Tentative Course Schedule
NRO B60
Fall 2006
NEUROSCIENCE I: CELL ANATOMY AND PHYSIOLOGY

Professor:	Dr. Janelle LeBoutillier
Office:	S557
Office Hours:	Tuesday and Thursday, 11-12 am
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Textbook:	*Neuroscience* by D. Purves et al (eds). Third Edition, 2004 New and used copies available in the bookstore.
Lab Text:	*On-line atlas; link available through the INTRANET*
Lectures:	Tues 3-4 H216 Thurs 3-5 H216 on-line Refer to the web page link for lecture availability.

Labs:

PRA0001	Tuesdays	1-3 p.m	SW328
PRA0002	Tuesdays	5-7 p.m.	SW328
PRA0003	Wednesdays	12-2 p.m.	SW328
PRA0004	Wednesdays	7-9 p.m.	SW328
PRA0005	Fridays	9-11 a.m.	SW328
PRA0006	Fridays	11-1 p.m.	SW 328
PRA0007	Wednesdays	3-5 p.m.	SW 328
PRA6001	Online PRA		

Course Description

Neuroscience is the scientific study of nervous systems. It includes the study of the nature and functioning of the nervous system at all levels, from the molecules that make up individual nerve cells and the transfer of information from one nerve cell to another, to the complexities of how thoughts, emotions and behaviours are produced.

Neuroscience is at the interface between biology and psychology. It is unique in that it makes use of a variety of methods and investigations from a wide range of traditional disciplines. To understand the nervous system and how it works requires knowledge of anatomy, molecular biology, biochemistry, pathology, physiology, pharmacology, psychology and zoology.

Neuroscience I is a fairly sophisticated introduction to the field of neuroscience; a virtual springboard from which to enter all of the other Neuroscience courses in our program. As well, this course can provide a physiological foundation for many of our Psychology courses and interdigitates nicely with many of our biology courses. We will cover the gross as well as cellular structure and function of the nervous system in depth. In particular, we will study the cellular and molecular biology of nervous system components, including: neurons, glial cells, meninges, choroid plexus, blood brain barrier, ventricular and vascular systems. We will definitely focus on the major cell of the nervous system - the neuron!

We will explore neuronal physiology at the cell and molecular levels in order to better understand the complex mechanisms of intercellular communication in the nervous system, including electro-chemical transformations at the synapse, different types of receptor mechanisms and neuroregulation at the DNA level.

The laboratory will cover gross and systems anatomy of the nervous system. Students participating in a practical lab section will dissect sheep brains and will examine a wide variety of nervous system structures in 3-D. The fine histology and function of several systems, as well as several neuroanatomical techniques will be discussed and/or demonstrated. Basic dissecting equipment will be provided but if you plan to continue in other science labs you may wish to purchase a dissecting kit. Glasses and safety glasses are strongly recommended. Gloves will be provided in the labs at a cost. Proper safety procedures, as detailed in your lab syllabus must be followed in the labs at all times. **Non-compliance will result in a failing lab grade.** Details of the lab schedule for both the on-line and practical lab sections will be outlined during the first week of labs.

Altogether, this course lays the framework for understanding subsequent neuroscience courses. We will begin to understand how the activity of even small groups of neurons can lead to the activity of circuits specialized for all of our sensations, movements, specific goal directed behaviours, emotions, and ultimately, we hope, cognition.

Grading

20% Midterm Exam I:	2 hours. Week of October 9, 2006 requested. Exact date TBA by the Registrar. [Material covered to date from lectures & text chapters 1,2 and 3.]

25% Midterm Exam II:	2 hours. Week of November 6, 2006 requested. Exact date TBA by the Registrar. [Material covered **SINCE** first midterm from lecture & text chapters 4 and 5.]
25% Final Exam:	2 hours. During Final Exam Period TBA by Registrar [Material covered SINCE midterm test 2 from lectures & text chapters 6 and 7.]

Note: All lecture tests may include the following testing format: Multiple choice, short answer, labelling, fill in the blank, matching

30% Lab	Refer to lab syllabus which is posted to the Intranet

Tentative Itinerary - NRO B60H3F Lectures

WEEK OF

September 11	Introduction to course (no labs this week). Chapter 1: Studying the Nervous Systems of Humans and Other Animals.
September 18	Chapter 1 (Cont'd.). Begin Chapter 2.
September 25	Chapter 2: Electrical Signals of Nerve Cells.
October 2	Chapter 3: Voltage-Dependent Membrane Permeability.
October 9	Midterm Exam One Requested, Exact date TBA by Registrar NOTE: Only Chap 1,2 and 3 AND corresponding lectures will be covered.
October 16	Chapter 4: Channels and Transporters
October 23	Chapter 5: Synaptic Transmission.
October 30	Chapter 5 (Cont'd)
November 6	Midterm Exam Two Requested, Exact date TBA by Registrar NOTE: Only Chap 4 and 5 AND corresponding lectures will be covered
November 13	Chapter 6: Neurotransmitters
November 20	Chapter 6 (Cont'd). Begin Chapt 7
November 27	Chapter 7: Neurotransmitter Receptors and Their Effects