

PSYC 478

Behavioural Neuroscience

Winter 2017

Instructor:	Dr. Simon Spanswick	Lecture Location:	SA 109
Phone:	403-220-4948	Lecture Days/Time:	MWF 10:00 – 10:50
Email:	scspansw@ucalgary.ca	Lab 01: AD047	T 14:00 – 16:45
Office:	A032	Lab 02: AD047	R 14:00 – 16:45
Office Hours:	Email me to arrange a convenient time	TAs:	Jhen Shankara Tristan Hynes

Course Description

The principle function of the nervous system is to produce behaviour. Thus, the goal of most behavioural work with laboratory animals in neuroscience is to understand how the nervous system produces behaviour and how experience changes the functioning of the nervous system. Understanding brain-behaviour relationships also offers a way to find treatments for dysfunctions of behaviour.

This course has multiple objectives that include, but are not limited to, the following;

- 1) Introduce students to the field of behavioural neuroscience.
- 2) Describe the organization and complexity of rodent behaviour.
- 3) Familiarize students with multiple behavioural apparatus and behavioural tests.
- 4) Relate behaviours to localized regions of the brain.
- 5) Provide students with hands on experiential learning opportunities with rodents.

Most students do find that taking the course is a worthwhile experience but there is no doubt that it requires real work. The course is considered as, and taught as, a senior-level course.

The laboratory component of this course involves the compassionate use of animals (rats). Most students find this hands-on learning experience valuable and exciting. The work is approved by the Life and Environmental Sciences Animal Care Committee and adheres to the guidelines laid down by the Canadian Council on Animal Care. **Intentional abuse and mistreatment of animals will not be tolerated.** Such abuse constitutes Academic Misconduct, and will result in a failing grade in the course. Students who are uncomfortable or nervous about handling animals should discuss their concerns with the instructor or TA.

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), and the expected level of achievement.

Course Learning Outcomes	PLO(s)	Level(s)
Compare the history and philosophy of behavioural neuroscience.	1, 2	C
Appraise the organization and complexity of rodent behaviour.	1, 5	A
Implement multiple behavioural tests using a variety of behavioural apparatuses.	3, 6	C
Relate behaviours to localized regions of the brain.	1, 3, 4	A
Perform hands-on experiments with rodents.	3, 4, 6	C, 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 – Principles of Psychology

Psyc 375 – Brain and Behaviour

Recommended Text

The Behaviour of the Laboratory Rat: A handbook with tests. Edited by Ian Q. Whishaw and Bryan Kolb, Oxford University Press, 2005. Available for free online using the link below:

<http://www.oxfordscholarship.com.ezproxy.lib.ucalgary.ca/oso/public/content/neuroscience/9780195162851/toc.html>

Evaluation

Exams

Midterm #1 (Lectures 1-9; January 30 th):	15%
Midterm #2 (Lectures 10-20; March 6 th):	15%
Final Exam (Lectures 21-35; TBA)	20%

Exams will be short answer and cover lecture and reading material up to the exam date. The midterms and final exam will not be cumulative. Short answer questions will be graded such that half marks will be given if it is clear you know the general answer but have omitted specific details. Full marks will be given to those that include specifics, and employ the correct terminology and concepts. No books, notes, computers, calculators, or cellular phones will be allowed during exams.

Class Assignment

Student presentations (Mar 31 st – Apr 12 th)	10%
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A short (7-8) minute presentation describing a behavioural neuroscience experiment selected and designed by the student. The presentation should be in a proposal format. Due to time constraints missed presentations cannot be made up and will receive a zero.

Lab Assignments

Lab assignments should be 8-10 pages in length (double spaced), and will be based on prior laboratory and lecture material. Assignments should be prepared according to the style of the Journal of Neuroscience (http://www.jneurosci.org/site/misc/ifa_organization.xhtml). Late assignments will be penalized 10% per day, including weekends. The due dates and weighting for the assignments are as follows:

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|---|----|
| 1. Adult Behaviour (due in lab Feb 7,9) | 8% |
| 2. Maternal Behaviour (due in lab Feb 28, Mar 2) | 8% |
| 3. Stroke (due in lab Mar 14,16) | 8% |
| 4. Fear, anxiety, depression (due in lab Mar 28,30) | 8% |
| 5. Learning and Memory (due Apr 12) | 8% |

A physical copy of each assignment should be handed in at the beginning of the corresponding lab section. Students must achieve a passing grade on both the class and lab components to pass this course.

