



PSYO 230 - 001
Introduction to Biopsychology

2021-2022 Winter Term 2
Tuesday and Friday 0830 to 1000, ASC140/hybrid

Welcome to Biopsychology of Behaviour!
I am looking forward to getting to know each of you while we explore the brain and select experiments in the field. My aim is to provide an engaging, respectful class environment where each student can practice critical thinking to further their understanding of the provided material.

Copyright: All information contained within this syllabus is copyrighted by the course instructor and is not to be used, in whole or in part, without prior explicit permission.

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Email policy: All queries and discussion pertaining to course material, schedule, and evaluation criteria are to be directed to the Canvas discussion page, as many other students may have similar questions as you. These discussions are moderated by myself and the TAs. Any emails containing above-noted queries will not be responded to. The last day to ask questions before deadlines (e.g., midterms, assignments) is 3



business days prior to the deadline or we cannot guarantee a response.

Only emails pertaining to personal issues and academic accommodations will be reviewed. If you are emailing, you are required to put the course code (“PSYO 230”) in the subject line, or we cannot guarantee a response.

Course Overview, Content, and Objectives

This course will provide you with fundamentals of biopsychology and exposure to cutting edge research in the field. With respect to research, the emphasis will be placed on recent work and experiments that expand upon fundamental topics covered in classic lecture format, due to their applicability to research experience and will provide exposure to various research techniques.

The course will explore: basic neuroanatomy, vision, sensation and perception, movement, learning and recovery, language and lateralization, and sleep. We will also cover neurological disorders and how such functions are disrupted after neurological injury. Class time will be divided between lectures, discussion activities, and presentations of cutting-edge experiments provided by researchers in the relevant fields.

COURSE DELIVERY:

Course delivery will occur via a hybrid model, with some lectures delivered asynchronously, and some live (that are recorded and posted). Live lectures will be online for the month of January, and/or until otherwise directed by the institution.

All recorded content will be posted for 1 week.

Pending public health and institutional guidelines, live lectures will (hopefully) be able to be in-person after the month of January.

Please refer to the syllabus for the course schedule. Any changes related to course delivery will be announced and/or emailed. The syllabus will be updated to reflect any and all changes made to the course schedule.

Please note: guest lecturers will be recorded only upon consent of the lecturer; thus no guarantee that these will be recorded.

Learning Outcomes

After completing this course, students will be able to:

- Identify main areas of the brain and components of the central nervous system
- Understand the fundamental of different brain systems
- Understand how different brain systems can be disrupted
- Understand the purpose of the Research Ethics Board
- Describe in detail at least one research method used to explore the brain
- Understand exemplar experiments conducted to advance our understanding of neuroscience



- Gain experience with reading and processing academic articles
- Gain experience with study conceptualization and identifying research questions to address a gap in the literature
- Develop critical thinking skills

Evaluation Criteria and Grading

- 1) **Exam #1 (25% of grade).** The exam will cover: Foundations, Vision, Sensation and Perception, including all lecture and textbook material. The exam will be in multiple-choice and brief written format. Guest lecture and methodology-related material will also be included.
- 2) **Exam #2: (25% of grade).** The exam will cover Movement, Learning, Language & lateralization, and Sleep, including all lecture and textbook material. The exam will be in multiple-choice and brief written format. Guest lecture and methodology-related material will also be included.
- 3) **Class-based Assignments (20%).** These assignments are based on *in class interactive/discussion activities* and the *guest lectures*. Each assignment is due at 10 AM the following day (i.e., the day after the in-class discussion/guest lecture).
- 4) **Final assignment (30%).** This is a group assignment, and will build upon class-based assignments completed over the course of the semester. Further details related to this assignment will be released early/mid-March. There is no final exam for this course.
- 5) **SONA/Research activity (2% Bonus).** See below for explanation of how to participate in SONA.

No additional or alternative opportunities for credit will be provided for fairness amongst all students.

