

PSYB64H3S

Introduction to Behavioural Neuroscience

Course Syllabus

Dr. Stefano Di Domenico

Instructor Email: stefanoddmn@gmail.com Use this email to schedule office-hour appointments.

Office Hours: TBA. Office hours are by appointment only. More information about office hour delivery will be announced soon.

Teaching Assistants: TBA

Teaching Assistant Email: 2024psyb64@gmail.com Use this email for content-related questions.

Textbook: *Discovering Behavioral Neuroscience: An Introduction to Biological Psychology 5th Edition* by Laura A. Freberg

Lectures: Thursdays 6 pm to 9 pm in HL B101

We will use *Quercus* for sharing lecture material and making announcements.

Course Description

This course will introduce students to behavioural neuroscience, an interdisciplinary science that seeks to understand the biological substrates of behavior, emotions, and cognition. The course will often focus on the workings of the brain.

Learning Objectives

By the end of this course, students should be able to:

- Describe the major anatomical sections of the nervous system
- Explain the basic principles of imaging and microscopic research methods
- Explain how neurons generate and propagate action potentials
- Describe the major neurotransmitter, neuromodulator, and neurohormone systems
- Explain the basic principles of drug effects
- Explain the basic principles of genetics, epigenetics, and behavioural genetics
- Describe the prenatal development of the nervous system
- Describe the evolution of the nervous system
- Explain the genetics of sex, describe sex differences in brain structure and behaviour, and describe the biological influences of sexual development and behaviour
- Describe the neural mechanisms and correlates of sleep and waking
- Describe the neural mechanisms and correlates of learning and memory
- Describe different neurocognitive disorders in terms of their genetic and neural substrates

Notice of Video Recording and Sharing (Download and Re-Use is Prohibited)

This course, including your participation, may be recorded on video and may 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.

Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

For questions about recording and use of videos in which you appear please contact Dr. Di Domenico.

Tentative Schedule

The following topics will be covered in the course. The weekly schedule is a guideline and some topics will take more or less than a lecture period to complete. Please note the weeks in which the midterm are indicated. The date for final exam will be determined by the registrar. When I have this information it will be posted on Quercus.

Week	Date	Lecture Topic	Readings
Part 1 <i>Parts of the Nervous System</i>			
1	Jan 11	Course introduction	Syllabus + Ch. 1
2	Jan 18	Functional neuroanatomy	Ch. 2
3	Jan 25	Cells of the nervous system	Ch. 3
4	Feb 1	Psychopharmacology	Ch. 4
5	Feb 8	MIDTERM TEST 1	Covers weeks 1 to 4
Part 2 <i>Origins of the Nervous System / Survival and Reproduction</i>			
6	Feb 15	Evolution, genetics, and development	Ch. 5
7	Feb 22	NO CLASS	READING WEEK
8	Feb 29	Homeostasis and motivation	Ch. 9
9	March 7	Sexual behavior	Ch. 10
10	March 14	MIDTERM TEST 2	Covers weeks 6 to 9
Part 3 <i>Basic Topics in Biological Psychology</i>			
11	March 21	Sleep and waking	Ch. 11
12	March 28	Learning and memory	Ch. 12
13	April 4	Neuropsychology	Ch. 15

Grading Scheme

Of greatest importance to me is the extent to which students can demonstrate their intellectual command of the subject matter of this course *in its entirety* at the end of the term. Consequently, it is essential that the final exam provide a comprehensive (cumulative) assessment of the course. Two midterm tests will provide students an interim assessment of their command of the course material. Both midterm tests will be one hour long and will likely be held during regularly scheduled lecture times. The first midterm test will comprise 30% of your final grade and it will cover Weeks 1 to 4. It will be held on February 8th, 2024. The second midterm test will also comprise 30% of your final grade and it will cover Weeks 6 to 9. It will be held on March 14, 2024. The final exam will comprise 40% of your final grade and it will cover the course in its entirety (Weeks 1 to 13). Approximately three quarters of the questions will cover Part 3; the other quarter of the questions will provide equal coverage of Parts 1 and 2.

