

**PSYC/NEURO 475**
**Drugs and Behaviour**
**Fall 2018**

<b>Instructor:</b>	Victoria Smith	<b>Lecture Location:</b>	SA 247
<b>Email:</b>	smithvm@ucalgary.ca	<b>Lecture Days/Time:</b>	M/W/F 10:00-10:50
<b>Office:</b>	Admin 155B		
<b>Office Hours:</b>	Email for an appointment		

### Course Description

The behavioural effects of drugs specifically employed to affect the nervous system, as seen in the treatment of mental disorders, behavioural disorders, and other conditions such as Parkinson's, Huntington's and Alzheimer's diseases. Neuro-pharmacologic agents will be discussed as they relate to the biochemistry and physiology of putative neurotransmitter systems.

### Course Learning Outcomes

The Department of Psychology is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes they facilitate (see [psyc.ucalgary.ca/undergraduate/program-learning-outcomes](http://psyc.ucalgary.ca/undergraduate/program-learning-outcomes)), and the expected level of achievement.

Course Learning Outcomes	Assessment Methods	PLO(s)	Level(s)
Explain the mechanisms of drug action	Exams, assignments and term paper	1,4,5	A,C,A
Explain how different drugs interact with nervous system function	Exams and term paper	1,4,5	A,C,A
Explain the effect of drugs on behaviour	Exams and term paper	1,4,5	A,C,A
Evaluate methods and findings from behavioural pharmacological studies using human and non-human subjects	Assignments and term paper	1,2,4,5,7	A,A,A,A,A
Outline the theories and mechanisms of drug addiction	Exams and term paper	1,4,5,7	C,C,A,A
Outline the theories and mechanisms of the major substances of abuse	Exams and term paper	1,4,5,7	C,C,A,A
Explain the neurobiology of neuropsychiatric and neuro-degenerative disorders and drugs used to treat these disorders	Exams and term paper	1,4,5,7	C,C,A,A

Notes. PLOs = Program-Learning Outcomes: 1 = demonstrate knowledge of psychological sciences, 2 = think critically and solve problems, 3 = conduct research and analyze data, 4 = communicate effectively, 5 = demonstrate information literacy, 6 = understand and implement ethical principles, 7 = apply psychological knowledge and skills. Level of PLO achievement facilitated by this course: I = introductory, C = competency, A = advanced.

### Prerequisites

Psyc 312 – Experimental Design and Quantitative Methods for Psychology

Psyc 375 – Brain and Behavior

## Required Text

Meyer, J.S. & Quenzer, L.F. (3<sup>rd</sup> Ed). Psychopharmacology: Drugs, the Brain and Behavior. Sinauer Associates, Inc. Available in the bookstore, or as hardcopy or e-copy from publisher.

## Assessment Methods

Midterm 1	Oct. 3	Chapters 1-4, 9	25%
Midterm 2 (non-cumulative)	Nov. 7	Chapters 5, 6, 8, 10, 12, 15, 17-20	25%
Final Exam (non-cumulative)	Dec. 10-20	Chapters 7, 11, 13, 14, 20	25%
Term Paper	Nov. 23		20%
Topic approval	Oct. 12 @ 10pm (by email)		
Small Assignments	Sept. 21	Pharmacokinetics/Pharmacodynamics	2%
	Oct. 17	Article Summary	3%

### Exam format:

Midterms and final exam are all non-cumulative. Each exam will be based on the material from the chapters covered and lecture content. The tests will consist of multiple choice questions, short answer/definitions/matching/etc., and longer answer questions (which may include a diagram or several sentences). No aids (eg. Notes, textbook, cell phone, iPad, etc.) are allowed during the exam. A pencil must be used for multiple choice scantron questions, and either pencil or pen may be used to complete written questions.

### Small Assignments:

1. Pharmacokinetics and Pharmacodynamics Questions (2%) Due Sept. 21
  - Consists of a few short questions, potentially requiring calculations or up to 5 sentences to answer each question
2. Article Summary (3%) Due Oct. 17
  - Choose a journal article used in one of the textbook chapters covered
  - Summarize the article (including a brief background, methods, results, implications and conclusions)
  - Include a copy of the full article with your submission
  - Maximum 3 pages double-spaced
  - Evaluation: completeness and quality of summary, demonstration of understanding of the article

Small assignments are due at the beginning of class. Assignments submitted after 10:05 will be considered late. Late penalty is 5% per day (including weekends). Emailed copies will not be accepted.

