NROC61
LEARNING AND MOTIVATION
UNIVERSITY OF TORONTO SCARBOROUGH
WINTER 2016

INSTRUCTOR: **Prof. Rutsuko Ito**   TAS: **Bilgehan Cavdaroglu**
OFFICE HOURS: **Thursdays 12.30-2.30pm**   **David Nguyen**
                          Room SW627   **Laurie Hamel**
                                                       Sadia Riaz
COURSE E-MAIL: **nroc61.utsc@gmail.com**   **Zenya Brown**
COURSE WEBSITE: **Blackboard**

Note about communication: *Please post content related questions to relevant blackboard discussion forum for the benefit of other students.* All other questions must be sent to nroc61.utsc@gmail.com, clearly indicating who the correspondence is addressed to. E.g., put the name of the TA in the subject line. Please note that emails pertaining to NROC61 sent to personal email accounts of Professor Ito's or the TAs will NOT be answered.

LECTURES: **Wednesdays 10-12pm, IC220**

TUTORIALS: **Students are required to attend weekly 1hr tutorials.**

	Day/Time	Location	TA
TUT1	Thur 9-10am	MW140	Zenya Brown
TUT2	Thur 10-11am	BV359*	Sadia Riaz
TUT3	Thur 11-12pm	BV359*	Bilgehan Cavdaroglu
TUT4	Thur 2-3pm	MW120	David Nguyen
TUT5	Thur 4-5pm	MW223	Laurie Hamel

* Subject to change

COURSE DESCRIPTION:

This course explores learning and motivation from a physiological, pharmacological and behavioral perspective, introducing the principal methods and logical inferences used in experiments that use laboratory animals. Thus, the course offers an in-depth exploration of the field of behavioural neuroscience. However, wherever possible, it is shown how these findings can be applied to humans, especially in a clinical setting. Topics covered under learning include: different types of associative learning and their neural basis with a focus on the notion that the mammalian brain is organized into multiple learning and memory systems. Topics covered under the category of motivation include the neural basis of eating, drinking and sleep and the neural correlates of reward and emotion.

Tentative Course schedule:

Week	Dates	Topic
1	Jan 6	Course Introduction *TUTORIALS start*
2	Jan 13	Pavlovian Conditioning *Tutorial 2*
3	Jan 20	Laws of association *Tutorial 3*
4	Jan 27	Instrumental conditioning *Tutorial 4*
5	Feb 3	Learning and Memory systems *Tutorial 5*
6	**Feb 10**	**Midterm * in class (2hrs)**
	Feb 17	Reading Week – No Class
7	Feb 24	Central Reward systems *Tutorial 6* **Annotated Reference List due in tutorials**
8	Mar 2	Hypothalamus and Motivation 1 *Tutorial 7*
9	Mar 9	Hypothalamus and Motivation 2 *Tutorial 8*
10	Mar 16	Limbic system and emotions *Tutorial 9*
11	Mar 23	Stress and arousal *Tutorial 10* **Minireview Assignment due in tutorials**
12	Mar 30	Biological Clocks: Sleep and Wakefulness *Tutorial 11*
	TBA	**Final exam*** *

* Content listed for Weeks 1 to 5 inclusive will be tested on the midterm.
** Content listed for Weeks 6 to 12 will be on the final exam.
I reserve the right to make alterations to the course content/schedule.

Resources:
Main Texts
Handouts will accompany all lectures. If you're itching to read more, then you can read relevant chapters in Bear, Connors & Paradiso, **Neuroscience: Exploring the Brain** 3rd edition.
You may also be assigned primary readings, which you will be expected to read.

Lecture slides and PDFs of papers for assigned reading will be posted on the course website (in the "Content" section) *by 9pm (or before)* on the night before the lecture.

Scheduling conflict: A web option will not be offered for this course, so it would be your responsibility to ensure that you are able to attend all the lectures and tutorials.
We will not answer emails concerning scheduling conflict, nor will we make special exceptions for missed tutorials many students are on the wait list for this course.

EVALUATION

The tests will be based on the materials covered in the lectures (and handouts), and ALL assigned readings.

1. Midterm Test (30% overall grade)

This test will consist of multiple-choice questions and short and long answer questions on the material covered in Lectures 1-5.

2. Final exam (35% overall grade)

This test will consist of multiple-choice questions and short and long answer questions on the material covered in Lectures 6-12:

3. Tutorial grade (35 % overall grade)
The tutorials are primarily intended to familiarize students with the general knowledge base of neuroscience, namely the published literature. The format of each tutorial will be:
- 20-30min Discussion/Recap/Questions on the Lecture material
- 2 x 15min Oral Presentations on pre-assigned primary articles

a. **Class presentation of primary article –10 %**
Two empirical articles will be assigned for each tutorial (2-11), **to be presented by 2 groups of 2 students (1 article per group)**. Each presentation will be 15 minutes in length – 12 minutes to present key details of the article (Introduction/Rationale of study/Methods/Results/Discussion/Caveats & Future directions) and ~3 minutes to answer questions about the article from the class. *The presentation (12min) will be timed, and any content presented beyond this time will not be considered for marking. Therefore, it is important that you get your timings right!* **In the first tutorial, please identify your presentation partner, and sign up for the week that you would like to present. If you do not sign up in the first week, the TA will assign a partner and week on your behalf**. A demonstration of what is expected of you will be provided by your TA in the first tutorial. You can discuss the paper and present the paper together as a team and will be expected to make equal contribution to both the preparation and presentation. A suggested division of labour is for 1 student to do the Introduction/Rationale and Results, while the other does the Methods and Discussion. *At the end, each of you must present a slide answering these questions: 1) Why is the study important? 2) What are the limitations and critique/future directions?* You must come up with your own thoughts on these.

