CAMOSUN COLLEGE
School of Arts & Science
Department of Psychology

PSYC-215-001
Biological Psychology
Fall 2018

COURSE OUTLINE

The course description is available on the web @ http://camosun.ca/learn/calendar/current/web/psyc.html

Ω *Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.*

1. Instructor Information

(a) Instructor	Michael Pollock	
(b) Office hours	Mondays, Tuesdays, & Fridays at 11:30-12:20	
(c) Location	Fisher 308B	
(d) Phone	250-370-3111	**Alternative:**
(e) E-mail	pollockm@camosun.ca	
(f) Website	http://online.camosun.ca	

2. Intended Learning Outcomes

Upon completion of this course a student will be able to:

1. Summarize the history of biopsychology, and the relationship of biopsychological theories and methods to the broader field of psychology.
2. Compare the most important research methods used in biopsychology.
3. Discuss the basic concepts, supporting the evidence for the interaction of evolution, genetics and experience in the development of behaviour.
4. Label and summarize the basic structures and functions of the human nervous system.
5. Explain the processes involved in neural conduction and synaptic transmission.
6. Label images of the human visual system and explain basic visual processes in the central nervous system.
7. Discuss the mechanisms of perception, consciousness, awareness and attention.
8. Describe the functioning of the human sensorimotor system.
9. Summarize the processes involved in the development of the human nervous system and the ways in which the human brain attempts to cope with brain damage with an emphasis on neuroplasticity.
10. Discuss human learning, memory and amnesia as they relate to the human brain.
11. Summarize human sexual development, human sexual dimorphism and the effects of hormones on human development and behaviour.
12. Describe a model of drug addiction and a general model of the effects of various drugs on the neuronal function.
13. Discuss various disorders of cognition and emotion with regard to the human brain.
14. Summarize the effects of stress and emotions on human neurophysiology.
15. Discuss the neurophysiology of schizophrenia, depression and anxiety and attempts to treat these disorders.

3. Required Materials

Pinel, John P. J. (2014). *Biopsychology*. (9th ed.). Toronto: Pearson.

4. Course Content and Schedule

Course Content:
Neuroscience is a relatively new field of study, but could its findings eventually provide an explanation for all of our behavior by reducing our thoughts and feelings down to the workings of the brain? This course familiarizes students with the current major findings and limitations associated with biopsychology - the study of how biological knowledge can be applied to psychological topics. In the process of trying to understand the biological mechanisms of the mind, topics will range from the microscopic (e.g., genetics, the electrophysiology of neurons, and neurochemistry) to the macroscopic (e.g., functional neuroanatomy and how the different parts of the nervous system interact). The concepts associated with these topics will be discussed in class and, when possible, demonstrations will be given to help bring them to life. In addition to studying concept lecture notes, students will be assisted with engaging in their own independent research as part of their course assignments. This course is a must for anyone interested in understanding the biological underpinnings of our minds and the first-hand experience you will gain in conducting neuroscience research will allow you to be better able to critically evaluate research claims for their practical usefulness in your personal and professional life.

Deadlines:
The Course Schedule below lists the dates for when the different components of your course grade are due. While the lab assignments have soft deadlines – which means students can still revise, edit, and submit the assignments after their set deadline until the end of the course – quizzes/exams have hard deadlines – which means there will be no make-up quizzes/exams for this course. Failing to take a quiz/exam by its scheduled date will result in a score of zero for that quiz/exam.
Exceptions may be granted at the discretion of the instructor for cases of hardship or extenuating circumstances (e.g., a medical emergency) if the proper documentation to show this can be provided. In cases with documented extenuating circumstances, make-up exams will be provided for missed exams while marks for other missed items will be waived, with the remaining accomplished items for those course components being weighted more heavily.

COURSE SCHEDULE				
Week	Lab or Lecture	Date	Lecture Topic, *Lab Activity,* or ***Exam***	Readings*, *Lab Assignment, or* ***Quiz***
Week 1	Lab	Sep 5 Wednesday	Introduction	
Week 2	Lecture	Sep 10 Monday	Course Overview	
	Lab	Sep 12 Wednesday	*Neuroscience Wishing*	*Research Topic*
Week 3	Lecture	Sep 17 Monday	Biopsychology & its Methods	Read Ch.1 & 5.1
	Lab	Sep 19 Wednesday	*Literature Search*	*Primary Research Article* **Online quiz on Biopsychology & its Methods**

