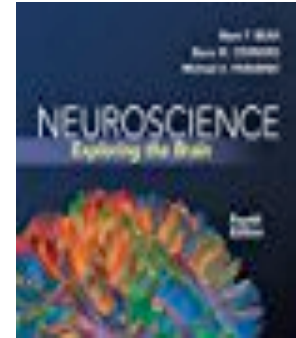


Neuroanatomy Lab (NROB60) Tentative Syllabus, Fall 2017



Professor/Lecturer: Dr. Janelle LeBoutillier

Course Administrator: Zachariah Campbell

Office: SY143

Office Hours: Fridays 12:30 to 1:30 PM

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**Phone contact is only available during the weekly office hour*

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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 (e.g., 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: Online (WebOption)

Labs: You are expected to attend your scheduled lab section each week.
Any lab section changes must be made through ROSI.
Labs start September 7/8 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 nervous system. 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 also 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 3D. 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 within 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 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’s Office.
- Tests lecture material and textbook chapters 1, 2, 3, plus the content of chapter 7 + Appendix that has been covered in lecture to date.

Final Exam **35%**

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

Note: 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 Office of the Registrar. When this information is available it will be posted to Blackboard.

Lab Component – Total 45%

Midterm Bell Ringer Test **15%**

Final Bell Ringer Test **25%**

Written Bell Ringer Quiz **5%**

Bonus Dissection Protocol Quizzes **up to 5 %**

COURSE SCHEDULE:

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. Dates for each week listings are listed below for each corresponding first Monday.

WEEK	DATE	TOPIC	CHAPTER(S)
1	Sept 4	Course Introduction Neuroscience: Past, Present and Future	1
2	Sept 11	Structure of the Nervous System <ul style="list-style-type: none"> Gross Organization Anatomical References CNS/PNS Video 	7 and Appendix
3	Sept 18	Development of the Nervous System <ul style="list-style-type: none"> Meninges BBB & Ventricular system Cranial nerves 	7 and Appendix
4	Sept 25	Cortical Function & Brain Cells <ul style="list-style-type: none"> The prototypical neuron Glia 	7 and Appendix, 2
5	Oct 2	Resting Membrane Potential Action Potential	3,4
	Oct 9	Reading Week	
6	Oct 16	Midterm requested (TBA)	
7	Oct 23	Principals of Synaptic Integration Chemical Synaptic Transmission Neurotransmitters <ul style="list-style-type: none"> Cholinergic neurons Catecholamine neurons Dopaminergic neurons 	5
8	Oct 30	Neurotransmitters <ul style="list-style-type: none"> Cholinergic neurons Catecholamine neurons Dopaminergic neurons 	6
9	Nov 6	Hippocampus	7 and Appendix
10	Nov 13	Cerebellum	7 and Appendix
11	Nov 20	Basal Ganglia	7 and Appendix
12	Nov 27	Tying it all Together	

LABORATORY COMPONENT:

The lab schedule will be discussed in the first week of labs which start the week of September 4. Any changes in your assigned lab section may only be made through ROSI. The instructor and 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 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 during bellringer tests. All you will need to complete your lab test is a pen and your lab coat. Specific details on the bell ringer will be posted to BB prior to the tests.

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

Pop up quizzes will be given at the start of some labs, with 5 administered over the term. 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 be 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: September 4	<ol style="list-style-type: none"> 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: September 11	<ol style="list-style-type: none"> 1. Ventral surface structures 2. Cranial nerves and functions 	1 and 2
Week 3: September 18	<ol style="list-style-type: none"> 1. Mid-sagittal sectioning 2. Identification of mid-sagittal structures 	3
Week 4: September 25	<ol style="list-style-type: none"> 1. Dorsal and lateral dissections 2. Hippocampal dissection 	4
Week 5: Oct 2	Review and Practice Quiz	1,2,3,4
October 9	Reading week, No Labs	
Week 6: October 16	Bell Ringer Test Requested <i>Details posted to BB</i>	
Week 7: October 23	<ol style="list-style-type: none"> 1. Identification of Horizontal structures Lab Quiz Returned	5
Week 8: October 30	<ol style="list-style-type: none"> 1. Rostral coronal sections 2. Caudal coronal sections 	6
Week 9: November 6	<ol style="list-style-type: none"> 1. Cerebellar coronal sections 2. Practice Bell Ringer 3. Written Quiz 	all
Week 10: November 13	Final Bell Ringer Test requested <i>Details posted to BB</i>	all
Week 11: November 20	No Labs	
Week 12: November 27	<ol style="list-style-type: none"> 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 Other Emergency:

All students citing a documented reason for missed term work must bring their documentation to the Psychology Course Coordinator in SW427C **within three (3) business days** of the assignment due date. You must bring the following:

- (1.) A completed [Request for Missed Term Work form](http://uoft.me/PSY-MTW) (<http://uoft.me/PSY-MTW>), and
- (2.) Appropriate documentation to verify your illness or emergency, as described below.

Appropriate Documentation:

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/UTSC-Verification-Of-Illness-Form) will be accepted (<http://uoft.me/UTSC-Verification-Of-Illness-Form>). 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 **medical emergency**, an original copy of the record of visitation to a hospital emergency room should be provided.

In the case of a **death of a family member**, a copy of a death certificate should be provided.

In the case of a **disability-related** concern, an email communication should be sent directly to the Course Coordinator (psychology-undergraduate@utsc.utoronto.ca) from your Disability Consultant at AccessAbility Services, detailing the accommodations required. The Course Instructor should also be copied on this email.

For U of T **Varsity athletic commitments**, an email communication should be sent directly to the Course Coordinator (psychology-undergraduate@utsc.utoronto.ca) from a coach or varsity administrator, detailing the dates and nature of the commitment. The email should be sent **well in advance** of the missed work.

Documents covering the following situations are **NOT acceptable**: medical prescriptions, anything related to personal travel, weddings/personal/work commitments.

Procedure:

Submit your (1.) [request form](#) and (2.) [medical](#)/other documents in person **within 3 business days** of the missed test or assignment. Forms should be submitted to **SW427C between 9 AM - 4 PM**, Monday through Friday. If you are unable to meet this deadline for some reason, you must contact the Course Coordinator via email (psychology-undergraduate@utsc.utoronto.ca) within the three business day window. Exceptions to the documentation deadline will only be made under exceptional circumstances.

Within approximately one week, you will receive an email response from the Course Instructor / Course Coordinator detailing the accommodations to be made (if any). You are responsible for checking your official U of T email and Blackboard course announcements daily, as accommodations may be time-critical. The Course Instructor reserves the right to decide what accommodations (if any) will be made for the missed work.

Missed Term Work due to Medical Illness or Other Emergency (continued):

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

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

AccessAbility:

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services as soon as possible.

AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations [416-287-7560](tel:416-287-7560) or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Academic Integrity:

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/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>) 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; and
- When you knew or ought to have known you were doing it.

Academic Integrity (continued):

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; and
- When you knew or ought to have known you were doing so.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources.

Note:

You may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters*.

It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre.

If you decide to use these services in spite of this caution, you must keep a draft of your work and any notes you made before you got help and be prepared to give it to your instructor on request.