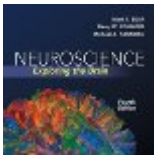

Neuroanatomy Lab (NROB60)
Tentative Syllabus, Fall 2016

Professor:	Dr. Janelle LeBoutillier
Office:	SW557
Office Hours:	Tues 2-3 pm
Phone:	287-7430
E-mail:	leboutillier@utsc.utoronto.ca
Textbook:	"Neuroscience: Exploring the Brain" 4th edition by Bear, Connors and Paradiso We will be covering the first 7 chapters and the appendix in this text. Several options are available to purchase the text eg: you may purchase only the required chapter readings, an electronic version of the entire text or a hard copy of the text through the bookstore.
Lab Text:	Sheep Brain Atlas: A Photographic Guide, 2016 Edition (available at the UTSC bookstore)
Lectures:	Wed 11-1
Labs:	You are expected to attend your scheduled lab section each week. Any lab section changes must be made through ROSI. Labs start Sept 8 and are conducted in SW242.

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.

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 SCHEME:

Lecture Component – total 55%

Midterm Exam 20%

- TBA by Registrar
- Tests lecture material and textbook chapters 1, 2, 3, plus the content of Chapt 7 + Appendix that has been covered in lecture

Final Exam 35%

- Held during final exam period (2 hours); date TBA by Registrars Office
- Tests lecture material covered since the midterm, and textbook chapters 4, 5, 6, plus ***all of the content*** of Chapt 7 + Appendix unless specifically excluded in class.

Lecture tests may include multiple choice, short answer, diagrams/labelling, and matching questions. Dates for the midterm exam and the final exam will be assigned by the Registrar. When this information is available it will be posted to BB.

Lab Component – total 45%

Midterm Bellringer Test	15%
Final Bellringer Test	25%
Written Bellringer Quiz	5%

Bonus Dissection Protocol Quizzes up to 5 %

LECTURE SCHEDULE:
The topics highlighted in yellow will be included on your first lecture midterm exam. You are responsible for all content in the assigned text readings, unless otherwise noted during lectures.

Week	Date	Topic	Chapter
1	Sept 7	Course Introduction Neuroscience: Past, Present and Future	1
2	Sept 14	Structure of the Nervous System • Gross Organization • Anatomical References • CNS • PNS • Video	7 and Appendix
3	Sept 21	Development of the Nervous System • Meninges • BBB • Ventricular system • Cranial nerves	7 and Appendix
4	Sept 28	Cortical Function Brain Cells • The prototypical neuron • Glia	7 and Appendix, 2
5	Oct 5	Resting Membrane Potential Action Potential	3,4
	Oct 12	**Reading Week**	
6	Oct 19	Midterm Test Requested	
7	Oct 26	Principals of Synaptic Integration Principals of Chemical Synaptic Transmission Neurotransmitters • Cholinergic neurons • Catecholamine neurons • Dopaminergic neurons	5
8	Nov 2	Neurotransmitters • Cholinergic neurons • Catecholamine neurons • Dopaminergic neurons	6
9	Nov 9	Hippocampus	7 and Appendix
10	Nov 16	Cerebellum	7 and Appendix
11	Nov 23	Basal Ganglia	7 and Appendix

12	Nov 30	Tying it all Together	

LABORATORY COMPONENT:
The lab schedule will be discussed in the first week of labs which start Sept 8. Any changes in your assigned lab section may only be made through ROSI. The instructor an TAs cannot make changes.

Colour printed copies of the *Sheep Brain Atlas: A Photographic Guide* will be available for purchase through the bookstore (the 2016 edition of the atlas is required). All students will be able to utilize the online sheep atlas and dissection videos posted 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. You will not be permitted to attend labs if you do not adhere to these rules.

Bellringer Test Format
Your TA will give a demonstration of the bellringer format during the first lab. In brief, specimen samples will be set up in dissection trays with a total of 3 neuroanatomical structures pinned per tray. You will be given 1 minute to identify all 3 pins at each tray. Practice bellringers will be set up during most labs.

Monitor Blackboard regularly for announcements. Dates and times of lab tests will be confirmed via BB.

- The midterm bellringer will cover all content highlighted in yellow on the lab schedule and will consist of approximately 10 dissecting trays with 3 pins each.
- The final bellringer test will consist of approximately 20 trays with 3 pins each and will be ***cumulative on all lab content (Photoseries 1-6)***.

The use of cell phones and computers will not be permitted in the room during bellringer tests, so please do not bring them on test days. All you will need to complete your lab test is a pen and your lab coat.

