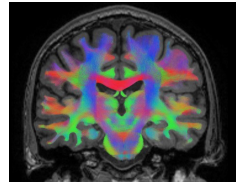


PSYB55: Introduction to Cognitive Neuroscience



University of Toronto, Scarborough, Fall 2020

Instructor: Prof. Adrian Nestor
Email: adrian.nestor@utoronto.ca
TAs/Emails: Eric Chang, ch.chang@mail.utoronto.ca
Tyler Roberts, tyler.roberts@mail.utoronto.ca
Shouyu Ling, shouyu.ling@mail.utoronto.ca
Vignash Tharmaratnam, vignash.tharmaratnam@mail.utoronto.ca

Office Hours: Please see “Announcements” on Quercus for this information.

Prior to contacting the instructor or the TA please read the **e-mail policy** (p. 3) and note that we will not respond to Quercus messages.

I. Your instructor



Dr. Nestor is an Associate Professor of Cognitive Neuroscience. He received his Ph.D. in Cognitive Science from Brown University and completed his postdoctoral training at Carnegie Mellon University. His research and teaching interests revolve around the neuroscience of visual cognition, computational modeling, neuroimaging methodology and neurotechnology.

II. Course description, pre-requisites and learning goals

The field of cognitive neuroscience is dedicated to exploring the biology of mental processes. With respect to content, the goal of this course is to provide you with a rigorous introduction to the field and the major domains in cognitive neuroscience (e.g., memory, language, cognitive control), with careful attention given to core theories, experimental designs, and the range of tools at our disposal. With respect to process, this course will introduce you how to conceptualize and concretize questions in cognitive neuroscience, how to deconstruct and answer short-answer questions, and how to approach a primary research article in the field of cognition. Taken together, this course is designed to provide you with the knowledge and fundamental skills necessary to further advance your understanding of the biological basis of cognition.

Prerequisites: PSYA01 and PSYA02

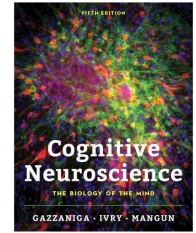
After successful completion of this course, you will have demonstrated an ability to:

1. Describe the complementary roles of cognitive psychology and neuroscience in promoting a more holistic understanding of how the mind works;
2. Describe the basic workings and utility of a range of neurocognitive tools and research designs, and apply the most appropriate tool(s)/design given the particular inquiry of interest;
3. Describe core theories in different domains in cognitive neuroscience, and evaluate evidence used to test these theories;
4. Analyze short-answer questions and create thoughtful, cogent written responses;
5. Describe the major elements of an empirical article and an approach for effectively consuming each, and apply this understanding to articles in cognitive neuroscience;
6. Integrate your learning in this course to better understand and articulate the integrative and hierarchical nature of cognitive processes (i.e., the role of attention's in creating new memories).

III. Course textbook

Gazzaniga, M., Ivry, R.B. & Mangun, G.R. (2018). Cognitive Neuroscience: The Biology of the Mind (5th edition). New York, NY: W.W. Norton & Co. (ISBN-13: 978-0-393-60317-0)

You should NOT use other editions of this book, as I have not compared this edition to other editions.



IV. Course webpage

Quercus will house important course-related announcements, materials, and exam marks. I expect that you will check it a few times per week to ensure that you don't miss any important updates.

V. Course requirements and grading

Midterm Examination I (27% of course grade)

Midterm Examination I will cover lecture and textbook materials from lectures 1-4 (see course schedule on the last page of this syllabus). Term tests dates and times are scheduled by the Office of the Registrar.

Midterm Examination II (33% of course grade)

Midterm Examination II will cover lecture and textbook materials from lectures 5-9 (see course schedule on the last page of this syllabus). Term tests dates and times are scheduled by the Office of the Registrar.

Final Examination (40% of course grade)

The Final Examination will cover lecture materials from lectures 1-13, textbook readings from the lectures AFTER Midterm 2, and one assigned journal article (to be announced later in the course). Final exam dates and times are scheduled by the Office of the Registrar.

Composition of all of the exams

All exams will be conducted in Quercus. Administrative details will be provided prior to the exams. Furthermore, all exams will consist of both multiple-choice (MC) questions and short-answer (SA) questions.

Each MC question will have five options and these questions may come in various formats, including (but not limited to) questions with diagrams and “all of the above” or “none of the above” options. MC questions will be drawn from both lecture and the textbook.

