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Psychology 478	Behavioural Neuroscience	Winter 2014
<b>Instructor:</b> Dr. G. Campbell Teskey	<b>Lecture Location:</b> Admin 051/053	
<b>Phone:</b> 403-220-4962	<b>Lecture Days/Time:</b> Tues/Thurs 9:30-10:45	
<b>Email:</b> gteskey@ucalgary.ca	<b>Lab 01:</b> Admin 047	Tues 1:00-3:50
	<b>Lab 02:</b> Admin 047	Thurs 1:00-3:50
	<b>TA:</b> Brendan McAllister	
<b>Office:</b> HSC 2103	<b>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 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. While dramatic advances have occurred at the molecular and cellular levels how these established factors ultimately impact behaviour will primarily be examined in rodents (mainly rats).

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.

### Prerequisites

Psyc 200 and 201 or Psyc 205; Psyc 312; Psyc 375

### Recommended Text

The Behaviour of the Laboratory Rat: a handbook with tests. Edited by Ian Q. Whishaw and Bryan Kolb, Oxford University Press, 2005. Text is available through amazon.ca. **There is also an online version**

**(missing some**

**figures).** <http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780195162851.001.0001/acprof-9780195162851>

## Important

See the Calendar description on <http://www.ucalgary.ca/pubs/calendar/current/sc-5-6-4.html> regarding “Ethics in Neuroscience”. All students should be prepared to work with live behaving animals. All work in the course conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The course strives for the highest ethical standards. Lab coats are recommended.

## Evaluations

The students should consider each Lab/Lecture write-up below as a take home exam. The expectation is that both the lab and lecture material will be used in the write up.

**Lab/Lecture write-up #1 – Sexual Behaviour, Mating and Maternal Behaviour (10% towards 30% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Feb 11th or 13th.**

Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the instructor.

**Lab/Lecture write-up #2 – Behaviour of the adult rat (10% towards 30% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Feb 25th or 27th.**

Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the TA.

**Lab/Lecture write-up #3 – Skilled Behaviour (10% towards 30% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Mar 4th or 6th.**

Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the instructor.

**Student Project Proposal (5% of final grade) due Monday March 3rd.** The writing quality is a factor in the evaluation. This assignment is marked by the instructor. The function of this assignment is to ensure the educational and ethical merit of the proposed research.

**Lab/Lecture write-up #4 – Fear, Anxiety, Depression (10% towards 30% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Mar 11th or 13th.**

Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the TA.

**Lab/Lecture write-up #5 – Epilepsy and Kindling (10% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Mar 18th or 20th.** Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the instructor.

**Lab/Lecture write-up #6 – Learning and Memory (10% of final grade) due at the beginning of your laboratory section – Tuesday or Thursday Mar 25th or 27th.** Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the TA.

Note that each student's top 3 marks (out of 10% each) on Lab/Lecture write-ups #1 through #4 will be used for a total of 30% of the final grade. The lowest mark over the Lab/Lectures #1 to #4 will be dropped.

**Laboratory Project write-up (25% of final grade) due Thursday, Apr 10th.** Use reading material from both lecture and textbook. The writing quality is a factor in the evaluation. This assignment is marked by the instructor.

**In-Class Student Presentations (15% of final grade), scheduled in lecture time.**

Students will give a ONE SLIDE PowerPoint presentation on an approved topic within the field of Behavioural Neuroscience that is not related to their laboratory project or final paper. The length of the presentation will be ~7 minutes with ~3 minutes for questions. This assignment is marked by the instructor.

**Critical Written Feedback on Presentations (5% of final grade), scheduled in lecture time.** All students will also provide the instructor with written critical feedback on all in-class student presentations. Class participation is also considered. This assignment is marked by the TA.

**Laboratory write-ups are due at the beginning of your laboratory session.**

The hardcopy of all other evaluations (except the PowerPoint presentation) will be due by the time the Psychology Main Office closes (4:30). Late evaluations will be penalized 10% per day excluding weekends. **Make sure your exams and reports are date stamped**, and leave it in the drop-off box located on the counter in Room A255. E-mailed assignments will **NOT** be accepted. 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.*** 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-).

