



## NROC61 TENTATIVE COURSE SYLLABUS

Spring 2010

### NEUROSCIENCE II: LEARNING AND MOTIVATION

**Instructor:**

Dr J. C. LeBoutillier

Room S-557

416-287-7430

Office hours: Tues 2-3

Wed 11-12

Email: [nroc61@utsc.utoronto.ca](mailto:nroc61@utsc.utoronto.ca)

**NOTE:** This is the only email account that will be monitored for this course.

**Teaching Assistants:**

Kimia Honarmand    [kimia0221@gmail.com](mailto:kimia0221@gmail.com)

Eliyas Jeffay        [elijasj@gmail.com](mailto:elijasj@gmail.com)

Paul McKeever      [prime12357@gmail.com](mailto:prime12357@gmail.com)

**Lectures:**

Tues 9:00 – 12:00 MW 170

**Tutorials:**

TUT0001	Wed	13:00	14:00	AA 204
TUT0002	Wed	13:00	14:00	AA 205
TUT0003	Wed	13:00	14:00	MW 160
TUT0004	Wed	14:00	15:00	HW 308

**Course Description:**

This course introduces the students to learning and motivation from a physiological and behavioral perspective. Topics covered under the category of motivation include: physiological basis of eating, drinking and sexual behavior, sleep, and the neural correlates of reward. Topics covered under learning include: learning categories, memory systems and the cell and molecular basis of learning and memory.

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 Office as soon as possible. Tina Doyle, the UTSC AccessAbility Manager 416-287-7560 is available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know about your needs, the quicker we can assist you in achieving your learning goals in this course.

### **Course Material:**

Students will be responsible for:

1. All material covered during lectures
2. Assigned text chapters and primary readings
3. Tutorial assignments

### **Tutorials**

The tutorials are intended to familiarize the student with the general knowledge base of neuroscience, namely the published literature. The tutorial assignments will include:

1. Using the library (or internet) referencing services to obtain a list of current references on an assigned topic.
2. A 10 minute oral presentation describing one of the empirical articles from your abstract list followed by 3-5 minutes of class discussion.
3. A mini review of 5 empirical articles.

Details and examples of these assignments are posted as part of the learning skills syllabus on the course Intranet.

### **Grading**

The assignment of grades will be based upon the following:

1. One midterm examination - 25%. This test will include MCQs and written components such as definitions and long answers.
2. A final examination - 40%. The format of the final will be similar to the midterm. You will be responsible for all lecture material covered during the course, but only the assigned readings and text chapters not covered on Test 1.
3. Tutorial grade 35%
  - a. Abstract list – 10%

Topics will be assigned following your first tutorial and this assignment will be due at the start of your tutorial on Feb 10, 2010.
  - b. Class presentation – 5%

Each presentation will be 15 minutes in length – 10 minutes to present full details of the article (purpose of study, methods, results, relevance of findings, etc.) and 5 minutes to answer questions about the article from the class. Marks will be awarded for clarity of presentation, use of visual aids/handouts and the ability to answer questions about the research article at the end of the presentation.
  - c. Mini review -15%

From the list of abstracts, students must complete a five page written review of 5 *empirical* articles. The review paper must discuss at least 3 different methodologies to investigate the problem of interest. In addition to these 5 pages,

you must include a cover page, an abstract and a reference page. Thus, your final paper will be about 8 pages in length. **APA format is required for the submission of this paper.** Your review paper is due on Tues March 24, 2010. You are required to turn in a hard copy to your TA, as well as an electronic copy through turnitin (details at the end of the syllabus. In addition, the total word count of your paper is required on your title page.

d. Class participation – 5%

Students are expected to attend and participate in weekly tutorials.

### **Missed Tests and Presentations**

**Makeup exams 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 65% of your final grade provided you meet the following criteria.

1. Notify me by email ASAP following the missed test at the course email.
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 notes will be accepted. If these criteria are not met a grade of zero will be assigned. If you are ill due to the flu please follow the instructions posted for students on ROSI.

### **H1N1 STATEMENT**

Students are advised to consult the university's preparedness site (<http://www.preparedness.utoronto.ca>) for information and regular updates regarding procedures relating to H1N1 planning and individual student responsibilities.

A grade of zero will be given if you do not give your presentation on the assigned date. Missed presentations will only be rescheduled provided an official documentation from one of the UTSC websites indicated above is delivered to your TA ASAP. You should be prepared to give your presentation at any tutorial following the missed date. Your TA will try to give you advance notice but this may not be possible. In the event that time does not permit us to reschedule your presentation during the term, you may be required to give your presentation during the reading week before the final exams. Failure to give your presentation on the assigned date will result in a grade of zero.