### Term paper:

Due Nov. 23

The purpose of this paper is to practice and improve your writing skills, and to further your knowledge of the subject matter of this course.

Select a paper topic based on anything related to the course content. Topics can be related to a psychological or physiological disorder, which involves a drug treatment or a neurotransmitter system covered in class, or a drug of abuse. Complete a literature review related to your topic, as well as some potential implications or treatment options relevant to your topic.

Proposed paper topics must be submitted no later than 10 pm on Oct. 12, by email, to be approved by the course instructor. Late submissions will incur a penalty of 5% per day (including weekends). Topic approval will account for 5% of the Term Paper grade.

Term papers should be written in APA style, and approximately 10 pages double-spaced in length (page length does not include title page, or references). Please include a title page and a reference section (minimum 10 academic references). Please do not use webpages as references. An abstract is not necessary.

Term papers are due November 23 at the beginning of class. Papers submitted after 10:05 will be considered late. Late penalty is 5% per day (including weekends). Emailed copies will not be accepted for the final term paper. Term Papers will be evaluated both on content (~80%) as well as style (~20%)

### **Department of Psychology Criteria for Letter Grades**

Psychology professors use the following criteria when assigning letter grades:

**A+ grade: *Exceptional Performance.*** An A+ grade indicates near perfect performance on multiple choice and short answer exams. For research papers/essays/course projects/presentations, an A+ grade is awarded for exceptional work deserving of special recognition and is therefore not a common grade.

**A, A- Range: *Excellent Performance.*** Superior understanding of course material. Written work is very strong in terms of critical and original thinking, content, organization, and the expression of ideas, and demonstrates student's thorough knowledge of subject matter.

**B Range: *Good Performance.*** Above average understanding of course material. Written work shows evidence of critical thinking and attention to organization and editing but could be improved in form and/or content.

**C Range: *Satisfactory Performance.*** Adequate understanding of course material. Knowledge of basic concepts and terminology is demonstrated. Written work is satisfactory and meets essential requirements but could be improved significantly in form and content. Note: All prerequisites for courses offered by the Faculty of Arts must be met with a minimum grade of C-.

**D range: *Marginally meets standards.*** Minimal understanding of subject matter. Written work is marginally acceptable and meets basic requirements but requires substantial improvements in form and content. Student has not mastered course material at a level sufficient for advancement into more senior courses in the same or related subjects.

**F grade: *Course standards not met.*** Inadequate understanding of subject matter. Written work does not meet basic requirements. Student has not demonstrated knowledge of course material at a level sufficient for course credit.

### **Grading Scale**

A+	96-100%	B+	80-84%	C+	67-71%	D+	54-58%
A	90-95%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades.

To determine final letter grades, final percentage grades will be rounded up or down to the nearest whole percentage (e.g., 89.5% will be rounded up to 90% = A but 89.4% will be rounded down to 89% = A-).

### Tentative Lecture Schedule

Ideally in table format with date of class, topics to be covered, and chapters/readings to be read. Due dates for tests/exams and assignments should be included in this schedule as well.

Date	Topic/Activity/Readings/Due Date	Readings
F Sep 7	Principles of Pharmacology: Pharmacokinetics <i>University Lectures begin.</i>	Chapter 1
M Sep 10	Principles of Pharmacology: Pharmacokinetics	Chapter 1
W Sep 12	Principles of Pharmacology: Pharmacodynamics	Chapter 1
R Sep 13	<i>Last day to drop full courses (Multi-term) and Fall Term half courses. No refunds for full courses (Multi-term) or Fall Term half courses after this date.</i>	
F Sep 14	Principles of Pharmacology: Pharmacodynamics <i>Last Day to Add Classes</i>	Chapter 1
M Sep 17	Synaptic Transmission: Cells and Organization of the Nervous System	Chapter 2
W Sep 19	Synaptic Transmission: Receptors and Signal Transduction, Synapses and Neurotransmitters	Chapter 2 & 3
F Sep 21	Synaptic Transmission: Synapses and Neurotransmitters <b>Short assignment 1 due at beginning of class.</b> <i>Fee payment deadline for Fall Term full and half courses.</i>	Chapter 3
M Sep 24	Principles and Techniques of Behavioural Pharmacology	Chapter 4
W Sep 26	Theories of Addiction	Chapter 9
F Sep 28	Theories of Addiction	Chapter 9
M Oct 1	Theories of Addiction	Chapter 9
W Oct 3	<b>Midterm 1 (Chapters 1-4, 9)</b>	
F Oct 5	Catecholamines	Chapter 5
M Oct 8	<i>Thanksgiving Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.</i>	
W Oct 10	Psychostimulants: Cocaine	Chapter 12
F Oct 12	Psychostimulants: Amphetamines <b>Last day for Term Paper topic to be submitted for approval (by 10pm)</b>	Chapter 12
M Oct 15	Schizophrenia	Chapter 19
W Oct 17	Parkinson's Disease <b>Short Assignment 2 due at beginning of class</b>	Chapter 20
F Oct 19	Serotonin	Chapter 6
M Oct 22	Hallucinogens: LSD, PCP, Ketamine	Chapter 15
W Oct 24	Disorders of Anxiety and the drugs used to treat them	Chapter 17
F Oct 26	Affective Disorders: Antidepressants and Mood Stabilizers	Chapter 18
M Oct 29	Glutamate	Chapter 8
W Oct 31	GABA	Chapter 8
F Nov 2	Alcohol	Chapter 10
M Nov 5	Alcohol	Chapter 10

