NEUR327/Cellular Neuroscience Summer 2025-ONLINE Synchronous

INSTRUCTOR: N KABBANI
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Online meeting times: M/W, 10:30AM-12:50PM (5/19-6/27)

OBJECTIVE: This is a fundamental neuroscience course that presents basic concepts of cellular and molecular neuroscience including the structure of neurons, cell membranes, regulation of electrical properties, and intracellular signaling and synaptic plasticity. The accompanying textbook is **Neuroscience 5/e, Purves et al. or any other edition.**

GRADING: There will be 2 exams and a comprehensive final. Each exam will be worth 25% of your final grade while the comprehensive will be worth 40%. **10% of your grade is based on attendance and an assigned presentation.**

Attendance and participation. Regularly attending the Zoom lecture, with camera turned on, and an engaged presence is required for success in the course. The slides provided are not complete notes nor are they substitutes for attending the lecture. It is recommended that you take notes during the lecture and ask questions throughout.

EXAMS: Your exams will be posted on Canvas on the scheduled day of the exam between the hours of 10AM and 3PM. Exams are timed to 60 minutes with only one attempt. The exam **is not** open book or open notes and to be taken using lockdown browser. You are asked to use the GMU Honor Code throughout the exam. **Make-up exams are not allowed**.

Presentation: Give a 10 min presentation on a technique or method. Summarize the concept and discuss (in broad terms) how the method is applied or used. You will be assessed based on content and clarity of presentation each counting or 50%.

SCHEDULE

Week of 5/19: M: Introduction to the Course, Studying the Nervous System Ch.1 W: Electrical Signals of Nerve Cells Ch.2
Week of 5/26: **M: No class Memorial Day** W: Voltage Dependent Membrane Permeability, Ch.3 (Kinza, Alisha, Jackelyn)
Week of 6/2: **M: EXAM 1 (Ch 1-3)** W: Channels and Transporters, Ch. 4 (Safia, Ruun, Emma)
Week of 6/9: M: Synaptic Transmission, Ch.5 (Ollie, Shazeb, Sarah) W: Neurotransmitters and their Receptors, Ch.6 (Lexie, Sofie, Ifrah)
Week of 6/16: **M: EXAM 2 (Ch 4-6)** W: Signaling within Neurons, Ch. 7 (Neela, Mahnoor, Muskan)
Week of 6/23 M: Molecular Synaptic Plasticity, Ch.8 (Yousef, Layan, Abu) **W: COMPREHENSIVE FINAL EXAM**