

**University of Waterloo**  
**Department of Psychology**  
**PSYCH 306 Perception**  
**Spring 2020**  
**Online**

**Instructor and T.A. Information**

Instructor: Linda Carson

Office Hours: LEARN chat Tuesdays and Fridays from 2-3 p.m. EDT, or by appointment

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*Please put your course code, PSYCH 306, in the subject line of all course-related email. You can expect email replies by the next business day. The TAs and I will also check email on the weekend(s) before an assignment is due.*

T.A.	Laura Bianchi	Torin Young
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**Course Description**

What we perceive through our senses makes up much of our conscious experience. This course examines how visual and auditory perception arises and includes topics such as how we become aware of colour, form, space, brightness, loudness, and pitch, and how this information guides behaviour. Other senses may be covered.

**Course Goals and Learning Outcomes**

The goal of this course is to understand perception. We will focus first and most thoroughly on visual perception and then, by extension, on other sensory modalities.

The textbook's companion website provides study questions for every chapter. These short-answer questions cover the fundamentals of the course content pretty thoroughly. If you can reliably answer these questions, you know enough to *pass* PSYCH 306.

To *thrive and excel* in the course, students should be able to:

- A. Describe how sensation leads to perception in vision, audition and other modalities
  - Recall and understand how sensations are detected, transmitted and interpreted as percepts, and how these phenomena are studied experimentally
  - Recall and understand the anatomy and functioning of the visual pathway
  - Recall and understand the anatomy and functioning of the auditory system
  - Recall and understand the anatomy and functioning of the vestibular system
  - Recall and understand touch, proprioception and haptic perception
  - Recall and understand olfaction and taste
- B. Read and write in the style and depth appropriate to psychological research
  - Conduct a literature search in the psychology of perception
  - Read a journal article and describe its hypothesis, method and findings

- Extend the findings of a study to suggest related research questions of interest and how they might be studied experimentally
  - To write clearly and succinctly about perception
- C. Extend and apply your knowledge of perception
- Extend the properties of sensation and perception from one modality to others
  - Predict the perceptual consequences of illness or injury
  - Propose, from a description of a perceptual anomaly, its anatomical or systematic origin
  - Explain unusual percepts, such as visual illusions, and how they result from the properties of the perceptual system

## Required Texts

You will genuinely need the textbook. Textbook readings will be tested weekly and form the basis of your assignments.

- **Sensation & Perception**, by Wolfe, Kluender, Levi, Bartoshuk, Herz, Klatzky, Lederman & Merfeld; looseleaf edition, hardcover or ebook.
  - Note: This textbook has been used in previous offerings of PSYCH 306 so you should be able to find bargain copies in the [WUSA used bookstore](#), which now provides online ordering. You can use the third, fourth or fifth edition. You do not need the PSYCOG CD.
  - [The companion website](#) to the textbook is free. It provides supplemental explanations and activities that will help you understand and remember course content better. It also provides study questions and answers for each chapter.
- **Instantiation**, by Greg Egan, is a short story originally published in Asimov's Science Fiction, March/April 2019, and recently re-released in an anthology of the same name (2020). You will need to read this story for Assignment 4.
  - The anthology is available as an ebook in several formats: Kindle ([Canada](#); also [USA](#), [UK](#), [Australia](#)); [Smashwords](#), [Apple Books](#), [Barnes and Noble Nook](#), and [Kobo](#). The last time I checked, the anthology cost roughly three dollars (US) at all of these outlets.
  - There are free Kindle apps for iOS, Android, Mac, and PC.
- You will also need a reference to APA style. You may use [the APA's own site on its style](#) and the [OWL \(Online Writing Lab\) at Purdue University](#). A new edition of the style guide was released in 2020 ([Publication manual of the American Psychological Association](#)).

