

PSYC/NEUR478

Behavioural Neuroscience

Fall 2015

Instructor:	Dr. Michael Antle	Lecture Location:	ST061
Phone:	403-220-2574	Lecture Days/Time:	MWF 10-10:50am
Email:	antlem@ucalgary.ca	Lab Location:	A048/51
Office:	A018	Lab Time:	W,F 13:00-15:50
Office Hours:	By appointment, or whenever my door is open	TA:	Jhen Vijaya Shankara
		TA email:	jhenkruthi.vijayasha@ucalgary.ca

Course Description and Goals

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 the 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. This work is approved by the Life and Environmental Sciences Animal Care Committee and adheres to the guidelines laid down by the Canadian Council of 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 professor or TA.

Prerequisites

Psyc 312 – Principles of Psychology

Psyc 375 – Brain and Behaviour

Required Text

None, although the following texts available for free online are recommended:

1. The Behaviour of the Laboratory Rat: a handbook with tests. Edited by Ian Q. Whishaw and Bryan Kolb, Oxford University Press, 2005
 - a. <http://www.oxfordscholarship.com.ezproxy.lib.ucalgary.ca/oso/public/content/neuroscienc/e/9780195162851/toc.html>
2. Neuroscience, 2nd edition, Edited by Dale Purves, George J Augustine, David Fitzpatrick, Lawrence C Katz, Anthony-Samuel LaMantia, James O McNamara, and S Mark Williams, Sinauer Associates, 2001
 - a. <http://www.ncbi.nlm.nih.gov/books/NBK10799/>

Evaluation

Exams

Exams will be short answer and will cover lecture and text material up to exam date. The final exam is not cumulative.

1. Exam 1 Wednesday, September 30th 1/6th of final grade
2. Exam 2 Friday, October 30th 1/6th of final grade
3. Exam 3 Scheduled by Registrar 1/6th of final grade
4. No iPods, iPads, computers, books or notes during tests

Class assignments

1. In class presentations, November 25th to December 7th 10% of final grade
 - a. A short 8 minute presentation describing a behavioural neuroscience experiment selected and designed by the student. The presentation should be a proposal format.
 - b. Due to time constraints, missed presentations cannot be made up, and will receive 0%

Lab Assignments – Short assignments

Short (usually ~2 page) assignments based on the previous week's lab.

<u>Assignment</u>	<u>Due:</u>	<u>% of final grade</u>
Handling	In lab September 16, 18	2%
Motor behavior	In lab October 7, 9	2%
Maternal Behavior	In lab October 14, 16	2%
Drinking	In lab October 4, 6	2%
Circadian	In lab November 26, 28	2%

Lab Assignments – Full lab assignments (~15 pages)

These assignments are to be prepared according to the style of the Journal of Neuroscience.

(http://www.jneurosci.org/site/misc/ifa_organization.xhtml). While this style stipulates word limits for the introduction and discussion, you may exceed these limits to demonstrate adequate understanding of the material.

<u>Assignment</u>	<u>Due:</u>	<u>% of final grade</u>
Pup development	In lab, October 21,23	10%
Stroke	In lab, November 19, 21	10%
Learning	To TA or Psych office by 4pm, December 10,12	10%

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	
T Sep 8	University Classes begins	
W Sep 9	Introduction	
F Sep 11	History / Philosophy	
M Sep 14	History / Philosophy	
W Sep 16	Motor systems	
F Sep 18	Motor systems	<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>
M Sep 21	Motor systems	<i>Last day to add or swap full courses (Multi-term) and Fall Term half courses. Last day for change of registration from audit to credit or credit to audit.</i>
W Sep 23	Motor systems	
F Sep 25	Motor systems	<i>Fee payment deadline for Fall Term full and half courses.</i>
M Sep 28	Motor systems	
W Sep 30	Exam #1	(Lectures 1-9)
F Oct 2	Sex	
M Oct 5	Sex	
W Oct 7	Sex	
F Oct 9	Maternal Behaviour	
M Oct 12	No lectures	<i>Thanksgiving Day, University closed</i>
W Oct 14	Maternal Behaviour	
F Oct 16	Maternal Behaviour	
M Oct 19	Maternal Behaviour	
W Oct 21	Feeding	
F Oct 23	Drinking	
M Oct 26	Thermoregulation	
W Oct 28	Support systems of the brain	
F Oct 30	Exam # 2	(Lectures 10-18)
M Nov 2	Blood flow and Stroke	
W Nov 4	Circadian rhythms	
F Nov 6	Circadian rhythms	
M Nov 9	Pain	
W Nov 11	No lectures	<i>Remembrance Day (Observed). University Closed</i>

F Nov 14	No lectures	<i>Reading Days</i>
M Nov 16	Anxiety and Fear	
W Nov 18	Learning	
F Nov 20	Learning	
M Nov 23	Learning	
W Nov 25	Student presentations	
F Nov 27	Student presentations and Course Evaluations	
M Nov 30	Student presentations	
W Dec 2	Student presentations	
F Dec 4	Student presentations	
M Dec 7	Student presentations	
T Dec 8	Fall Term Lectures End.	<i>Last day to withdraw with permission from Fall Term half courses.</i>
Dec 11-22	Fall Term Exam Period.	

Tentative Lab Schedule

(some minimal extra laboratory time may be expected outside of the regular schedule)

Week	Lab	Assignment due
Sept 9,11	1. Handling	
Sept 16,18	2. General Behaviour	Handling (short assignment)
Sept 23,25	3. Skilled Behaviour	
Sept 30,2	4. Maternal Behaviour and Pup Development #1	
Oct 7,9	5. Pup Development #2	Motor behaviour (short assignment)
Oct 14,16	6. Surgery Demonstrations	Maternal behaviour (short assignment)
Oct 21,23	7. Drinking	Pup Motor Development (full Report)
Oct 28, 30	8. Post stroke motor behaviour	
Nov 4, 6	9. Circadian rhythms	Drinking (short assignment)
Nov 11, 13	Reading Week – No Labs	
Nov 19, 21	10. Fear and Anxiety	Stroke (full Report)
Nov 26, 28	11. Avoidance	Circadian (short assignment)
Dec 3, 5	12. Spatial learning / recognition	Learning (full Report)

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.ucalgary.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.ucalgary.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-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. 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 via the Department Office (Admin 255), 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 **Dec 8, 2015**

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 suvpaca@ucalgary.ca
Student Union Faculty Rep.: Phone: 403-220-3913 socialscirep@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 **September 18, 2015**. Last day for registration/change of registration is **September 21, 2015**. The last day to withdraw from this course is **December 8, 2015**.