



Psychology 478

Behavioural Neuroscience

Instructor:	Michael Antle	Lecture Location:	ST 059
Phone:	403-220-2574	Lecture Days/Time:	M,W,F 10-10:50am
Email:	antlem@ucalgary.ca	Lab Location:	A47
Office:	A018	Lab days/Time:	M,F 1:00pm - 3:50pm
Office Hours:	By appointment	TA:	Patrick Wu
		Office	A20
		Email:	hppwu@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 and Psyc 375 – Brain and Behaviour or consent of the Department

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.

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|----|--------|----------------------------------|----------------------------------|
| 1. | Exam 1 | Monday, October 1 st | 1/6 th of final grade |
| 2. | Exam 2 | Friday, October 26 th | 1/6 th of final grade |
| 3. | Exam 3 | Scheduled by Registrar | 1/6 th of final grade |

Class assignments

1. In class presentations, November 26th 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.

Assignment	Due:	% of final grade
Handling	In lab Sept 24, 28	2%
Motor behavior	In lab Oct 12, 15	2%
Maternal Behavior	In lab Oct 19, 22	2%
Drinking	In lab Nov 16, 19	2%
Circadian	In lab Nov 30, Dec 3	2%

Lab Assignments – Full lab assignments (~15-20 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.

Assignment	Due:	% of final grade
Pup development	In lab, Nov 2, 5	10%
Stroke	In lab, Nov 23, 26	10%
Learning	Dec 7, 10 to prof or Psych green box	10%

Students must achieve a passing grade on both the class and lab components to pass this course.

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
M Sep 10	Introduction
W Sep 12	History / Philosophy
F Sep 14	History / Philosophy
M Sep 17	Motor systems
W Sep 19	Motor systems
F Sep 21	Motor systems <i>Last day to drop a course with no W grade and tuition refund.</i>
M Sep 24	Motor systems <i>Last day for add or swap courses.</i>
W Sep 26	Motor systems
F Sep 28	Motor systems
M Oct 1	Exam #1 (Lectures 1-9)
W Oct 3	Sex
F Oct 5	Sex
M Oct 8	Thanksgiving Day -----> No lecture <-----
W Oct 10	Sex
F Oct 12	Maternal Behaviour
M Oct 15	Maternal Behaviour
W Oct 17	Maternal Behaviour

F Oct 19	Feeding
M Oct 22	Drinking
W Oct 24	Thermoregulation
F Oct 26	Exam # 2 (Lectures 10-18)
M Oct 29	Support systems of the brain
W Oct 31	Blood flow and Stroke
F Nov 2	Circadian rhythms
M Nov 5	Circadian rhythms
W Nov 7	Circadian rhythms
F Nov 9	Reading days -----> No lecture <=====
M Nov 12	Remembrance Day -----> No lecture <=====
W Nov 14	Anxiety and Fear
F Nov 16	Depression (Guest Lecture – Veronika Kiryanova)
M Nov 19	Learning
W Nov 21	Learning
F Nov 23	Learning
M Nov 26	Student presentations
W Nov 28	Student presentations
F Nov 30	Student presentations and Course Evaluations
M Dec 3	Student presentations
W Dec 5	Student presentations
F Dec 7	Student presentations
Dec 10-19	Fall Term Exam Period. Final exam is 2hrs, and covers material from lectures 19-28

Tentative Lab Schedule (Monday Lab underlined; some minimal extra laboratory time may be expected outside of the regular schedule)

Week	Lab	Assignment due
Sept <u>10</u> ,14	No Lab	
Sept <u>17</u> ,21	1. Handling	
Sept <u>24</u> ,28	2. General Behavior	Handling (short assignment)
Oct <u>1</u> ,5	3. Skilled Behavior	
Oct 12, <u>15</u>	4. Maternal Behavior and Pup Development #1	Motor behavior (short assignment)
Oct 19, <u>22</u>	5. Pup Development #2 and Stroke Surgery Demonstration	Maternal Behavior (short assignment)
Oct <u>26</u> , <u>29</u>	6. Drinking	
Nov <u>2</u> , <u>5</u>	7. Post stroke motor behavior	Pup Motor Development (Full Report)
Nov <u>16</u> , <u>19</u>	8. Circadian rhythms	Drinking (short assignment)
Nov <u>23</u> , <u>26</u>	9. Fear and Anxiety	Stroke (Full Report)
Nov 30, <u>Dec 3</u>	10. Spatial learning / recognition	Circadian (short assignment)
Dec <u>7</u> , <u>10</u>		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. 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.

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 275), 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

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, 2012**

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

Important Dates

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **September 21, 2012**. Last day for registration/change of registration is **September 24, 2012**. The last day to withdraw from this course is **December 7, 2012**.