

PSYC 531 – Mammalian Neurobiology

Tuesdays & Thursdays, 1:30pm – 2:45pm. Angel Cabrera Global Center 1306B

Instructor

Dr. Martin Wiener

Phone

703-993-6217

Email

mwiener@gmu.edu

Office Location

David King Hall, Room
2055

Office Hours

By appointment

Grade Criteria

<u>Grade</u>	<u>Percent</u>
A	90-100%
B	80-89.9%
C	70-79.9%
D	60-69.9%
F	Below 60%

Course Overview

The objective of this class is to provide knowledge about the anatomy and function of the mammalian (especially human) central nervous system. We will take a systems neuroscience perspective to understanding brain anatomy and function: we will place particular emphasis on the way that nuclei and regions interconnect and work together in the service of function. The course will provide a detailed look at different sensory, motor, cognitive, and regulatory systems, including a detailed examination of the anatomy and physiology of key regions/nuclei, and connections between structures, that comprise these systems. At the end of this course I hope you will have gained the following:

1. Knowledge of the gross anatomy of the human brain
2. Be able to identify the major anatomical structures and pathways that comprise sensory, motor, cognitive, and regulatory systems
3. An understanding of the relationship between brain structure and function

Class Format

A seminar format will be used for these classes, with active student participation expected. Students will be expected to be able to identify and diagram brain systems under discussion each week. Mandatory homework and readings will be assigned for each week on Blackboard to be submitted before each class. I expect that much of the material covered in the course will be new to you, so keeping up with the readings etc will be critical.

Assessment: Assessment will consist of homework (30%), in-class participation (20%), and a take home, open book final exam with items very similar to those covered in the weekly assignments (50%).

Required Reading

Kandel et al (2013) Principles of Neural Science. 5th edition. McGraw-Hill. (note: you are not required to purchase this textbook).

All readings will be distributed via Blackboard.

Online format (if necessary)

Due to the present state of the pandemic, there is the possibility that this class will need to switch to an online format at certain times. If that should happen, I will inform all students via email in advance.

General Policy

Honor Code: George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited. All violations of the Honor Code will be reported to the Honor Committee. See honorcode.gmu.edu for detailed information. Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, or another person's assistance. Unless otherwise stated in class, all

work done for courses -- papers, examinations, homework exercises, laboratory reports, oral presentations -- is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources -- journals, books, or other media -- these resources must be cited in a manner appropriate to the course. Everything used from other sources -- suggestions for organization of ideas, ideas themselves, or actual language -- must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism. If you are caught plagiarizing or cheating, you will be referred to the honor committee and, if found guilty, will fail the assignment, and, depending upon the severity of the violation, you may fail the class.

Disability Statement: If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Services (DRS) at [703-993-2474](tel:703-993-2474). All academic accommodations must be arranged through that office. Please see me as soon as possible about this, as I will not adjust grades for exams after they have been given.

Class Cancellation Policy: This class will entail frequent use of email, blackboard, PowerPoint, etc. Please check blackboard and your email regularly. If class is cancelled, I will notify you by email/blackboard and how we will make the time up.

Make-up policy: Make-up exams will only be given if exceptional circumstances are claimed AND substantiated. I must see proof of what you are claiming to verify that it is true.

Add/Drop Deadlines: Please note that the *last day to add classes* is **January 31st**. The last day to drop a course *with no tuition penalty* is **February 7th**. The last day to drop *with a 50% tuition penalty* is **February 14th**. The final day to *drop with a 100% tuition penalty* is **March 1st**. After March 1st, withdrawal from the class requires approval of the dean and is only allowed for nonacademic reasons.

Official Communications via GMU E-mail: Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly. If class has to be canceled, you will be informed via e-mail. Information will be provided in the e-mail about making up the missed class.

Technology: Powerpoint, videos, and white board will be used to present class materials. Materials will be distributed via email, in class, and via Blackboard.

Course Schedule:

Date (Week of)	Lecture topics/Activities	Chapters
1/25	Class introduction and overview of brain anatomy	1&2
2/1	Neural activity and transmission	9 & 10
2/8	Visual system	25 & 27
2/15	Auditory system	31
2/22	Somatosensory system	22 & 23
3/1	NO CLASS	
3/8	Smell & Taste	32
3/15	NO CLASS	
3/22	Motor systems & Movement	37 & 38
3/29	Cerebellum & Basal Ganglia	42 & 43
4/5	Arousal and Neuromodulation	46 & 47

4/12	Brainstem & Pain	24 & 45
4/19	Limbic system	48
4/26	Hippocampus	67
5/3	Frontoparietal	19