

Research Methods in Behavioural Neuroscience (PSYCH 396 – 001)

Time: Tuesday & Thursday; 10:30 am -12:30 pm

Location(s): PAS 4288 (classroom); PAS 2271 (lab)

Course Instructor:

Dr. Colin Ellard

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Teaching Assistant:

Kevin Barton

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Course Materials:

-Vanderwolf, C. H. & Cooley, R. K. The sheep brain: A photographic series.

-Nolte, J. The human brain: An introduction to its functional anatomy. 6th edition preferred.

-Original journal articles as required to complete assignments.

Purpose of the course:

Welcome to the course! The main objective of the course is to deepen your understanding of neuroanatomy and brain function using a variety of approaches ranging from lecture and seminar presentations to experimentation and anatomical dissection.

Evaluation: Your performance in the course will be evaluated based on the following:

Area	Type of Assessment	Date/Due Date	Value (%)
Midterm exam	Practical and written	Feb 16	25
Neuroanatomy quiz	Practical and written	March 15	10
Somatosensory mapping assignment	Written	February 28	15
Presentation	Seminar presentation	Varying	20
Short LEARN assignments	Online	Varying	10
Spatial updating paper	Written	Last day of term	20

Description of course content:

Midterm test and anatomy quiz These tests include a practical (“bell-ringer”) component and a written exam. A bell-ringer requires you to identify different locations on a physical/tissue specimen and so is geared towards assessing your understanding of the layout of the brain. The written exam will test both your identification skills and your understanding of the function of different parts of the brain and will be based on both lecture content and assigned readings. More details on both will be provided prior to their dates.

Written assignments. The somatosensory mapping experiment will be conducted in class on January 31. This assignment will consist of written answers to questions. The purpose of this assignment is both to deepen your understanding of sensory systems and to give you some practice in writing experimental papers. The second paper on spatial updating will be a full experimental write-up (cover page, abstract, method, results, discussion, and references) adhering to APA format.

Seminar presentation: Students will work in groups of about 4 to put together seminar presentations on topics assigned by the instructor. For each topic, I will give you some guidance and some starting points, but it will be largely up to members of the group to decide how to organize their presentation and what content to include.

Quizzes (LEARN). The quizzes are meant to guide your neuroanatomy readings early in the course and help you better understand the research process later in the course.

A brief note about deadlines: There are many different types of evaluation in this course and it will be very important for you to plan ahead. I will try to give you advice about *what* to be working on *when*, but the final responsibility for organizing your time rests with you. Occasionally, in extenuating circumstances, I may grant extensions of deadlines but you will need to talk to me in advance and you will need to obtain signed, written permission for the extension. If you fail to do so, late work will be assessed a penalty of 5%/day, including weekend days.

Date:	Location	Description
January 3	PAS4288	Welcome to the course
January 5	PAS4288	Cellular neuroanatomy
January 10	PAS4288	Introduction to gross neuroanatomy
January 12	PAS 2271	Sheep brain dissection I
January 17	PAS4288	Sensory systems – general principles/Discussion of presentations
January 19	PAS 2271	Sheep brain dissection II – Sensory systems

January 24	PAS4288	In-class experiment: Measuring somatosensory acuity
January 26	PAS4288	How to write a laboratory paper
January 31	PAS4288	Presentation I: Comparative neuroanatomy and brain evolution
February 2	PAS4288	Presentation II: Is the human brain unique?
February 7	PAS4288	Presentation III: Comparative issues in sensory systems
February 9	PAS4288	Presentation IV: Specialized sensory processing systems in human brains
February 14	PAS 2271	Review session
February 16	PAS 2271	Midterm test
February 21	READING WEEK	
February 23	READING WEEK	
February 28	PAS4288	Motor systems
March 1	PAS 2271	Sheep brain dissection III
March 6	PAS 2271	Sheep brain dissection IV
March 13	TBA	Spatial updating
March 15	TBA	Spatial updating
March 20	PAS4288	Neuroanatomy quiz/tutorial on spatial updating
March 20	PAS4288	Presentation V: Comparative perspectives on spatial cognition
March 22	PAS4288	Presentation VI: Human spatial cognition and the brain
March 27	PAS4288	Virtual reality and psychological experimentation
March 29	TBA	Virtual reality demonstration day
April 3	PAS4288	It's a wrap

Accommodations for Students with Disabilities

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Concerns About the Course or Instructor (Informal Stage)

We in the Psychology Department take great pride in the high quality of our program and our instructors. Though infrequent, we know that students occasionally find themselves in situations of conflict with their instructors over course policies or grade assessments. If such a conflict arises, the Associate Chair for Undergraduate Affairs is normally charged with mediating resolution between student and instructor. However, for this course, because your instructor is the Associate Chair, you should direct concerns to Dr. Colin MacLeod, chair of the Department of Psychology (cmacleod@uwaterloo.ca). Please remember with this course and with all of your courses that if you find yourself in a situation of conflict of any kind, your best first course is to raise your concerns with the instructor before seeking help from a higher authority. A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 and 71 below for further details.

Academic Integrity, Academic Offenses, Grievance, and Appeals

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check <http://www.uwaterloo.ca/academicintegrity/> for more informaton.]

Discipline: A student is expected to know what constitutes academic integrity [check <http://www.uwaterloo.ca/academicintegrity/>], to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about 'rules' for group work/collaboration should seek guidance from the course instructor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 - Student Discipline. For information on categories of offenses and types of penalties, students should refer to [Policy 71](#) - Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70](#) - Student Petitions and Grievances, Section 4, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>

Appeals: A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read [Policy 72](#) - Student Appeals, <http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm>

Academic Integrity website (Arts):

http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html

Academic Integrity Office (UW): <http://uwaterloo.ca/academicintegrity/>