

Psych 396 Winter 2018

Tuesday and Thursday, 2:30-3:50 PM, PAS 1241

Instructor and T.A. Information

Instructor: Colin Ellard

Office: PAS 4034

Office Phone: 519-888-4567 ext 36852

Office Hours: Tuesday 1-2 pm or by arrangement

Email: cellard@uwaterloo.ca

The best way to reach me is by email. You can normally expect a response from me within 24 hours. I will hold regular office hours on Wednesdays but you can reach me at other times and I will do my best to set an appointment for either a face to face meeting or a phone call with you at a time that works for both of us.

T.A.	Karisa Parkington
Email	kparkington@uwaterloo.ca
Office	PAS 2241
Office Hours	Thursday, 1-2 pm

Course Description

The main objective of the course is to deepen your understanding of neuroanatomy and brain function using lecture and seminar presentation

Course Goals and Learning Outcomes

Upon completion of this course, students should be able to:

- A. Describe the basic elements of the mammalian brain
 - Describe and locate structures on photos or diagrams of the brain
 - Describe many of the major pathways connecting brain areas
- B. Read critically and comment on primary research papers in neuroscience
 - Conduct literature reviews, identify key papers in a restricted area of neuroscience
 - Read primary research papers and comment critically on their content
- C. Prepare and deliver a seminar presentation on a topic in neuroscience
 - Plan an oral presentation by reading an assigned reading and conducting library research to fill in necessary context
 - Deliver an oral presentation soliciting feedback from class members to ensure understanding

Required Texts and Materials

- Braitenberg V (1984). Vehicles: Experiments in synthetic psychology. Cambridge: MIT Press.
- Schneider, GE (2014). Brain structure and its origins. Cambridge: MIT Press
- Original journal articles as specified on the syllabus.

Readings Available on LEARN

- Course notes associated with each module
- Original research articles
- Powerpoint slides used for lectures

Course Requirements and Assessment

<u>Assessment</u>	<u>Date of Evaluation (if known)</u>	<u>Weighting</u>
Quiz 1	Feb 8	15
Quiz 2	April 3	20
Vehicles assignment	Jan 25/Jan 29	5+10=15
Presentation 1	Various	10
Presentation 2	Various	10
Final short paper	April 3	15
Reflections	Various	5 x 3 = 15
Total		100%
***up to 4 bonus points available through SONA participation		

Notes on Assessments

Quizzes The quizzes will cover assigned readings and lectures. The format of the tests will be both objective question (multiple choice, T/F) and written (fill-in-the-blank, short written answer).

Final short paper. There will be a final paper, due at the end of the semester. The paper will consist of a short review of one of the major methods in behavioural neuroscience, guided by a series of assigned questions. Think of it more like a take-home test except that you will have much more time to write it. Roughly 1000 words in length.

Seminar presentations: For a good deal of the course, we will be going through the book by Schneider. For each of these classes, two students will be assigned to oversee the class. One student will come prepared to go over the assigned reading with the class (present, summarize, question the class, etc) and the other will present a summary of a paper from the primary literature on a topic that will be (somewhat) related to the main reading. The purpose of these papers will also be to help familiarize you with major neuroscience methods.

Vehicles assignment. At the beginning of the course, we will read Braitenberg's delightful little book "Vehicles," which consists of a series of thought experiments designed to help you reflect on mechanism and behaviour. To solidify your reading, you will be asked to design your own vehicle using the principles described by Braitenberg and to describe how your vehicle "works" (this will all be much clearer once you've had a look at the book). Students will work in pairs (just because this is more fun) and you will submit one short description (with diagrams) of your vehicle. Students will also give very brief presentations in class on their vehicles.

Reflections: On six unannounced occasions throughout the course, we will conclude the class with a brief written “reflection” exercise, where you will have 10-15 minutes to write a brief response to the events of that day’s class. Each response will be graded as pass/fail (i.e. if you were mentally present that day you should have no difficulty with the task). Passing assignments will receive a grade of 3. You will receive one “free pass” (that is, if you aren’t in class for one of the reflections or you experience unfortunate brain freeze, you’re forgiven for this one time).

Course Outline

Week	Date	Topic	Readings
1	Jan 4	Welcome to the class and introductions	
1	Jan 9	Introduction to neuroanatomy	Schneider, Chapter 1
2	Jan 11	Introduction to vehicles	Braitenberg, Vehicles 1-5
2	Jan 16	Anatomical methods	Schneider, Chapter 2
3	Jan 18	Evolution of brains	Schneider, Chapters 3 and 4
3	Jan 23	Vehicle tutorial	Braitenberg (as required)
4	Jan 25	Vehicle presentations	
4	Jan 30	Evolution of mammalian brain	Schneider, Chapters 5-7
5	Feb 1	Spinal cord (2 presenters)	Schneider, Chapters 8-9 Calancie et al (1994)
5	Feb 6	Hindbrain and midbrain (2 presenters)	Schneider, Chapters 10-11 Borchers & Ewert (1979)
6	Feb 8	Quiz 1	
6	Feb 13	Forebrain synopsis/ Development of great networks (2 presenters)	Schneider, Chapters 12-13 Ellis-Behnke et al (2004)
7	Feb 15	Motor systems (2 presenters)	Schneider, Chapters 14-16 Lawrence & Kuypers (1968)
7	Feb 27	Brain states (2 presenters)	Schneider, Chapter 17 Moncrieff & Cohen (2004)
8	March 1	Chemical senses (2 presenters)	Schneider, Chapters 18-19 Berns et al (2015)
8	March 6	Vision (2 presenters)	Schneider, Chapters 20-22 Cavina-Pratesi et al (2007)
9	March 8	Audition (2 presenters)	Schneider, Chapter 23 Gruters et al (2017)
9	March 13	Forebrain redux (2 presenters)	Schneider, Chapter 24 Jerison (1985)
10	March 15	Hypothalamus and Limbic system 1 (2 presenters)	Schneider, Chapters 25-26 Freedman et al (1999)
10	March 20	Hypothalamus and Limbic System 2 (2 presenters)	Schneider, Chapters 27-28 Deadwyler et al (2013)
11	March 22	Striatum (2 presenters)	Schneider, Chapters 30-31 Ehgoetz Martens et al (2014)
11	March 27	Neocortex 1 (2 presenters)	Schneider, Chapter 32 Naci et al (2015)

