NEUR327- Cellular, Neurophysiological, and Pharmacological Neuroscience

SPRING 2020/MW 10:30-11:45am/Krasnow 229

INSTRUCTOR: N KABBANI, **nkabbani@gmu.edu, Office Krasnow 233**
Office Hours: Mon 12–1:00 pm or by appointment

OBJECTIVE: This is a core neuroscience course that presents key cellular and molecular neuroscience concepts. We will discuss the features and functions of cellular membranes, select organelles, receptors and ion channels, and intracellular signal transduction. We will explore how these processes can contribute to synaptic plasticity that can underlie cognition, learning, memory, and neurodisease.

Required Text & Material: Neuroscience 6/e, Purves et al. or older additions. Powerpoint slides will be provided via Blackboard however these slides are outlines of the lecture (see below). Exams require the use of a scantron.

GRADING: There will be 2 exams and a Comprehensive Final. Each exam is worth 30% while the final is worth 40%. Exams will be in the multiple-choice format and cover material discussed in class. Make up exams are not permitted. You must follow the guidelines of the GMU Honor Code at all times.

ATTENDANCE participation, and taking notes are essential for success in the course. The slides are a tool to guide you during the lecture and are not complete lecture notes.

Schedule (subject to change)

Jan 22: Studying the Nervous System Ch.1
Jan 27-29: Electrical Signals of Nerve Cells, Ch.2
Feb 3-5: Voltage Dependent Membrane Permeability, Ch.3
Feb 10: Voltage Dependent Membrane Permeability, Ch.3
Feb 12: **No class**
Feb 17: Channels and Transporters, Ch.4 (part 1)
Feb 19**: Exam 1 (Chapters 1-4 (part1))**
Feb 24-26: Synaptic Transmission, Ch. 5 and Ch. 4 (part 2)
Mar 2: Synaptic Transmission, Ch.5
Mar 4: Neurotransmitters and their Receptors, Ch.6
Mar 9-11: **Spring Break**
Mar 16-18: Neurotransmitters and their Receptors, Ch.6
Mar 23-25: Neurotransmitters and their Receptors, Ch.6
March 30: **Exam 2 (Chapters 5-6, and 4 (part 2))**
April 1: Molecular Signaling within Neurons Ch. 7
Apr 6-8: Molecular Signaling within Neurons Ch. 7
Apr 13: **Easter Monday**
Apr 15: Synaptic Plasticity, Ch.8
Apr 20-22: Synaptic Plasticity, Ch.8
Apr 27-29: Synaptic Plasticity, Ch.8/ FINAL REVIEW
FINAL EXAM: TBD