

PSYC*3270, Course Outline: Fall 2017

General Information

Course Title: Cognitive Neuroscience

Course Description:

This course will focus heavily on reviewing and discussing primary research, with the goal of revealing the types of methods that cognitive neuroscientists use, and types of questions that they ask, as they try to understand the relationship between our minds and brains.

Credit Weight: 0.5 credits

Academic Department (or campus): Psychology

Semester Offering: Fall 2017

Class Schedule and Location: Tues and Thurs, 10-11:20am, in 031 MCKN

Instructor Information

Instructor Name: Naseem Al-Aidroos

Instructor Email: Please see Course Policy on Contacting the Instructor or TA. This email is for emergency contact only: naseem@uoguelph.ca

Office location and office hours: MacKinnon Extension 4018, Wed 2:30-3:20pm, Thurs 12-1pm

GTA Information

GTA Name: TBA

GTA Email: TBA

GTA office location and office hours: TBA on CourseLink after each quiz, and after paper grades are released

Course Content

Specific Learning Outcomes:

By the end of this course, students should be able to:

1. Recall the major discoveries in the field of cognitive neuroscience and explain how these discoveries inform our current understanding of the mind and brain.
2. Explain the questions that researchers posed to make these discoveries, and how the questions were eventually answered using cognitive neuroscience paradigms.
3. Predict, based on past research, the results of hypothetical experiments.
4. Find research articles reporting cognitive neuroscience discoveries, and assess the quality of the contribution made by a given article.

5. Understand and evaluate the methodologies employed by cognitive neuroscientists.
6. Describe how the data reported by cognitive neuroscientists relates to the conclusions they made about the mind and brain.
7. Provide accurate written descriptions summarizing cognitive neuroscience research.
8. Independently read and understand cognitive neuroscience literature.
9. Differentiate between researchers (and university instructors) claims that are well founded on scientific research from those that are not (even if they sound plausible).
10. Appreciate the ethical decisions involved in cognitive neuroscience research, and why different people come to different conclusions.

Lecture Content:

Date	Topics (may change) and in-class quiz dates
Sept 7	Introduction
Sept 12	Overview of the brain
Sept 14	Methods: Imaging (focus on fMRI)
Sept 19	Methods: Electrophysiology (focus on EEG/ERP)
Sept 21	Methods: Stimulation (focus on TMS)
Sept 26	Quiz 1
Sept 28	Perception: Low-level vision
Oct 3	Perception: High-level vision
Oct 5	Attention: Spatial
Oct 10	Fall Study Break
Oct 12	Attention: Feature/object
Oct 17	Attention: Bottom-up
Oct 19	Quiz 2
Oct 24	Working Memory
Oct 26	Executive Function
Oct 31	Analysis: Connectivity
Nov 2	Long-term Memory
Nov 7	Quiz 3
Nov 9	No class today
Nov 14	Analysis: Classification
Nov 16	Emotion
Nov 21	Consciousness
Nov 23	Analysis: Intra-individual Variability
Nov 28	Interactions Across Cognition
Nov 30	Quiz 4; Final Paper due

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Quiz 1	Sept 26	25% (best 3 of 4)	1-3, 5-10

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Quiz 2	Oct 19	25% (best 3 of 4)	1-3, 5-10
Quiz 3	Nov 7	25% (best 3 of 4)	1-3, 5-10
Quiz 4	Nov 30	25% (best 3 of 4)	1-3, 5-10
Final Paper	Nov 30, 11:59pm	25%	1,2,4-9

Additional Notes (if required):

In-class quizzes: The objective of the quizzes is to allow you to demonstrate that you have gained the relevant knowledge about the function of our minds and brains, and that you can synthesize this knowledge to make predictions about unanswered questions in cognitive neuroscience. The quizzes will contain both multiple-choice and written-answer questions. Quiz questions will cover lecture material and assigned readings and videos. Quizzes are not cumulative. Your final grade for the quiz component of the course is based on the average of your best three quizzes (i.e., the worst grade is dropped). Please see note about missed quizzes below.

Final Paper: The final paper will consist of (a) a review of one current (2013 to present) research article in cognitive neuroscience (broadly defined, but not from the lectures or course readings) and (b) a proposal for an additional experiment. The review should include the basic research question, methodology, results, and conclusions from the reviewed paper. The proposal should consist of a clearly defined experimental question, the theoretical underpinnings of the question, the method for examining the research question, and predicted results. In addition to a cover page and a reference page, the text of the paper is strictly limited to 6 pages (double-spaced, not less than 12 pt font, not less than 1 inch margins). Additional guidance on the paper will be given at the end of class on November 2. The grading rubric is available on CourseLink.

