NEUROSCIENCE I: Cell Anatomy and Physiology
NROB60 Lec 1 Fall 2008
(Tue 3-4pm and Thur 3-5pm SW319)

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Office hours: Tue 4-5pm, Thur 1-3pm

This course provides an overview of the structure and function of the nervous system. Concepts learned in this course will provide you with the background required for higher level neuroscience courses, and are critical for understanding the neurobiology of behaviour, motivation, emotion, sensation, movement, etc.

The first part of this course deals with the anatomy of the nervous system. Here you will learn about the anatomy of the brain, spinal cord, and nerves, as well as the structure and function of the cells of the nervous system (i.e., neurons and glia). The second part of the course is dedicated to understanding how neurons send information to other neurons or other cells. Here, you will learn about the physiological properties of neurons that allow them to communicate with one another, and the neural mechanisms involved in this communication. The final part of the course deals with neuropharmacology, and provides an overview of the major neurochemical systems found in the brain.

TEXTBOOK

Bear, M.F., Connors, B.W., & Paradiso, M.A. (2007). *Neuroscience: Exploring the Brain* (3rd ed.). Baltimore, MD: Lippincott Williams & Wilkins.

COURSE WEBSITE

Lecture-related material including the course outline and lecture notes will be provided on **Blackboard**. Blackboard is an on-line course management system much like the UTSC intranet. In order to access course materials on Blackboard, you must have an active UTORid. For help with activating your UTORid, please visit the computing help desk (B-487) or the library. Each time you want to log on to the course site on Blackboard, you simply go to the UTSC homepage, click on "**Portal**" at the top of the webpage, and then click on "**log-in to the portal**". You then click on the course which will be found under "**My Courses**". Please note that all lecture-related material will be posted on Blackboard and not the UTSC intranet. It is, therefore, important that you figure out how to access the course materials on Blackboard at the beginning of the term.

EVALUATION

There are two components to this course: a lecture component and a laboratory component. These two components are run independent of one another. Your final grade will be based on exams and/or assignments completed in both the lecture and laboratory components.

Grade breakdown:	**LECTURE**	**75%**
	LABORATORY	**25%**

LABORATORY → For information on the laboratory component, please refer to the course outline you receive during your first lab.

LECTURE → The lecture material is divided roughly into three sections, with an opportunity for evaluation following each section. There will be two term tests each worth 22.5% of your final grade. There will also be a final exam at the end of the term worth 30% of your final grade.

Structure of Tests and Exam

The term tests will consist of mostly multiple-choice questions and some short-answer questions. The final exam will similarly consist of multiple-choice and short-answer questions. The final exam will be cumulative. However, greater emphasis will be placed on material covered after the second term test. You are responsible for assigned readings and lecture material.

Note: Exact dates for the term tests cannot be given at this point, since they will be arranged by the registrar's office. I have requested the dates indicated below. Tests may be held during class time or outside of class time. Changes may be made to the schedule of lectures to accommodate tests should they be scheduled during class time.

Test/Exam	Date	% final grade	Duration	Material covered
Term Test #1	Week of October 13	22.5%	2 hours	Ch.1, 2, 7 (including appendix) AND Sept.11 – Oct.7 lectures
Term Test #2	Week of November 10	22.5%	2 hours	Ch. 3,4,5 AND Oct.9 – Nov.4 lectures
Final Exam	TBA	30%	3 hours	All

POLICY ON MISSED TESTS

If you miss either of the term tests due to illness, you will have the opportunity to write a make-up test which will be scheduled at a mutually agreeable time the following week. This consideration will ONLY be made for students who provide appropriate medical documentation **within one week** of the missed test. If you have missed a test, please contact me as soon as possible, since you will have to make arrangements to write the make-up. If documentation is not provided within one week, a grade of ZERO will be given for the missed test.

Note: Only ONE make-up test will be scheduled. If you miss the make-up test for any reason at all, you will receive a grade of zero. Under no circumstances will there be a make-up for the make-up test.

If you miss the final exam, you must contact the Office of the Registrar.

SCHEDULE OF LECTURES ***(schedule subject to change)***

DATE	TOPIC	READINGS
September 9	Course Introduction	
September 11	An Introduction to the Field of Neuroscience: Origins and Methods	Chapter 1
September 16	The Structure of the Nervous System: *Anatomy of the Central Nervous System*	Chapter 7 (including appendix)
September 18	The Structure of the Nervous System: *Anatomy of the Central Nervous System (Continued)*	Chapter 7 (including appendix)
September 23	The Structure of the Nervous System: *Anatomy of the Central Nervous System (Continued)* *Development of the Nervous System*	Chapter 7 (including appendix)
September 25	The Structure of the Nervous System: *Anatomy of the Peripheral Nervous System*	Chapter 7 (including appendix)
September 30	Cells of the Nervous System: *The Neuron: Structure and Function*	Chapter 2
October 2	Cells of the Nervous System: *The Neuron: Structure and Function* (Continued)	Chapter 2
October 7	Cells of the Nervous System: *Glia*	Chapter 2
October 9	Resting Membrane Potential	Chapter 3
October 14	**IN-CLASS OFFICE HOURS FOR TERM TEST #1**	
October 16	Resting Membrane Potential (Continued)	Chapter 3
October 21	The Action Potential: *Molecular Basis of the Action Potential*	Chapter 4
October 23	The Action Potential: *Molecular Basis of the Action Potential (Continued)* *Action Potential Conduction*	Chapter 4
October 28	Synaptic Transmission: *Synapses* *Principles of Synaptic Transmission*	Chapter 5
October 30	Synaptic Transmission: *Principles of Synaptic Transmission (Continued)* *Postsynaptic Potentials*	Chapter 5
November 4	Synaptic Transmission: *Postsynaptic Potentials (Continued)*	Chapter 5
November 6	Neurotransmitter Systems: *Chemistry and Anatomy*	Chapter 6

November 11	**IN CLASS OFFICE HOURS FOR TERM TEST #2**	
November 13	Neurotransmitter Systems: *Chemistry and Anatomy (Continued)*	Chapter 6
November 18	Neurotransmitter Systems: *Behavioural Pharmacology*	Chapter 6
November 20	Wiring the Brain: *Neurogenesis*	Chapter 23
November 25	Wiring the Brain: *Neurogenesis (Continued)* *Synaptic Plasticity*	Chapter 23
November 27	Wiring the Brain: *Synaptic Plasticity (Continued)* Course Wrap-up	Chapter 23
TBA	**FINAL EXAM**	