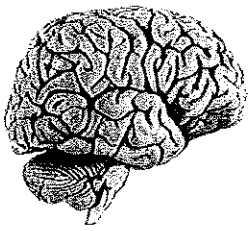

NROC61 COURSE SYLLABUS: Spring 2006

NEUROSCIENCE II: LEARNING AND MOTIVATION

Instructor:
Dr J. C. LeBoutillier
Room S-557
287-7430
Office hours: Tues 5-6 pm
Wed 11-12 am

Email: leboutillier@utsc.utoronto.ca

Teaching Assistants:

Christina de Rivera: christina.derivera@utoronto.ca
Pria Nippak: pria.nippak@utoronto.ca
Michelle Ryan: michelle.ryan@rogers.com

Lectures:
Tues 14:00 – 17:00 S143

Tutorials:

TUT0001	Tues	10:00	11:00	BV 359	Pria
TUT0002	Tues	10:00	11:00	BV 361	Christina
TUT0003	Tues	10:00	11:00	BV 526	Michelle

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 now about your needs, the quicker we can assist you in achieving your learning goals in this course.

Course Material:

For the lecture part of the course, the student will be responsible for:

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

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 class presentation describing an empirical article followed with 3-5 minutes for class discussion.
3. A mini-review of 5 empirical articles.

Details on each of these assignments are posted in the tutorial section of the course Intranet

Grading

The assignment of grades will be based upon the following:

1. One midterm examinations - 25% . Test and exam will include MC and written components such as FIB, short answers.
2. A comprehensive final examination - 45%.
3. Tutorial grade 30%
    a. Abstract list - 2.5%
    b. Class presentation – 5 %
    c. Mini review - 15%
    d. Class participation – 7.5%

Missed Tests and Late Assignments

Makeup exams will only be considered with a note from a physician, otherwise a "0" will be recorded for that exam. Please use only the medical note available for download at www.utsc.utoronto.ca/~registrar/. Late abstracts lists and papers will not be accepted.

Texts

We will be using 3 chapters from the Purves text you used last year in NROB60. In addition, chapters from 2 additional texts will be used as indicated in the course schedule which follows. Copies of all texts are available on short-term loan. Text information will be discussed further at the first class.

Purves et al., **Neuroscience** 3rd edition

Rosenzweig et al., **Biological Psychology : An Introduction to Behavioral and Cognitive Neuroscience** 4th edition
Carlson, **Physiology of Behavior** 8th edition

Assigned Readings

You will also be required to read the following articles. Copies of these articles are available in the library and several can be downloaded from our library.

Damasio, AR. (2002). Remembering when. *Scientific American* 287 (September) pp 66-73.

Fields, R.D. (2004). The other half of the brain. *Scientific American* 290 (April) 54-61.

Hall, S.S. (2003). The quest for a smart pill. *Scientific American* (Sept) 54-65.

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

Kinsley, CH & Lambert, KG. (2006). The maternal brain. *Scientific American* (January), 72-79.

LeDoux, JE. (1994). Emotion, memory and the brain. *Scientific American* (June), 2270, 50-57.

Nestler, E.J., & Malenka, R.C. (2004). The addicted brain. *Scientific American (March)* 290 78-85.

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

Sapolsky, R. (2003). Taming stress. *Scientific American*, (Sept) 87-95.

Siegel, J.M. (2003). Why we sleep. *Scientific American*, (Nov) 289, 92-97.

Treffert, DA & Christensen, DD. (2005). Inside the mind of a savant. *Scientific American,* (Dec) 108-113.

Walsh, BT & Devlin, MJ. (1998). Eating disorders: progress and problems. *Science,* 280,1387-1390.

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

COURSE SCHEDULE

Week	Date	Topic	Assigned Lecture Readings	Assigned Primary Reading
1	Jan 10	Course Introduction Regulation of Internal Body States		
2	Jan 17	Physiology and Neurobiology of Thirst	Rosenzweig Chap 13	McKinley al.
3	Jan 24	Physiology and Neurobiology of Eating	Rosenzweig Chap 13	Walsh & Devlin
4	Jan 31	Biological Clocks Sleep and wakefulness	Purves Chap 27	Wright Siegal
5	Feb 7	Sex, Sexuality and the Brain	Purves Chap 29	Goldstein Kinsley & Lambert
6	Feb 14	**First Midterm Exam Requested for this week**		
	Feb 21	READING WEEK		
7	Feb 28	Learning and Memory: Biological Perspectives	Rosenzweig Chap 17	Damasio
8	Mar 6	Learning and Memory: Neural Mechanisms	Rosenzweig Chap 18	Hall Fields
9	Mar 13	Learning and Memory: Continued		Treffert & Christense
10	Mar 20	Neural Correlates of Reward	Carlson Chap18	Nestler & Malenka
11	Mar 27	Physiology of Emotions	Purves Chap28	LeDoux
12	Apr 4	Stress	TBA	Sapolsky