

Drugs and Behaviour – Psychology 3115

Department of Psychology – Faculty of Health and Behavioural Sciences

Winter 2023 Jan 9 - Apr 11

Instructor Informatio	n en		
Instructor:	TBD		
Office Location:	NA		
Email:	ТВА		
Office Hours:	MW 2:30PM - 4:00PM		
Teaching Assistant			
TAs:	TBD		
E-mail:	ТВА		
Office Hours:	Email for an appointment through Zoom		
Course Identification			
Course Number:	PSYC-3115 WDE		
Course Name:	Drugs and Behaviour		
Course Location:	Online –Zoom link is provided through MyCourseLink		
Class Times:	MW 2:30PM - 4:00PM		
Prerequisites:	Psychology 1100 and Psychology 3114		

Course Description

<u>Calendar Description</u>: Builds on the principles of psychopharmacology and examines the psychopharmacology of specific psychoactive drugs and drug classes (e.g., opioids, cannabis, cocaine, antidepressants). Drugs will be examined in terms of their pharmacokinetics, pharmacodynamics, effects on the body and behaviour, tolerance and dependence, and therapeutic applications. Research on drug effects in both humans and animal models is critically examined and discussed.

Notes: Students with previous credit in Psychology 3401 may not take Psychology 3114/3115 for credit. Course Classifications:

- Type C: Engineering, Mathematical and Natural Sciences
- Type D: Health and Behavioral Sciences



The main focus of this course is the scientific study of the behavioural and neurobiological effects of psychoactive drugs. The course will help the student understand the relationship between drugs, the body, and behaviour and provide a basic foundation to better evaluate drug use and abuse (over-the-counter drugs, prescription drugs, and recreational drugs). It will also enable one to make better decisions, backed by critical thinking and understanding of the research, when faced with personal or social issues concerning the use of drugs in the future. To understand drug effects, we must understand drug action. This course builds upon material covered in Psychology 3114 by examining the pharmacokinetics and pharmacodynamics (e.g., dosage, route of administration, time course, side effects, metabolism, neurotransmitters, and brain areas affected) of the major categories of psychoactive drugs (e.g., stimulants, opiates, cannabis, etc.).

Secondary goals of the course are to provide exposure to research on the behavioural effects of drugs; to increase understanding of the design of drug studies; and to aid in searching for, locating, reading, and critically evaluating original research articles in the area. This will be accomplished though the journal article readings and the paper. As it will be necessary to be familiar with the library and the use of electronic databases/indexes for the paper (i.e., Psychinfo and Pubmed), it is strongly recommended that you sign up for one of the library's free sessions on Electronic Indexes (registration is limited). This course is one of the core Biological Bases of Behaviour courses in the Psychology program. As such, the focus of the course is on the biological, rather than the social, effects of drugs on behaviour.

Course Resources

The books listed below are available for purchase in the bookstore and electronically. It is strongly recommended that all students obtain a copy of the Publication Manual of the American Psychological Association (7th edition). This manual is important for writing the paper and APA style is important to master for any papers in Psychology. There are also required article readings listed on pages 8-9.

Required:

1) Textbook: (available through LU bookstore)

Meyer, J.S. & Quenzer, L.F. (2018). *Psychopharmacology: Drugs, the Brain and Behavior (3rd ed.)*. Sunderland, MA: Sinauer. (hard copy version or electronic version)

Hard copy – bookstore lists the price as \$199.99

Electronic Version – purchase options: 180 days (\$60.00), 1 year (\$90.00) or 4 year (\$120.00) terms.

***This is the same textbook used last term in Psychology 3114: Principles of

Psychopharmacology.*** link: https://www.vitalsource.com/en-ca/products/psychopharmacology-jerrold-s-meyer-linda-f-v9781605357287?term=9781605357287

2) Course Website:

myCourseLink (aka: D2L): TBA

Recommended:

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th Ed.). American Psychological Association.

