

**University of Waterloo**  
**Department of Psychology**  
**Psych 261**  
**Physiological Psychology**  
**Winter 2019**  
**M & W, 4:00 p.m. to 5:20 p.m.**  
**AL 116**

**Instructor and T.A. Information**

Instructor: Daniel Smilek, PhD  
Office: PAS 4051  
Office Hours: Tuesdays 2:00pm-3:00pm, and by appointment  
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T.A.	Karisa Parkington	Emilie Caron
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Office	PAS 2241	PAS 2257
Office Hours	Monday 1:00 pm – 2:00 pm	Thursday 1:00 pm – 2:00 pm

**Course Description**

This course is an introduction to the physiology of the brain and to the scientific study of how the brain is involved in perception, cognition, emotion and behaviour. Although the focus will be primarily on the human brain, various animal models and analogs will also be discussed. Topics that will be covered include research methods, neural function, neuroanatomy, psychopharmacology, the senses (e.g., vision), memory, emotion, sleep, attention, consciousness and mental disorders (e.g., mood disorders). The studies discussed will include both classic work as well as current cutting-edge research.

Because of the size of the class, I will spend most of class time lecturing. However, I encourage questions and comments and I am sure that interesting discussions will spontaneously emerge during the class. You will also have an opportunity to participate by responding to questions using the iClicker. I would like to highlight that it is important that you attend lectures and study the textbook. Although there will be some overlap between lectures and text, there will be material that does not overlap. You are responsible for all of the material covered in class and in the assigned readings.

**Required Material**

- Required Text: Kalat, J. W. (2015). Biological Psychology, 12th Edition, Belmont, CA: Wadsworth.
- An iClicker will also be required, which you can purchase new or used at the UW Bookstore.

## Course Requirements and Assessment

<b>Assessment</b>	<b>Date of Evaluation</b>	<b>Weighting</b>
Test 1	Feb 4, 2019	32%
Test 2	Mar 11, 2019	32%
Test 3	April 3, 2019	25%
Class Participation (iClickers)		7%
Participation in SONA Experiments		4%
<b>Total</b>		<b>100%</b>

### Tests

The course is divided into three sections with an in-class test at the end of each section. The purpose of the tests is to assess your understanding of the material in the course. The tests will not be cumulative. The tests will be based on the material presented in the text and in lectures. Given the size of the class, each test will contain mainly multiple choice questions, with some short answer questions. The tests will be written either in the regular classroom or in rooms that are yet to be determined.

### Class Participation

During each class I will present multiple choice questions and you will be required to respond to these questions using an iClicker. Your specific responses to these questions will not be graded, but you will receive participation points for responding. It is important that you do your best when answering the iClicker questions because they will give you an idea of the sorts of questions that will be asked on the tests and you will also receive feedback about your knowledge of the course material. Your participation points will be computed by taking the number of classes you responded in over the term as a proportion of the total number of classes in which iClicker questions are presented throughout the course.

### Participation in Experiments

You will be able to earn percentage points towards your final grade by participating in Cognitive Psychology and Behavioral Neuroscience studies conducted by students and faculty in the Department of Psychology. Please refer to the attached guidelines for participation in psychology research for more details.

### Course Outline

Below is a tentative reading schedule. I would like to emphasize that this is only a tentative schedule and topics and readings may change as a result of class interest as well as delays due to the occurrence of unexpected events. I will announce any changes that might arise in class and/or on LEARN so make sure that you attend class and check LEARN on a regular basis.

Week	Date	Topic	Readings
1	Jan 7, 9	Introduction / History	Introduction, Module 4.1
2	Jan 14, 16	Neurons/Glia	Modules 1.1 – 1.2
3	Jan 21, 23	The Synapse	Modules 2.1 – 2.2
4	Jan 28, 30	Drugs/ Neuroanatomy	Modules 3.1 – 3.2
5	<b>Feb 4, 6</b>	<b>Test 1 / Methods</b>	Module 3.3
6	Feb 11, 13	Neurodevelopment/ Plasticity	Module 4.2 – 4.3
7	<i>Feb 18, 20</i>	<i>Family Day and Study Break</i>	
8	Feb 25, 27	Vision	Modules 5.1 – 5.2
9	Mar 4, 6	Vision / Audition	Modules 5.2 & 6.1
10	<b>Mar 11, 13</b>	<b>Test 2 / Touch, Temperature &amp; Pain</b>	Module 6.2
11	Mar 18, 20	Sleep / Emotion	Modules 8.1 - 8.3, 11.1
12	Mar 25, 27	Mood Disorders / Memory	Modules 11.2, 14.2, 12.1
13	<b>April 1, 3</b>	Learning/ <b>Test 3</b>	Modules 12.2

### Academic Integrity

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the [UWaterloo Academic Integrity webpage](#) and the [Arts Academic Integrity webpage](#) for more information.

**Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, 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](#). For typical penalties check [Guidelines for the Assessment of Penalties](#).