W Nov 7	<b>Midterm 2 (Chapters 5, 6, 8, 10, 12, 15, 17-20)</b>	
F Nov 9	Acetylcholine	Chapter 7
Nov 11-17	<i>Reading Days. No lectures.</i>	
M Nov 12	<i>Remembrance Day (Observed). University Closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.</i>	
M Nov 19	Nicotine and Caffeine	Chapter 13
W Nov 21	Alzheimer's Disease	Chapter 20
F Nov 23	Alzheimer's Disease <b>Term Paper due (at start of lecture)</b>	Chapter 20
M Nov 26	Alzheimer's Disease	Chapter 20
W Nov 28	Opioids	Chapter 11
F Nov 30	Opioids	Chapter 11
M Dec 3	Marijuana and the Cannabinoids	Chapter 14
W Dec 5	Marijuana and the Cannabinoids	Chapter 14
F Dec 7	Marijuana and the Cannabinoids <i>Fall Term Lectures End. Last day to withdraw with permission from Fall Term half courses.</i>	Chapter 14
Dec 10-20	<i>Fall Term Exam Period.</i>	

#### **Reappraisal of Graded Term Work** <http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the paper re-graded as follows. The student shall discuss the work with the instructor **within fifteen days** of being notified about the mark or of the item's return to the class. If not satisfied, the student shall **immediately** take the matter to the Director of Undergraduate Studies who will arrange for a reassessment of the work **within the next fifteen days**. Students in faculties without a departmental structure should take the matter to the dean or the associate/assistant dean (Academic/Student Affairs) of the faculty offering the course. The result of that reassessment should be given to the student in writing. ***The reappraisal of term work may cause the grade to be raised, lowered or to remain the same.***

#### **Reappraisal of Final Grade** <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

In the reappraisal of a final grade, the only element that will be considered is the grading of the final assessment that makes up the final mark (e.g., final examination, final project, final paper). An exception may occur when the Instructor of Record evaluates a piece of graded term work at the end of the term; that grade may also be considered in a reappraisal of final grade.

A student wishing a reappraisal of a final grade should first attempt to review the final assessment with the department or faculty offering the course. After which, the student shall obtain a Reappraisal of Final Grade form from [ucalgary.ca/registrar](http://ucalgary.ca/registrar) (under Student Forms). Students must indicate exactly what error was made in marking the final assessment and/or in computing the final grade. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected.

Students wishing a reappraisal of a final grade (excluding Law courses) must submit their request by the following dates:

Fall Term – March 1

Winter Term – June 30

Spring Intersession – August 15

Summer Term – October 15

Supplemental Examinations: 30 calendar days from the date the examination was written

The reappraisal form shall be submitted to Enrolment Services who will forward it to the department head or dean of the faculty offering the course. Reappraisals of final grades are dealt with by the head of the academic unit in consultation with members of academic staff. Normally, the department/faculty will respond to a reappraisal request within thirty calendar days of its initiation. After the reappraisal is completed, the department shall return the form to the Registrar's Office who shall inform the student in writing of the decision. ***Students should be aware that the grade being reappraised may be raised, lowered or remain the same. A student may request a reappraisal of final grade only twice in one academic year (September 1 – August 31).***

### **Plagiarism and Other Academic Misconduct**

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct <http://www.ucalgary.ca/pubs/calendar/current/k-5.html>.