Optional: 1) textbook website (optional use):

https://oup-arc.com/access/psychopharmacology-3e-student-resources#tag chapter-01



Course Learning Objectives

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

- List, describe, and recognize some of the latest knowledge and research about the pharmacokinetics, pharmacodynamics, and behavioural effects of the main categories of psychoactive drugs and many specific drugs
- Demonstrate information literacy skills in terms of being able to locate, summarize, synthesize, and critically evaluate studies and basic key aspects of research design within the field of behavioural pharmacology
- Interpret and explain psychopharmacology findings when presented both in writing and in basic graphical and table formats
- Identify and explain some of the ethical issues involved in psychopharmacology research
- Communicate effectively in writing (while adhering to APA style) about research on drugs and behaviour

Course Evaluation

Quizzes/Exams	Due Date	Value
Quizzes on Lectures *	These are easy quizzes based on the live/synchronous lectures (live on Zoom). They must be completed in class at the end of each live class. Final deadlines are 4:15pm (just after class ends).	10%
Exam #1	TBA	30%
Exam #2	TBA	30%
Paper	ТВА	30%

^{*}Note that the two lowest scoring quiz marks will be dropped. This includes any missed quizzes. Thus, if you miss a quiz, please note that there will not be an option to re-write the quiz later. There are no exceptions to this rule as the two lowest marks are dropped to account for missed quizzes. The quizzes reflect attendance, participation, and provide extra incentive for students to keep up with the lectures and readings.

Lectures, Notes, and Lecture Slides

All lectures will be conducted through Zoom. Students can find the link to the Zoom lectures within the course website on D2L (MyCourseLink: https://mycourselink.lakeheadu.ca/). Each Tuesday lecture will be live/synchronous and Thursday lectures are typically recorded for viewing through Zoom. Other lectures may be live/synchronous as noted in the course syllabus. Students should click on the Zoom link within the Course Website, which should then direct one to sign into one's LU account. Be sure to do this



ten minutes before class begins. This will help ensure that you can figure out any technical issues. You will be put into a waiting room immediately upon sign-in and then let into the class just prior to the start of class. Be sure to arrive on time as there may otherwise be a delay in letting you in. The Tuesday lectures will include some interactive components and discussion. The Thursday lectures will primarily be asynchronous (i.e., recorded through Zoom and the video link posted online). This will allow some flexibility in viewing the material. Lectures will be recorded and posted as a back-up in case any student faces technical difficulties. However, students are expected to attend the Tuesday lectures live and there will be a short easy quiz on the material at the end of each Tuesday lecture (and any other live lecture).

The quiz is provided in class and these quizzes are worth 10% of the final mark. (It may also be helpful to create an account through lakeheadu.Zoom.us and download the Zoom app to your desktop in order to access some features of Zoom. In "Profile" on this site you can change your picture and ensure your name is correct.)

Lecture slides will be made available on the course website (MyCourseLink) within approximately 24 hours of the completion of the lecture. Recordings of the lectures through Zoom will be posted on the course website as soon as they are available (usually within 24 hours). Slides will not be emailed to individual students. Slides posted on the site may not be exactly as shown in lectures. There will be material covered in lectures that is not shown on the slides. Students are responsible for attending all live synchronous classes (i.e., Tuesdays), watching the asynchronous lectures (usually on Thursdays) and taking notes, as the slides only contain summaries of some important points. Any supplementary resources will also be made available on MyCourseLink.

Quizzes

Quizzes on the Synchronous Lectures. There will be approximately 10 three-item quizzes based on the live lectures that are usually on Tuesdays (e.g., multiple choice, true/false). It is expected that students will attend these lectures at the scheduled times to get the full experience out of the course. Each quiz should be completed at the end of the Tuesday lecture within class. These quizzes are meant to help consolidate learning and to ensure class attendance and attention. The final deadline for completing each of these quizzes is within 25 minutes of the end of class (i.e., Tuesday @ 4:15 pm) but students should be able to complete them within the last few minutes of class time. The quizzes are completed through a link provided in "class". The lowest two quiz marks will be dropped. This includes any missed quizzes. Thus, if you miss a quiz, please note that there will not be an option to re-write the quiz later. There are no exceptions to this. The quizzes are meant to reflect attendance, participation, and provide extra incentive for students to attend the live lectures.

