

PSYCHOLOGY 409

COGNITIVE NEUROPSYCHOLOGY

Section 001 Winter 2021-22, Term 2
Tu-Th 2:00 - 3:30

INSTRUCTOR

Name: Dr. Todd C. Handy
Email: todd@psych.ubc.ca

LEARNING OBJECTIVES

This course is not a traditional survey of topics and issues in cognitive neuropsychology as one might find in a textbook. The goal is to develop an understanding of human neurocognitive function not through a brain-centric lens of neural systems and networks that process information in support of basic behavioral tasks, but rather, through a body-centric perspective of a physically mobile organism adapted to navigate its way through a physical and socio-cultural environment. Throughout, emphasis will be placed not on describing and detailing neurocognitive function in mechanistic, impersonal, third-person terms, but rather, from appreciating neurocognitive function as a first-person, subjectively lived experience that unfolds in the flow of everyday life. As such, at the end of the course, the successful student should be able to:

1. Understand the larger biological context for cognition and brain function, be able to answer the question of why we have brains, and be able to articulate why this is a critical question to address.
2. Understand the role of the body and environment in shaping human cognition and its evolution

COURSE ORGANIZATION

This course is not lecture-based. Rather, as a small (for the Psychology Department), fourth-year course, it is taught in a seminar-based style, which emphasizes open discussion rather than formal lectures. **In terms of structure, the course consists of 4 modules, each three weeks in length.** As such, each module will consist of six on-line class sessions, two per week (at our scheduled lecture time of 2 pm Tuesdays/Thursdays, Vancouver time).

MODULE ORGANIZATION

The overarching goal behind the module organization is to facilitate asynchronous learning while also utilizing the actual assigned lecture time in a way all students can hopefully access, either via attending live or via watching a posted recording. Please note: all time references in the following

are with respect to Vancouver time (either Pacific Standard Time, or after early March, Pacific Daylight Time). Each module will include three assigned articles for reading, a take-home quiz, and a written, 1-page assignment, as per the following weekly schedule:

- Week 1:** On-line session #1: An introduction to the Module
- On-line session #2: Discussion of the **first** assigned reading
- Week 2:** On-line session #3: Discussion of the **second** assigned reading
- On-line session #4: Discussion of the **third** assigned reading
- Take-home quiz**
- Week 3:** On-line session #5: Open Q&A
- On-line session #6: Open Q&A
- Written assignment**

LECTURE SLIDES

In the LECTURE SLIDES module on the course Canvas site, I will post any slides shown in class shortly after class ends (e.g., by that evening). However, as a discussion-based course, please be aware that most class sessions will not include lecture slides.

ASSIGNED READINGS

All of the assigned readings will be available for download in pdf format from the course CANVAS site, on the MODULES page. To facilitate your reading of the papers, I have also included a short document on the MODULES page titled *Reading Strategies*; if you adopt them, these strategies will hopefully help you to maximize what you learn from the papers while minimizing the natural anguish and stress that can come with reading material that feels difficult to digest.

TAKE-HOME QUIZZES

To incentivize reading the assigned articles and attending (or listening to) the on-line class sessions, each module includes a take-home quiz. This will be available on the ASSIGNMENTS page on the course canvas site at 8 pm on the Thursday evening (Vancouver time) of Week 2 of each module, as per the module outline above. You will need to upload your answers (as a .doc or .pdf

document) on the ASSIGNMENTS page within 48 hours (or by 8 pm that Saturday, Vancouver time). Each quiz will ask 5 short questions concerning major themes/concepts/ideas from the assigned papers for that module and/or our discussion of those papers in class. **These will be worth 10 points each, for a total of 40 possible points.**

WRITTEN ASSIGNMENTS

At the end of the second week in each module I will post a written assignment that will be due at the end of the third week in that module. The assignment will build on an issue or topic from the material and discussion from that module. Details will be specific to each assignment, but each assignment will require turning in a 1-page written document, in 12-point, single-spaced Times New Roman font, with margins of 1" on all four sides. Grading will be based on two dimensions: (1) the general comprehensibility and quality of the writing itself, and (2) the rigor/demonstrated ability of applying concepts and ideas as they pertain to the specific topic/assignment. **These will be worth 20 points each, for a total of 80 possible points.**

MISSED QUIZZES and ASSIGNMENTS

Take-home quizzes and written assignments can be turned in late, but they will be downgraded according to the degree of lateness. Please note that not all circumstances regarding missed quizzes and assignments can be anticipated ahead of time, and so further grading policies in this domain may be specified to the class at later points in the term in order to fairly deal with such situations if they arise.