Summary

The first midterm (**30% of final grade**) will cover Part 1 (Weeks 1-4).

The second midterm (**30% of final grade**) will cover Part 2 (Weeks 7-9).

A *cumulative* final exam (**40% of final grade**) will cover all Parts (Weeks 1-13)

= 5% [Part 1] + 5% [Part 2] + 30% [Part 3] = 40%.

Missed Term Tests (Make-Up Tests)

Students who are unable to complete the regularly scheduled midterm tests for reasons that conform to the Department of Psychology Missed Term Work Policy (described below) may request a make-up test. Upon receipt of the missed term work accommodation form, a make-up test will be promptly scheduled.

Final Exam Policies & Procedures. The scheduling of final exams and the granting of petitions to defer final exams are matters that fall entirely within the jurisdiction of the Registrar's Office. If you have any concerns relating to your final exam attendance, please contact the Registrar.

QUERCUS

This course uses the University's learning management system, Quercus, to post information about the course. This includes posting readings and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. The site is dynamic and new information and resources will be posted regularly as we move through the term, so please make it a habit to log in to the site on a regular, even daily, basis. To access the course website, go to the U of T Quercus log-in page at <https://q.utoronto.ca>. Once you have logged in to Quercus using your UTORid and password, you should see the link or "card" for **PSYB64H3S (2024 Winter) - Introduction to Behavioural Neuroscience**. You may need to scroll through other cards to find this. Click on the **PSYB64H3S (2024 Winter) - Introduction to Behavioural Neuroscience** link to open our course area, view the latest announcements and access your course resources. There are Quercus help guides for students that you can access by clicking on the "?" icon in the left side column.

SPECIAL NOTE ABOUT GRADES POSTED ONLINE: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved and posted on ACORN at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.

ACADEMIC INTEGRITY

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 in papers and assignments include 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, cheating includes using or possessing unauthorized aids, looking at someone else's answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University.

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EQUITY, DIVERSITY AND INCLUSION

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

The University of Toronto is a richly diverse community and as such is committed to providing an environment free of any form of harassment, misconduct, or discrimination. In this course, I seek to foster a civil, respectful, and open-minded climate in which we can all work together to develop a better understanding of key questions and debates through meaningful dialogue. As such, I expect all involved with this course to refrain from actions or behaviours that intimidate, humiliate, or demean persons or groups or that undermine their security or self-esteem based on traits related to race, religion, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, gender identity, gender expression, age, marital status, family status, disability, receipt of public assistance or record of offences.

UNIVERSITY LAND ACKNOWLEDGEMENT

I wish to acknowledge this land on which the University of Toronto operates. For thousands of years, it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

ACCOMMODATIONS

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.

AccessAbility Services staff (located in Rm AA142, Arts and Administration Building) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email ability.uts@utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

USE OF GENERATIVE ARTIFICIAL INTELLIGENCE TOOLS

Students may use artificial intelligence tools, including generative AI, in this course as learning aids or to help produce assignments. However, students are ultimately accountable for the work they submit.

Students may not use artificial intelligence tools for taking tests, writing research papers, creating computer code, or completing major course assignments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding.

The knowing use of generative artificial intelligence tools, including ChatGPT and other AI writing and coding assistants, for the completion of, or to support the completion of, an examination, term test, assignment, or any other form of academic assessment, may be considered an academic offense in this course.

RECORDING OF CLASSROOM MATERIAL BY STUDENTS

Recording or photographing any aspect of a university course - lecture, tutorial, seminar, lab, studio, practice session, field trip etc. – without prior approval of all involved and with written approval from the instructor is not permitted.

MISSED TERM WORK POLICY (OPTIONAL, IF YOU HAVE YOUR OWN ALTERNATE VERSION)

For missed term work (assignments and term tests) due to illness, emergency, or other mitigating circumstances, please follow the procedure outlined below.