Exams



There are two examinations in this course and they are non-cumulative. That is, only material covered in readings or lectures since the previous examination will appear on an exam. The exams will likely consist of multiple choice, short-answer, and essay questions; but other formats may be used. The first exam will be written online in class through D2L/MYCOURSELINK (1 hour and twenty minutes). The final exam will be written online during the scheduled examination period in April (2 hours). The exams will be based on the relevant lectures and readings (approximately 50% each). You are equally responsible for material from the lectures and the textbook/readings, as these will only have some overlap.

Note that you will have 33% of your final grade determined by the withdrawal date for the course, which is Friday March 10th, for half-year courses.

Please note that examination dates and holidays are firm dates. However, the dates listed below for the coverage of relevant topics in the course are provisional or tentative. That means it is only a rough or approximate guide. If additional time is needed to cover a topic, we will take extra time. If we find we can move ahead more quickly, we will. Do not rely solely on this list of dates and topics. It is expected that students will attend class to determine where we are in the course and what material will appear on each exam.

Students are expected to be familiar with the university's regulations. For more information about examination regulations, please refer to section IV (Examinations) of the regulations in the academic calendar:

(http://csdc.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=28&chapterid=89 76&loaduseredits=False)

Exams will not be returned to students. Since some exam questions may be used again in other semesters, returning old exams would destroy the security of exams. However, if you have any questions about your examination, you may discuss them with the graduate assistants. Please make an appointment with the GA (Smruthi) by email.

Assignments



The Paper represents a critical examination of the research on a specific topic related to drugs and behaviour. That is, one must identify a specific research question that involves both a psychoactive drug or class of drugs and a behaviour, and then critically evaluate the available research. The chosen drug must have a clear psychoactive effect (i.e., an ability to cross the blood-brain barrier and alter brain functioning) and one must examine the effect of the drug on a specific behaviour (e.g., perception (e.g., vision), mood, cognition (e.g., memory, attention, visuoperceptual ability, verbal ability), sleep, consciousness, mental health etc.). Please ensure that you are examining the effect of the drug on a behaviour or a set of behaviours. Some examples of topics include: How does chronic alcohol use affect memory? What is the impact of acute nicotine use on attention? How does hormone replacement therapy affect women's risk of dementia? Some things to keep in mind when choosing a topic include: (a) more specific behaviours are easier to examine in a paper like this (e.g., examine short-term verbal memory as opposed to just memory, or examine rates of depressive disorders as opposed to general mood), and (b) be sure to distinguish between acute and chronic effects of the drug. Please discuss your topic with the instructor to ensure that your topic is appropriate and that you understand the paper guidelines. Students may complete the paper individually or in pairs. Each student or pair must choose one specific topic and read the relevant research. Five articles must be discussed and cited in the paper and must meet the following criteria: four articles must represent original research studies; one article can be a review article; two of the articles must have a publication date between 2020 and 2023. The best electronic search indexes for this course are PSYCHINFO and PubMed. The purpose of the paper is to review and critique the most relevant research on a particular chosen issue, provide a conclusion based on the research, justify your conclusion, and provide suggestions for future research in the area.

The paper must be 10 to 15 double-spaced typewritten pages (with margins and font as per APA format: 1 inch margins and one of the APA-approved fonts). The entire paper must not be longer than 15 pages (excluding references and title page). APA style must be followed. PDF copies of the full five articles must also be turned in with the paper. Be sure to put your name(s) and student number(s) on the paper. If articles fitting the above listed criteria do not exist for your chosen topic (they should exist for most topics), choose another topic or please contact the instructor or graduate assistants. A tentative marking scheme for the paper is provided in this course outline. Please review this as it provides further details regarding the expectations for this paper. The due date of the paper is to be announced and can be submitted online through D2L within the "Assignments" tab.

Late papers will be deducted 5% per day and will not be accepted after TBA (2 weeks later). Papers submitted more than two weeks after the deadline will result in a mark of 0.



