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**Psychology 478****Behavioural Neuroscience****Winter 2015**

<b>Instructor:</b>	Dr. Victoria Smith	<b>Lecture Location:</b>	SS010
<b>Phone:</b>	403-220-3969	<b>Lecture Days/Time:</b>	MWF 14:00-14:50
<b>Email:</b>	smithvm@ucalgary.ca	<b>Lab Location:</b>	AD048/051
		<b>Lab Time:</b>	T,R 9:00-11:50
		<b>TA:</b>	Brendan McAllister
<b>Office:</b>	A034	<b>TA email:</b>	<a href="mailto:bmcallis@ucalgary.ca">bmcallis@ucalgary.ca</a>
<b>Office Hours:</b>	By appointment		

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### Course Description and Goals

The principle function of the nervous system is to produce behavior. 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 experimental 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

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

### Required Text

None, although the following texts available at the University Bookstore or 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.oxfordsholarship.com.ezproxy.lib.ucalgary.ca/oso/public/content/neuroscience/978019516285/toc.html>
2. Neuroscience, 5<sup>th</sup> Edition, Edited by Dale Purves, George J Augustine, David Fitzpatrick, William C Hall, Anthony-Samuel LaMantia, and Leonard E White. Sinauer Associates, 2001.
  - a. <http://ncbi.nlm.nih.gov/books/NBK10799/> (2<sup>nd</sup> Edition available by key word search only, not by chapter)

## Evaluation

### Exams

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

1. Exam 1	Monday February 2	1/6 <sup>th</sup> of final grade
2. Exam 2	Wednesday March 4	1/6 <sup>th</sup> of final grade
3. Exam 3	Scheduled by Registrar	1/6 <sup>th</sup> of final grade

### Class assignments

1. In class presentations, April 1 to April 15 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. Late assignments will be docked 10% per day, including weekends.

Assignment	Due:	% of final grade
Handling	In lab January 20, 22	2%
Motor Behaviour	In lab February 3, 5	2%
Maternal Behaviour	In lab February 10, 12	2%
Drinking	In lab March 10, 12	2%
Circadian	In lab March 31, April 2	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](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. Late assignments will be docked 10% per day, including weekends.

Assignment	Due:	% of final grade
Pup Development	In lab March 3, 5	10%
Stroke	In lab March 24, 26	10%
Learning	To TA or Psyc office by 4pm April 14	10%

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 in 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
M Jan 12	Lecture 1: Introduction Winter term lectures begin.
W Jan 14	Lecture 2: History / Philosophy
F Jan 16	Lecture 3: History / Philosophy
M Jan 19	Lecture 4: Motor Systems
W Jan 21	Lecture 5: Motor Systems
F Jan 23	Lecture 6: Motor Systems Last day to drop Winter Term half-courses.
M Jan 26	Lecture 7: Motor Systems Last day to add or swap Winter Term half courses. Last day for change of registration from audit to credit or credit to audit.
W Jan 28	Lecture 8: Motor Systems
F Jan 30	Lecture 9: Motor Systems Fee payment deadline for Winter Term fees.
M Feb 2	<b>Exam #1 (Lectures 1-9)</b>
W Feb 4	Lecture 10: Sex
F Feb 6	Lecture 11: Sex
M Feb 9	Lecture 12: Sex
W Feb 11	Lecture 13: Maternal Behaviour
F Feb 13	Lecture 14: Maternal Behaviour
Feb 15-22	<b>No lectures</b> Reading Week. University open (except Family Day).
M Feb 16	<b>No lectures</b> Alberta Family Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries).
M Feb 23	Lecture 15: Maternal Behaviour
W Feb 25	Lecture 16: Feeding
F Feb 27	Lecture 17: Drinking
M Mar 2	Lecture 18: Thermoregulation
W Mar 4	<b>Exam #2 (Lectures 10-18)</b>
F Mar 6	Lecture 19: Support systems of the brain
M Mar 9	Lecture 20: Blood Flow and Stroke
W Mar 11	Lecture 21: Circadian Rhythms
F Mar 13	Lecture 22: Circadian Rhythms
M Mar 16	Lecture 23: Pain
W Mar 18	Lecture 24: Anxiety and Fear
F Mar 20	Lecture 25: Learning
M Mar 23	Lecture 26: Learning
W Mar 25	Lecture 27: Learning
F Mar 27	Lecture 28: Guest Lecture
M Mar 30	Lecture 29: Guest Lecture
W Apr 1	Student presentations

F Apr 3	<b>No Lectures</b>	Good Friday University Closed
M Apr 6	Student presentations	
W Apr 8	Student presentations and Course Evaluations	
F Apr 10	Student presentations	
M Apr 13	Student presentations	
W Apr 15	Student presentations	Winter Term Lectures End. Last day to withdraw from full courses and Winter Term half courses.
Apr 18-29	Winter Term Final Examinations.	

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

<b>Week</b>	<b>Lab</b>	<b>Assignment due</b>
Jan 13, 15	1. Handling	
Jan 20, 22	2. General Behaviour	Handling (short assignment)
Jan 27, 29	3. Skilled Behaviour	
Feb 3, 5	4. Maternal Behaviour and Pup Development #1	Motor behaviour (short assignment)
Feb. 10, 12	5. Pup Development #2	Maternal behaviour (short assignment)
Feb 24, 26	6. Surgery Demonstrations	
Mar 3, 5	7. Drinking	Pup Motor Development (full Report)
Mar 10, 12	8. Post stroke motor behaviour	Drinking (short assignment)
Mar 17, 19	9. Circadian rhythms	
Mar 24, 26	10. Fear and Anxiety	Stroke (full Report)
Mar 31, Apr 2	11. Avoidance	Circadian (short assignment)
Apr 7, 9	12. Spatial learning / recognition	
Apr 14,16	No lab	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**

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.

**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 except under exceptional circumstances. Students are advised to wait until the final examination schedule is posted before making any travel arrangements.

**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 **April 15, 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](mailto:suvpaca@ucalgary.ca)  
**Student Union Faculty Rep.:** Phone: 403-220-3913 [socialscirep@su.ucalgary.ca](mailto: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](mailto:ombuds@ucalgary.ca) (<http://www.su.ucalgary.ca/services/student-services/student-rights.html>).

### **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 23<sup>rd</sup>, 2015**. Last day for registration/change of registration is **January 26<sup>th</sup>, 2015**. The last day to withdraw from this course is **April 15<sup>th</sup>, 2015**.