

NROC61
LEARNING AND MOTIVATION
UNIVERSITY OF TORONTO SCARBOROUGH
WINTER 2017

INSTRUCTOR: **Prof. Rutsuko Ito**

OFFICE HOURS: **Wednesday 2-4pm**
Room SW627

COURSE E-MAIL: nroc61.utsc@gmail.com

TAS: **Anett Schumacher**
Bilgehan Cavdaroglu
David Nguyen
Dylan Yeates
Laurie Hamel
Sadia Riaz

COURSE WEBSITE RESOURCES: **Blackboard & TopHat**

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, SW143**

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

	Day/Time	Location	TA
TUT1	Thur 9-10am	AA205	Anett Schumacher
TUT2	Thur 10-11am	SW128	Sadia Riaz
TUT3	Thur 11-12pm	MW130	Bilgehan Cavdaroglu
TUT4	Thur 12-1pm	SW319	Laurie Hamel
TUT5	Thur 3-4pm	SW143	Dylan Yeates
TUT6	Thur 6-7pm	MW110	David Nguyen

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 4 Jan 5	Course Introduction <i>Tutorial 1</i>
2	Jan 11 Jan 12	Pavlovian Conditioning <i>Tutorial 2</i>
3	Jan 18 Jan 19	Laws of association <i>Tutorial 3</i>
4	Jan 25 Jan 26	Instrumental conditioning <i>Tutorial 4</i>
5	Feb 1 Feb 2	Learning and Memory systems <i>Tutorial 5</i>
6	Feb 8	Midterm * in class (2hrs) No tutorial
7	Feb 15 Feb 16	Central Reward systems <i>Tutorial 6</i>
	Feb 22 Feb 26	<i>Reading week – no class or tutorial</i> Outline of minireview due
8	Mar 1 Mar 2	Hypothalamus and Motivation 1 <i>Tutorial 7</i>
9	Mar 8 Mar 9	Hypothalamus and Motivation 2 <i>Tutorial 8</i>
10	Mar 15 Mar 16	Limbic system and emotions <i>Tutorial 9</i>
11	Mar 22 Mar 23	Stress and arousal <i>Tutorial 10</i> Minireview Assignment due in tutorials
12	Mar 29 Mar 30	Biological Clocks: Sleep and Wakefulness <i>Tutorial 11</i>
	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.

You may also be assigned empirical articles to read for your tutorial presentations. You are strongly encouraged to read them before each tutorial, as they may help you with your exam performance.

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.

Weboption: A web option is offered for the lecture component of this course, but not the tutorials. **The lecture videos will be posted 24hrs after the lecture in class, and will remain accessible to everyone for a period of 21 days. It is your responsibility to keep up with the lectures if you are not able to attend class.** This is particularly important, as you will need to participate in an online quiz within one week of the lecture delivery if you choose the option of not attending class (see below).

EVALUATION

The tests will be based on the materials covered in the lectures and handouts.

1. Quiz – IN class for majority and OUT of class for minority (10% overall grade)

In order to facilitate active learning, there will be 5 quiz questions during each lecture (starting on Jan 11th), which you must participate in answering (5% overall grade for participation, and 5% overall grade for correctness across 10 lectures) using the TopHat* learning platform.

Students who are not able to attend class due to schedule conflict (a maximum of 25 students), will be required to complete an OUT of CLASS quiz (5 questions) using the TopHat platform before the next class, for which 10% of the overall grade will be awarded for correctness (i.e., quiz will only be available to complete for a week).

The out of class quiz questions will be available to the 'in-class' students as extra review questions after the out of class students have completed their quiz.

