

PSYC/NEU 521
Cognitive & Clinical Neuroscience
Winter 2019

Instructor:	Giuseppe Iaria	Lecture Location:	SA147
Phone:	403-220 8482	Lecture Days/Time:	Tuesday 17:00 – 19:45
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Office Hours:	Anytime (but email first)		

Course Description

The course provides an overview of the latest research investigating brain mechanisms underlying some of the cutting-edge topics in cognitive neuroscience. At the outset, students will be introduced to basic concepts of cognitive neuroscience and the range of techniques used with both healthy subjects and clinical populations. In subsequent weeks, classes will consist of detailed introductions to specific topics, student presentations and class discussion of scientific literature. The goal is for students to acquire knowledge about cognitive and clinical neuroscience through selected topics and to develop critical thinking skills when evaluating scientific literature.

Course Learning Outcomes

The Department of Psychology is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes they facilitate (see psyc.ucalgary.ca/undergraduate/program-learning-outcomes), and the expected level of achievement.

Notes. PLOs = Program-Learning Outcomes: 1 = demonstrate knowledge of psychological sciences, 2 = think critically and solve problems, 3 = conduct research and analyze data, 4 = communicate effectively, 5 = demonstrate information literacy, 6 = understand and implement ethical principles, 7 = apply psychological knowledge and skills. Level of PLO achievement facilitated by this course: I = introductory, C = competency, A = advanced.

By the end of this course students will be able to ...	Teaching and Learning Activities	Assessment Methods	PLOs	Level
Analyze fundamental differences between cognitive science and cognitive neuroscience, as well as between neuropsychology and clinical neuroscience.	Lectures and class discussion	Quality of student's class contribution	1, 5	C

Differentiate the use of neuroimaging techniques to investigate cognitive functioning and behaviour.	Reading material and class discussion	Grading on student's presentation and class contribution	1, 2, 5	C
Evaluate the methodological approach of selected peer-reviewed scientific articles, and critique their overall contribution to the field of cognitive and clinical neuroscience.	Online questions, class presentations, and class discussion	Quality of student's online questions, and quality of class discussion.	2, 3, 6	C
Create scientific presentation aiming to disseminate knowledge in an engaging manner.	Student presentations	Quality of student's presentation.	4, 5	A
Formulate questions and raise issues in order to generate discussion among peers.	Online questions, class presentations, and class discussion	Quality of student's online questions, and quality of class discussion.	1, 2, 4, 5	C
Design a novel experiment by formulating a specific hypothesis, and write it in the format of a research proposal.	Written proposal	Written proposal.	1-5, 7	A
Predict the location of brain damages (or neural activity while acquiring fMRI scans) by observing and measuring cognitive processes.	Student presentations, and class discussion	Quality of class discussion.	1, 2, 7	C

Prerequisites

Psyc 312 (Experimental Design & Quantitative Method) and Psyc 375 (Brain and Behaviour).

Required Text

There are no required textbooks for this course. The course material consists of selected articles that will be made available to students throughout the course.

Assessment Methods

Student evaluations will be based on two leading discussion assignments (20% of final grade each), prepared questions for class discussion (10% of final grade), and one term paper (40% of final grade); in addition, students' participation in class discussion throughout the course will account for 10% of the final grade. Missed or late assignments will receive 0% unless documented **by approved documentation**. Important, at the end of the two leading discussion assignments, students will receive a comprehensive feedback and a percent grade.

During the first week of class, students will be asked to select two dates (and, accordingly, two topics as scheduled in the course outline) for their two leading discussion assignments. Students will perform their assignments individually or in groups depending on class size, and assigned at random if the number of dates and topics chosen voluntarily do not cover the entire course schedule. Students may be

asked to lead more than two discussions, in which case only the last two assignments will be graded, and the initial ones will be considered practice trials.

A. Leading Discussion 1 (20% of final grade). The format of the leading discussion is similar to a typical power-point presentation with the exception that there will be no slides to be presented to the class. Students will be asked to present and examine in detail a peer-reviewed journal article, which other students in the class would have read as well. The length of the assignment will be approximately 20-30 minutes but it may vary depending on the number of students attending the course, and the ability of the student presenting to generate discussion on the article and the topic. During the presentation of the article, students are not allowed to read extensive scripts. **Students missing their leading discussion assignment without approved documentation will receive 0% grade for the assignment.**

The leading discussion assignment may occur individually or in groups depending on class size, and assigned at random if the number of dates and topics chosen voluntarily do not cover the entire course schedule. Evaluation is based on creativity and success in engaging students' participation in class discussion, clarity, accuracy and completeness of the presentation.