OVERALL COURSE MARKS

Course marks will be based on a sum total of take-home quizzes (40 points) and the written assignments (80 points), **for a total of 120 possible points.**

DEPARTMENT SCALING POLICY

In order to reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms regarding grade distributions for final course marks. According to departmental norms, the mean course mark in a 300-level class is 70 for a good class, 68 for an average class, and 66 for a weak class, with a standard deviation of 13. Final course marks may be scaled up or down as necessary by the professor or department in order to comply with these norms. For official UBC policy on grade scaling, please see: <http://students.ubc.ca/calendar/index.cfm?tree=3,42,96,0>. **However, please note that for Term 2 2020-2021, the Department of Psychology is allowing for a 5-point higher mean than normal.**

CONTACTING THE INSTRUCTOR

To avoid having your emails automatically deleted as spam, the subject header must read "Psych 409." The answers to questions regarding lecture/reading content may often be useful for the entire class to hear. As a consequence, questions may be answered in the live lecture rather than via email. Please also note that while I try to be responsive to student emails, there are limits that must be put in place. Unfortunately, to keep things fair for everyone, I can not respond to students who generate excessive/frequent emails or who generate long lists of questions, as it would be impossible for me to provide this level of service to all students. **Finally, in order to promote good problem solving skills, I will deduct 1 point from a student's final course mark for each email question that can be answered by consulting this syllabus, the Department of Psychology web page, and/or the UBC web page.** Examples of such questions would be *When is the next quiz?*, *Where/when is the final?* and *What are the assigned readings for the next exam?*

PLEASE ALSO NOTE: I DO NOT USE OR MONITOR THE EMAIL SYSTEM ON CANVAS. I WILL ONLY BE MONITORING EMAIL TO MY ADDRESS LISTED AT THE TOP OF THE SYLLABUS.

ACADEMIC CONCESSIONS

Arts Students must contact Arts Advising as soon as you are aware you may need an [in-term concession](#). Please review [their website](#) for concession criteria as well as process to follow. Students in other Faculties should contact their Faculty advising office for direction.

OUTSIDE RESOURCES

If you run into trouble and need information on effective studying, preparing for exams, how to take notes, or manage your academic time, free workshops and advice are available from the Student Resources Center, which can be reached through the School and College Liaison Office at 822-4319. UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here: (<https://senate.ubc.ca/policies-resources-support-student-success>)

COURSE SCHEDULE AND TOPICS

Module 1: A New Perspective on the Brain

Our starting point is to re-think our perspective on the human brain. Why do we have them in the first place? What is their evolved purpose? In this module we establish an understanding of the brain from a biological perspective, one that sees it as an organ of the body with a purpose to serve for the body just like the heart, lungs, and liver, and a purpose that is common to all embrained organisms in the animal kingdom.

Begins the week of January 10

Module 2: The Cognitive Neuropsychology of the Body

The goal of this module is to introduce a central but overlooked fact about us humans — our walking is a cognitively demanding activity. Why do we begin to have problems with falling as we advance into older age? How can we diagnose our cognitive health through the pattern our footsteps make as we walk down a hall? We will answer these questions in Module 2 by exploring the relationship between brain function and the health of our physical mobility.

Begins the week of January 31.

Module 3: The Cognitive Neuropsychology of the Environment

A critical issue that arises from viewing the brain from a biological perspective is that brain function itself can not be fully understood independent of the body and environment. This becomes readily apparent when one considers models of how the environment constrains and shapes our patterns of physical mobility, and in particular, models aimed at understanding why our mobility patterns in the out-of-home environment change as our cognition declines in older age.

Begins the week of February 28.

Module 4: The Cognitive Neuropsychology of Human Evolution

The final idea we explore in class concerns how what makes us physically unique among primates — our adaptations for walking and running — helps to explain what makes us neurocognitive unique among primates. In particular, we will examine this issue from two complimentary perspectives, one that emphasizes the impacts of physical mobility on our brains, and one that examines our capacity for what I call "mental mobility."

Begins the week of March 21.