Week 4	Lecture	Sep 24 Monday	Behavioral Genetics	Read Ch.2.3 & 2.5
	Lab	Sep 26 Wednesday	*Article Analysis*	*Article Summary* **Online quiz on Behavioral Genetics**
Week 5	Lecture	Oct 1 Monday	Electrophysiology	Read Ch.3.2 & 4.1-4.4
	Lab	Oct 3 Wednesday	*Hypothesis Generation*	*Hypotheses* **Online quiz on Electrophysiology**
Week 6	Lecture	Oct 8 Monday	College closed due to Thanksgiving Day long weekend	Read Ch.4.5-4.7, 15.3, & 18.1-18.2
	Lab	Oct 10 Wednesday	*Measurement Planning*	*Baseline Methods* **Online quiz on Neurochemistry & Neuropharmacology**
Week 7	Lecture	Oct 15 Monday	Psyc Jeopardy	
	Lab	Oct 17 Wednesday	**Midterm Exam**	
Week 8	Lecture	Oct 22 Monday	PNS & Brainstem	Read Ch.3.1, 3.3, 3.5, 3.6, & 14.5
	Lab	Oct 24 Wednesday	*Correlation*	*Correlational Analyses* **Online quiz on PNS & Brainstem**
Week 9	Lecture	Oct 29 Monday	Forebrain	Read Ch.3.6, 7.1, 7.3, 8.2, 8.4, 9.2, 15.4, & 17.1-17.4
	Lab	Oct 31 Wednesday	*Experiment Planning*	*Experimental Methods* **Online quiz on Forebrain**
Week 10	Lecture	Nov 5 Monday	Lateralization	Read Ch.16 & 17.4
	Lab	Nov 7 Wednesday	*Descriptive Statistics*	*Descriptive Statistics Analyses* **Online quiz on Lateralization**
Week 11	Lecture	Nov 12 Monday	College closed due to Remembrance Day long weekend	Read Ch.6.4, 6.6, 7.3, 7.5, & 11.7
	Lab	Nov 14 Wednesday	*Inferential Statistics*	*Inferential Statistics Analyses* **Online quiz on Perception**

Week 12	Lecture	Nov 19 Monday	Action	Read Ch.8.2-8.5, 8.8, & 18.4
	Lab	Nov 21 Wednesday	*Graphing Data*	*Graphs* **Online quiz on Action**
Week 13	Lecture	Nov 26 Monday	Memory	Read Ch. 11
	Lab	Nov 28 Wednesday	*Drawing Conclusions*	*Conclusions* **Online quiz on Memory**
Week 14	Lecture	Dec 3 Monday	Psyc Jeopardy	
	Lab	Dec 5 Wednesday	*Poster Session*	*Poster Presentation*
		TBA	**Final Exam**	

5. Basis of Student Assessment (Weighting)

Course component	Weight
Assignments:	25%
Online Quizzes:	15%
Midterm Exam:	26%
Final Exam:	34%

Each of these components is described in more detail below. You can check the course D2L website at any time during the semester for your current class standing and you are invited to discuss any concerns about your grade with the instructor.

Assignments:

For your course assignments you will develop in the following 12 stages a neuroscience research project involving self-experimentation. Guidance will be provided in labs throughout the semester for how to carry out these assignments. After you have completed an assignment, you should submit a copy of it in person to the instructor during lab time for feedback on it. To receive a mark for each assignment, your work must meet a satisfactory level of quality as determined by the instructor and you will not be allowed to progress to the next assignment until all requested revisions on the previously submitted assignment have been made and approved by the instructor.

Assignment #1 - Research Topic – You will identify a psychological aspect about yourself that you wish to understand the neuroscience of and provide a description of why you are personally interested in that topic. You will then specify a research topic based on this (IMPORTANT NOTE: make sure it's a topic that you'd also be willing to share with the class your results about it).

Assignment #2 - Primary Research Article – You will perform a literature search using *PsycINFO* or *MEDLINE* to see what aspects about your topic have already been examined by scientific research and find at least one primary research article about that topic.

Assignment #3 - Article Summary - You will reference (in APA format) your approved primary research articles and summarize *in your own words* what findings they have revealed about your topic and the methods that were used in the articles to discover those findings.

Assignment #4 - Hypotheses - Based on the previous findings revealed in your article analyses, you will generate several hypotheses that each makes a specific prediction involving two variables (an independent and a dependent variable) and an expected direction of results.