As a guideline, each leading discussion assignment should include: (1) a brief overview of the subject of the article, (2) the main question that the article aims to address, the relevance of it in the context of the topic of the week, and the authors' hypothesis, (3) a detailed description of the methods and procedure used, (4) the results of the study, (5) the authors' interpretation of the results, (6) the authors' general conclusion, (7) the student's observations about the study (including merits and/or limits of the experimental approach used), and (8) the student's suggestions for future studies given the findings provided in the article.

Students are encouraged to read additional research as needed and/or to prepare material (such as handouts or prepared questions) in order to engage the class and stimulate relevant discussion. In order to actively participate in the discussion, students attending are required to read the article presented as well as additional material related to that topic in advance of the class.

B. Leading discussion 2 (20% of final grade). The format of this second assignment is identical to the previous one. The only exception being an expected specific focus by the student on the issues identified in the first assignment by the instructor, and provided to the student during the previous feedback. Students are expected to improve on the critical issues identified in the previous assignment. In addition, as for the first assignment, evaluation will also be based on creativity and success in engaging colleagues' participation in class discussion, clarity, accuracy and completeness of the presentation. **Students missing their leading discussion assignment without approved documentation will receive 0% grade for the assignment.**

C. Questions (10% of final grade). Students who will not be leading a discussion on a given class are required to read one of the articles that will be presented on that given class. Not later than 24 hours prior to the class, students are expected to post on the D2L online discussion forum one question related to the selected article that will be discussed during the class on the next day. The questions are made available to everyone for discussion during the class. Evaluation is based on the quality of the

questions submitted throughout the course. **Students not posting on the D2L online discussion forum without approved documentation will receive 0% grade for that specific week.**

D. Term paper (40% of final grade). Each student will write a term paper consisting of a research proposal. The proposal must focus on a topic covered during the course. The topic chosen for the proposal can be the same as that chosen (or assigned) by the student for his/her leading discussion assignments. In the proposal, students are required to formulate one or two experiments that would make an original contribution to the literature/topic that the proposal focuses on. Importantly, the research proposal must include human studies and must have a neuro-component. Term papers will be submitted by email to the instructor in PDF format (not word).

The content of the paper must be organized into the following sub-headings: (1) Title and name of the student, (2) Abstract (150 words maximum), (3) Topic/literature overview, (4) Objective of the proposal, (5) Methods, (6) Expected results, (7) Implications and conclusions, (8) References (minimum 10; reference list in any format). Title of the proposal, name of the student, and abstract will form the "Title page" of the proposal. The body of the paper (excluding title page, **abstract**, and reference list) must not exceed five pages (double-spaced, 12 pt Times font). No figures or tables should be included in the paper. Evaluation is based on clarity, accuracy and completeness, and special consideration will be given to the novelty and originality of the proposal. Students who do not comply with the guidelines described above will have 5% deducted from the term paper's grade. **Without approved documentation, late submissions of the term paper will not be accepted.**

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/Readings/Due Date
T Jan 15	Introduction to the course
R Jan 17	Last day to drop Winter Term half courses
F Jan 18	Last day to add or swap Winter Term half courses Last day for change of registration from audit to credit or credit audit
T Jan 22	PubMed Search and articles' selection
F Sep 25	Fee payment deadline for Winter Term fees
T Jan 29	Topic 1 – Human topographical orientation
F Sep 29	Fee payment deadline for Fall Term full and half courses.
T Feb 5	Topic 1 – Human topographical disorientation
M Oct 9	Thanksgiving Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.
T Feb 12	Topic 2 – Mood, emotions and empathy in health individuals
Feb 17-24	Reading Week. No lectures. University open (except Family Day).
M Feb 18	Alberta Family Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.
T Feb 26	Research presentation – Guest lecture
T March 5	Topic 2 – Mood, emotions and empathy in clinical populations
T March 12	Topic 3 – Neuroplasticity in healthy individuals
Nov 10-13	Remembrance Day (Observed). University Closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.
T March 19	Topic 3 – Neuroplasticity in brain-damaged patients
T March 26	Research proposal review and discussion

T April 2	Topic 4 – Consciousness in healthy individuals
T April 9	Topic 4 – Consciousness disorders in brain-damaged patients
F April 12	Winter Term Lectures End. Last day to withdraw full courses and Winter Term half courses.
S April 14	TERM PAPER DUE TODAY!
F April 19	Good Friday
T April 30	Winter Term Lectures End. Last day to withdraw full courses and Winter Term half courses.

