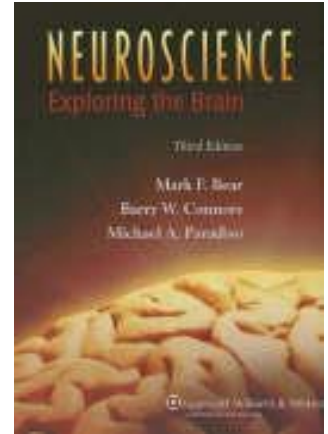


# Neuroanatomy Lab

## NROB60

### Tentative Syllabus Summer 2013



Professor: Dr. Janelle LeBoutillier

Office: S557

Office Hours: TBA on Blackboard

Phone: 287-7430

E-mail: leboutillier@utsc.utoronto.ca

Textbook: “Neuroscience: Exploring the Brain” 3<sup>rd</sup> revised edition by Bear, Connors and Paradiso. **Note:** In the past this text has been used for NROC61 and NROC64.

New and used copies are available in the bookstore.

Lab Text: *On-line atlas; link available through B.*  
Optional printed copies of the lab atlas will be available for sale in the bookstore when term starts.

Lectures: On-line

Labs: You are expected to attend your scheduled lab section each week. Any lab section changes must be made through ROSI.

### Course Description:

Neuroscience is the scientific study of nervous systems. It is 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.

The lecture part of this course deals with the anatomy of the NS. In this component you will learn about the anatomy of the brain, as well as the structure and function of the cells of the nervous system. You will also develop an understanding of how neurons communicate, with a focus on their physiological properties. We will examine specific brain regions which you will identify in the lab component of this course and discuss their functions and connections.

Learning neuroanatomy is like learning both a new language and a map of a new world, so be patient, practice the nomenclature, and your hard work will be rewarded. Weekly lab sessions will cover gross and systems anatomy of the nervous system. Students will dissect sheep brains to examine a wide variety of nervous system structures in 3-D. Basic dissecting equipment will be provided, but if you plan to continue in other science labs you may wish to purchase a dissecting kit. Lab coats are required to be worn at all times when in the lab and safety glasses are also required for the dissections. Disposable gloves will be provided. Proper safety procedures, as discussed at the first lab must be followed at all times. **Non-compliance will result in a grade of zero for the lab component of the course**

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:	2 hours. Week of June 10 requested. Exact date TBA by the Registrar. [Lectures & text chapters 1, 2, 3 and content covered to date in lectures from Chapt 7 and the Appendix]
35% Final Exam:	2 hours. During Final Exam Period TBA by Registrar [Lectures & text chapters 4, 5, 6 and all content from Chapt 7 and the Appendix]

**Note:** Lecture tests may include the following testing format: multiple choice questions, short answers, labelling, and matching.

45% Lab Component	Lab Quiz valued at 15%
-------------------	------------------------

Final lab test valued at 30%

### Tentative Course Syllabus

You will find below lecture and lab syllabi for this course. These will be discussed in detail at the first class meeting. The topics highlighted in yellow will be included on your first mid-term. You are responsible for all content in the assigned text readings, unless otherwise noted during lectures.

Week	Date	Topic	Chapter
1	May 6	Course Introduction Neuroscience: Past, Present and Future	1
2	May 13	Structure of the Nervous System <ul style="list-style-type: none"> <li>Gross Organization</li> <li>Anatomical References</li> <li>CNS</li> <li>PNS</li> <li>Video</li> </ul>	7 and Appendix
3	May 20	Development of the Nervous System <ul style="list-style-type: none"> <li>Meninges</li> <li>BBB</li> <li>Ventricular system</li> <li>Cranial nerves</li> </ul>	7 and Appendix
4	May 27	Cortical Function Brain Cells <ul style="list-style-type: none"> <li>The prototypical neuron</li> <li>Glia</li> </ul>	7 and Appendix, 2
5	June 3	Resting Membrane Potential Action Potential	3,4
6	June 10	Lecture Test requested for this week	
	June 17	Reading Week June 18-21	
7	June 24	Principals of Synaptic Integration Principals of Chemical Synaptic Transmission	5
8	July 1	Neurotransmitters <ul style="list-style-type: none"> <li>Cholinergic neurons</li> <li>Catecholamine neurons</li> <li>Dopaminergic neurons</li> </ul>	6
9	July 8	Hippocampus	7 and Appendix
10	July 15	Cerebellum	7 and Appendix
11	July 22	Basal Ganglia	7 and Appendix
12	July 29	Tying it all together	

## **Tentative Lab Syllabus**

**Summer 2013**

The lab schedule will be discussed in the first week of labs. Any changes in your assigned lab section may only be made through ROSI. Colour printed copies of the atlas will be available for purchase through the bookstore (the summer 2010 edition of the atlas is required). All students will be able to utilize the on-line sheep atlas posted on BlackBoard. New this term, supplementary videos are available for your review on BlackBoard. Details and a demonstration regarding the use of this atlas will be presented in your first lab. During the lab students are required to wear a lab coat at all times, wear closed toed shoes and to follow all lab rules and regulations, which will be discussed at your first lab. Failure to follow these safety rules will result in a zero for your lab grade.

