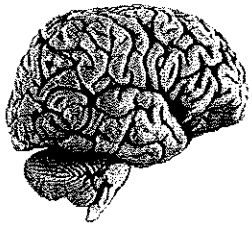

NROC61 FALL 2007 COURSE SYLLABUS:

NEUROSCIENCE II: LEARNING AND MOTIVATION

TENTATIVE SCHEDULE

Instructor:

Dr J. C. LeBoutillier
Room S-557
287-7430
Office hours: Wed 10-12

Email: nroc61@utsc.utoronto.ca

Please note, this is the only email account that will be monitored for this course. All correspondence must be made with a University of Toronto account, not gmail, hotmail etc.

Teaching Assistants:

Andreea Moraru	andreea.moraru@utoronto.ca
Dave Kupferschmidt	kupferda@utsc.utoronto.ca
Zenya Brown	zenya.brown@utoronto.ca

Lectures:

Thurs 11:00 – 2:00 S128

Tutorials:

TUT0001	Fri 10:00	MW 223	Andreea
TUT0002	Fri 10:00	BV 264	Zenya
TUT0003	Mon 10:00	MW 223	Andreea
TUT0004	Mon 10:00	MW 262	Dave

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:

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-research proposal

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 examination - 20% . This test will include MC and written components such as FIB, short 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 40 %
    a. Abstract list – 10 %
    b. Class presentation – 5 %
    c. Research proposal --15%
    d. Class participation – 10 %

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 60% of your final grade provided you meet the following criteria.

1. Notify me by email ASAP following the missed 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/. No other notes will be accepted. If these criteria are not met a grade of zero will be assigned.

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 medical note downloaded from the UTSC website 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 proposal will be accepted with a penalty of 10% per day. All assignments are due at the start of the lecture.

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 most can be downloaded from our library as pdfs.

Cupples, W.A. (2005). Physiological regulation of food intake. American Journal of Physiology: Reg Integr Comp Physiolog 288: R1438-R1443.

Damasio, A.R. (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.

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

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

LeDoux, J.E. (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, M.J., 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, D.A. & Christensen, D.D. (2005). Inside the mind of a savant. *Scientific American,* (Dec) 108-113.

Tsigos, C & Chrousos, G.P. (2002). Hypothalamic-pituitary-adrenal axis, neuroendocrine factors and stress. Journal of Psychosomatic Research 53: 865-871.

Walsh, B.T., & Devlin, M.J. (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	Sept 13	Course Introduction Regulation of Internal Body States		
2	Sept 20	Introduction to the LSS	Rosenzweig Chap 13	McKinley et al.
3	Sept 27	Physiology and Neurobiology of Thirst	Rosenzweig Chap 13	Walsh & Devlin
4	Oct 4	Physiology and Neurobiology of Eating	Rosenzweig Chap 13	Gura
5	Oct 11	Biological Clocks Sleep and wakefulness	Purves Chap 27	Wright Siegal
6	Oct 18	Sex, Sexuality and the Brain	Purves Chap 29	Goldstein Kinsley & Lambert
7	Oct 25	Midterm test requested this week		
8	Nov 1	Learning and Memory: Biological Perspectives	Rosenzweig Chap 17	Damasio Hall Fields
9	Nov 8	Learning and Memory: Neural Mechanisms	Purves Chap 24	Treffert & Christensen
10	Nov 15	Neural Correlates of Reward	Carlson Chap18	Nestler & Malenka
11	Nov 22	Physiology of Emotions	Purves Chap28	LeDoux
12	Nov 29	Stress		Sapolsky Tsigos & Chrousos