SA questions will consist of multi-part questions that are broken down to help you structure your thinking. Each question will require a several sentence response. SA questions will be drawn from lecture only. SA questions will be weighted based on relative difficulty, as opposed to how many things you need to say (i.e., we will not employ a system of five points requiring five “things” to say).

On the whole, there will be more of a focus from lecture (~2/3 of the points on the exam) than the textbook readings (~1/3 of the points on the exam). For superior performance, you will need to develop a clear understanding of both the lectures and the readings. Take note that rote memorization of lectures and the textbook will not ensure you a high mark; rather, I expect you to not only learn what things are, but also why they are relevant, and how/why they are used, etc.

To give you an opportunity to prepare for the examinations, practice questions will be made available for you for each course lecture. These sample questions are an invaluable resource for multiple reasons, including (1) acclimating you to my testing style and expectations, and (2) giving you an opportunity to apply what you've learned in a test-like structure. Please keep a look out for these on Quercus and please do connect with Prof. Nestor or your TA to discuss the answers after you've tried to work them out to receive feedback.

While exams will essentially be “open notes and open book,” you are absolutely NOT permitted to work with or obtain any pertinent information from any other person – a student in this course or anyone otherwise – during examinations!

VI. Course policies

Lecture slides

For your convenience, lecture slides and associated materials will be posted at the beginning of each week (i.e., by the first day of classes of each week).

You should know that lecture slides are not a suitable substitute for watching and understanding the lecture. Lecture slides are not exhaustive and we will regularly cover important material that extends beyond them during lecture. You are responsible for this material with respect to testing.

Instructional materials are only for the purpose of learning in this course and must not be distributed or used for any other reason whatsoever.

Reading the textbook

The material covered in the textbook is meant to reinforce and complement what we discuss in lecture. At times, we may overlap more with the textbook than at other times. In the spirit of promoting fair and transparent expectations, we will target your conceptual understanding of the bold face terms and figures. It is reasonable to assume that this is particularly important for such terms and figures that were not covered in lecture.

E-mail policy

The email subject should include the course name and nature of the inquiry (e.g., “PSYB55: Question about the Dual Route theory”). Emails should be sent from your UofT email account. The start of your email should include your full name and student ID number so that we know who you are. An email should contain no more than one question and you should try to explain your current understanding of the concept in the email (which will be affirmed or corrected).

In most cases, e-mails will be answered within 48 hours of receipt (not including weekends).

If you are not used to writing emails in an academic context, I encourage you to review this online resource so that you adopt proper email etiquette now and in the future: <<https://tinyurl.com/kysxwtx>>

Office hours

You should consider visiting Prof. Nestor's office hours if you would like to (1) discuss course content, (2) if you have an issue with course performance or progress or (3) contest a question on a midterm. With respect to Point 3, contesting a question must occur within two weeks of releasing the exam marks or it will not be considered.

Syllabus changes

There may be minor changes to the syllabus during the term. You will be notified of these changes ASAP and no changes will be instituted that dramatically affect your ability to properly prepare for an examination (e.g., reading an extra chapter the week before the midterm).

Taking an examination

All examinations will be held online using Quercus, and the dates/times of these exams will be set by the Office of the Registrar.

Notice of video recording and sharing (Download permissible; re-use prohibited)

This course (potentially including your participation) will be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but **you should not copy, share, or use them for any other purpose without the explicit permission of the instructor.**

AccessAbility

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 as soon as possible.

AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations [416-287-7560](tel:416-287-7560) or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

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/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement;
- Submitting your own work in more than one course without the permission of the instructor;
- Making up sources or facts;
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Receiving aid of any form from another person in the context of an examination
- Using or possessing unauthorized aids;
- Looking at someone else's answers during an exam or test;
- Misrepresenting your identity; and
- When you knew or ought to have known you were doing it.

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; and
- When you knew or ought to have known you were doing so.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources.

Note that you may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters*.

It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre.

If you decide to use these services in spite of this caution, you must keep a draft of your work and any notes you made before you got help and be prepared to give it to your instructor on request.

VII. Course policies on time zone conflicts and missed term work

Time Zone conflicts

If you are physically in a different time zone and a quiz or midterm is scheduled outside of 7:00am to midnight in your local time, you may use the following form to request special arrangements. Note that the form is only for term work. [Final exam conflicts](#) are handled by the Registrar's Office.

The form must be submitted **at least ten (10) business days before the activity**.