### Concerns About a Course Policy or Decision

**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 (Richard Eibach) is available for consultation and to mediate a resolution between the student and instructor: Email: [reibach@uwaterloo.ca](mailto:reibach@uwaterloo.ca); Ph 519-888-4567 ext. 38790

**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. When in doubt, please be certain to contact [Richard Eibach](#), the Associate Chair for Undergraduate Affairs who will provide further assistance.

**Appeals:** A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

### **Accommodation for Students with Disabilities**

**Note for students with disabilities:** The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (1401), 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 AS office at the beginning of each academic term.

### **Accommodation for course requirements**

Students requesting accommodation for course requirements (assignments, midterm tests, final exams, etc.) due to illness should do the following:

- Consult the University's [examination regulations](#) for information about procedures and policies for requesting accommodations
- seek medical treatment as soon as possible
- obtain documentation of the illness with a completed uWaterloo [Verification of Illness Form](#)
- submit that form to the instructor within 48 hours. Students in Centre for Extended Learning (CEL) courses must submit their confirmation of the illness to CEL.
- (if possible) inform the instructor by the due date for the course requirement that you will be unable to meet the deadline and that documentation will be forthcoming.
- In the case of a missed final exam, the instructor and student will negotiate an extension for the final exam, which will typically be written as soon as possible, but no later than the next offering of the course.
- In the case of a missed assignment deadline, midterm test, or quiz, the instructor will either:
  - waive the course component and re-weight remaining term work as he/she deems fit according to circumstances and the goals of the course, or
  - provide an extension.
- In the case of bereavement, the instructor will provide similar accommodations to those for illness. Appropriate documentation to support the request will be required.

- Students who are experiencing extenuating circumstances should also inform their academic advisors regarding their personal difficulties.
- Elective arrangements such as travel plans are not acceptable grounds for granting accommodations to course requirements per the [uWaterloo Examination Regulations and Related Matters](#).

### **Official version of the course outline**

If there is a discrepancy between the hard copy outline (i.e., if students were provided with a hard copy at the first class) and the outline posted on LEARN, the outline on LEARN will be deemed the official version. Outlines on LEARN may change as instructors develop a course, but they become final as of the first class meeting for the term.

### **Cross-listed course**

Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSYCH cross-list will count in the Philosophy major average, even if the course was taken under the Psychology rubric.

### **Academic freedom at the University of Waterloo**

[Policy 33, Ethical Behaviour](#) states, as one of its general principles (Section 1), “The University supports academic freedom for all members of the University community. Academic freedom carries with it the duty to use that freedom in a manner consistent with the scholarly obligation to base teaching and research on an honest and ethical quest for knowledge. In the context of this policy, 'academic freedom' refers to academic activities, including teaching and scholarship, as is articulated in the principles set out in the Memorandum of Agreement between the FAUW and the University of Waterloo, 1998 (Article 6). The academic environment which fosters free debate may from time to time include the presentation or discussion of unpopular opinions or controversial material. Such material shall be dealt with as openly, respectfully and sensitively as possible.” This definition is repeated in Policies 70 and 71, and in the Memorandum of Agreement, Section 6.

## **Sona and Research Experience Marks Information and Guidelines**

Experiential learning is considered an integral part of the undergraduate program in Psychology. Research participation is one example of this, article review is another. A number of undergraduate courses have been expanded to include opportunities for Psychology students to earn grades while gaining research experience.

Since experiential learning is highly valued in the Department of Psychology, students may earn up to **4% of their final mark** in this course through research experience (i.e., course work will make up 96% of the final mark and research experience will make up the other 4% for a maximum grade of 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 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 been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee.

#### ***How to earn extra marks for your Psychology course(s) this term by participating in studies ...***

- You will earn "credits" which will be converted to "marks" (1 credit = 1%)
- You can schedule your LAB and/or ONLINE studies using the "Sona" website.

#### ***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 Chief Ethics Officer of the Office of Research Ethics should the student wish 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 has increment values of 0.5 participation credits (grade percentage points) for each 30-minutes of participation. Participation in ONLINE studies has increment values of .25 credits for each 15-minutes of participation. Researchers will record student's participation, and at the end of the term the REG Coordinator will provide the course instructor with a credit report of the total credits earned by each student.

### ***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:

[Participating/SONA information: How to log in to Sona and sign up for studies](#)

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

More information about the REG program in general is available at:

[REG Participants' Homepage](#)

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

Students are not required to participate in research, and not all students wish 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. The course instructor will specify a suitable source of articles for this course (i.e., scientific journals, newspapers, magazines, other printed media). *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.**
- Be typed
- Fully identify the title, author(s), source and date of the article. A copy of the article must be attached.
- Identify the psychological concepts in the article and indicate the pages in the textbook that are applicable. Critically evaluate the application or treatment of those concepts in the article. If inappropriate or incorrect, identify the error and its implications for the validity of the article. You may find, for example, misleading headings, faulty research procedures, alternative explanations that are ignored, failures to distinguish factual findings from opinions, faulty

statements of cause-effect relations, errors in reasoning, etc. Provide examples whenever possible.

- Clearly evaluate the application or treatment of those concepts in the article.
- Keep a copy of your review in the unlikely event we misplace the original.