

**University of Waterloo
Department of Psychology
PSYCH 261 (section 001)
Physiological Psychology
Fall 2022**

Mondays and Wednesdays, 10:00am-11:20am, AL 113

Instructor Information

Instructor: Brady Roberts

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Office hours by appointment only (online or in-person)

T.A. Information

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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 the history of physiological psychology, research methods, neural function, neuroanatomy, psychopharmacology, the senses (e.g., vision), memory, emotion, sleep, attention, consciousness, and mood disorders (e.g., depression). The studies discussed will include both classic work as well as current cutting-edge research.

The main content of the course will be delivered via live in-person lectures. Before each lecture I will post the corresponding PowerPoint slides on the course Learn page. The content will be typically uploaded on Mondays and Wednesdays before class, or the night before. In addition to attending lectures, you will be responsible for reading specific sections of the assigned textbook. It is very important that you attend the lectures and study the textbook. Although there will be some overlap between the lectures and the textbook readings, there will be material that does not overlap. You are responsible for all of the material covered in the live lectures and in the assigned readings.

Course Textbook

- **Required Text:** Kalat, J. W. (2019). Biological Psychology, 13th Edition. Cengage Learning, Inc.
- The additional 'MindTap' online software associated with the textbook is **not** required. Some students, however, may find the quizzes that the software offers useful for learning.
- There are physical copies for sale in the W Store, as well as a cheaper e-book option available.
- A single, physical course reserve textbook is available to freely access at the Dana Porter library and is able to be checked out for one day at a time. To check if the book is available, see here: <https://www.reserves.uwaterloo.ca/ares/ares.dll?Action=6&Type=60&Form=50&Value=182315>
- Older versions of the textbook *may* have similar content but the chapters *may* not align with the current edition. It is up to the student to sort this out if they choose to use a previous edition.

Course Assessments

| Assessment | Date of Evaluation | Weighting |
|-----------------------------------|-----------------------------|-----------|
| Test 1 | Sept 26, 2022 | 24% |
| Test 2 | Oct 24, 2022 | 24% |
| Test 3 | Nov 14, 2022 | 24% |
| Test 4 | Dec 5, 2022 | 24% |
| Participation in SONA Experiments | Sept 8, 2022 to Dec 6, 2022 | 4% |
| Total | | 100% |

Course Outline

Below is a tentative schedule. Topics, readings, and the assignment of lectures to specific dates 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 on Learn, so make sure that you check Learn on a regular basis.

| Week | Date(s) | Topic | Readings Due |
|------|----------------|--|-----------------------------------|
| 1 | Sept 7 | Introduction & History | Introduction chapter |
| 2 | Sept 12 & 14 | Neurons & Glia / The Action Potential | Modules 1.1 / 1.2 |
| 3 | Sept 19 & 21 | The Synapse / Drugs & Toxins | Modules 2.1 / 2.2 |
| 4 | Sept 26 & 28 | Test 1 (Sept 26) / Neuroanatomy | / Modules 3.1 |
| 5 | Oct 3 & 5 | Neuroanatomy / Methods | Modules 3.2 / 3.3 |
| -- | Oct 10 & 12 | Reading Week | |
| 6 | Oct 17 & 19 | Methods / Neurodevelopment | Modules 3.3 / 4.2 |
| 7 | Oct 24 & 26 | Test 2 (Oct 24) / Neural Plasticity | / Module 4.3 |
| 8 | Oct 31 & Nov 2 | Vision | Modules 5.1 & 5.2 / 5.3 |
| 9 | Nov 7 & 9 | Audition / Touch, Temperature, Pain | Modules 6.1 / 6.2 |
| 10 | Nov 14 & 16 | Test 3 (Nov 14) / Sleep | / Modules 8.1 |
| 11 | Nov 21 & 23 | Sleep / Emotion | Modules 8.2 / 11.1 & 11.2 |
| 12 | Nov 28 & 30 | Mood Disorders / Memory and Learning | Modules 14.2 / 12.1, 12.2, & 12.3 |
| 13 | Dec 5 | Test 4 (Dec 5) | |