### **Academic Accommodations**

The student accommodation policy can be found at: [ucalgary.ca/access/accommodations/policy](http://ucalgary.ca/access/accommodations/policy). Students needing an Accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities [ucalgary.ca/policies/files/policies/student-accommodation-policy](http://ucalgary.ca/policies/files/policies/student-accommodation-policy). Students needing an Accommodation based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the instructor.

### **Seating During Exams**

Instructors and exam invigilators are free to ask students to move seats before an exam begins or even during an exam. Students must comply with this request and refusal to do so may warrant a charge of academic misconduct.

### **Absence From A Test/Exam**

Makeup tests/exams are **NOT** an option without an official University medical excuse (see the University Calendar). A completed Physician/Counselor Statement will be required to confirm absence from a test/exam for health reasons; the student will be required to pay any cost associated with this Statement. Students who miss a test/exam have up to 48 hours to contact the instructor and to schedule a makeup test/exam. Students who do not schedule a makeup test/exam with the instructor within this 48-hour period forfeit the right to a makeup test/exam. At the instructor's discretion, a makeup test/exam may differ significantly (in form and/or content) from a regularly scheduled test/exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup test/exam must be written within 2 weeks of the missed test/exam during exam make-up hours provided by the department <http://psychology.ucalgary.ca/undergraduate/exam-and-course-information#mues>. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final).

### **Travel During Exams**

Consistent with University regulations, students are expected to be available to write scheduled exams at any time during the official December and April examination periods. Requests to write a make-up exam because of conflicting travel plans (e.g., flight bookings) will NOT be considered by the department. Students are advised to wait until the final examination schedule is posted before making any travel arrangements. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final). Students with an exceptional extenuating circumstance (e.g., a family emergency) should contact the Department of Psychology ([psyugrd@ucalgary.ca](mailto:psyugrd@ucalgary.ca)).

### **Freedom of Information and Protection of Privacy (FOIP) Act**

The FOIP legislation disallows the practice of having student's retrieve tests and assignments from a public place. Therefore, tests and assignments may be returned to students during class/lab, or during office hours, or will be made available only for viewing during exam review sessions scheduled by the Department. Tests and assignments will be shredded after one year. Instructors should take care to not link students' names with their grades, UCIDs, or other FOIP-sensitive information.

### **Acknowledgments and Respect for Diversity**

Our classrooms view diversity of identity as a strength and resource. Your experiences and different perspectives are encouraged and add to a rich learning environment that fosters critical thought through respectful discussion and inclusion. The Department of Psychology would also like to acknowledge the traditional territories of the people of the Treaty 7 region in southern Alberta. The City of Calgary is also home to Métis Nation of Alberta, Region III.

### **Wellness and Mental Health Resources**

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed.

We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy website (<http://www.ucalgary.ca/mentalhealth/>).

### **Course Credits for Research Participation (Max 2% of final grade)**

Students in most psychology courses are eligible to participate in Departmentally approved research and earn credits toward their final grades. **A maximum of two credits (2%) per course, including this course, may be applied to the student's final grade. Students earn 0.5% (0.5 credits) for each full 30 minutes of participation.** The demand for timeslots may exceed the supply in a given term. Thus, students are not guaranteed that there will be enough studies available to them to meet their credit requirements. Students should seek studies early in the term and should frequently check for open timeslots. Students can create an account and participate in Departmentally approved research studies at <http://ucalgary.sona-systems.com>. The last day to participate in studies and to assign or reassign earned credits to courses is **Dec 7, 2018**.

### **Evacuation Assembly Point**

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at

<http://www.ucalgary.ca/emergencyplan/assemblypoints>

Please check this website and note the nearest assembly point for this course.

### **Student Organizations**

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in Administration 130 and may be contacted at 403-220-5567.

**Student Union VP Academic:** Phone: 403-220-3911 [suypaca@ucalgary.ca](mailto:suypaca@ucalgary.ca)

**Student Union Faculty Rep.:** [arts1@su.ucalgary.ca](mailto:arts1@su.ucalgary.ca)

### **Student Ombudsman's Office**

The Office of the Student Ombudsmen provides independent, impartial and confidential support for students who require assistance and advice in addressing issues and concerns related to their academic careers. The office can be reached at 403-220-6420 or [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca)

(<http://www.ucalgary.ca/provost/students/ombuds>)

### **Safewalk**

The safewalk program provides volunteers to walk students safely to their destination anywhere on campus. This service is free and available 24 hrs/day, 365 days a year.

Call 403-220-5333.

### **Important Dates**

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **September 13, 2018**. Last day to add a course is **September 14, 2018**. The last day to withdraw from this course is **December 7, 2018**.