Psychology 702 (Section 001)
Biological Bases of Human Behavior
SPRING 2024

INSTRUCTOR Leah M. Adams, Ph.D. [she/her/hers]
Office: 3057 David King
E-mail: ladamse@gmu.edu

MEETINGS Asynchronous online & in-person Mondays: 1:15 – 2:45pm (Mason Center for Community Mental Health Classroom)

OFFICE HOURS Mondays 3:00 – 4:00p (or by appointment) [in person or virtual]

DEADLINES January 23 is the last day to add this class;
January 30 is the last day to drop this class with no tuition penalty
February 20 is the last day to drop this class with 100% tuition penalty
After the last day to drop a class, withdrawing from this class requires the approval of the dean and is only allowed for nonacademic reasons.

TECHNOLOGY

- **Official Communications via GMU E-mail:** Students must use their GMU email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.
- **Class cancellation policy:** If the campus closes or class is canceled, students will be notified via their GMU email. The instructor will provide details regarding coursework and/or assignments.
- **Blackboard**: Activities and assignments in this course will regularly use the Blackboard learning system, available at https://mymason.gmu.edu. Students are required to have regular, reliable access to a computer with an updated operating system (recommended: Windows 10 or Mac OSX 10.13 or higher) and a stable broadband Internet connection (cable modem, DSL, satellite broadband, etc.).
- **Course Materials and Student Privacy:** All course materials posted to Blackboard or other course site are private to this class; by federal law, any materials that identity specific students (via their name, voice, or image) must not be shared with anyone not enrolled in this class. Video recordings – whether made by instructors or students – of class meetings that include audio, visual, or textual information from other students are private and must not be shared outside the class. Live video conference meetings (e.g., Zoom) that include audio, textual, or visual information from other students must be viewed privately and not shared with others in your household or recorded and shared outside the class.

COURSE OVERVIEW & OBJECTIVES

This course is designed to help students develop an understanding of human functional neuroanatomy and basic brain-behavior relationships. Throughout the semester, students will familiarize themselves with key brain structures and neural processes that affect the lived experience. Though this course uses the lens of neuropsychology, which aims to understand brain-behavior relationships to identify impairments in behavior, emotion, cognition, and motor function that may arise due to brain injury or disease, it is not designed to train students to perform neuropsychological assessment or to provide the necessary training

to become a neuropsychologist. Instead, it aims to reinforce the importance of the "bio" component of the *biopsychosocial* model for psychologists.

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

- Describe the broad anatomy of the human brain
- Explain how neurons work
- Describe key brain structures, systems, and functions relevant to a number of psychological processes
- Define and describe psychopharmacological interventions for mental illness, including indications, physiological modes of action, and side effects/considerations for each medication class
- Describe the neuronal and physiological underpinnings of common psychiatric diagnoses
- Define and describe clinical signs of common neurological conditions
- Demonstrate knowledge of professional, ethical, and cultural issues relevant to the practice of neuropsychology

COURSE FORMAT

Owing to the constraints of advanced clinical doctoral students' off-site clinical schedules, this course is offered in a hybrid modality. It is expected that, in most instances, you will have completed the asynchronous online portion of class prior to our Monday in-person meetings. Online classes will primarily be lecture-based with opportunity for hands-on application using online media. In-person classes will primarily be student discussion of relevant readings and group-based activities that apply the online content.

REQUIRED TEXT

Course material will also be drawn from: Kolb, B. & Wishaw, I.Q. (2021). *Fundamentals of human neuropsychology, 8th Edition.* Worth. This book is not required, but may be used as a helpful reference.

Though not required, it is highly recommended that students follow along (and have fun!) with the following: Felten, D.L., & Maida, M.S. (2019). *Netter's neuroscience coloring book.* Elsevier.

Weekly required readings of empirical works will be available on Blackboard for students.

COURSE REQUIREMENTS

- **Participation (15%):** The in-person portion of this class is taught in a seminar format. It is expected that all students will have watched the asynchronous lecture and have read the readings before class to fully participate in each week's activities and discussions. Pro tip ☺: While you are not formally assessed on attendance, it is difficult to actively participate when you are absent.
    - **Due:** Rolling deadline
- **Weekly Quizzes (8 @ 5% each):** With the exception of Week 1 and exam days, there will a brief (5 – 15 minute) quiz at the start of every class session that pulls from the asynchronous lecture content. These quizzes are meant to be brief, regular check-ins to facilitate staying up to date on the material which often builds upon itself. Of the 10 quizzes, the two lowest scores will be dropped.
- **Exams (2 @ 15% each):** Two exams consisting of multiple choice and short answer questions will be given in class. Exam 1 will cover material from the "Foundational Topics" section and Exam 2 will cover material from the "Higher Order Functions" section of class. Students will be allowed to bring one double-sided 5x7-inch flashcard to each exam.

