



Psychology/Neuroscience 531

Nervous System Development

Fall 2015

Instructor:	Richelle Mychasiuk	Lecture Location:	ES920
Phone:	403-220-3469	Lecture Days/Time:	W 13:00-15:45
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Office:	AD030		
Office Hours:	By appointment		

Course Description and Goals

The function of the human brain is mediated by billions of cells and trillions of connections. In order to understand human brain function we need to understand how these processes arise and the ways in which they change throughout a lifetime. The goal of this course is to provide a contemporary overview of CNS development from biological, behavioural and clinical perspectives.

Prerequisites

Psyc 475 – Behavioural Pharmacology

Required Text

There will be no required text – Review articles will be provided along with additional readings.

Evaluation

The final course grade will be based on:

- 1) Midterm 1 Examination: 20%
 - a. 60 minutes in class on Oct 7, 2015
 - b. Multiple choice, short answer and Long answer/essay questions
 - c. Examine covers information in Section 1. Assigned Readings and In-Class Material
- 2) Midterm 2 Examination: 20%
 - a. 60 minutes in class on Nov 4, 2015
 - b. Multiple choice, short answer and Long answer/essay questions
 - c. Examine covers information from Section 2 and what is needed from Section 1 as foundational information. Assigned Readings and In-Class Material
- 3) Final examination: 20%
 - a. 75 minutes – registrar scheduled
 - b. Multiple choice, short answer and Long answer/essay questions

- c. Examine covers information from Section 3, and what is needed from Section 1 and 2 as foundational information. Assigned Readings and In-Class Material
- 4) In-Class Presentation: 20%
 - a. Topic will be selected from a list of 10 provided in the first class. Group and topic must be selected by end of second scheduled class.
 - b. Group presentation (3 people/group)
 - c. 20 minutes maximum, including time for questions
 - d. Grade is based on:
 - i. Content (70%)
 - ii. Presentation (10%)
 - iii. Participation (20%)
- 5) Term Paper: 20%
 - a. On any topic dealing with normal or abnormal nervous system development.
 - b. **Maximum** of 10 pages (Spacing 1.5x), not including references.
 - c. 12-point Times font (about 15 characters/inch).
 - d. The paper topic, in the form of an outline, must be approved by instructor no later than 4:00 pm November 8th.
 - i. **Reduction of final paper grade by 5% for each 24h interval that the paper outline is late.**
 - e. Paper will be graded on two criteria: **presentation (20%)**, including grammar, organization, clarity of writing, and other skills pertaining to written English, and **content (80%)**, including the accuracy of information presented, etc.
 - f. Paper to be handed in or e-mailed by 4:00pm December 9th, 2013.
 - i. **Reduction of 10% for each 24h interval that the paper is late, including weekends.**
- 6) . iPods, iPads, computers, books or notes are not allowed exams.

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.

In this course there will be no rounding up of final grades, especially in light of the opportunities students have to increase their final grade via research participation.

Tentative Lecture Schedule

Date	Topic
Section 1 – Brain Under Construction	
Sep 9	Lecture 1 – General principles of CNS development 1. Neural Induction, 2. Birth and Migration
Sep 16	Lecture 2 – Determination and Differentiation
Sep 23	Lecture 3 – Axon Growth and Target Selection
Sep 30	Lecture 4 – Synapse Formation and Refinement
Section 2 – Cortical Development	
Oct 7	Exam 1; Lecture 5 – Opening and Closing of Cortical Windows
Oct 14	Lecture 6 – Gene Expression and Cortical Development
Oct 21	Lecture 7 – Shaping of Axons and Dendrites: Neuron-glia Interactions
Oct 28	Lecture 8 – Cortical Plasticity
Section 3 – Systems Development	
Nov 4	Exam 2; Lecture 9 – Pain/Vestibular/Somatosensory
Nov 11	Remembrance Day. University Closed.
Nov 18	Lecture 10 – Auditory/Visual/Olfactory
Nov 25	Lecture 11 –Senescence and Cognitive Decline
Section 4 – Student Presentations	
Dec 2	Student Presentations
Dec 8	Fall Term Lectures End.
Dec 11-22	Fall Term Final Examinations.

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 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 **Dec 6, 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

suypaca@ucalgary.ca

Student Union Faculty Rep.: Phone: 403-220-3913

socialscirep@su.ucalgary.ca

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**.