The paper must be submitted to the **Final Paper Dropbox** available through CourseLink by **11:59pm on the last day of class**. To ensure that the instructor and TA(s) can read your document, the **only acceptable file formats are Microsoft Word (i.e., .doc or .docx) and PDF**. Please see note about late papers below.

When you submit your final paper through CourseLink, your document will automatically be processed by **Turnitin software**. This software will produce an “Originality Report” for your work. This report is a useful tool for you in assessing potential instances of plagiarism, and you should definitely make use of it. Two important notes:

- 1) A Turnitin Student Guide is available in the Content Section on CourseLink that describes how to make the best use of this software

- 2) You can resubmit your assignment as many times as you want (only the most recent version is kept). Please note, however, that it can take up to 24 hours to generate an Originality Report for resubmissions, so plan accordingly.

Final examination date and time: N/A

Final exam weighting: 0%

Course Resources

Other Resources:

Assigned Readings and Videos:

There is no course textbook. All assigned readings are primary research articles, and are available through CourseLink along with any assigned videos. The assigned readings are designed to help you develop:

- Your ability to process journal articles, which are the most reliable source for staying up to date with research
- Your ability to think independently. Many of the assigned readings will not be discussed in class, but will be tested through the in-class quizzes. Your challenge is to figure out how to make sense of these articles.

CourseLink:

- Copies of the lecture slides will be posted to CourseLink by 7am on the morning of each lecture, at the latest.
- Grades for all in class quizzes will be shared through CourseLink. As soon as grades are posted, I will add an announcement to the CourseLink News Feed.
- It is your responsibility to periodically verify your grades on CourseLink

Course Policies

Contacting the Instructor or TA

To help your instructor and TA stay on top of answering your questions, please use the following procedures when contacting us:

- The fastest way to get a response to simple questions is through the class discussion board on CourseLink. By simple, I mean questions that only require a sentence or two to answer. I check the board every weekday, and you are encouraged to respond to each other's posts.
- Longer questions, and questions of a confidential nature, should be brought to my office hours (times listed above). I'm always happy to have visitors, so take as much advantage of these office hours as you can!
- Please direct questions about quiz grading to the TA during their office hours (announced on CourseLink).
- My email is to be used for emergencies only.

Grading Policies

Missed Quizzes: This course uses frequent in-class quizzes, which affords you the opportunity to drop your worst quiz mark. The tradeoff is that there are no make-up quizzes, because make-up quizzes could delay the grading process and prevent the instructor/TA from returning quiz grades in a timely fashion. The first time you miss a quiz this will be treated as your worst quiz grade that is dropped—you do NOT need to provide documentation, nor inform the instructor. Additional missed quizzes will be given a grade of 0 and count toward your final grade unless appropriate documentation is provided within one week to the instructor as evidence of illness or compassionate circumstances.

Late Final Paper: Papers are graded out of 100 marks, and 10 marks will be subtracted from the assigned grade each day the paper was late, including weekend days. Papers submitted more than 5 days late will receive a grade of 0. Late papers should be submitted through the Final Paper Dropbox on CourseLink.

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:

[Academic Consideration, Appeals and Petitions](#)

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of

detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

[Academic Misconduct Policy](#)

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email accessibility@uoguelph.ca or the [Student Accessibility Services Website](#)

Course Evaluation Information

Please refer to the [Course and Instructor Evaluation Website](#).

Drop date

The last date to drop one-semester courses, without academic penalty, is Friday November 3rd. For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#).

[Current Undergraduate Calendar](#)

Additional Course Information

Turnitin: Course instructors are allowed to use software to help in detecting plagiarism or unauthorized copying of student assignments. Plagiarism is one of the most common types of academic misconduct on our campus. Plagiarism involves students using the work, ideas and/or the exact wording of other people or sources without giving proper credit to others for the work, ideas and/or words in their papers. Students can unintentionally commit misconduct because they do not know how to reference outside sources properly or because they don't check their work carefully enough before handing it in. Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

In this course, your instructor will be using Turnitin.com to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to prevent plagiarism in the College of Social and Applied Human Sciences.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.