Form: <https://uoft.me/PSY-TimeZone>

Missed Term Work due to Medical Illness or Other Emergency

All students citing a documented reason for missed term work must submit their request for accommodations **within three (3) business days** of the deadline for the missed work.

Submit via email to: Keely Hicks, Departmental Assistant, keely.hicks@utoronto.ca

Students must submit **BOTH** of the following:

- (1.) A completed **Request for Missed Term Work Accommodations form** (<http://uoft.me/PSY-MTW>)
- (2.) **Appropriate documentation** to verify your illness or emergency, as described below.

Appropriate documentation:

For missed **ASSIGNMENTS** or **TERM TESTS** due to **FLU-LIKE SYMPTOMS or SELF-ISOLATION REQUIREMENTS:**

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), and
- **Declare** your absence on [ACORN](#) (Profile & Settings > Absence Declaration)

For missed **ASSIGNMENTS** due to **OTHER ILLNESS:**

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), along with the Self-Declaration of Student Illness Form (uoft.me/PSY-self-declare-form).

For missed **TERM TESTS** due to **OTHER ILLNESS:**

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), along with a scan/photo of the **original** copy of the official UTSC Verification of Illness Form (uoft.me/UTSC-Verification-Of-Illness-Form) or an **original** copy of the record of visitation to a hospital ER.
- Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration # and business stamp are required.
- *Note: If an end date of "ongoing" is specified, the medical note will be assumed to cover a period of **two weeks**. If no end date / an "unknown" end date is specified, the note will be assumed to cover a period of **three business days** (starting from illness start date.)*

For missed **TERM TESTS** due to **ACCESSABILITY REASONS:**

- Meet with your **AccessAbility consultant** and have them email Keely (keely.hicks@utoronto.ca) detailing accommodations required.

For missed **ASSIGNMENTS** due to **ACCESSABILITY REASONS**:

- If your desired accommodation is **within the scope** of your Accommodation Letter (ex. your letter includes “extensions of up to 7 days” and you need 1-7 more days), email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), and attach a **copy of your letter**. Specify how many days extension you are requesting in your email.
- If your desired accommodation is **outside the scope** of your Accommodation Letter (ex. your letter includes “extensions of up to 7 days” but you need more time than that) you will need to meet with your **AccessAbility consultant** and have them email Keely (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed **ASSIGNMENTS or TERM TESTS** in **OTHER CIRCUMSTANCES**:

Email the Request for Missed Term Work Accommodations form (<http://uoft.me/PSY-MTW>) form to Keely (keely.hicks@utoronto.ca), along with:

- For the **death of a family member/friend**, provide a copy of the death certificate.
- For U of T varsity-level or professional **athletic commitments**, an email from your coach or varsity administrator should be sent directly to Keely (keely.hicks@utoronto.ca) **well in advance** of the missed work, detailing the dates and nature of the commitment.
- For **religious accommodations**, please email Keely (keely.hicks@utoronto.ca) **well in advance** of the missed work.
- For circumstances **outside of these guidelines**, please email Keely (keely.hicks@utoronto.ca) **on or before the date of the test / assignment deadline** to describe your circumstances and determine appropriate documentation.

Documents covering the following situations are NOT acceptable: medical prescriptions, personal travel, weddings, personal/work commitments.

As stated above, your documents must be submitted **within three (3) business days** of the deadline for the missed work.

After submitting your documentation:

Within approximately one to five business days, you will receive a response from your instructor detailing the accommodations to be made (if any).

You are responsible for checking your official U of T email and Quercus course announcements daily, as accommodations may be time-critical.

You should continue to work on your assignments to the best of your ability, as extension accommodations may be as short as one business day, depending on the nature of the illness/emergency.

If an accommodation has been granted but you are unable to meet the conditions of the accommodation (ex. you need a longer extension, or you missed a make-up test), you will need to repeat the missed term work procedure and submit additional forms to request further accommodation. Note that in the case of a missed make-up test, an opportunity to write a second make-up test may not be provided.

Completion of this form does NOT guarantee that accommodations will be made. The course instructor reserves the right to decide what accommodations (if any) will be made. Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.

Missed Accommodations

If an accommodation is granted but a continued illness/emergency prevents you from meeting the requirements of your accommodation, you must repeat the missed term work procedure to request additional accommodations. (E.g.) If you miss a make-up midterm, you would need to submit another Request for Missed Term Work Accommodations form. If your original medical note / documentation included the date of the make-up midterm, then only the Request form is required. If the date of the make-up midterm fell outside of the dates indicated on your original medical note/other documentation, then a new medical note/other appropriate documentation must also be submitted.