### **Late Assignments**

Late abstract lists and research proposals will be accepted with a penalty of 10% per day. All assignments are due at the **start** of your tutorial.

### **Texts**

- Bear, Connors & Paradiso, **Neuroscience: Exploring the Brain** 3<sup>rd</sup> edition.

## Assigned Readings

You will be required to read the following articles. Copies of these articles are available in the library and most can be downloaded in an Adobe Acrobat (pdf) format.

Eskandari, F. & Sternberg E.M. (2002). Neural-immune interactions in health and disease. *Annals of the New York Academy of Science* 966, 20-27.

Goldstein, I. (2000). Male sexual circuitry. *Scientific American* (August), 283, 70-75.

Gura, T. (2003). Obesity drug pipeline not so fat. *Science*, 299, 849-852.

Kinsley, C.H & Lambert, K.G. (2006). The maternal brain. *Scientific American* (January), 72-79.

LeDoux, J.E. (2003). The emotional brain, fear and the amygdala. *Cellular and Molecular Neurobiology*, 23,727-738.

Lynch, G. (2002). Memory enhancement: the search for mechanism-based drugs. *Nature Neuroscience*, 5, 1035-1038.

McKinley, M.J., et. al. (2004). Physiological and pathophysiological influences on thirst. *Physiology and Behavior*, 81, 795-803.

Medina, J.H., Bekinschtein, P., Cammarota, M., & Izquierdo, I. (2008). Do memories consolidate to persist or do they persist to consolidate?. *Behavioural Brain Research*, 192, 61-69.

Squire, L.R. (2009). Memory and brain systems: 1969-2009. *The Journal of Neuroscience*, 29(41): 12711-12716.

Sutcliffe, J.G. & de Lecea (2002). The hypocretins : Setting the arousal threshold, *Nature Review*, 3,339-349.

Wright, K. (2002). Times of Our Lives. *Scientific American* (September) 287, 58-65.

## COURSE SCHEDULE

Week	Date	Topic	Assigned Lecture Readings	Assigned Primary Reading
1	Jan 5	Course Introduction Regulation of Internal Body States	Chapter 15 (Hypothalamus 484-90)	
2	Jan 12	Introduction to the LSS Physiology and Neurobiology of Thirst	Chapter 16	McKinley et al.

3	Jan 19	Physiology and Neurobiology of Eating	Chapter 16	Gura
4	Jan 26	Biological Clocks: Sleep and Wakefulness	Chapter 19	Wright
5	Feb 2	Sex, Sexuality and the Brain	Chapter 17	Kinsley & Lambert Goldstein
6	Feb 9	Class attendance required at lecture Assignment 1 due in tutorials		
	Feb 16	READING WEEK		
7	Feb 23	Midterm test requested		
8	Mar 2	Learning and Memory: Biological Perspectives	Chapter 24	Squire
9	Mar 9	Learning and Memory: Neural Mechanisms	Chapter 25	Sutcliffe & de Lecea
10	Mar 16	Learning and Memory con'd Neural Correlates of Reward	Chapter 15	Lynch Medina et al.
11	Mar 23	Physiology of Emotions Assignment 3 due in tutorials	Chapter 18	LeDoux
12	Mar 30	Stress Final Exam Review		Eskandari & Sternberg

Content listed for Weeks 1 to 5 inclusive and highlighted in yellow will be tested on the midterm.

Content listed for Weeks 6 to 12 AND all lecture content (Week 1-12) will be on the final exam.

### Turnitin:

First, some background information on this program. Turnitin.com is a tool that assists in detecting textual similarities between compared works i.e.: it is an electronic resource that assists in the detection and deterrence of plagiarism.

*Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.*

As indicated on the turnitin home page, all work submitted to Turnitin is checked against three databases of content:

- A current and archived copy of the publicly accessible Internet (more than 4.5 billion pages updated at a rate of 30-40 million pages per day);
- Millions of published works (from ABI/Inform, Periodical Abstracts, Business Dateline, ProQuest, the Gutenberg Collection of literary classics, and tens of thousands of electronic books);
- Millions of student papers submitted to Turnitin since 1996.

Students will submit all written reports to the turnitin.com site ([www.turnitin.com](http://www.turnitin.com)). Detailed instructions on setting up your account can be found on this page. You must set up your own account and will need the following information: Course name, NROC61; Class ID #, 3018323; Class Enrolment Password; neuro.