Tentative Course Schedule/Outline						
(Order/content could change throughout the term. Instructor will inform you of any change.)						
Date	Tentative Topic	Text Readings				
January 9 & 11	Introduction & Orientation to Course Caffeine and the Methylxanthines	Chapter 13				
January 16 & 18	Nicotine	Chapter 13*				
January 23 & 25	Psychomotor Stimulants: Cocaine and Amphetamines	Chapter 12				
January 30-February 1	The Opioids	Chapter 11*				
February 6 & 8	Cannabis	Chapter 14*				
February 13	Review and discuss papers					
February 15 - exam	Exam #1 (in class time)					
February 20 - 24	Winter Study Week – No Class					
February 27 - March 1	Hallucinogens, PCP, and Ketamine	Chapters 15				
March 6 & 8	Inhalants and GHB	Chapter 16*				
March 13 & 15	Anxiolytics and Anxiety Disorders Paper Due (March 15th)**	Chapter 17				
March 20 & 22	Antidepressants, Mood Stabilizers, & Affective Disorders	Chapter 18*				
March 27 & 29	Antipsychotics & Schizophrenia	Chapter 19				
April 3 & 5	Discuss articles and review					
Exam Period (April 14th to 28th; 28th is contingency date)	Exam #2 - Final Exam - time/date to be announced					

^{*} Indicates that an additional reading is required (i.e., a journal article). See pages 8-9. Note: Final Date for Withdrawal (Drop) of a winter course is Friday March 10, 2023.



Bonus Points

Students may earn up to a maximum of 3 additional bonus points, added to their final mark, in one of two ways, or in combination:

- Participate in Psychology Department approved research studies that are posted throughout the academic term(s) on http://lupsych.sona-systems.com. An account will be created for students by the end of the 2nd week of classes. Students must complete participation in studies by the last day of class.
- 2. Submit a synopsis* of a recent Psychopharmacology journal article, <u>chosen in consultation with the instructor</u>. This involves choosing a journal article of interest and relevance, published in 2020 onward, writing a <u>500</u>-word (2 pages double spaced) critical commentary about that article, and submitting an e-copy of the synopsis and the article to the instructor by the last day of classes to the instructor at koinonen@lakeheadu.ca. A submitted synopsis is worth three (3) bonus points. Note: A critical commentary must include a discussion of the strengths and limitations of the article.

*The instructor reserves the right to request an in-person virtual conversation with any student to ensure that the synopsis is a product of the student's own work.

Video and Audio Recordings of Class Activities

In Drugs and Behaviour (3115 – WDE), in the context of remote instruction and participation, video and audio recordings of class activities will be made to ensure students' and instructors' easy and comprehensive access to those activities. The recordings are confidential and are intended only for the use of the course students and instructors. They may otherwise **not** be used or disclosed. During recording, to protect others' privacy, each student should ensure that no one else is present in the location where they are being recorded without that non-student's consent. The recordings are made under the authority of sections 3 and 14 of *The Lakehead University Act, 1965*. Questions about the collection of the images and sounds in the recordings may be directed to Dr. Rupert Klein, Chair, Department of Psychology, Lakehead University, rgklein@lakeheadu.ca.

Copyright Issues

Students should be aware that all instructional, reference, and administrative materials prepared for this course are protected in their entirety by copyright. Students are expected to comply with this copyright by only accessing and using the course materials for personal educational use related to the course, and that the **materials cannot be shared in any way**, without the written authorization of the course instructor. If this copyright is infringed in anyway, students may be prosecuted under the Lakehead University Student Code of Conduct – Academic Integrity, which requires students to act ethically and with integrity in academic matters and to demonstrate behaviours that support the University's academic values.

Lakehead University Grading Scale



A+	90-100%	
Α	80-89%	
В	70-79%	
С	60-69%	
D	50-59%	
E Fail	40-49%	
F Fail	1-39%	
F Academic Dishonesty	0%	

Accommodations

Lakehead University is committed to achieving full accessibility for persons with disabilities/medical conditions. Part of this commitment includes arranging academic accommodations for students with disabilities/medical conditions to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability/medical condition and think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please email sas@lakeheadu.ca or visit https://www.lakeheadu.ca/faculty-and-staff/departments/services/sas