Reappraisal of Graded Term Work <http://www.ucalgary.ca/pubs/calendar/current/i-2.html>

A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the paper re-graded as follows. The student shall discuss the work with the instructor **within fifteen 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 Director of Undergraduate Studies who will arrange for a reassessment of the work **within the next fifteen days**. Students in faculties without a departmental structure should take the matter to the dean or the associate/assistant dean (Academic/Student Affairs) of the faculty offering the course. The result of that reassessment should be given to the student in writing. *The reappraisal of term work may cause the grade to be raised, lowered or to remain the same.*

Reappraisal of Final Grade <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

In the reappraisal of a final grade, the only element that will be considered is the grading of the final assessment that makes up the final mark (e.g., final examination, final project, final paper). An exception may occur when the Instructor of Record evaluates a piece of graded term work at the end of the term; that grade may also be considered in a reappraisal of final grade.

A student wishing a reappraisal of a final grade should first attempt to review the final assessment with the department or faculty offering the course. After which, the student shall obtain a Reappraisal of Final Grade form from ucalgary.ca/registrar (under Student Forms). Students must indicate exactly what error was made in marking the final assessment and/or in computing the final grade. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected.

Students wishing a reappraisal of a final grade (excluding Law courses) must submit their request by the following dates:

Fall Term – March 1

Winter Term – June 30

Spring Intersession – August 15

Summer Term – October 15

Supplemental Examinations: 30 calendar days from the date the examination was written

The reappraisal form shall be submitted to Enrolment Services who will forward it to the department head or dean of the faculty offering the course. Reappraisals of final grades are dealt with by the head of

the academic unit in consultation with members of academic staff. Normally, the department/faculty will respond to a reappraisal request within thirty calendar days of its initiation. After the reappraisal is completed, the department shall return the form to the Registrar's Office who shall inform the student in writing of the decision. ***Students should be aware that the grade being reappraised may be raised, lowered or remain the same. A student may request a reappraisal of final grade only twice in one academic year (September 1 – August 31).***

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 Accommodations

The student accommodation policy can be found at: ucalgary.ca/access/accommodations/policy. Students needing an Accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities ucalgary.ca/policies/files/policies/student-accommodation-policy. Students needing an Accommodation based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the instructor.

Seating During Exams

Instructors and exam invigilators are free to ask students to move seats before an exam begins or even during an exam. Students must comply with this request and refusal to do so may warrant a charge of academic misconduct.

Absence From A Test/Exam

Makeup tests/exams are **NOT** an option without the approval of the instructor. A student may be asked to provide supporting documentation for an exemption/special request for a make-up exam <https://www.ucalgary.ca/pubs/calendar/current/n-1.html>. Students who miss a test/exam have up to 48 hours to contact the instructor to ask for a makeup test/exam. It's the instructor's discretion if they will allow a make-up 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. **Once approved by the instructor 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** <https://www.ucalgary.ca/registrar/exams/deferred-exams>.

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** <https://www.ucalgary.ca/registrar/exams/deferred-exams>. **Students with an exceptional extenuating circumstance (e.g., a family emergency) should contact the Department of Psychology (psyugrd@ucalgary.ca).**

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 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.

Acknowledgments and Respect for Diversity

Our classrooms view diversity of identity as a strength and resource. Your experiences and different perspectives are encouraged and add to a rich learning environment that fosters critical thought through respectful discussion and inclusion. The Department of Psychology would also like to acknowledge the traditional territories of the people of the Treaty 7 region in southern Alberta. The City of Calgary is also home to Métis Nation of Alberta, Region III.

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy website (<http://www.ucalgary.ca/mentalhealth/>).

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 12, 2019**.

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 130 and may be contacted at 403-220-5567.

Student Union VP Academic: Phone: 403-220-3911 [suyvaca@ucalgary.ca](mailto:suypaca@ucalgary.ca)

Student Union Faculty Rep.: arts1@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 **January 17, 2019**. Last day for registration/change of registration is **January 18, 2019**. The last day to withdraw from this course is **April 12, 2019**.