Tests (96% of final grade):

The course is divided into four parts with an in-class test at the end of each. The purpose of these tests is to assess your understanding of the material in the course. The tests will be non-cumulative. The tests will be based on the material presented in the textbook and in the live lectures. The tests will be multiple choice and administered with pencil and paper during regular class time. **Tests are entirely open-book, but collaboration with others is not allowed during the test time.**

If a student misses a test, the student will receive a score of 0% on the test unless the student provides a valid Verification of Illness Form (VIF) or provides the instructor with a valid reason for missing the test well in advance of the test date (at least two days in advance).

Participation in SONA Experiments (4% of final grade):

You will be able to earn percentage points towards your final grade by participating in studies conducted by students and faculty in the Department of Psychology. Note that up to 4% will be added to your grade on Learn **at the end of the course, not as you accrue them in the online SONA system.** Please refer to the SONA guidelines further below for more details.

Course COVID Contingency Plan

If the university decides at any point to cancel or postpone in-person activities, this course will shift online for the duration of that time. In that case, lectures will be delivered live and synchronously via Microsoft Teams during the regularly scheduled class time. Tests, if required, will be online via Learn.

SONA Participation 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%). **Be sure to review the guidelines referred to later in this document.**

The two options for earning research experience grades; participation in research through online remotely operated and In Lab studies, as well as article review; are described below. Students may complete any combination of these options to earn research experience grades. For Fall 2022, credits will be permitted to be earned with half from online, and the other half (2.0) from In-lab or Remote Access studies.

Option 1: Participation in Psychology Research

Research participation is coordinated by the Research Experiences Group (REG). Psychology students may volunteer as research participants in remotely operated, 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 remotely operated (replacing in-lab) and 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 Director 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 remotely operated (counts as the same as in-lab) studies has increment values of 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 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:

[Sona Information on the REG Participants website](#) or you can check the [Sona FAQ on the REG website homepage](#) for additional information.

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.

University Policies

COVID-19 / Illness Policy (from the Psychology department's official policy page)

Students requesting accommodation for course requirements in Psychology courses due to illness should do the following:

- If experiencing COVID-19 or influenza-like symptoms: You can self-declare symptoms that might be COVID-19 through Quest. *You should self-declare within two days of the activity missed* by completing the [Illness Self-declaration](#) form as soon as possible
- If experiencing non-influenza-like symptoms: Seek medical treatment as soon as possible and obtain a [Verification of Illness Form](#). **You do not need to visit a physical clinic in order to secure a VIF.** The University's [Health Services](#) is providing essential services and telemedicine and will authorize VIFs where warranted. Other health care providers are also offering remote services. Submit that VIF 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, test or quiz, the instructor will either:

1. waive the course component and re-weight the remaining term work as he/she deems fit according to circumstances and the goals of the course, or
2. provide an extension.

Accommodation for course requirements for Psychology courses.

Policies of the Psychology department pertaining to course requirements are available on the [department website](#).

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 [Office of 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. Check [the Office of Academic Integrity](#) for more information. 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; 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; reibach@uwaterloo.ca.

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](#).

Note for Students with Disabilities

The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (NH 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.

Mental Health Support

All of us need a support system. The faculty and staff in Arts encourage students to seek out mental health support if they are needed.

On Campus

Due to COVID-19 and campus closures, services are available only online or by phone.

- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext. 32655
- [MATES](#): one-to-one peer support program offered by the Waterloo Undergraduate Student Association (WUSA) and Counselling Services

Off campus, 24/7

- [Good2Talk](#): Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-4300 ext. 6880
- [Here 24/7](#): Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- [OK2BME](#): set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online on the Faculty of Arts [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe app](#) to your phone to quickly access mental health support information.

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.

Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabe and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes ten kilometres on each side of the Grand River. For more information about the purpose of territorial acknowledgements, please see the [CAUT Guide to Acknowledging Traditional Territory](#).

Intellectual Property

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).