PSY 460H1 S – Seminar in Learning
Tuesday 3-5 pm, Sidney Smith Hall Room 581

Contact Information

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<tr>
<th>Instructor:</th>
<th>Teaching Assistant(s):</th>
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<tr>
<td>Kaori Takehara-Nishiuchi, Ph. D.</td>
<td>N/A</td>
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<th>Virtual Office Hours:</th>
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<td>Appointment only</td>
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Course Description, Goals, and Prerequisites

Recent advances in research tools open the door to investigating the biological basis of various cognitive processes, such as memory, spatial navigation, decision making, and social interaction. In this course, we will read and discuss primary research articles on biopsychological experiments using non-human animals to gain insights into how cognitive processes are implemented in the brain. This course provides valuable opportunities 1) to learn cutting-edge tools in animal research and their applications to study biological bases of cognition and 2) to improve oral and written communication skills to express your thoughts and ideas on important, contentious questions in comparative and physiological psychology.


Note about prerequisites: It is your responsibility to ensure that you have met all prerequisites listed in the Psychology section of the A&S Calendar for this course. If you lack any prerequisites, you will be removed. No waivers will be granted.

Although PSY290 is not a prerequisite for this course, you would enjoy the content with some basic understanding of molecular biology and physiology. Please study a lecture slide (BasicBiology.pdf) in Quercus to ensure that you are prepared to comprehend the research articles covered in this course.

Course Delivery

Weekly meeting: Before each class starts, you must read the assigned readings listed in the following section. The assigned chapter in the textbook provides the basic understanding of a topic assigned to each week. Two papers (Paper 1 and 2) are
primary research articles reporting groundbreaking results on the topic. For each of
the primary research articles, one of you (presenter) will give a short presentation of
the content, followed by a class discussion moderated by another student
(discussant). Your active participation plays an important part to make the class
experience valuable and enjoyable.

Class discussion starts with specific questions on the findings of the assigned
article and their implications in the context of other related research (>70% of the
time). Subsequently, it moves onto general questions about their relation to real-life
examples and implications to mental disorders (<30% of the time). Please keep in
mind that class discussion is training to think critically and objectively. It is not the time
to casually “chat” about your personal feelings and comments on the assigned topic.

Office hours: Office hours will be held by appointment only. Please contact me via
Quercus email to book an appointment for a meeting via Zoom or MicrosoftTeams.

Reading Material/Textbook(s)

This class requires that you keep up with the following readings. All articles are
downloadable from the UofT library.

Oxford University Press

Week 1 (January 10th) Primer
Textbook: Chapter 1

Course outline and a short lecture on methodologies used in contemporary
biopsychological research

Week 2 (January 17th) Episodic memory

Textbook: Chapter 2, 17 – 34

Paper 1: Food-caching Western Scrub-Jays keep track of who was watching when.
Dally JM, Emery NJ, Clayton NS. Science. 2006; 312(5780), 1662-1665.


Week 3 (January 24th) Associative learning

Textbook: Chapter 2, 34 - 41


**Week 4 (January 31st) Concept learning**

Textbook: Chapter 2, 41 - 48


**Week 5 (February 7th) Spatial navigation**

Textbook: Chapter 3, 49-57


**Week 6 (February 14th) Foraging and Planning**

Textbook: Chapter 3, 57-61; 66-72


**Week 7 (February 21st) Reading week: No class**

**Week 8 (February 28th) Numerical cognition**

Textbook: Chapter 3, 61-66


**Week 9 (March 7th) Tool-use**

Textbook: Chapter 3, 73-80


**Week 10 (March 14th) Theory of mind**

Textbook: Chapter 4, 81-88


**Week 11 (March 21st) Prosocial behaviour**

Textbook: Chapter 4, 89-92

Paper 1: Rat behavior and dopamine release are modulated by conspecific distress. Lichtenberg NT, Lee B, Kashtelyan V, ... Roesch MR. Elife. 2018;7. pii: e38090.


**Week 12 (March 28th) Social learning**

Textbook: Chapter 4, 93-101


Week 13 (April 4th) Communication

Textbook: Chapter 4, 101-111


Course Evaluation/Marking Scheme

III. Grading Criteria
Your final grade will be assessed as follows;

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<th>Date of your choice</th>
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<tr>
<td>Presentation</td>
<td>(20%)</td>
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<tr>
<td>Discussant</td>
<td>(10%)</td>
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<td>Research proposal</td>
<td>March 14th (26%)</td>
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<td>Discussion questions</td>
<td>Every class (44%)</td>
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Course Webpage/Quercus

The website associated with this course is accessible via Quercus.

Course Policies

Contact: You can ask questions during the class. If you need to discuss any other issues and concerns, please contact me by sending an email via Quercus. I will try my best to reply to emails within three business days.

