SYLLABUS

Behavioral Chemistry
PSYC559 / PSYC461 / NEUR461 – Spring 2025

MW: 12:00-1:15 PM_East Hall, Room 134

Instructor: Ted Dumas
Contact Information: tdumas@gmu.edu, 3-9170
Office Hours: Tuesday, 1:00pm – 2:00pm or by appointment
Office Location: Krasnow Hall, Room 109
Last day to add: 01/27/2025
Last days to drop: 02/03/2025 (0% tuition liability), 02/10/2025 (50% tuition liability)

COURSE INFORMATION

Course Objectives

The environment we live in is not static. At times we flow smoothly through our day and at times there is turbulence. This is an advanced multidisciplinary course that approaches the chemistry of behavior through analysis of our responses to short- and long-term challenges. Relationships between body and mind are emphasized. The first portion of the course covers nuts and bolts about the neurobiology associated with thoughts, feelings, and actions and introduces fear, stress and anxiety as common factors that strongly influence mental and physical health. The second third of the course examines the impacts of stress on basic human functions like eating and sleeping and defines relationships between early life experience and our ability to cope as adults. The latter third of the course covers interactions between cognition and emotion, touches on aging, and finishes with a holistic approach to improving mental and physical resilience in the face of what life throws at us. The course is in-person lecture-based with some online videos.

Education Mode

This class will be delivered in person!

Textbook

There is no textbook to purchase. Course material is derived from *Neuroscience 6e* (Purves et al) and a course overview packet with an outline of course material and all background citations. The syllabus for this course, all instructional materials, and homework assignments will be distributed via ***Canvas***. All required reading materials are also available at Canvas. Two video talks by Dr. Robert Sapolsky (Stanford Neurobiologist) will be the substance of one of the lectures.

Talks by Dr. Robert Sapolsky
"The Uniqueness of Humans"
https://www.ted.com/talks/robert_sapolsky_the_uniqueness_of_humans

"The Biology of Humans at Their Best and Worst"
https://www.youtube.com/watch?v=ORthzIOEf30&list=PL4sAUyGOV7IZW4fx6Ncy6-RwcYLCNapQC&index=8

Grading

Exams: There are three scheduled exams. Exam 1 is worth 20% of the final grade. Exams 2 is worth 30% of the final grade. Exams 3 is worth 40% of the final grade. Exam 3 is NOT cumulative. Changes to exam dates or times or make-up exams are not allowed unless the student has written medical documentation in advance. Medical documentation for a family member or friend is not sufficient to request a make-up exam.

Presentations: Each student is required to deliver one short presentation (approximately five minutes) on a topic related to the course that is scheduled with the instructor at least one week in advance. The instructor must approve the topic and presentation contents prior to the presentation. The presentation counts for 10% of your final grade.

Homework: There are nine homework assignments (3 per exam) that each count as one exam point. Homework answers do not need to be correct, but homework assignments must be completed and submitted prior to 10pm on each submission deadline (listed on the calendar below). Completed homework assignments are sent to the instructor's Mason email address as Word or PDF attachments.

Grading Policy
A score of 90% or above results in a grade of A- or above, 80-89% corresponds to a B- or above, 70-79% results in a C- or above, and 60-69% results in a D. For undergraduates, a final grade below 70 does not earn credit toward the neuroscience major. For graduate students, any final grade below 80 is a failing grade. The final grades may be determined on a curve if this is in the students' favor and justified.

SUPPLEMENTARY INFORMATION
Academic Integrity
GMU is an Honor Code university. Please see the University Catalog for a full description of the code and the honor committee process. Academic integrity is taken very seriously. When you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. The instructor must be notified when an artificial intelligence app/software is used to complete homework assignments. Another aspect of academic integrity is the free exchange of ideas regardless of gender, race, ability, or age. Vigorous discussion and debate are encouraged with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt, please request guidance.

GMU Email Accounts
Students must use their Mason email accounts to receive and send course-related information.

Office of Disability Services
Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students. If you are seeking accommodations for this class, please first visit https://ds.gmu.edu/ for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu | Phone: (703) 993-2474

COUNSELING AND PSYCH SERVICES (CAPS): (703) 993-2380; http://caps.gmu.edu

University Policies
The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.

Class Policies
The instructor of this course reserves the right to enter a failing grade to any student found guilty of an honor code violation. Use of cell phones, pagers, and other communicative devices are not allowed. Laptops or tablets may be permitted for the purpose of taking notes only. Please be respectful of your peers and your instructor and do not engage in activities that are unrelated to class. Such disruptions show a lack of professionalism and may affect your grade.

Neuroscience 6e, Calming an Overactive Brain

Week of Semester	Monday	Wednesday
Week 1 Wed. Jan. 21st		1-Cell Signaling & Neurotransmitters
Week 2 **(Homework 1: 01/25)** Jan. 26th, Jan. 28th	2-Neurotransmitters & Receptors	3-Receptors, Signaling, & Plasticity
Week 3 **(Homework 2: 02/01)** **Feb**. 2nd, Feb. 4th	Sapolsky Videos & Discussion	4-Fear & Stress
Week 4 **(Homework 3: 02/08)** Feb. 9th, Feb. 11th	5-Anxiety & Anxiety Disorders	6-Immunity
Week 5 Feb. 16th, Feb. 18th	**Exam 1 Review**	**Exam 1**
Week 6 Feb. 23rd, Feb. 25th	*No Lecture!*	7-Eating & Digestion
Week 7 **(Homework 4: 03/01)** Mar. 2nd, Mar. 4th	8-Child Development	9-Obsessive-Compulsive Disorders
Week 8 **(Homework 5: 03/08)** Mar. 9th, Mar. 11th	*Spring Recess, No Class!*	*Spring Recess, No Class!*
Week 9 **(Homework 6: 03/15)** Mar. 16th, Mar. 18th	10-Sleep & Pain	11-Brain Function & Memory
Week 10 Mar. 23rd, Mar. 25th	**Exam 2 Review**	**Exam 2**
Week 11 **(Homework 7: 03/29)** Mar. 30th, April 1st	*No Lecture!*	12-Depression, Helplessness & PTSD
Week 12 **(Homework 8: 04/05)** April 6th, April 8th	13-Aging	14-Coping_Exercise, Diet, & Cognitive Approaches
Week 13 **(Homework 9: 04/12)** April 13th, April 15th	*Student Presentations*	*Student Presentations*
Week 14 April 20th, April 22nd	*Student Presentations*	*Student Presentations*
Week April 27th, April 29th	*Student Presentations*	**Exam 3 Review**
Final Exams May 4th, May 6th	*No Lecture!*	*No Lecture!*
Final Exams Monday, May. 11th	**Exam 3: 10:30am-1:15pm**	