

PSYC*3030, Course Outline: Winter 2021

General Information

DUE to the ongoing COVID-19 pandemic, this course is offered in an alternative format. Alternative Delivery Synchronous – AD-S Virtual: Tuesdays and Thursdays, 2:30-3:50 PM

Course Title: PSYC*3030 - Neurochemical Basis of Behaviour

Course Description:

This course examines the link between neurochemical systems and behaviour. The actions of neurotransmitters in the brain strongly influence all aspects of behavior, from emotions and motivation to perception, learning, and memory. This course will help you understand the role of these neurochemical systems in behaviour and the mechanisms through which psychoactive drugs influence these systems and affect psychological processes. Topics of discussion will include anatomical, biochemical, and physiological aspects of neurotransmitter systems in the brain, current theories of function of these systems in behaviour, and actions of psychotropic drugs.

Credit Weight: 0.5

Academic Department (or campus): Psychology

Semester Offering: Winter 2021

Class Schedule and Location: Tuesdays and Thursdays, 2:30-3:50 PM; Zoom

Instructor Information

Instructor Name: Sarah Thackray

Instructor Email: sthackra@uoguelph.ca

Office location and office hours: N/A; email to set up an appointment

GTA Information

GTA Name: TBD

GTA Email: TBD

GTA office location and office hours: TBD

Course Content

Specific Learning Outcomes:

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

1. Recall and describe various neurochemical mechanisms underlying nervous system function and its regulation of aspects of behaviour such as cognition, motor performance, and addiction
2. Explain various pharmacological concepts germane to the properties of the nervous system and the effects of drugs on neurochemical and behavioural function (e.g. drug efficacy vs potency)
3. Explain and evaluate the relative strengths and weaknesses of various methods used in the field of neuropsychopharmacology to study the neurochemical basis of behaviour
4. Explain and contrast specific cellular and behavioural effects of drugs and neurotransmitters acting at different receptors in the nervous system (e.g. ionotropic vs metabotropic receptors)
5. Describe the neurochemical bases of various neurodegenerative and neurological disorders and critically evaluate candidate treatment strategies based on pharmacological manipulations

Lecture Content:

Tentative lecture schedule.

Date	Topic	Readings
T Jan 12	Introduction	Ch 9
R Jan 14	Principles of Pharmacology	Ch 1
T Jan 19	Principles of Pharmacology	Ch 1
R Jan 21	Structure and Function of the Nervous System	Ch 2
T Jan 26	Chemical Signaling	Ch 3
R Jan 28	Chemical Signaling	Ch 3
T Feb 2	Methods in Psychopharmacology	Ch 4
R Feb 4	Methods in Psychopharmacology	Ch 4
T Feb 9	Exam 1	
R Feb 11	Neurotransmitter Systems - Catecholamines	Ch 5
Feb 14-20	Reading Week – No classes	
T Feb 23	Neurotransmitter Systems - Catecholamines	Ch 5
R Feb 25	Neurotransmitter Systems - Catecholamines	Ch 5
T Mar 2	Neurotransmitter Systems - Serotonin	Ch 6
R Mar 4	Neurotransmitter Systems - Serotonin	Ch 6
T Mar 9	Neurotransmitter Systems - Acetylcholine	Ch 7
R Mar 11	Neurotransmitter Systems - Acetylcholine	Ch 7
T Mar 16	Exam 2	
R Mar 18	Neurotransmitter Systems – Glutamate and GABA	Ch 8
T Mar 23	Neurotransmitter Systems – Glutamate and GABA	Ch 8
R Mar 25	Neurotransmitter Systems – Glutamate and GABA	Ch 8

Date	Topic	Readings
	Project Due by 11:59pm	
T Mar 30	Major Drug Classes – Cannabinoids	Ch 14
R Apr 1	Major Drug Classes – Cannabinoids Project Feedback Due by 11:59pm	Ch 14
T Apr 6	Major Drug Classes – Opioids	Ch 11
R Apr 8	Major Drug Classes – Opioids	Ch 11

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Quizzes	Various – see below	15%	1 – 5
Project	Mar 25 at 11:59PM	15%	1, 4, 5
Midterm Exam 1	Feb 9 – in class	20%	1 – 5
Midterm Exam 2	Mar 16 – in class	20%	1 – 5
Final Exam	TBD	30%	1 – 5

Additional Notes (if required):

Quizzes (15%):

There will be several quizzes throughout the course. They will consist of 5-10 multiple choice questions and are designed to be completed in 10 min. The first quiz will test your knowledge of the course outline; it is mandatory and will be worth 1%. It will be available at the end of the first class (Jan 12 at 3:50pm) until the beginning of the second class (Jan 14 at 2:30pm).