Psychology 3115: Drugs and Behaviour Additional Required Readings 2023

The following 5 readings were chosen to expose you to a variety of original research articles in psychopharmacology. The pdfs can be downloaded at the links provided and are also found on the course website. Please copy and paste the link if clicking the link does not work. If the paper does not pop up automatically, you may need to click "download pdf". Each article is *not* intended to be representative of the results of the research in that area. Furthermore, it is not expected that you will understand all of the details of the statistical analyses or the complex methodology in some of the studies. However, it is expected that you have a basic understanding of: (a) the purpose of the study, (b) the methodology, (c) the general results, (d) some strengths and limitations of the study, and (e) the implications of the study for the effects of drugs on behaviour. Reading these articles will help prepare you to understand the research articles that you will need to read and critique for the paper. These articles will be discussed in class and all readings and lecture material could appear on the examinations. It is expected that you will come to class prepared to discuss the articles.

Week 1: Caffeine and the Methylxanthines – No articles

Week 2: Nicotine

Eisenberg, M.J., Filion, K.B., Yavin, D., Belisle, P., Mottillo, S., Joseph, L., Gervais, A., O'Loughlin, J., Paradis, G., Rinfret, S., & Pilote, L. (2008). Pharmacotherapies for smoking cessation: A meta-analysis of randomized controlled trials. *Canadian Medical Association Journal*, 179(2), 135-44. http://www.cmaj.ca/content/cmaj/179/2/135.full.pdf

Week 3: Psychomotor Stimulants: Cocaine and Amphetamines – No articles

Week 4: The Opioids



Clair, J., Martin, L., Bond, A.J., O'Ryan, D., Davis, P., & Curran, H.V. (2009). An experimental study of aggressive and neutral interpretative bias in opiate-dependent and opiate abstinent men. *Journal of Psychopharmacology, 23,* 428-435. doi: 10.1177/0269881108091880

http://jop.sagepub.com/content/23/4/428.full.pdf+html

Week 5: Cannabis

Zammit, S., Allebeck, P., Andreasson, S., Lundberg, I., & Lewis, G. (2002). Self-reported cannabis use as a risk factor for schizophrenia in Swedish conscripts of 1969: Historical cohort study. *British Medical Journal, 325*, 1-5. http://www.bmj.com/content/325/7374/1199.full.pdf

Week 6: Article Discussion and Review

Exam #1 (in class)

Winter Study Week - No Class - No articles

Week 7: Hallucinogens, PCP, and Ketamine - No articles

Week 8: Inhaled Substances and GHB

Bosch, O. G., Eisenegger, C., Gertsch, J., von Rotz, R., Dornbierer, D., Gachet, M. S., Heinrichs, M., Wetter, T. C., Seifritz, E., & Quednow, B. B. (2015). Gamma-hydroxybutyrate enhances mood and prosocial behavior without affecting plasma oxytocin and testosterone. *Psychoneuroendocrinology, 62, 1-10.* https://www.clinicalkey.com/service/content/pdf/watermarked/1-s2.0-S0306453015004011.pdf?locale=en_US

Week 9: Anxiolytics and Anxiety Disorders - No articles

Week 10: Antidepressants, Mood Stabilizers, & Affective Disorders

Read, J. (2020). How common and severe are six withdrawal effects from, and addiction to, antidepressants? The experiences of a large international sample of patients. *Addictive Behaviors*, 102, 1-8. https://doi.org/10.1016/j.addbeh.2019.106157

Week 11: Antipsychotics & Schizophrenia - No articles

Week 12: Extra Material, Discuss articles, & Review



Tentative Marking Scheme for Psychology 3115 Paper

1) APA Style -proper referencing in the reference list -proper referencing in the text	/10
-title page format, proper page numbering, header, running head-paper should comply with all aspects of APA style as described in the APA manual	
2) Paper Organization and Structure -should be easy to follow and understand -should contain a title page, abstract, the main body of the paper, and a reference section (as per APA style) -overall paper structure and paragraph structure	/10
 3) Appropriateness of Topic and Articles -paper must examine either the effect of a specific psychoactive drug or class of psychoactive drugs on a particular behaviour (as indicated in the course outline) -articles must be from peer-reviewed journals -articles must be included with the paper (full articles) -unless previous permission was given, articles must meet specific criteria: a) at least 4 original research studies b) 1 review article is allowed c) 2 of 5 articles must have a publication date between 2020 and 2022 	/10
4) Evidence of Critical Thinking -critical examination of the 5 studies -a discussion of strengths and weaknesses of the studies -evidence of the ability to make connections and note discrepancies between the studies -provide suggestions for future research	/10
5) Writing Quality -grammar, punctuation, spelling -a scientific objective writing style (do not write in the first person, use other journal articles and the APA manual as a guideline) -orderly presentation of ideas, precision and clarity, smoothness of expression	/10
6) Overall Quality of the Paper	/50
FINAL MARK =	/100