Course Schedule, Required Readings

*The textbook used alongside this course is **Discovering Behavioral Neuroscience: An Introduction to Biopsychology** by L. Freberg ISBN 9781337570961. The **MindTap** bundle is optional as this may be helpful to your learning but not required to complete the course.*

Note: This schedule is tentative and subject to change. It is your responsibility to attend class, to monitor Canvas, and to be aware of any changes that occur. Links to the supplementary readings can be found on Canvas.



| | Topics | Reading | Assignment | Format |
|---------------------|---|---|---------------------------|-----------------------------|
| Tues. Jan 11 | Course overview and introduction | Syllabus | - | Live - online |
| Fri. Jan 14 | Foundations | Ch 1 pgs 2-7,19, 23-28 Ch 2 pg 28-54 Ch 3 | - | asynchronous |
| Tues. Jan 18 | Foundations | ^ | - | asynchronous |
| Fri. Jan 21 | Foundations | ^ | Class-based assignment #1 | Live - online |
| Tues. Jan 25 | <i>Vision – T Yousef, Dalhousie University</i> | Ch 6 | - | Live - online |
| Fri. Jan 28 | <i>Light adaptation and electrophysiology – T Yousef</i> | | Class-based assignment #2 | Live - online |
| Tues. Feb 1 | Sensation and perception | Ch 7 | - | asynchronous |
| Fri. Feb 4 | Sensation and perception | Ch 7 | - | asynchronous |
| Tues. Feb 8 | Neuroimaging essentials | Ch 1 pg 12-17 | Class-based assignment #3 | Live |
| Fri. Feb 11 | <i>Structural brain imaging and motor skills – C Rubino, University of British Columbia</i> | | Class-based assignment #4 | Live - online |
| Tues. Feb 15 | Midterm #1 | | - | Live w/remote option |
| Fri. Feb 18 | Movement | Ch 8 | | asynchronous |
| Tues. Feb 22 | <i>Reading break</i> | | - | - |
| Fri. Feb 25 | <i>Reading break</i> | | | - |
| Tues. Mar 1 | Neurophysiology essentials | Ch 1 pg 17/18 | Class-based assignment #5 | Live |
| Fri. Mar 4 | Learning | Ch 12 pg 416-447 | - | asynchronous |
| Tues. Mar 8 | <i>Learning & recovery – L Boyd, University of British Columbia</i> | | Class-based assignment #6 | Live |
| Fri. Mar 11 | Sleep | Ch 11 pg 376-406 | - | asynchronous |
| Tues. Mar 15 | Language & lateralization | Ch 13 pg 456-480 | Class-based assignment #7 | Live |
| Fri. Mar 18 | TBA | | - | Live |
| Tues. Mar 22 | Midterm #2 | | - | Live w/remote option |



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|--------------|--|---------------------------|---------------------------|---------------------|
| Fri. Mar 25 | Neurocognitive disorders and rehabilitation | Ch 15 pg 524-534, 540-553 | - | asynchronous |
| Tues. Mar 29 | Neurocognitive disorders and rehabilitation | ^ | Class-based assignment #8 | Live |
| Fri. Apr 1 | <i>Conscious vs unconscious processing x EEG - S Heiraini, Queens University</i> | | Class-based assignment #9 | Live - online |
| Tues. Apr 5 | Final assignment-related activities & work period | | - | Live |
| Fri. Apr 8 | Review and conclusions | | - | Live |

Reminder: All class-based assignments are due at 10AM the following day.



RESEARCH ACTIVITY (2% BONUS)

This course allows for 2% bonus to be added to your final grade. This requirement may be fulfilled either through direct participation in research through the SONA online volunteer subject pool (Option 1), by completing two written summaries of primary research articles (Option 2), or by a combination of the two types of activities.

