

# Neurochemical Basis of Behaviour (PSY396H1-F)

Fall 2022

Tuesday 1:10 p.m. – 3:00 p.m.

Thursday 1:10 p.m. – 2:00 p.m.

McLennan Physical Laboratories, Room 137

---

**Instructor:** Dr. Suzanne Wood

Email: [suzanne.wood@utoronto.ca](mailto:suzanne.wood@utoronto.ca)

Office: Sidney Smith, Room 4036

Office Hours: You can schedule an [individual appointment](#) with me online

<https://calendly.com/drswood/officehours/>

Also, I will be holding [drop-in office hours](#) a day or two before each term test; dates and times will be posted on Quercus.

**Teaching Assistant:** Zachary Pierce-Messick

Email: [zachary.piercemessick@mail.utoronto.ca](mailto:zachary.piercemessick@mail.utoronto.ca)

Office Hours: *details will be posted on Quercus throughout the semester*

**Textbook (recommended):** *Psychopharmacology: Drugs, the Brain, and Behavior*, 4<sup>th</sup> Edition, Meyer JS, Farrar AM, Biezonski D and Yates JR (2023) Sinauer

*I am working on getting a copy of the textbook on reserve – details TBD*

**Prerequisites:** PSY201 (or equivalent), PSY260 or PSY290 / HMB200 / PSL300

**Exclusions:** PCL200 / PCL476 / PSYC62H3

## Course Description

The functional relevance of neurotransmitters, with particular emphasis on their role in mediating behaviour.

## Course Objectives

By the end of this course you will be able to:

- Describe how major neurotransmitter systems function in the brain
- Relate the actions of neurotransmitters to behaviour
- Connect disease symptoms to pathologies in neurotransmitter function
- Explain drug effects in terms of actions on neurotransmitter functioning

## Email

Please reserve the use of email addressed to me for personal matters, only. To ask content-related questions, please post on the [Discussion Board](#). Many students will likely have the same question, so it will benefit the whole class to see the question and answer (whether

posted by fellow students or your TA). I can only check email sporadically during business hours (9am-5pm), since I do not check while I am teaching, in a meeting or holding office hours. I do NOT check email after business hours (5pm-9am). Please anticipate up to a 48-hour period before you receive a response to your email. Plan accordingly. I encourage you to attend group office hours or book an individual appointment with me to help clear up any questions. Please also see me before or after class.

## Grading Criteria

Term Test 1	30%
Term Test 2	25%
Thesis and Annotated Bibliography	3.5%
Final Paper	30%
Perusall	11.5%

## Perusall

In order to assist with article discussion preparation, for every week there is an assigned article, there will be a low-stakes Perusall assignment. Your job is to log onto Perusall and annotate the week's article before [Wednesday at 11:59pm](#). Further details will be discussed in class.

## Term Tests

The term tests may consist of multiple-choice, fill-in, and/or short answer questions. Both term tests will be based on lectures, the textbook (overlapping content, only) and the journal articles. Further details regarding term tests will be discussed in class.

## Final Paper

In addition to learning the basics of neurochemistry, the students will also have the opportunity to explore a topic related to the course in the paper assignment. To give students the benefit of feedback on their paper topics, a thesis and annotated bibliography will be submitted. Further details regarding the paper will be found on Quercus.

## Plagiarism Detection

Normally, students will be required to submit their course essays to the university's plagiarism detection tool 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 tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (<https://uoft.me/pdt-faq>).

If you wish to opt out of submitting work to plagiarism detection, you must do the following:

1. Email the TA no later than two weeks before the due date indicating you wish to opt out
2. Submit a paragraph describing why this topic is of particular interest to you with your final essay
3. Submit handwritten notes used for the design of your essay with your final essay

## Writing Help

Book an appointment online with the Writing Centres on St. George Campus:

<http://www.writing.utoronto.ca/writing-centres/arts-and-science>

Attend a free group workshop this winter with Writing Plus:

<http://writing.utoronto.ca/writing-plus/winter-workshops/>

English is not your first language? Take a look at these resources:

<http://www.writing.utoronto.ca/support/english-language-support>

<https://www.artsci.utoronto.ca/current/academic-advising-and-support/english-language-learning>

## Missed Class

It is in the best interest of all students to attend all the lectures. However, if you miss a lecture, please download the slides, get notes from your classmates, and then be prepared to ask specific questions about the lecture to the TA or instructor during office hours. Do NOT ask the TA or instructor to give a second delivery of the lecture. Videos displayed during lecture will unfortunately be unavailable for viewing again.

## Missed Quiz, Exam or Paper Deadline

If a student misses a deadline for an assignment or assessment for any reason (illness, family situation, etc.), an online absence declaration must be submitted on ACORN. Please email me within one week if this should happen. For the term tests, if the severity of the illness warrants the absence, an oral and/or free-response and/or written alternate exam in Dr. Wood's office may be scheduled that will cover similar topics to those covered by the missed assessment. Paper outlines, introductions, and references are scored out of 3.5 points – 0.5 points will be lost for every 24-hour period or portion thereof that it is late. Final papers that are turned in late without a verification of illness will incur an 8% penalty for every 24-hour period or portion thereof. Assignments will not be accepted more than 4 days after the due date.