## Lecture Schedule

Date	Topic/Activity/Readings/Due Date
R Jan 9	Class Introduction, Instructor, Behavioural Neuroscience <b>Winter term lectures begin</b>
T Jan 14	History of the discipline, Perspectives
R Jan 16	Sexual Behaviour – sexes
F Jan 17	<b>Last day to drop Winter Term half-courses</b>
M Jan 20	<b>Last day to add or swap Winter Term half courses</b> <b>Last day for change of registration from audit to credit or credit to audit</b>
T Jan 21	Sexual Behaviour – mate choice
R Jan 23	Circadian Rhythms (guest lecturer Mike Antle)
F Jan 24	<b>Fee payment deadline for Winter Term fees</b>
T Jan 28	Maternal Behaviour – overview
R Jan 30	Posture, Locomotion, Swimming
T Feb 4	Grooming, Dodging and Robbing
R Feb 6	Skilled Behaviour - overview
T Feb 11	Skilled Behaviour – motor maps
R Feb 13	Fear, Anxiety, Depression – overview
Feb 16-23	<b>Reading Week. No lectures. University open (except Family Day).</b>
M Feb 17	<b>Alberta Family Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.</b>
T Feb 18	<b>Reading Week. No lectures. University open (except Family Day).</b>
R Feb 20	<b>Reading Week. No lectures. University open (except Family Day). Fernie conference</b>
T Feb 25	Fear, Anxiety, Depression – the tests, the problem with inferred central processes
R Feb 27	Epilepsy – overview, pathophysiology (guest lecturer Jordan Farrell)
T Mar 4	Kindling
R Mar 6	Learning and memory: Spatial abilities
T Mar 11	Learning and memory: Recognition
R Mar 13	Brain Stimulation – overview
T Mar 18	Brain Stimulation – deep brain
R Mar 20	Experimental autoimmune encephalomyelitis (guest lecturer Laura Craig)
T Mar 25	Laboratory Projects Time
R Mar 27	Laboratory Projects Time
T Apr 1	Student Presentations (~ 10 minutes each)
R Apr 3	Student Presentations (~ 10 minutes each)
T Apr 8	Student Presentations (~ 10 minutes each)
R Apr 10	Student Presentations (~ 10 minutes each) <b>Winter Term Lectures End</b>
M Apr 14	<b>Last day to withdraw from full courses and Winter Term half courses</b>
Apr 19-29	<b>Winter Term Final Examinations</b>

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### Laboratory Schedule

<b>Week 1 – Jan 14 or 16</b>	<b>No Labs.</b>
<b>Week 2 – Jan 21 or 23</b>	Rodent Handling and Ethics
<b>Week 3 – Jan 28 or 30</b>	Sexual Behaviour, Mating (ear wiggling, lordosis, mounting) and Maternal Behaviour (nursing, licking & grooming, pup retrieval)
<b>Week 4 – Feb 4 or 6</b>	Behaviour of Adult rats (posture, ground locomotion, swimming, grooming, nest building, dodging and robbing)
<b>Week 5 – Feb 11 or 13</b>	Skilled Behaviour (single pellet, pasta matrix, rung walking, sticky tape test, food handling, Rotorod)
<b>Week 6 – Feb 18 or 20</b>	<b>Reading Days AND CSCBB “Fernie” Meeting</b>  – <b>No Labs.</b>
<b>Week 7 – Feb 25 or 27</b>	Fear, Anxiety and Depression (open field, elevated plus maze, Porsolt swim, startle, defensive burying)
<b>Week 8 – Mar 4 or 6</b>	Epilepsy and Kindling ( <b>Teskey laboratory HSC 2046</b> )
<b>Week 9 – Mar 11 or 13</b>	Learning and Memory: Spatial (Morris water task), Recognition (Mumby novelty task)
<b>Week 10 – Mar 18 or 20</b>	Time to collect data for Lab project
<b>Week 11 – Mar 25 or 27</b>	Time to collect data for Lab project
<b>Week 12 – Apr 1 or 3</b>	Time to collect data for Lab project
<b>Week 13 – Apr 8 or 10</b>	<b>No Labs.</b>

### 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 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 (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 14, 2014**.

### **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](mailto:suypaca@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 17<sup>th</sup>, 2014**. Last day for registration/change of registration is **January 20<sup>th</sup>, 2014**. The last day to withdraw from this course is **April 14<sup>th</sup>, 2014**.