Week	Date	Topic	Readings
12	March 29	Neocortex 2 (2 presenters)	Schneider, Chapter 33 Maranesi et al (2014)
12	April 3	Quiz 2	

Late Work

Deadlines for papers are clearly stated in the syllabus. Except for accommodations due to illness or bereavement, a penalty of 5% per day will be imposed on late submissions (weekend days included). Drop boxes for written assignments will close 7 days following the stated deadlines, after which written work will no longer be accepted.

Experiential Learning with SONA

Since experiential learning is highly valued in the Department of Psychology, students may earn a "bonus" grade of up to 4% in this course through research experience. Course work will make up 100% of the final mark and a "bonus" of up to 4% may be earned and will be added to the final grade if/as needed to bring your final grade up to 100%.

The two options for earning research experience grades (participation in research and article review) are described below. Students may complete any combination of these options to earn research experience grades.

Option 1: Participation in Psychology Research, Research Experiences Group (REG)

Research participation is coordinated by the Research Experiences Group (REG). Psychology students may volunteer as research participants in lab and/or online (web-based) studies conducted by students and faculty in the Department of Psychology. Participation enables students to learn first-hand about psychology research and related concepts. Many students report that participation in research is both an educational and interesting experience. Please be assured that all Psychology studies have undergone prior ethics review and clearance through the Office of Research Ethics.

Educational focus of participation in research

To maximize the educational benefits of participating in research, students will receive feedback information following their participation in each study detailing the following elements:

- Purpose or objectives of the study
- Dependent and independent variables
- Expected results

References for at least two related research articles

Provisions to ensure confidentiality of data

Contact information of the researcher should the student have further questions about the study

Contact information for the Director of the Office of Research Ethics should the student want to learn more about the general ethical issues surrounding research with human participants, or specific questions or concerns about the study in which s/he participated.

Participation in LAB studies is worth 0.5 participation credits (grade percentage points) for each 30-minutes of participation. Participation in ONLINE studies is worth .25 credits for each 15-minutes of participation. Researchers will record student's participation and will advise the course instructor of the total credits earned by each student at the end of the term.

How to participate?

Study scheduling, participation and grade assignment is managed using the SONA online system. All students enrolled in this course have been set up with a SONA account. You must get started early in the term.

For instructions on how to log in to your SONA account and for a list of important dates and deadlines please, as soon as possible go to:

*** Please do not ask the Course Instructor or REG Coordinator for information unless you have first thoroughly read the information provided on this website.***

Option 2: Article Review as an alternative to participation in research

Students are not required to participate in research, and not all students want to do so. As an alternative, students may opt to gain research experience by writing short reviews (1½ to 2 pages) of research articles relevant to the course.

You must contact your TA to get approval for the article you have chosen before writing the review. Each review article counts as one percentage point. To receive credit, you must follow specific guidelines. The article review must:

Be submitted before the last day of lectures. Late submissions will NOT be accepted under ANY circumstances.

Information on Plagiarism Detection

I have chosen not to use plagiarism detection software in this course. You should know, however, that both the teaching assistants and I have an expert eye for cheating developed over many years of experience. Any suspected violations of the University's integrity policy will be treated seriously and

reported to the appropriate authorities. As per the note on integrity below, it is the student's responsibility to understand what plagiarism is and to avoid committing it.

Electronic Device Policy

You are welcome to use notebook computers or smartphones in my classroom for note-taking, and even the occasional Google search of something related to discussion would not be inappropriate. I would appreciate it if all chimes, beeps, tweets and ringtones (especially those which sample music I don't like) be muted during class. Also, surfing of unrelated sites during the class can be very disruptive to your fellow students. If I see you doing this, I will ask you to stop.

Attendance Policy

There is ample evidence that students who attend class regularly do better than those who don't. This, and the fact that you're investing a large amount of money to obtain a good education, should make questions about class attendance a no-brainer. You should come to class as often as you can. If you can't come to class, please let me know in advance.

Accommodations for Students with Disabilities ^[L]_[SEP] Access-Ability Services, 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 Access-Ability Services at the beginning of each academic term.

Concerns About the Course or Instructor (Informal Stage) ^[L]_[SEP] 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 Studies (Richard Eibach) is available for consultation and to mediate a resolution between the student and instructor. Contact information is as follows:

Richard Eibach ^[L]_[SEP] email reibach@uwaterloo.ca ^[L]_[SEP] Ph 519-888-4567 ext 38790

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. ^[L]_[SEP]

Academic Integrity, Academic Offenses, Grievance, and Appeals

To protect course integrity, as well as to provide appropriate guidance to students, course outlines in the Faculty of Arts must include the following note on avoidance of academic offenses:

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.

^[L]_[SEP] Further details: <http://www.uwaterloo.ca/academicintegrity/>

Discipline: A student is expected to know what constitutes academic integrity [<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>]. Include also the following paragraph if you will be using Turnitin*): Plagiarism detection software (Turnitin) will be used to screen assignments in this course. This is being done to verify that use of all materials and sources in assignments is documented. In the first week of the term, details will be provided about arrangements for the use of Turnitin in this course.

Academic Integrity website (Arts): http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html

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

Note 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.