## Showing up Late for a Term Test

If a student is late, the student may still sit the term test for the time remaining, so long as no one has left the exam room before the student shows up. On term test days, students should allow enough time to get to campus so that they will still be on time, even with TTC delays and/or flat tires and/or the zombie invasion, during which they join our local high schools and elevate both the football teams and cheer squads to new competitive heights.

## Questions About Marking

Any questions regarding a grade received for an item of work in this course should be brought to the attention of the TA within two weeks of receipt of the graded work. If the student is not satisfied with the meeting with the TA, the student can submit an appeal letter to Dr. Wood through the TA. This letter must detail the item(s) in contention and why it has not been assessed accurately. A legitimate request will result in a re-grade of the entire work, which may result in a higher, lower, or identical grade.

## Academic Integrity

The University of Toronto takes cases of academic misconduct seriously. UofT has detailed policies regarding misconduct, which includes:

- quoting another person's ideas in your work without clear acknowledgement
- using or possessing an unauthorized aid or obtaining unauthorized assistance in taking an exam or writing a paper
- submitting forged or altered documentation for excuses for missed exams

Any of these offenses will result in referral to the central academic integrity office and consequences that the University deems appropriate after investigation. For more information, please see: <https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity>

## Plagiarism

Plagiarism is using another writer's words or ideas without the proper acknowledgement. Know what plagiarism is so you can avoid it:

<http://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize>

If you have any questions about whether what you are doing constitutes plagiarism, contact your TA.

## Accessibility

University of Toronto is committed to accessibility. If you require accommodations for a disability or have an accessibility concern about this course, please contact Accessibility Services as soon as possible: <http://www.studentlife.utoronto.ca/as>

## Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or accommodation. They may be able to provide you with a College Registrar's letter of support to give to your instructors, and importantly, connect you with other resources on campus for help with your situation.

## That Other Kind of Psychology

These years can be challenging, both in and out of the classroom. University of Toronto offers services to assist students facing a wide range of emotional and psychological challenges: <http://www.studentlife.utoronto.ca/hwc>

## SCHEDULE OF LECTURES

*(topics subject to change; exam & assignment dates are fixed)*

Week	Date	Topic	Lecture Reading (recommended)
1	Sept. 8	Introduction and Review of Key Concepts ( <i>start</i> )	2,3 ( <i>review as necessary</i> )
2	Sept. 13	Review of Key Concepts ( <i>continued</i> ) Lecture 1: Chemical Signaling Overview with DA & NE	2,3 ( <i>review as necessary</i> ) 5 (148-162; 168-176)
	Sept. 15	Article 1: Guanfacine for PFC Dysfunction	
3	Sept. 20	Lecture 2: Principles of Pharmacology	1 (1-20; 26-36)
	Sept. 22	Articles 2a & 2b: Elephants on LSD	
4	Sept. 27	Lecture 3: Glutamate and Schizophrenia	8 (222-230); 19 (619-652)
	Sept. 29	Articles 3a & 3b: The CATIE Study	
5	Oct. 4	Lecture 4: Serotonin and Affective Disorders	6 (179-191); 18 (587-617)
	Oct. 6	Article 4: Antidepressants vs. Placebo	
6	Oct. 11	<b>Term Test 1 (30%) Weeks 1-5, Lectures 1-4, Articles 1-4</b>	
	Oct. 13	Lecture 5: Stimulants	12 (368-389)
7	Oct. 18	Lecture 6: GABA and Anxiety	8 (239-249); 17 (547-583)
	Oct. 20	Article 5: Does Exercise Alleviate Anxiety and Stress?	
8	Oct. 25	Lecture 7: Addiction	9 (253-287)
	Oct. 27	Article 6: Humans Abuse Drugs that Increase Dopamine	
	Oct. 28	<b>Paper thesis and annotated bib (3.5%) -- due by midnight</b>	
9	Nov. 1	Lecture 8: Opioids, Narcotics, and Pain	11 (330-350; 352-366)
	Nov. 3	Article 7: Do Opioids Alleviate Chronic Noncancer Pain?	
10	Nov. 8 Nov. 10	--- READING WEEK ---	
11	Nov. 15	Lecture 9: Endocannabinoids and Marijuana	14 (445-455; 462-476)
	Nov. 17	Article 8: Cannabis & Psychosis	
12	Nov. 22	Lecture 10: Hallucinogens & Psychedelics	15 (483-510)
	Nov. 24	Article 9: Psilocybin to Treat Depression	
	Nov. 25	<b>Final Paper -- due by midnight (30%)</b>	
13	Nov. 29	Lecture 11: Acetylcholine, Nicotine, & Alcohol	7 (203-219); 13 (406-432); 10 (289-297; 307-323)
	Dec. 1	In-Class Review Session	
14	Dec. 6	<b>Term Test 2 (25%) Weeks 6-13, Lectures 5-11, Articles 5-9</b>	