BIOL 2480 Principles of Neuroscience

Class: Tuesdays and Thursdays 8:30 am – 9:50 am
Location: Microsoft Teams

Instructor

Dr. Jeffrey Dason
Email: jeffrey.dason@uwindsor.ca
Office Hours: By appointment

GAs/TAs

Zeenat Aurangzeb (aurangz@uwindsor.ca)
Abuzar Sikandar (sikanda@uwindsor.ca)
Breanna Vasko (vaskob@uwindsor.ca)
Your GAs/TAs will be responsible for all grading in the course.

Course Objectives

Upon completion of this course, you should be familiar with fundamental principles of neuroscience. This course will provide an understanding of how neurons and the nervous system functions. This course will focus on neural signalling, plasticity, sensory systems, and development. You should also be able to extrapolate what you have learned to relevant topics outside this course.

Textbook

The recommended textbook for this course is Neuroscience, edition 6 by Purves et al. You are welcome to use a previous edition if you want but all figure numbers and page numbers given refer to the 6th edition of the text and in some instances differ from the other editions. All material you need to succeed in the class will be provided in lecture, but the text is an excellent resource as a backup, especially if you will take other neuroscience courses in your career.

Grading

Grades will not be “curved”. Exact grade breakdown is as follows:

Exam 1	30%
Exam 2	30%
Final Exam	40%

Schedule

January 18	Course overview
January 20	Chapter 1: Studying the Nervous System
January 25	Chapter 2: Electrical Signals of Nerve Cells
January 27	Chapter 3: Voltage-Dependent Membrane Permeability
February 1	Chapter 4: Ion Channels and Transporters

February 3	Chapter 5: Synaptic Transmission
February 8	Chapter 5: Synaptic Transmission
February 10	Exam 1 (Chapters 1-5)
February 15	Chapter 6: Neurotransmitters and Their Receptors
February 17	Chapter 6: Neurotransmitters and Their Receptors
February 22 and 24	Reading week
March 1	Chapter 7: Molecular Signaling within Neurons
March 3	Chapter 7: Molecular Signaling within Neurons
March 8	Chapter 8: Synaptic Plasticity
March 10	Chapter 8: Synaptic Plasticity
March 15	Chapter 9: The Somatosensory System: Touch and Proprioception
March 17	Chapter 10: Pain
March 22	Exam 2 (Chapters 6-10)
March 24	Chapter 22: Early Brain Development
March 29	Chapter 23: Construction of Neural Circuits
March 31	Chapter 23: Construction of Neural Circuits
April 5	Chapter 24: Circuit Differentiation: Intrinsic Factors and Sex Differences
April 7	Chapter 26: Repair and Regeneration in the Nervous System
April 12	Chapter 30: Memory
April 14	Review
TBD	Final Exam (Chapters 1-10, 22-24,26 and 30)

Lecture notes

Lecture notes will be posted on blackboard. The notes are OUTLINES of what we will cover but you will be responsible for ALL material presented in lectures, whether it is on the posted outlines or not.

Exams

Exams will be on all material presented in lectures. Exams will consist of multiple choice and short answer questions. Exams will be on blackboard. Do not paste your answers from other sources. Students caught cheating on the exams will be given a grade of zero for the test and will be referred to the Dean's office for disciplinary action.

Missed exams: You are expected to take the exams at the regularly scheduled times. If you are too sick to write an exam you MUST provide a signed doctor's note as evidence. Students missing exam 1 or exam 2 for a legitimate reason (physician confirmed illness, verified death in the family, or other verifiable personal crisis) will have their final exam weighted heavier (70% instead of 40%). A make-up exam for the final exam will be given within one week of the scheduled exam date at a mutually convenient time.

Regrades: If you feel a mistake has occurred or your exam was graded unfairly you are encouraged to notify me. You have one week to request for a regrade after your mark is posted. No appeals will be considered after the one week time limit. All requests for a regrade must be in writing.

Academic misconduct

Cheating will not be tolerated. Any evidence of attempting to copy answers or otherwise conduct academic misconduct as spelled out in the University of Windsor policy will be dealt with as severely as allowed.

Tips for doing well in this course

1. Attend all lectures and pay attention.
2. Use the Power Point presentation of a lecture as guidelines and make notes as we go.
3. If you are confused by something said in lecture, raise your hand and ask me to clarify it or ask me after class.
4. Study the material of a lecture before and shortly after it is given. Exams will be based on lectures. Therefore, concentrate your effort on my PowerPoint presentations and the notes that you take in the class when you study for exams.