Assignment #5 - Baseline Methods - You will describe in detail a method you propose for how you will quantitatively measure on yourself natural variations in the variables listed in your hypotheses in order to test the hypotheses using a non-experimental design. The methods you choose for measuring your variables can be based on those previously used in the scientific literature or can be entirely of your own creation.

Assignment #6 - Correlational Analyses - Following approval of your proposal by the instructor, you will start carrying out your baseline methods (IMPORTANT NOTE: findings from a project whose methods have not been approved will receive a mark of zero). Using the data collected from your baseline measurements, you will perform correlational analyses to test your hypotheses.

Assignment #7 - Experimental Methods – Based on the hypothesis that your correlational analyses most strongly support as best predicting the intended outcome of your research, you will describe in detail a method you propose for how to experimentally test on yourself the relationship between the independent variable and dependent variable listed in that hypothesis. The methods you choose for manipulating your independent variable and measuring your dependent variable can be based on those previously used in the scientific literature or can be entirely of your own creation.

Assignment #8 - Descriptive Statistics Analyses – Following approval of your proposal by the instructor, you will start carrying out your experimental methods (IMPORTANT NOTE: findings from a project whose methods have not been approved will receive a mark of zero). Based on the measurements you collect in your experiment, you will calculate the descriptive statistics for each of your experimental and control conditions.

Assignment #9 - Inferential Statistics Analyses – Based the descriptive statistics for each of your conditions, you will perform inferential statistics (primarily a *t*-test) to determine if there was a statistically significant difference between your conditions.

Assignment #10 - Graphs – To visually represent your major findings you will create two types of summary graphs: (1) scatterplots of the correlations between variables from your baseline measurements and (2) a bar graph comparing the average values of the different conditions in your experiment. You will provide meaningful labels of the axes on the graphs: with the name of the independent variable as the title of the X-axis (i.e., horizontal axis) and the name of your dependent variable as the title of the Y-axis (i.e., vertical axis), along with descriptions of their units/conditions.

Assignment #11 - Conclusions – Based on your statistical analyses you will state which of your hypotheses were confirmed (if any) and based on the results of your experiment state whether any causal conclusions can be made.

Assignment #12 - Poster Presentation – You will present in the final lab a poster summarizing your research project. It will include on it each of the following headings: Research Topic, Literature Review, Hypotheses, Methods, Results, and Conclusions. The purpose of this poster presentation is for you to share the major findings of your assignment with your colleagues in the class. Compared to slide presentations, the poster session format offers a more intimate and relaxed forum in which to discuss findings.

Quizzes & Exams:
All quizzes and exams will cover solely the material contained in the concept lecture notes, with each of the questions describing one of the points from the concept lecture notes and asking you for the name of that concept. The format of the questions will be very multiple-choice: with each question listing as options the names of all the concepts for a given lecture. Half of the questions will be knowledge-type questions which use for descriptions of the concepts the same wording as the points in the concept lectures notes, while the other half of questions will be understanding-type questions which reword these points usually in the form of a real-life scenario.

Online Quizzes – Since your learning will be enhanced by testing yourself and practicing your retrieval of the course information from memory (known as the testing effect), for each set of concept lecture notes you will be assigned an online quiz. In addition to being worth marks, the online quizzes will also help prepare you for exams since they cover the same content from the concept lecture notes (although they use different scenarios for the understanding-type questions). The online quizzes can be accessed through the course D2L website and can be performed on a computer either on campus or off campus. Time will be allotted during labs for students to attempt each week's online quiz and students may also perform them ahead of lab time. Students may take each online quiz an unlimited number of times until its deadline and only the highest score you achieve on a quiz before its deadline will be recorded as your mark for that quiz.

Exams – Exams will be in-class, closed book, and will not be cumulative (i.e., the final exam will only cover material that came after the midterm exam). You will only be given a single attempt at each exam. The content of the questions will be taken equally from each of the concept lecture notes covered by that exam.

6. Grading System

X Standard Grading System (GPA)

Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

8. College Supports, Services and Policies

Immediate, Urgent, or Emergency Support
If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ http://camosun.ca/about/mental-health/emergency.html or http://camosun.ca/services/sexual-violence/get-support.html#urgent

College Services
Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at http://camosun.ca/

College Policies
Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at http://camosun.ca/about/policies/. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS http://camosun.ca/about/policies/index.html

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at http://camosun.ca/about/policies/index.html for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	*Compulsory Withdrawal*: A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.