Importance of Three Business Day window:

If you are unable to submit your documents within the three business day window, **you must email Keely (keely.hicks@utoronto.ca) within the three business day window** to explain the nature of the delay, and when you will be able to provide your documents. Exceptions to the documentation deadline will only be made under exceptional circumstances.

NOTE: Assignments due at end of term

Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, you would need to file a petition with the Registrar's Office (<https://www.utoronto.ca/registrar/term-work>).

NOTE: Final Exams

This policy applies only to missed assignments and term tests. Missed final exams are handled by the Registrar's Office (<http://www.utoronto.ca/registrar/missing-examination>).

VIII. Links you might find useful

UTSC Dates and Deadlines

<https://www.utoronto.ca/registrar/dates-and-deadlines>

Skill building, future planning

Academic Advising, Career Centre

<http://www.utoronto.ca/aacc/>

Writing Services

<http://www.utoronto.ca/twc/>

Presentation Skills

<http://www.utoronto.ca/ctl/presentation-skills>

Co-op Program

<http://www.utoronto.ca/askcoop/>

Your well-being

AccessAbility

<http://www.utoronto.ca/~ability/>

Health and Wellness

<http://www.utoronto.ca/hwc/>

Test anxiety

https://www.anxietybc.com/sites/default/files/Test_Anxiety_Booklet.pdf

The Department of Psychology

UTSC Psychology

<http://www.utoronto.ca/psych/>

UTSC Psychology courses

<http://www.utoronto.ca/psych/courses>

UTSC Experiential Learning

<http://www.utoronto.ca/psych/experiential-learning>

Psychology lab opportunities

<http://tinyurl.com/jjq25t7>

Psi Chi @ UTSC

<https://www.utoronto.ca/projects/psichi/>

PSYB55: Course Schedule

May be subject to minor revisions with advance notice from the instructor

<u>Week</u>	<u>Dates</u>	<u>Agenda for the day</u>	<u>Relevant details</u>
1	8-11 Sep	Course introduction, success in this course Foundations of cognitive neuroscience	<u>Textbook</u> : Chapter 1 (pp. 3-21)
2	14-18 Sep	Neurotransmission and neuroanatomy <i>Deconstructing short-answer questions</i>	<u>Textbook</u> : Chapter 2 (pp. 22-61)
3	21-25 Sep	Methods in cognitive neuroscience <i>Designing experiments (part I)</i>	<u>Textbook</u> : Chapter 3 (73-111)
4	28 Sep -2 Oct	Perception <i>Designing experiments (part II)</i>	<u>Textbook</u> : Chapter 5 (184-219)
-	TBD	MIDTERM EXAMINATION I	(see below)
5	5-9 Oct	Object recognition <i>Reading journal articles: the abstract</i>	<u>Textbook</u> : Chapter 6 (223-265)
6	12-16 Oct	READING WEEK (NO CLASS)	
7	19-23 Oct	Attention <i>Reading journal articles: the introduction</i>	<u>Textbook</u> : Chapter 7 (276-309)
8	26-30 Oct	Action <i>Reading journal articles: the methods</i>	<u>Textbook</u> : Chapter 8 (325-58; 365-75)
9	2-6 Nov	Memory	<u>Textbook</u> : Chapter 9 (379-418)
-	TBD	MIDTERM EXAMINATION II	(see below)
10	9-13 Nov	Study space for Midterm II (NO CLASS)	.
11	16-20 Nov	Emotion <i>Reading journal articles: the results</i>	<u>Textbook</u> : Chapter 10 (427-59; 468-71)
12	23-27 Nov	Language <i>Reading journal articles: the discussion</i>	<u>Textbook</u> : Chapter 11
13	30Nov-4 Dec	Cognitive Control Course review and conclusion	<u>Textbook</u> : Chapter 12
-	TBD	FINAL EXAMINATION	(see below)

There are three examinations in this class, and the intended timing for each is indicated above. Midterm and Final exam dates/times are set by the Registrar's office and may occur later (but not earlier) than this timing.

Midterm Examination 1 will cover ALL lecture and assigned textbook material from weeks 1-4.

Midterm Examination 2 will cover ALL lecture and assigned textbook material from weeks 5-9.

The Final will cover ALL lectures, the textbook from weeks 11-13; and one article (TBD)