PSYC*2410, Course Outline: Fall 2019

General Information

Course Title: Behavioural Neuroscience I

Course Description:
Can the human brain ever fully understand itself? Psychology and Neuroscience involve the scientific study of behaviour and the nervous system, respectively. In this course, we will consider both of these pursuits from the integrative perspective of biopsychology, or behavioural neuroscience. The ultimate effect of nervous system function is to produce and control behaviour. This course deals with the link between psychological processes and the brain. As such, we will consider evolutionary, genetic, anatomical, pharmacological, synaptic, neurochemical, and developmental bases of aspects of human and animal behaviour. Throughout, we will emphasize the behavioural relevance of the biological and physiological mechanisms under discussion.

Format: Lectures.

Credit Weight: 0.5

Academic Department (or campus): Psychology

Semester Offering: F19

Class Schedule and Location: MWF, 10:30AM-11:20AM; THRN 1200

Instructor Information

Instructor Name: Dr. Boyer Winters
Instructor Email: bwinters@uoguelph.ca
Office location and office hours: MacKinnon Extension, Room 3005; ext. 52163**;** Meeting by arrangement; e-mail at all times

GTA Information

GTA Name: TBA
GTA Email: TBA
GTA office location and office hours: TBA
Around the start of the semester, weekly TA tutorial sessions will be arranged for interested students to 'drop in' and catch up on that week's lecture material. Location and times TBA.

Course Content

Specific Learning Outcomes:

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

1. Identify gross anatomical structures of the mammalian brain and describe their basic functions.
2. Recognize various genetic and pharmacological factors that influence brain function and behaviour.
3. Critically evaluate various methods used to study the intersection between brain and behaviour.
4. Apply the above concepts to understanding the neural bases and possible therapies for human brain disorders.
5. Recognize the major neurobiological features of the mammalian sensory and motor systems.

Lecture Content:

Schedule of topics and dates.

The following is an outline of how the course will proceed. However, if necessary, I reserve the right to progress more slowly than indicated.

DATE	READINGS	TOPICS
Sept 6	Chpt 1	Brief Orientation, questions and answers, introduction
Sept 9	Chpt 1	Introduction, cont'd
Sept 11	Chpt 3	Anatomy and Functions of the Central Nervous System
Sept 13	Chpt 3	Anatomy and Functions of the Central Nervous System
Sept 16	Chpt 3	Anatomy and Functions of the Central Nervous System
Sept 18	Chpt 3	Anatomy and Functions of the Central Nervous System
Sept 20	Chpt 2	Evolution
Sept 23	Chpt 2	Evolution/Genetics of Behaviour
Sept 25	Chpt 2	Genetics of Behaviour

DATE	READINGS	TOPICS
Sept 27	Chpt 2	Genetics of Behaviour
Sept 30	Chpt 2	Genetics of Behaviour
Oct 2	Chpt 2	Genetics of Behaviour
Oct 4	Chpt 2	Genetics of Behaviour
Oct 7	Chpt 4	Excitable Cell Membranes
Oct 9	Chpt 4	Neuronal Action Potentials
Oct 11	Chpt 4	Neuronal Action Potentials/Synaptic Transmission
Oct 14	No CLASS	THANKSGIVING Monday
Oct 16	Chpt 4	Synaptic Transmission
Oct 18	******	First Midterm Exam
Oct 21	Chpt 4, plus Neurotransmitters Supplement	Pharmacological and Genetic Manipulation of Behaviour
Oct 23	Chpt 4, plus Neurotransmitters	Pharmacological and Genetic Manipulation of Behaviour
Oct 25	Chpt 4, plus Neurotransmitters	Pharmacological and Genetic Manipulation of Behaviour
Oct 28	Chpt 4, plus Neurotransmitters	Pharmacological and Genetic Manipulation of Behaviour
Oct 30	Chpt 4, plus Neurotransmitters	Pharmacological and Genetic Manipulation of Behaviour
Nov 1	Chpt 4, plus Neurotransmitters	Pharmacological and Genetic Manipulation of Behaviour
Nov 4	Chpt 6/7	Visual System
Nov 6	Chpt 6	Visual System
Nov 8	Chpt 6/7	Visual System