IMPORTANT: It is not possible to switch between the 'in class' and 'out of class' quiz mode from week to week. You will all automatically be placed in the 'in-class' quiz group unless you email me (nroc61.utsc@gmail.com) by the end of the day on January 6th to be considered for the out of class quiz option. There will be a limit of 25 students for this latter option, and this will only be granted if 1) you have a schedule conflict or 2) you have other medical related reasons which are likely to affect your quiz performance in class. You must provide valid evidence to support your case. If you belong to the 'in class' quiz group, and you have to miss a class due to illness, then you must email the course email address (nroc61.utsc@gmail.com) to be

TOPHAT

For the first time this year, we will be using the Top Hat (www.tophat.com) classroom response system in class and out of class for exam practice and review. You will be able to submit answers to in-class and out of class review questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email sometime soon, but if don't receive this email, you can register by simply visiting our course website:

Unique Course URL Note: <https://app.tophat.com/e/759019>
our Course Join Code is 759019

Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing. *I recommend the \$24 option, as TOPHAT has not yet been rolled*

out in any other courses at UTSC. Please consider this fee as an investment in an enhanced learning experience, which will hopefully translate into better exam performance! Also remember that you do NOT need to purchase a coursepack or textbook for this course as I have written a course text for you, so I am saving you money in other ways!

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

2. Midterm Test (25% overall grade)

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

2. Final exam (30% 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
- 1, or 2 x 15min Oral Presentations on pre-assigned primary articles

a. Class presentation of primary article -10 %

One or two empirical articles will be assigned for each tutorial (2-11), **to be presented by 2 students per article**. 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, or send the TA an electronic copy of your presentation. Your TA will indicate their preference.

*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 and 1-2 review papers 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 of systems neuroscience (but not molecular or genetics) with a focus on animal studies and at least 5 empirical articles must be from the last 6 years (2010-2016), 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 analyze/evaluate the evidence. The assignment is divided up into two parts, to help guide you in the process of writing the mini review.

- **Mini review outline (5%):** You will be required to generate an outline of your minireview for the TA to assess the appropriateness of the intended topic and content of your minireview, and to give you guidance on the structure. This document must have the following components:

- **Proposed title of mini-review:**

Outline of :

- **Introduction** – briefly describe (in ~5 bullet points) what you will be writing in this section. You should be aiming to give a brief introduction to the topic, including defining the scope of your review, and what is already known in the field vs. what is still unknown.
- **Main body** – outline what major point you will be making in each paragraph. For each point, list 2-3 empirical articles (give all author names, year of publication, title of the paper, journal, journal volume, page numbers) you will be discussing/reviewing in that section. It is recommended that you have at least 3 sections in the main body.
- **Conclusion** – again, briefly describe what your main conclusions are likely to be. A few sentences will suffice here.
- The outline document must be submitted to your **tutorial blackboard site** on **11.59pm Sunday 26th February 2017**.
- **Mini review paper (15%):** The paper should be typed double spaced, 12pt Arial font, and should be 7-8 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 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 23rd March 2017**.
- **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 (14293342)**
 - **Class ID # by tutorial groups:**
 - TUT01 (Anett Schumacher) 14293345**
 - TUT02 (Sadia Riaz) 14293350**
 - TUT03 (Bilgehan Cavdaroglu) 14293354**
 - TUT04 (Laurie Hamel) 14293360**
 - TUT05 (Dylan Yeates) 14293364**
 - TUT06 (David Nguyen) 14293366**
 - **Class Enrolment Password; NROC61**

COURSE POLICIES:**Missed Term Work and Midterms due to Medical Illness or Emergency:**

All students citing a documented reason for missed term work (this includes presentation, assignments and midterm exam) must bring their documentation to the Undergraduate Course Coordinator, Ainsley Lawson, within three (3) business days of the term test / assignment due date. All documentation must be accompanied by the departmental [Request for Missed Term Work form](http://uoft.me/PSY-MTW) (<http://uoft.me/PSY-MTW>).

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/PSY-MED) (<http://uoft.me/PSY-MED>) will be accepted. 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 other emergency, a record of visitation to a hospital emergency room or copy of a death certificate may be considered.

Forms should be dropped off in SW427C between 9 AM - 4 PM, Monday through Friday. Upon receipt of the documentation, you will receive an email response from the Course Instructor / Course Coordinator within three business days. The Course Instructor reserves the right to decide what accommodations (if any) will be made for the missed work.

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

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

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 notification comes our way from Ainsley Lawson. 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.

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 via the official route described below. Exams that are missed without a genuine, legitimate reason will receive a 0% mark.**

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/>).