The remainder of the quizzes will be available on CourseLink every week, except the weeks with midterms, beginning after Thursday's class until the start of Tuesday's class. There will be 10 quizzes total; however, only the best 7 will count toward your final grade (2% each x 7 = 14%). More information will be provided in class and on CourseLink.

Exams (70%):

There are three exams for this course; the two midterms will consist of half multiple-choice questions and half short answer questions (which may include ordering, labeling and/or matching questions). Midterm #1 will be held in class on February 9th and is worth 20% of your final grade. Midterm #2 is scheduled in class for March 16th and will also be worth 20% of your final grade. **Midterm #2 will NOT be cumulative.** The final exam will be scheduled by the registrar and is worth 30% of your final grade, it will include multiple-choice and short answer questions (which may include ordering, labeling and/or matching questions); **the final exam will be cumulative but with a focus on material covered since midterm #2.**

The short answer questions on the midterm and final exams will be graded using a similar format. Half marks will be given if it is clear that you know the general answer but have omitted specific details or scientific terms. Full marks will be given to those that include specifics and employ the correct terminology and concepts.

Project (15%):

The final project will allow students to delve deeper into a drug or neurological disorder that is of interest to them. The final project is to create an informational digital poster that discusses EITHER a psychoactive drug (legal or illegal) OR a neurological disorder/neurodegenerative disease at the level that the public could understand.

For posters focused on a specific drug, you should include the history of the drug, its chemical structure, how the drug is most commonly used and administered, how the drug acts in the brain, and the potential for abuse/addiction. For posters focused on a neurological disorder/neurodegenerative disease, you should include how it affects the brain and behaviour (what is known about the etiology and symptoms), and known or potential treatments for the disorder/disease (i.e. drugs or other). Projects will be graded on content (i.e. includes the appropriate information at the appropriate level) and the design/organization (i.e. it is visually appealing, easy to read, no spelling/grammatical errors).

Completed projects should be posted to the Project Discussion Board on CourseLink. Students will have 1 week to view the posters and provide feedback/comments to a minimum of 3 other students. The final project is due March 25 and will be worth 15% of your final grade: 12% will be based on the poster, 3% will be for providing feedback to a minimum of 3 posters by 11:59pm on April 1. Late assignments will not be accepted without prior consent and proper documentation. More information will be provided in class and on CourseLink.

Final examination date and time: TBD??

Final exam weighting: 30%

[Examination Regulations](#)

Course Resources

Recommended Texts: J. S. Meyer & L. F. Quenzer. Psychopharmacology: Drugs, the brain, and behavior. Massachusetts. 3rd edition.

The textbook is not available on library reserve.

Other Resources:

Lectures notes will usually be available on CourseLink before each class.

Course Policies

Grading Policies

Makeup quizzes/exams are **NOT** an option without the approval of the instructor. Students who miss a quiz/exam have up to 48 hours to contact the instructor to ask for a makeup quiz/exam. It's the instructor's discretion if they will allow a make-up exam. Students who do not schedule a makeup quiz/exam with the instructor within this 48-hour period forfeit the right to a makeup quiz/exam. At the instructor's discretion, a makeup quiz/exam may differ significantly (in form and/or content) from a regularly scheduled quiz/exam. Once approved by the instructor a makeup quiz/exam must be written within 2 weeks of the missed test/exam on a day/time scheduled by the instructor.

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted, they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

*****Disclaimer:**

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings and academic schedules. Any such changes will be announced via CourseLink and/or class email. All University-wide decisions will be posted on the COVID-19 website and circulated by email.

*****Illness:**

The University will not normally require verification of illness (doctor's notes) for fall 2020 or winter 2021 semester courses. However, requests for Academic Consideration may still require medical documentation as appropriate.

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:

[Academic Consideration, Appeals and Petitions](#)

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and

students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
[Academic Misconduct Policy](#)

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email accessibility@uoguelph.ca or the [Student Accessibility Services Website](#)

Course Evaluation Information

Please refer to the [Course and Instructor Evaluation Website](#) .

Drop date

The last date to drop one-semester courses, without academic penalty, is April 12, 2021 . For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#).

Instructors must provide [meaningful and constructive feedback, at minimum 20% of the final course grade, prior to the 40th class day](#). For courses which are of shorter duration, 20% of the final grade must be provided two-thirds of the way through the course.

[Current Undergraduate Calendar](#)

Additional Course Information

Course instructors are allowed to use software to help in detecting plagiarism or unauthorized copying of student assignments. Plagiarism is one of the most common types of academic

misconduct on our campus. Plagiarism involves students using the work, ideas and/or the exact wording of other people or sources without giving proper credit to others for the work, ideas and/or words in their papers. Students can unintentionally commit misconduct because they do not know how to reference outside sources properly or because they don't check their work carefully enough before handing it in. Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

In this course, your instructor will be using Turnitin.com to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to prevent plagiarism in the College of Social and Applied Human Sciences.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.