Written Bell Ringer Quiz
This quiz will be held in the lab prior to your final bell ringer. It will be based on the content of PS 5 and 6 only.

Bonus Dissection Protocol Quizzes

Quizzes will be given at the start of some labs, with a total of 5 administered over the term. Quizzes will be given in Week 2,3,4,7 and 8. These will be based on the study guides for the weekly lab and the dissection videos for each lab. The purpose of these quizzes is to encourage you to be prepared for the lab that week. There will be no lab quiz during the first lab. These are bonus quizzes and as such there are no make-up quizzes and you will not be permitted to write the quiz if you arrive late. A maximum of 5% can obtained through these bonus quizzes in the course.

LAB SCHEDULE:

The content highlighted in yellow will be included on your midterm bellringer lab test. The final bellringer test is cumulative, testing the content of Photoseries 1-6. You are responsible for knowing all neuroanatomical structures as presented in the Sheep Brain Atlas: A Photographic Guide, 2016 edition.

DATE	TOPIC	PHOTO SERIES
Week 1: Sept 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: Sept 15	1. Ventral surface structures 2. Cranial nerves and functions	1 and 2
Week 3: Sept 22	1. Mid-sagittal sectioning 2. Identification of mid-sagittal structures	3
Week 4: Sept 29	1. Dorsal and lateral dissections 2. Hippocampal dissection	4
Week 5: Oct 6	Review and Practice Quiz	1,2,3,4
Oct 13/14	**Reading Week, No Labs**	
Week 6 Oct 20	Bell RingerTest Requested Details posted to BB	
Week 7: Oct 27	1. Identification of Horizontal structures Lab Quiz Returned	5
Week 8: Nov 3	1. Rostral coronal sections 2. Caudal coronal sections	6
Week 9: Nov 10	1. Cerebellar coronal sections 2. Practice Bell Ringer 3. Written Quiz	all
Week 10: Nov 17	Lab Test Requested Time TBA	all
Week 11: Nov 24	No Labs	
Week 12: Dec 1	1. Pick-up Lab Test 2. Confirm final lab grade	

	3. Office hours for final lecture exam	

Missed Term Work due to Medical Illness or Emergency:

All students citing a documented reason for missed term work (this includes assignments and midterm exams) must bring their documentation to the Undergraduate Course Coordinator, Ainsley Lawson, **within three (3) business days** of the term test / assignment due date. All documentation must be accompanied by the departmental **Request for Missed Term Work form** (http://uoft.me/PSY-MTW).

In the case of missed term work due to illness, only an **original copy** of the **official UTSC Verification of Illness Form** (http://uoft.me/PSY-MED) will be accepted. Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.

In the case of other emergency, a record of visitation to a hospital emergency room or copy of a death certificate may be considered.

Forms should be dropped off in SW427C between 9 AM - 4 PM, Monday through Friday. Upon receipt of the documentation, you will receive an email response from the Course Instructor / Course Coordinator within three business days. The Course Instructor reserves the right to decide what accommodations (if any) will be made for the missed work.

Note that this policy applies only to missed term work (assignments and midterms). Missed final exams are dealt with by the Registrar's Office (http://www.utsc.utoronto.ca/registrar/missing-examination).

Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.

If the process outlined above is followed the instructor may permit the following accommodations:

Missed Midterm Lecture Test
There will be no make-up test. Your final lecture exam will be cumulative and count for 55% of your final grade in the course.

Missed Midterm Bell Ringer Lab Test
There will be no make-up test. Your final lab test will be valued at 40%.

Missed Written Bell Ringer Quiz
The value of this quiz will be added to your final bell ringer ie: Your final bell ringer test will be valued at 30% instead of 25% of your final grade in the course.

Missed Final Bell Ringer Lab Test

A make-up test will be scheduled. Make-up tests may not follow the same format. The date and time of the make-up test will be posted to BB and will be conducted in Week 12. Your final Bellringer will be valued at 25% of your final grade in the course.

Missed Bonus Dissection Protocol Quizzes
There are no make-up quizzes. If you miss a quiz for any reason or arrive late to the lab a mark of zero will be assigned. The goal of these quizzes is to encourage you to be prepared for the weekly lab. You may only write the quiz in your assigned lab. All quizzes will be given at the start of the lab. You may receive up to a maximum of 5 percent for your performance on these quizzes.

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.

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/resourcesfor students.html).

Please note: The University of Toronto's Code of Behaviour on Academic Matters applies to all University of Toronto Scarborough students. The Code prohibits all forms of academic dishonesty including, but not limited to, cheating, plagiarism, and the use of unauthorized aids. Students violating the Code may be subject to penalties up to and including suspension or expulsion from the University.