Research Participation (Option 1)

As a participant in one of numerous Psychology Department Subject Pool experiments posted at <http://ubco.sonasystems.com/>, you will obtain 0.5% credit for each 0.5 hour of participation at UBCO. Hence, participation requiring a 1-hour time commitment provides a credit of 1%, 1.5 hours provides a credit of 1.5%, and 2 hours provides a credit of 2.0%, etc.

Important Requirements

You may participate in more than one experiment in order to accrue credits. A substantial number of studies are typically hosted on SONA; therefore, you will have many different choices. It is important to sign up for experiments early in the semester in order to increase the odds that a time slot is available. If you wait until late in the semester, all time slots may be taken.

Logging On To The System

SONA is only open for those students who are registered in a psychology course offering SONA credit. Please only use the request account option if you have never used the SONA system before. If you have used the SONA system before, please use the most recent login information you remember to log in.

Missed Appointments & Penalties

Missed appointments (i.e., failure to cancel the appointment at least 3 hours prior to the session) will be tracked. The consequence will be that you will not receive credit for participation in the experiment and will lose the credit value of the study from possible marks associated with participation in research.

Please email psyc.ubco.research@ubc.ca with any questions or concerns that you may have regarding the SONA system, including unassigned bonus credits. **Your professor does NOT have access to this information.**

Research Summary Assignment (Option 2)

As an alternative to participating in a Psychology Subject Pool experiment, you may obtain subject pool credit by completing 1 library-writing project to a satisfactory level. This library-writing project is worth a total of two credits [i.e., 2% toward the final grade].

Important Requirements

1. This project consists of reading and summarizing (in written form) a recent, peer-reviewed, primary research article.
 - A “recent” article has been published within the past 12 months.
 - A “peer reviewed” article is one that has been reviewed by other scholars before it is accepted – for example, it **cannot** be a news item, an article from a popular magazine,



a notice, or a letter to the editor.

- A “primary” research article describes an experiment or study where data are collected by the authors. In other words, the article you choose to review **cannot** be a book review, literature review, or summary article.

2. You must choose an article published by one of the following journals:

- *Acta Psychologica*
- *Brain*
- *Brain Research*
- *Behavioural Brain Research*
- *Behavioural Neuroscience*
- *Canadian Journal of Behavioural Science*
- *Canadian Journal of Experimental Psychology*
- *Cerebral Cortex*
- *Cognitive, Affective, & Behavioral Neuroscience*
- *Cortex*
- *Current Directions in Psychological Science*
- *Experimental Brain Research*
- *Human Brain Mapping*
- *Journal of Experimental Psychology (and any of its sub-journals, such as Human Perception and Performance)*
- *Journal of Cognitive Neuroscience*
- *Learning & Behavior*
- *Memory & Cognition*
- *Nature (or any nature sub-journal, such as Nature Human Behaviour, Scientific Reports)*
- *Neuroimage*
- *Psychological Science*
- *Perception & Psychophysics*
- *Psychonomic Bulletin & Review*

Should you wish to choose an article in a journal not listed here, you are required to seek Dr. Kraeutner’s approval.

3. Other Assignment Guidelines

The summary should be about 300-500 words in length. The source must be cited and referenced in accordance with the *Publication Manual of the American Psychological Association* (6th ed.). The review will be graded on a pass – fail basis (2% or 0%). At least **14 days before the end of classes** each term, submit the following to the course instructor:

- the article summary
- a copy of the article
- a cover page that specifies your name, student number, email address, and word count of the summary.
- the course title and number



Submitting the assignment 14 days in advance is necessary to ensure that you have an opportunity to make corrections, if required. If you do not check your email frequently, provide a phone number on the cover page.

UBC Okanagan Disability Resource Centre:

The Disability Resource Centre ensures educational equity for students with disabilities and chronic medical conditions. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, please contact Earllene Roberts, the Diversity Advisor for the Disability Resource Centre located in the University Centre building (UNC 214). UNC 214 250.807.9263

Email earllene.roberts@ubc.ca

Web: www.students.ok.ubc.ca/drc