### **Grading Scheme for Labs:**

**Total Lab Mark** - 45% of your final grade in this course

Lab Quiz - 15%

Final Lab test - 30 %

### **Lab Quiz and Test Format**

Your TA will give a demonstration of the quiz format during the first lab. Dissection trays will be set up with 3 pins in each tray. You will be given 1 minute to answer all questions at one tray. Practice dissection trays will be set up during most labs and you are required to participate in these each week. The Lab Quiz has been requested for June 5 BUT the exact date and time will be confirmed by the registrar. When this information is available an announcement will be posted to BB. The quiz will cover all content highlighted in yellow on the lab schedule. The lab quiz will consist of approximately 10 dissecting trays with 3 pins each. The final bell ringer test will consist of approximately 20 trays with 3 pins each and will be cumulative on all lab content.

Cell phones and computers will not be permitted in the room during the lab tests. Please do not bring these to the test room on the day of the quiz or to the assigned room on the day of the final lab test. All you will need to complete your lab test is a pen and your lab coat.

**Lab Outline Summary:**

<b>DATE</b>	<b>TOPIC</b>	<b>PHOTO SERIES</b>
Week 1: Wed May 8	Introductory Lab 1. Lab rules 2. Basic Terminology 3. Accessing the on-line atlas 4. Demo of lab test format 5. Gross Anatomy 6. Removal of Meninges 7. Major sulci and gyri	1
Week 2: Wed May 15	1. Ventral surface structures 2. Cranial nerves and functions	1 and 2
Week 3: Wed May 22	1. Mid-sagittal sectioning 2. Identification of mid-sagittal structures	3
Week 4: Wed May 29	1. Dorsal and lateral dissections 2. Hippocampal dissection	4
Week 5: Wed June 5	Practice Quiz in Lab only Lab Quiz Requested Date/Time TBA	1,2,3,4
Week 6: Wed June 12	1. Identification of Horizontal structures Lab Quiz Taken Up	5
Wed June 19	No Labs Reading Week	
Week 7: Wed June 26	1. Horizontal structures con't 2. Rostral coronal sections	6
Week 8: Wed July 3	1. Caudal coronal sections 2. Cerebellar coronal sections	6
Week 9: Wed July 10	1. Lab review and wrap-up	all
Week 10: Wed July 17	Lab Test Requested Date/time TBA by Registrar	all
Week 11: Wed July 24	No labs	
Week 12: Wed July 30	1. Pick-up Lab Test 2. Confirm final lab grade 3. Office hour for final exam	

## **Missed Lecture Test**

Makeup tests will not be scheduled in this course. If you miss the midterm test you will be permitted to write a final cumulative exam on all course content valued at 55% of your final grade provided you meet the following criteria:

- 1) Notify me by email ASAP following the missed test. Provide a brief explanation of the reason why you missed the test.
- 2) Deliver a medical note from a physician to me within 2 weeks of the test. Please use only the official medical note available for download at [www.utsc.utoronto.ca/~registrar/](http://www.utsc.utoronto.ca/~registrar/). No other medical notes will be accepted. In the event that you are not able to obtain a medical note you should contact me by email within 2 weeks of the test for further instructions.

## **Missed Lab Quiz**

No make-up quizzes will be conducted in the course. If you miss the quiz, complete the proper medical documentation as indicated above and notify your TA within one week. Your final lab test will be valued at 45%.

## **Missed Final Lab Test**

Missed final lab tests will only be conducted with the proper medical documentation and notification of the missed test to me within one week. Please complete the UTSC medical form available through the registrar's site and present this to me at the make-up bell ringer test. Failure to meet these requirements will result in a grade of zero for the bell ringer. Make-up tests may not follow the same format. The date and time of the make-up test will be posted to BB,

## **General Information which you should be aware of:**

The University of Toronto is dedicated to fostering an academic community in which the learning and scholarship of every member may flourish, with vigilant protection for individual human rights, and a resolute commitment to the principles of equal opportunity, equity and justice.

## **ACCESSABILITY STATEMENT**

Students with diverse learning styles and needs are welcome in this course. If you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).

## **ACADEMIC INTEGRITY STATEMENT**

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

- **IN PAPERS AND ASSIGNMENTS:** Using someone else's ideas or words without appropriate acknowledgement. Submitting your own work in more than one course without the permission of the instructor. Making up sources or facts. Obtaining or providing unauthorized assistance on any assignment.
- **ON TESTS AND EXAMS:** Using or possessing unauthorized aids. Looking at someone else's answers during an exam or test. Misrepresenting your identity.
- **IN ACADEMIC WORK:** Falsifying institutional documents or grades. Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes. All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/resourcesforstudents.html>).