- **Exam 1:** Monday, February 26 in class
- **Exam 2:** Monday, April 1 in class

- **Final Exam (15%):** Students will complete a mock "fact-finding" written exam in which they must reason their way to identifying a specific neurological incident/disorder given information about a fictionalized patient. Grading will be based on how the student arrives at their conclusion (i.e., justifying, based on their knowledge of functional neuroanatomy and clinical presentations of neurological disturbance, where noted impairments likely originate and/or are implicated in the brain) rather than the accuracy of their findings (i.e., whether their "diagnosed" illness is the correct the one).
  - **Final Exam Due:** Monday, April 29 in class

EXAM & HOMEWORK POLICY

Without prior arrangement, there will be no extensions or make-ups without penalty except in instances such as the following:

- hospitalization or illness that has been documented and judged by your instructor as preventing you from a) preparing adequately for an exam or b) completing an assignment
- death or serious illness in your family
- court appearances

Decisions regarding extensions and make-ups under these circumstances will be made on a case-by-case basis. When possible, I encourage students to reach out as soon as you know that you may miss class and/or related work; it is much easier to develop a plan in advance than it is to do so later.

EVALUATION & GRADES

Participation	15%
Exam 1	15%
Exam 2	15%
Weekly Quizzes (8 highest of 10)	40%
Final Fact Finding Exam	15%

A final grade of B denotes work that meets course objectives and demonstrates the level of comprehension and skill expected of graduate students. Note that a grade of C or lower denotes unsatisfactory level of achievement for a graduate student. It is worth trying to earn a grade higher than a C since this course will have to be retaken otherwise. However, it is not worth fretting about whether you get an A or A- since this distinction usually has little practical importance in graduate school or one's professional development – the most important thing is working to become competent and comfortable with the content. Please contact me if you believe your work has been graded improperly. Final grades will be assigned according to the following percentages (with typical rounding rules for decimals):

A	A-	B+	B	B-	C	F
93 – 100%	90 – 92%	87 – 89%	83 – 86%	80 – 82%	70 – 79%	< 70%

ACADEMIC INTEGRITY & HONOR CODE

All students in this course are to become familiar with and follow the University's honor code, which does not tolerate any form of cheating and attempted cheating, plagiarism, lying, and stealing. Exams and assignments are expected to be individual efforts unless otherwise noted by the instructor. Violations

of the GMU Honor Code can result in failure of an assignment or exam, depending on the severity of violation. All violations will be reported to the Honor Committee. I reserve the right to enter a failing grade to any student found guilty of an honor code violation. For more information on the Honor Code please visit:
https://oai.gmu.edu/mason-honor-code/full-honor-code-document/

ACCOMMODATION OF DISABILITIES
Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. Note that this provision includes the range of disabilities, including physical, psychiatric, and learning disabilities. If you are seeking accommodations for this class, please first visit http://ds.gmu.edu/ for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. All academic accommodations **must** be arranged through Disability Services. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993 – 2474.

SEXUAL HARASSMENT, SEXUAL MISCONDUCT, AND INTERPERSONAL VIOLENCE
As a faculty member and designated "Responsible Employee," I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's Title IX Coordinator per university policy 1412. If you wish to speak with someone confidentially, please contact the Student Support and Advocacy Center (703-993-3686) or Counseling and Psychological Services (703-993-2380). You may also seek assistance from Mason's Title IX Coordinator (703-993-8730; titleix@gmu.edu).

STUDENT SUPPORT SERVICES
George Mason offers services to support students' academic and emotional development. Counseling and Psychological Services, located in SUB I room 3129 (caps.gmu.edu), offers workshops in academic skills, stress management training, and virtual counseling for students who would like some help with social, emotional, or educational concerns. Consider taking advantage of these resources if you need them. For additional information about other student support services offered, visit:
https://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-onhttps://stearnscenter.gmu.edu/knowledge-center/knowing-mason-students/student-support-resources-on-campus/campus/

Week	Date	Tentative Schedule of Topics Readings + Assigned work available on Blackboard
Foundational Topics		
1	M 1/22	Overview of Course. Human brain & behavior.
2	M 1/29	Nervous system organization. Spinal cord injury.
3	M 2/5	Neuron structure & Communication. Neurotransmitters.
4	M 2/12	Psychopharmacology.
5	M 2/19	Somatosensory & Motor Systems Organization.
6	M 2/26	**In-class Exam #1: Foundational Topics**
Higher Order Functions		
7	M 3/4	**NO CLASS:** Spring Break! Enjoy! ☺
8	M 3/11	Cortical Organization. Vision-related processing. Learning & memory.
9	M 3/18	Speech & language.
10	M 3/25	Emotions & the social brain. Executive functions.
11	M 4/1	In-class Exam #2: Higher order functions
Disorders Represented in the Brain		
12	M 4/8	Intro to fact-finding. Neural underpinnings of psychiatric disorders.
13	M 4/15	Brain development. Neurodevelopmental disorders.
14	M 4/22	Neurological disorders.

15	M 4/29	TBI. Plasticity. **In-class Fact-finding final exam.**