<u>General Suggestions for the Paper:</u> (1) Learn how to search Psychinfo and Pubmed for relevant articles, and how to obtain the articles online, in the library, or through interlibrary loan (or *Racer*). (2) Order or obtain your articles very early to ensure that they are appropriate. (3) Meet with the GAs or professor to ensure that your topic and articles are appropriate.



Course Policies in the Department of Psychology

The following policies apply to all courses offered by the Department of Psychology. Students are expected to be familiar with these policies and abide by them.

Academic Integrity

A breach of Academic Integrity is a serious offence. The principle of Academic Integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should view the Student Code of Conduct - Academic Integrity for a full description of academic offences, procedures when Academic Integrity breaches are suspected and sanctions for breaches of Academic Integrity.

https://www.lakeheadu.ca/students/student-life/student-conduct/academic-integrity/node/51239

Classroom Behaviour

Arrive on time, stay for the duration, and do not become a source of distraction. Personal computer use is welcome if it relates to the course. Sound on computers and cell phones must remain muted. Unless otherwise stated by the Instructor, students are prohibited from making audio or video recordings of lectures or taking pictures of lecture material.

Email Communication

All email communication from the Department of Psychology and from course Instructors will be sent to students' email addresses provided by Lakehead University (i.e., your "userid@lakeheadu.ca" email address). Students are expected to regularly check their email to make sure that they stay up to date with course news, Department information, and events. All Instructors and administrative personnel may be contacted by email at "firstname.lastname@lakeheadu.ca." Emails need to be prepared in a clear and courteous manner.

Instructor Offices Hours

All Psychology faculty provide regular office hours whereby students can expect to meet individually with their Instructor. Do take advantage of this opportunity, especially in circumstances where email communication cannot substitute for face-to-face contact with your Instructor.

Examinations

All tests/examinations must be written on the scheduled day and time as noted on the course outline or on the final exam schedule. Students who miss exams without a valid reason will receive a mark of "0" for that exam. When a student knows in advance that he/she will miss an exam, or in the case of a missed exam due to unexpected reasons, the Instructor must be notified as soon as possible. Following a review of the circumstances, alternative arrangements may be considered by the Instructor if the reason is determined to be valid. All electronic communication devices (e.g., laptop computers, cell phones, etc.) are strictly prohibited during examinations unless previously approved by the Instructor. Samples of final examinations



are typically available on D2L.

APA Formatting

The Department of Psychology follows the guidelines of the American Psychological Association (more commonly known as APA) as the standard method of formatting for all submitted written work, unless otherwise stated by an Instructor. Students should refer to the course material (course outline, assignment instructions, D2L, etc.) for specific instructions and guidance to ensure that documents are formatted properly. Our library provides guidance at http://libguides.lakeheadu.ca/cite/APA and in-person through their Writing Centre.

Research Participation

Some Instructors allow students to earn bonus points toward their final grade in return for voluntary participation in Psychology research studies. Your Instructor will advise you at the beginning of the course. Students should regularly check https://lupsych.sona-systems.com to see what opportunities are available.

Contacts

Dr. Stroink, Chair

Jennifer Liscomb, Psychology Program Coordinator

Psychology Administrative Assistant

Faculty of Health and Behavioural Sciences (Dean's office)

mirella.stroink@lakeheadu.ca
grad.psych@lakeheadu.ca
admin.psych@lakeheadu.ca
Human Resources

Additional Supports for Students – there are many resources available to support students. These include but are not limited to:

- Health and Wellness
- Student Success Centre
- Student Accessibility Centre
- Library
- Lakehead International
- Indigenous Initiatives