Marks will be awarded individually for clarity of presentation, effective use of visual aids/handouts, and the ability to answer questions about the research. There will also be a mark for evidence of co-operation and cohesiveness between the 2 of you. You will also be given the opportunity to make comments on your partner (in confidence), should you feel that there was an unfair division of labour.

On the day of your presentation, please come prepared with a hardcopy of your powerpoint presentation.

*Please note that the content of the articles cannot be discussed with your TAs or myself during tutorials or office hours. Furthermore, to give the same amount of preparation time for everyone, the articles will be released **two weeks** in advance on blackboard.*

b. **Mini review – 20%**

This assignment is designed for you to make use of the internet referencing services such as *pubmed* (http://www.ncbi.nlm.nih.gov/pubmed) in selecting a maximum of 10 current empirical articles on a given topic of choice for you to review. The list of topics will be released after your first tutorial. **The focus of the review should be on 'current developments' in the field, and at least 5 empirical articles must be from the last 6 years (2009-2015), while also demonstrating a good understanding of the research context (based on older studies).** The review should not be a simple recitation of facts/experiments, but should critically analyse/evaluate the evidence.

- **Annotated reference list** (5%): You will be asked to generate an abstract list of 5 empirical articles (not reviews) that will become the main focus of your review paper. This document must have a chosen title of your minireview topic, followed by a brief description of the minireview topic. You will then list your 5 articles, each of which should include the title of the paper, all authors' names, year of publication, journal, journal volume, page numbers, followed by the abstract from the paper, and short paragraph summarizing the findings, and why you would like to include the paper in your review. The reference list must be handed in at the start of the tutorial on the **Thur 25th February 2016**.

- **Mini review paper** (15%): The paper should be typed double spaced, 12pt Arial font, and should be 6-7 pages in length. In addition to these pages, you must include a cover page (title, candidate name and number), an abstract (100-120 words) and a reference page. Thus, your final paper will be about 8-10 pages in length. Your TA will not read any content beyond 10 pages. **APA format is required for the submission of this paper.** The time stamp on blackboard will be used as the official time submitted. In addition, the total word count of your paper is required on your title page. Your review paper is due on **Thur 24th March 2016**.

- **Final papers should be submitted electronically to the blackboard assignment box 1) in your respective tutorial group blackboard site AND 2) the turnitin website (details in next section).** Failure to submit to both Blackboard/Turnitin on time will result in a penalty for the assignment. Details will be discussed at the first tutorial.

c. **Tutorial attendance and participation – 5 %**

Students are expected to attend and participate in weekly tutorials. 2.5% of the overall mark will be awarded for weekly attendance of the 11 mandatory tutorials. The other 2.5% will be awarded for active participation. You will be asked to sign up in your first tutorial as a 'discussant' for a particular research article being presented by another student. Your role would be to prepare at least **2 questions (and answers to the questions)** to ask the student(s) during 'question time'. This will ensure that everyone will have an opportunity to participate, and be fairly evaluated for participation. *So that the TAs can assess the quality of the questions, please email the questions to them in advance (before a time specified by the individual TAs).*

Information about 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 will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com website

Additional information on conditions of use can be viewed at
http://www.utoronto.ca/ota/turnitin/ConditionsofUse.html

Steps to submitting your assignment:
- Go to www.turnitin.com
- You must set up your own account and will need the following information:
    - **Course name: NROC61 Learning and Motivation (11371587)**
    - **Class ID # by tutorial groups:**
      TUT01 (Zenya Brown) 11371507
      TUT02 (Sadia Riaz) 11378445
      TUT03 (Bilgehan Cavdaroglu) 11378452
      TUT04 (David Nguyen) 11378456
      TUT05 (Laurie Hamel) 11378460
    - **Class Enrolment Password; nroc61**

Course Policies:

Missed exams
You are expected to make every effort to take required mid-terms/final exam. Absence from a mid-term/exam will only be granted for genuine, legitimate reasons, including a documented family emergency, or a documented severe illness. This does not include reasons of scheduling conflict. **There will be __one make-up test __for the midterm for those who can supply legitimate documents.** *Exams that are missed without a genuine, legitimate reason will receive a 0% mark.*

Missed presentation
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.

Late Assignments
Late assignments will be accepted with a penalty of **10% per day**, up until the third day after the assignment is due in. All assignments are due by 11.59pm (midnight) on the due date.

Contesting a grade
All requests for a re-grade must be submitted **in writing** within two weeks of the day the grade is received. Only requests that include adequate written justification of an error in the original grading will be considered. *A legitimate request will result in the entire exam or assignment being re-graded. Your overall grade may be raised, lowered, or it may stay the same.* If there has been an error in our arithmetic,

please let us know and we will immediately recalculate your grade (no written request necessary). **Arbitrary requests for grade increases will not be entertained (e.g., "I need to get into grad school, so could you please give me a higher grade?").**

Video and Auditory Recording
For reasons of privacy as well as protection of copyright, unauthorized video or audio recording in classrooms is prohibited. This is outlined in the Provost's guidelines on *Appropriate Use of Information and Communication Technology*. Note, however, that these guidelines include the provision that students may obtain consent to record lectures and, "in the case of private use by students with disabilities, the instructor's consent must not be unreasonably withheld."

Copyright of lecture material
As protection of copyright, unauthorized copying, use, or uploading of any of the lecture slides, lecture handouts produced by Professor Ito is strictly prohibited.

Accessibility
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. 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. Contact at (416) 287-7560 or ability@utsc.utoronto.ca.

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/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:

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/).