Procedure:

1. Complete the [Request for Missed Term Work Accommodations Form](#) ("MTW Form").
2. Email **BOTH** your MTW Form and Supporting Documentation to 2024psyb64@gmail.com according to the instructions specified below.

Supporting Documentation Requirements and Deadlines:

Reason for Missed Work	Documentation required for a first absence in the term	Documentation required for subsequent absences in the term	Deadline for submitting MTW form and supporting documentation
Illness or Injury	ACORN Absence Declaration	UofT Verification of Illness Form	<u>WITHIN 2 BUSINESS DAYS</u> of the missed work
Bereavement	ACORN Absence Declaration	A death certificate or funeral announcement	<u>WITHIN 2 BUSINESS DAYS</u> of the missed work
University-sponsored athletic or artistic obligation at the varsity/provincial/national level	ACORN Absence Declaration	A note from a university staff member (advisor, coach, residence staff, etc.) who can substantiate the obligation, sent directly to the course email	<u>10 BUSINESS DAYS IN ADVANCE</u> of the missed deadline
Disability-related reasons for students registered with AccessAbility Services	<p>For missed TERM TESTS,</p> <ul style="list-style-type: none"> - Contact your AccessAbility consultant and have them write to the course email detailing the accommodations needed. <p>For missed ASSIGNMENTS,</p> <ul style="list-style-type: none"> - If your desired accommodation is within the scope of your Accommodation Letter (e.g. your letter includes "extensions of up to 7 days" and you need 3 days), send your Accommodation Letter to the course email and specify how many days extension you are requesting. - If your desired accommodation is outside the scope of your Accommodation Letter (e.g. your letter includes "extensions of up to 7 days" but you need more time than that), contact your AccessAbility consultant and have them write to the course email detailing the accommodations needed. 		<u>PREFERABLY IN ADVANCE OF THE MISSED WORK, OR AS SOON AS POSSIBLE</u>

Academic Conflict (e.g. two midterms at the same time)	Screenshot from Quercus demonstrating the conflict.	10 BUSINESS DAYS IN ADVANCE of the missed work
Religious Conflict	None required	

Notes:

- The following reasons are not considered sufficient for missed term work: social activities, recreational travel, technological issues, avoidance of assessments or deadlines, work commitments
- [Missed Final Exams](#) are handled by the Registrar's Office and should be declared on eService.
- For ACORN absence declarations, the date you declare the absence is required to fall within the seven-day declaration period (i.e.) the absence cannot be submitted proactively or retroactively.
- Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, accommodations are only possible via the Registrar's Office [petition process](#).
- If you are unable to submit your request within the specified number of business days, you must still email your instructor within that window to explain the nature of the delay. Exceptions to the deadlines are made only under exceptional circumstances.
- Multiple assignments due on the same day are not considered academic conflicts. Students are expected to manage their time effectively to meet assignment deadlines.
- Back-to-back tests/quizzes are not considered academic conflicts. Only overlapping activities are conflicts.
- Students are responsible for keeping their course timetables conflict-free. Students who register in two courses with overlapping lecture/tutorial/lab schedules will not be accommodated.

Next Steps:

After submitting your documentation, you will receive a response from your instructor or TA. The course instructor reserves the right to decide what accommodations will be made. Failure to adhere to any aspect of this policy may result in a denial of your request. **You are responsible for checking your official U of T email and Quercus course announcements daily**, as accommodations may be time-critical.

For missed assignments, **do not wait for the instructor's response to resume work on your assignment**. Extensions may be as short as one business day, depending on the nature of the illness/emergency. Complete your assignment as soon as you're able, and email it to your instructor.

If an accommodation is granted but a continued illness/emergency prevents you from meeting its requirements, you must repeat the missed term work procedure to request additional accommodations. **Please make it clear in your subject line that you are requesting a second accommodation**. Examples: If you were granted an extension for a paper but are still unable to meet the new deadline, or if you miss a make-up term test, you must submit *another* MTW form and supply documentation according to the "subsequent absences" column in the chart above. *Note: In the case of a missed make-up test, an opportunity to write a second make-up test may not necessarily be provided.