Department of Psychology Grade Distribution Policy

The distribution of grades in Psychology courses (the percentage of A grades, B grades, etc.) will be similar to the distribution of grades in other courses in the Faculty of Arts. The Department monitors the grade distributions of 200-, 300-, and 400-level courses in the Faculty to ensure that the grade distributions in Psychology courses are comparable. Based on these reviews, students can expect that 1) up to 30% of grades in 200- and 300-level psychology courses will be "A" grades (A+, A, and A-), and 2) up to 40% of grades 400-level psychology courses will be "A" grades.

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

Date	Topic/Activity/Readings/Due Date (revise and add columns & rows as necessary)
M Jan 09	Introduction to the course
W Jan 11	History/Philosophy
F Jan 13	History/Philosophy
M Jan 16	History/Philosophy
W Jan 18	General Behaviour (movement)
F Jan 20	<i>Last day to drop Winter Term half-courses.</i> General Behaviour (movement)
M Jan 23	<i>Last day to add or swap Winter Term half courses.</i> <i>Last day for change of registration from audit to credit or credit to audit.</i> General Behaviour (vision)
W Jan 25	General Behaviour (vision/foraging)
F Jan 27	<i>Fee payment deadline for Winter Term fees.</i> Skilled Behaviour
M Jan 30	Midterm #1 (Lectures 1-9)
W Feb 1	Skilled Behaviour
F Feb 3	Sex
M Feb 6	Sex/Maternal Behaviour
W Feb 8	Maternal Behaviour/Development
F Feb 10	Development
M Feb 13	Circadian Rhythms
W Feb 15	Circadian Rhythms
F Feb 17	Circadian Rhythms
Feb 19-26	<i>Reading Week. No lectures. University open (except Family Day).</i>

M Feb 20	<i>Alberta Family Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.</i>
M Feb 27	Stroke/Lesion
W Mar 1	Stroke/Lesion
F Mar 3	Stroke/Lesion
M Mar 6	Midterm #2 (Lectures 10-20)
W Mar 8	Fear/Anxiety/Depression
F Mar 10	Fear/Anxiety/Depression
M Mar 13	Fear/Anxiety/Depression
W Mar 15	Learning and Memory (spatial learning)
F Mar 17	Learning and Memory (spatial learning)
M Mar 20	Learning and Memory (spatial learning)
W Mar 22	Learning and Memory (object recognition)
F Mar 24	Learning and Memory (object recognition)
M Mar 27	Putting it all together
W Mar 29	Putting it all together
F Mar 31	Student presentations
M Apr 3	Student presentations
W Apr 5	Student presentations
F Apr 7	Student presentations
M Apr 10	Student presentations
W Apr 12	<i>Winter Term Lectures End.</i> <i>Last day to withdraw from full courses and Winter Term half courses.</i> Student presentations
F Apr 14	<i>Good Friday. No Classes. University Closed</i>
Apr 15-26	Winter Term Final Examinations.

Tentative Lab Schedule

Week	Lab	Assignment due
Jan 9 – 13	No labs	
Jan 16 – 20	1. Handling	
Jan 23 – 27	2. General behaviour	
Jan 30 – Feb 3	3. Skilled behaviour	
Feb 6 – 10	4. Maternal behaviour	Adult behaviour
Feb 13 – 17	5. Drinking	
Feb 20 – 24	Reading Days. No labs	
Feb 27- Mar 3	6. Surgery Demonstration	Maternal behaviour
Mar 6 – 10	7. Post stroke motor behaviour	
Mar 13 – 17	8. Fear, anxiety, and depression	Stroke
Mar 20 – 24	9. Spatial learning	
Mar 27 – 31	10. Object recognition	Fear, anxiety, depression

Apr 3 – Apr 7	No labs	
Apr 12	Assignment dropped off at Psychology office by 4:30 pm.	Learning and memory

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; no reappraisal of term work is permitted after the 15 days. 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

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services ; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ualgary.ca/access/. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at http://www.ualgary.ca/policies/files/policies/student-accommodation-policy_0.pdf . 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 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-review-and-makeup-exams>. 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. Under no circumstances will this be accommodated by the department.

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. Under no circumstances will this be accommodated by the department.

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.

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 **April 12, 2017**.

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:
Student Union Faculty Rep.:

Phone: 403-220-3911

suvpaca@ucalgary.ca
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 (<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 **January 20, 2017**. Last day for registration/change of registration is **January 23, 2017**. The last day to withdraw from this course is **April 12, 2017**.