: neuronal and non-neuronal cells	Quiz: Organization
Feb. 5	Neural cell biology: neuronal and non-neuronal cells	
Feb. 10	Neurotransmitters, electrical activity & synapses	Quiz: Neural cell biology
Feb. 12	SNOW DAY	
Feb. 17	Neurotransmitters, electrical activity & synapses	
Feb. 19	Neurodevelopment	Quiz: Neurotransmitters, electrical activity & synapses
Feb. 24	Neurodevelopment	
Feb. 26	Fear & stress	Quiz: Neurodevelopment
Mar. 3	Exam 1 Review	Quiz: Fear & stress
Mar. 5	**Exam 1**	
Mar.10	**Spring Break No Class**	**No Class**
Mar. 12	**Spring Break No Class**	**No Class**
Mar. 17	Learning and memory	
Mar. 19	Movement	Quiz: Learning & memory
Mar. 24	Sensory systems	Quiz: Movement
Mar. 26	Sensory systems	
Mar. 31	Circadian rhythms/sleep	Quiz: Sensory systems
Apr. 2	Language	Quiz: Circadian rhythms/sleep
Apr. 7	Review	Quiz: Language
Apr. 9	**Exam 2**	
Apr. 14	Attention	
Apr. 16	Project presentations	Quiz: Attention
Apr. 21	Project presentations	
Apr. 23	Project presentations	
Apr. 28	Methods for studying the brain: models, assays	
Apr. 30	Evolution	
May 5	Final exam review	Quiz: Methods, evolution
May 7	**Final Exam – cumulative 1:30-4:15**	

Academic Standards
Academic Standards exist to promote authentic scholarship, support the institution's goal of maintaining high standards of academic excellence, and encourage continued ethical behavior of faculty and students to cultivate an educational community which values integrity and produces graduates who carry this commitment forward into professional practice.

As members of the George Mason University community, we are committed to fostering an environment of trust, respect, and scholarly excellence. Our academic standards are the foundation of this commitment, guiding our behavior and interactions within this academic community. The practices for implementing these standards adapt to modern practices, disciplinary contexts, and technological advancements. Our standards are embodied in our courses, policies, and scholarship, and are upheld in the following principles:

- **Honesty:** Providing accurate information in all academic endeavors, including communications, assignments, and examinations.
- **Acknowledgement:** Giving proper credit for all contributions to one's work. This involves the use of accurate citations and references for any ideas, words, or materials created by others in the style appropriate to the discipline. It also includes acknowledging shared authorship in group projects, co-authored pieces, and project reports.
- **Uniqueness of Work:** Ensuring that all submitted work is the result of one's own effort and is original, including free from self-plagiarism. This principle extends to written assignments, code, presentations, exams, and all other forms of academic work.

Violations of these standards—including but not limited to plagiarism, fabrication, and cheating—are taken seriously and will be addressed in accordance with university policies. The process for reporting, investigating, and adjudicating violations is outlined in the university's procedures. Consequences of violations may include academic sanctions, disciplinary actions, and other measures necessary to uphold the integrity of our academic community.

The principles outlined in these academic standards reflect our collective commitment to upholding the highest standards of honesty, acknowledgement, and uniqueness of work. By adhering to these principles, we ensure the continued excellence and integrity of George Mason University's academic community.

Student responsibility: Students are responsible for understanding how these general expectations regarding academic standards apply to each course, assignment, or exam they participate in; students should ask their instructor for clarification on any aspect that is not clear to them.

Accommodations for Students with Disabilities
Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit https://ds.gmu.edu/ for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu. Phone: (703) 993-2474.

Student responsibility: Students are responsible for registering with Disability Services and communicating about their approved accommodations with their instructor *in advance* of any relevant class meeting, assignment, or exam.

FERPA and Use of GMU Email Addresses for Course Communication
The Family Educational Rights and Privacy Act (FERPA) governs the disclosure of education records for eligible students and is an essential aspect of any course. **Students must use their GMU email account** to receive important University information, including communications related to this class. Instructors will not respond to messages sent from or send messages regarding course content to a non-GMU email address.

Student responsibility: Students are responsible for checking their GMU email regularly for course-related information, and/or ensuring that GMU email messages are forwarded to an account they do check.

Title IX Resources and Required Reporting
As a part of George Mason University's commitment to providing a safe and nondiscriminatory learning, living, and working environment for all members of the University community, the University does not discriminate on the basis of sex or gender in any of its education or employment programs and activities. Accordingly, **all non-confidential employees, including your faculty member, have a legal requirement to report to the Title IX Coordinator, all relevant details obtained directly or indirectly about any incident of Prohibited Conduct** (such as sexual harassment, sexual assault, gender-based stalking, dating/domestic violence). Upon notifying the Title IX Coordinator of possible Prohibited Conduct, the Title IX Coordinator will assess the report and determine if outreach is required. If outreach is required, the individual the report is about (the "Complainant") will receive a communication, likely in the form of an email, offering that person the option to meet with a representative of the Title IX office.

For more information about non-confidential employees, resources, and Prohibited Conduct, please see University Policy 1202: Sexual and Gender-Based Misconduct and Other Forms of Interpersonal Violence. Questions regarding Title IX can be directed to the Title IX Coordinator via email to TitleIX@gmu.edu, by phone at 703-993-8730, or in person on the Fairfax campus in Aquia 373.

Student opportunity: If you prefer to speak to someone ***confidentially***, please contact one of Mason's confidential employees in Student Support and Advocacy (SSAC), Counseling and Psychological Services (CAPS), Student Health Services (SHS), and/or the Office of the University Ombudsperson.

Student Services

- Learning Services (learningservices.gmu.edu)
- University Libraries (library.gmu.edu)
- Writing Center (writingcenter.gmu.edu)
- Counseling and Psychological Services (caps.gmu.edu)
- See a longer list of Mason student support services posted on The Stearns Center website.

Add/Drop Deadlines

Deadlines for the Spring 2025 semester can be found on the Mason Academic Calendar page.