Absence from class: You will lose 4% points (assigned to Discussion questions) every class you miss. If you have legitimate excuses, such as family emergency, illness, and religious holidays, please record your absence through the ACORN online absence declaration. AND within one week of missing a class/assignment, please email me how many days you reported as an absence. Then, the missed mark for discussion questions will be re-weighed to those for the remaining weeks. The deadline for
research proposal will be adjusted based on the number of absent day. No make-up assignments/presentations will be accepted.

**Penalties for Lateness:** The research report is due at 5 pm on March 14th (EST). The request for the deadline extension for the research report should be accompanied by legitimate excuses and must be submitted by three business days before the actual deadline. The penalty for late submission without a pre-approved extension is a reduction by 10% of the maximum mark applicable for each assignment for each business day that the assignment is late. Therefore, an assignment submitted more than ten business days after the deadline will have a mark of zero recorded for that assignment.

**Copyright:** The materials provided in this course are for the use of the students enrolled in the course. Any course materials should not be shared, distributed, or sold in print or digitally outside the course without permission.

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**Academic Resources**

**Accessibility Needs:**
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 Accessibility Services at (416) 978 8060; accessibility.utoronto.ca.

**Writing:**
As a student here at the University of Toronto, you are expected to write well. The university provides its students with a number of resources to help them achieve this. For more information on campus writing centres and writing courses, please visit http://www.writing.utoronto.ca/.

**Academic Integrity and Plagiarism:**
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 (www.governingcouncil.utoronto.ca/policies/behaviorac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences.

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 www.utoronto.ca/academicintegrity/resourcesforstudents.html).
Other Resources
Student Life Programs and Services (http://www.studentlife.utoronto.ca/)
Academic Success Services (http://www.asc.utoronto.ca/)
Counselling and Psychological Services (http://www.caps.utoronto.ca/main.htm)

Details on Assignments

**Presentation:** You are required to present assigned articles at least once during the semester. Your presentation should clearly and concisely explain an introduction to the main hypothesis/question, methods, findings, and conclusions. The presentation should take no more than 20 minutes. Your presentation will be evaluated based on 1 (poor) to 5 (excellent) scales in the following five categories:

- **Content** --- The presentation must include all the information needed for the audience to understand the main ideas of the article.
- **Organization** --- The presentation should begin with an overview of what will be covered. Each idea or topic should be logically linked to the next topic. In some cases, it may be useful to review previous findings. The presentation should close with a summary of the main points.
- **Clarity** --- The presenter needs to avoid using jargon found in the articles. Translate it to a simple word or phrase so that the audience can understand.
- **Oral delivery** --- The presenter should speak clearly, loudly, and at an effective pace.

**Discussant:** At least once during the semester, you will play the role of a discussant who moderates the class discussion. It is the discussant’s responsibility to ensure the discussion stays on topic and raise points/questions for discussion if necessary.

**Research proposal:** Research proposal is due at 5 pm on March 14th (EST). Please submit your proposal to the “Assignment” page in Quercus.

In this assignment, you will propose an experiment (or a series of experiments) on one of the topics we cover during the course. You need to choose a topic different from the topic of your presentation. Your research proposal should include an introduction, main hypothesis/question, detailed method section, and a results section that shows the expected outcome. You might also consider what an unexpected outcome would mean for your hypothesis. The proposal will be evaluated based on the following criteria:

- **Importance of the main hypothesis** --- The introduction summarizes sufficient background information to demonstrate why your main hypothesis is important.
- **Effectiveness of experiment(s)** --- Sufficient justifications are provided to evaluate whether the proposed experiment is the best way to address the hypothesis.
- **Logic of expected outcome** --- Expected results are logical and are thoroughly explained.
- **Novelty of research** --- No previous publication uses the same methodologies and approaches for addressing the same hypothesis.

Your papers should be total minimum 12 pages and maximum 15 pages (double-spaced pages, not including references, tables, and figures, if any) with the list of
references in APA format. Please use 12-point font and 1-inch margins. Include a cover page with your name, student number, and the title of your proposal.

**Discussion question:** By 2 pm on every class time (starting from January 17th), you must submit a one-page paper of questions on the assigned readings in the “Assignments” page in Quercus. Each paper should include 1) three take-home messages of the assigned chapter of the textbook and 2) one question on Paper 1 and another question on Paper 2.

The questions can be points of confusion, issues for further consideration, and follow-up research ideas. Please type in a 12-point font. Put your name and the date at the top, not on a separate page. Each paper will be marked on a 4 point scale, where 1 = off the mark; 2 = acceptable, 3 = on the mark; 4 = insightful. Note you receive 0 points for an unacceptable or not-turned-in-on-time paper (because of missed class or lateness). You can earn up to 2 points (50% of the mark assigned to each paper) by actively sharing your thoughts and offering answers to questions raised by other students during the class discussion. As feedback, your mark will be posted in Quercus within one week.