



Department of Psychology
Psychology 475 (L01) – Behavioral Pharmacology
Winter 2010 – Course Outline

Instructor:	Brian H. Bland	Lecture Location:	Admin 253
Phone:	403-220-4948	Lecture Days/Time:	T/R 11:00 – 12:15
Email:	bhbland@ucalgary.ca		
Office:	Admin 032		
Office Hours:	By Appointment		

Course Description and Goals

The behavioural effects of drugs specifically employed to affect the nervous system, as seen in the treatment of mental disorders, behavioural disorders, and other pathological conditions such as Parkinson's disease, and Schizophrenia. Neuro-pharmacologic agents will be discussed as they relate to the biochemistry and physiology of neurotransmitters.

Prerequisites

PSYC 312 – Experimental Design and Quantitative Methods for Psychology, and PSYC 375 – Brain and Behaviour, or consent of the Department.

Required Text

Drugs and Human Behaviour, David M. Grilly (2006) 5th Ed. Allyn and Bacon. Available at the bookstore.

Evaluation

Mid-term Exam (30%). Multiple-choice and short-essay questions. Part 1 of lectures and Chapters 1 to 5.

Final Exam (40%). Multiple-choice and short-answer essay questions. Part 2 of lectures and Chapters 6, 7, 12, and 14 (Parkinson's Disease).

Essay (30%). Topic of your choice in Behavioural Neuroscience. Length should be 10-12 double-spaced pages in a scientific review format (e.g. Brain Research Reviews). Due November 23. Emailed assignments will not be accepted. Late assignments will be assessed a penalty of 10% per day (including weekends).

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

Date	Topic/Activity/Readings/Due Date (revise and add columns as necessary)
T Jan 12	Part 1. Electrical properties of neurons A. Axonal physiology (the membrane potential and the action potential) The organization of signaling in neurons
R Jan 14	The concept of excitability Membrane potential
M Jan 18	Resting potential Depolarization Hyperpolarization
T Jan 19	The action potential Chemical and electrical forces and the Nernst equation The Goldman equation
R Jan 21	Voltage -dependent Conduction of the action potential
F Jan 22	Last day to drop a course with no W grade and tuition refund.
T Jan 26	Last day for registration/change of registration. B. The Synapse Polarization of chemical synapses Types of chemical synapses Vesicles Patterns of connections
R Jan 28	C. Synaptic Potentials Depolarizing (EPSP) and hyperpolarizing (IPSP) potentials Synaptic integration Current flow during IPSP's and EPSP's
T Feb 2	Presynaptic factors controlling transmitter release Nature of transmitter release
R Feb 4	D. Neurotransmitters and neuromodulators Identification of neurotransmitters and neuromodulators
T Feb 9	Co-existence of neurotransmitters Transmitter reception Time course of action Some specific transmitters highlighted (ACh, NE)
R Feb 11	Some specific transmitters highlighted (DA, 5-HT, and GABA)
T Feb 16	Reading Days. No lectures.
R Feb 18	Reading Days. No lectures.
T Feb 23	Midterm Exam
R Feb 25	A. Parkinson's Disease Historical remarks Clinical features
T Mar 2	Basal ganglia and Parkinsonism

	<ul style="list-style-type: none"> i) inputs to striatum ii) outputs from striatum
R Mar 4	<ul style="list-style-type: none"> iii) putative neurotransmitters in basal ganglia pathways iv) dopamine changes in Parkinsonism v) changes in HVA, TH, and DDC vi) functional consequences of striatal DA deficiency <p>Compensated and decompensated stages Involvement of other neurotransmitters</p>
T Mar 9	<p>The MPTP story</p> <ul style="list-style-type: none"> i) MPTP conversion to MPP+ ii) Prevention of MPTP-induced Parkinsonism by pargyline
R Mar 11	<p>Therapeutic aspects</p> <ul style="list-style-type: none"> i) classic levo-dopa therapy ii) Deep Brain Stimulation (DBS)
T Mar 16	<p>B. Schizophrenia</p> <p>Background Clinical features</p> <ul style="list-style-type: none"> i) Schneider's first rank symptoms ii) positive and negative symptoms iii) introduction to neuroleptics
R Mar 18	<p>Neurohumoural hypotheses</p> <ul style="list-style-type: none"> i) Serotonin deficiency ii) NE deficiency iii) DA overactivity
T Mar 23	<ul style="list-style-type: none"> iv) Monoamine oxidase deficiency v) GABA deficiency vi) LSD and amphetamine psychoses vii) Mechanism of action of amphetamine
R Mar 25	<p>Essay Due</p> <p>Neurochemistry</p> <ul style="list-style-type: none"> i) Serotonin hypothesis ii) NE hypothesis iii) DA hypothesis
T Mar 30	<ul style="list-style-type: none"> iv) GABA deficiency hypothesis
R Apr 1	<p>Chronic schizophrenia and the "defect state"</p>
T Apr 6	<p>Chemical and structural changes</p>
R Apr 8	<ul style="list-style-type: none"> two syndromes ii) relationship between the two syndromes
T Apr 13	<p>Aetiology Summary</p>
R Apr 15	<p>Last day to participate in research and allocate research credits</p>
F Apr 16	<p>Winter Session Lectures end. Last day to withdraw.</p>
M Apr 19 – R Apr 29	<p>Final exam (scheduled by the Registrar)</p>

Reappraisal of Grades

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 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 Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

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.

Academic Accommodation

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

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 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.

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 (2) 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 **April 15, 2010**.

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 170 and may be contacted at 403-220-5567.

Student Union VP Academic:	Phone: 403-220-3911	suypaca@ucalgary.ca
Student Union Faculty Rep.:	Phone: 403-220-3913	socialscirep@su.ucalgary.ca

Important Dates:

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Jan 22nd, 2010**. Last day for registration/change of registration is **Jan 26th, 2010**. The last day to withdraw from this course is **Apr 16th, 2010**.