DATE	READINGS	TOPICS
Nov 11	******	Second Midterm Exam
Nov 13	Chpt 7	Visual System
Nov 15	Chpt 7	Visual System/Hearing
Nov 18	Chpt 7/11	Touch/Smell/Taste
Nov 20	Chpt 11	Touch/Smell/Taste
Nov 22	Chpt 11	Learning, Memory, and Amnesia
Nov 25	Chpt 11	Learning, Memory, and Amnesia
Nov 27	Chpt 11	Learning, Memory, and Amnesia
Nov 29	Chpt 11	Learning, Memory, and Amnesia

Labs: N/A

Seminars: N/A

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Midterm #1	Oct 18, in class	25%	1-5
Midterm #2 (non-cumulative)	Nov 11, in class	25%	1-5
Final Exam (cumulative)	Dec 5, 8:30am; Location TBA	50%	1-5
Optional Written Assignment	Dec 1, 11pm; use Dropbox in CourseLink	Potential to replace weight of MT1 or MT2	2-4

Additional Notes:

Midterms and final exam will be multiple choice.

Optional Written Assignment: “Never mind the neurobollocks”. Students have the option to complete a written critical evaluation of a pop cultural representation of a neuroscience-related issue (e.g., the depiction of long-term memory loss in the movie “Memento”; tinnitus in “Baby

Driver"). THIS PAPER IS NOT MANDATORY. If a student chooses to complete this assignment s/he will have the option to replace the lower of the two midterm grades. ***Please note that all students must still write both midterms; this optional assignment merely provides the opportunity to replace the lowest of your two midterm grades.***

THE FINAL EXAM GRADE CANNOT BE REPLACED.

This paper should be approximately 4-5 pages, double-spaced, plus a title page with your name and student ID. Your paper should include an introduction of the relevant neuroscience-related topic, a summary of the pop cultural representation being examined, and a critical comparison between the pop cultural representation and the scientific facts (as determined from your own research into the topic), as well as your conclusions about the accuracy of the pop culture representation. Keep in mind that "critical evaluation" does not necessarily mean negative; a well-reasoned and researched positive or balanced assessment will be just as likely to produce a good grade. A session will be held in class closer to the end of the semester to address student questions regarding this assignment, but you are welcome to approach me sooner with any thoughts you might have.

Final examination date and time: Dec 5, 8:30am; location TBA

Final exam weighting: 50%

Course Resources

Required Texts:

1. J. P. Pinel. Biopsychology. New York: Allyn and Bacon, 7th Edition or later. There are several copies of the textbook on reserve in the library.
2. Neurotransmitters Supplement: B.D. Winters. Neurotransmitter Systems and Behavior. Downloadable as an interactive e-book from Kendall Hunt Publishing at the following url: https://he.kendallhunt.com/product/neurotransmitter-systems-and-behavior

Recommended Texts:

Lab Manual: N/A

Other Resources:

Web site: lecture notes will be available online before each class. Just login to CourseLink using your U of G email username and password.

Instructor – Student Communication: You can email me at any time. I will set up an e-mail class list that I will use to communicate important information to you (e.g., exam marks). I will use your U of G email address as default.

Field Trips: N/A
Additional Costs: N/A

Course Policies

Grading Policies

If you miss an exam, please inform me AS SOON AS POSSIBLE, so that a make-up can be arranged.

Course Policy on Group Work: N/A

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. 56208 or email accessibility@uoguelph.ca or see the website: 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 November 29th. For regulations and procedures for Dropping Courses, see the Academic Calendar:
Current Undergraduate Calendar