## Course Requirements and Assessment

Assessment	Date of Evaluation	Weighting
Weekly reading quizzes	Weekly	35%
Assignments		65%
#1 Search the literature	June 1	
#2 Read and hypothesize	June 22	
#3 Describe, compare and contrast	July 13	
#4 Extend your knowledge	August 7	
Research participation bonus(es)	Scheduled through REG/SONA	Up to 3%
Total		100%

## **Reading quizzes, due weekly**

This is an open-book quiz on the weekly reading(s). "Open-book" means that you can consult the reading(s). It does not mean that you can collaborate with other people. The intent is to reinforce and integrate your learning, and perhaps highlight topics that need further study. To get the most from the experience:

- Answer one question at a time. You will not be able to double back to revisit questions.
- Try to think of the answer without looking it up first. Then check the reading(s) to confirm and complete your answer.

You will have one attempt to answer ten questions: nine multiple choice and one written answer. You will have two hours from when you begin. If you do the reading(s) before you start the quiz, two hours should be abundant time for everyone, including people entitled to extra time on quizzes as an accommodation.

At the end of the term, I will drop your lowest-scoring quiz. Each quiz is worth slightly more than 3% of your overall grade in the course. Late quizzes will be accepted for one week, subject to a 10% penalty.

### **Assignment 1: Search the literature, due June 1**

Synopsis a TED talk and search for related scholarly literature. Details on LEARN. Late submissions will be accepted until June 8<sup>th</sup>, subject to a 10% late penalty.

### **Assignment 2: Read and hypothesize, due June 22**

Synopsis a recent scholarly article on perception and propose a follow-up experiment. Details on LEARN. Late submissions will be accepted until June 29<sup>th</sup>, subject to a 10% late penalty.

### **Assignment 3: Describe, compare and contrast, due July 13**

Describe, compare and contrast two sensory systems. Details on LEARN. Late submissions will be accepted until July 20<sup>th</sup>, subject to a 10% late penalty.

### **Assignment 4: Extend your knowledge, due August 7**

Analyze a fictional perceptual experience. Details on LEARN. Late submissions will be accepted until August 14<sup>th</sup>, subject to a 10% late penalty.

## **Research participation bonus(es), scheduled through REG/SONA**

Since experiential learning is highly valued in the Department of Psychology, students may earn a bonus grade of up to 3% in this course through research experience. Details below.

## **File formats**

Unfortunately, LEARN cannot preview all file formats for marking. Downloading files doubles my grading time and I cannot read all file formats either. Please submit all written work in Microsoft Word (DOC or DOCX) or PDF format unless you have made other arrangements with me in advance. To maintain academic integrity, I cannot accept links to Google docs. Download your Google doc as DOCX or PDF

before submitting to the dropbox. If I need to ask you to resubmit work because of file format, I may apply the late penalty.

### Course Outline

This course is based on textbook readings, mini-lectures, supplemental activities, and assignments. The best way to learn the course content is to read the textbook weekly, to take the reading quizzes promptly, to engage with the mini-lectures and supplemental activities regularly, to take notes meaningfully, and to complete assignments on time. *I promise that the mini-lectures will not re-hash the readings, but explain selected topics in more detail, and supplement the textbook with other content.*

Week	Beginning Date	Topic	Readings
1	May 11	Introduction to the course and to perception	Chapter 1
	May 18	May 18 is the Victoria Day holiday and the University is closed	
2	May 19	Early vision	Chapter 2
3	May 25	Spatial vision	Chapter 3
4	June 1	Object perception & recognition; Assignment 1 is due	Chapter 4
5	June 8	Colour perception	Chapter 5
6	June 15	Space perception & binocular vision	Chapter 6
7	June 22	Attention & scene perception; Assignment 2 is due	Chapter 7
8	June 29	Motion perception	Chapter 8
	July 1	July 1 is the Canada Day holiday and the University is closed	
9	July 6	Hearing	Chapters 9 & 10
10	July 13	Vestibular sensation; Assignment 3 is due	Chapter 12
11	July 20	Touch	Chapter 13
12	July 27	Olfaction & taste	Chapters 14 & 15
	August 3	August 3 is the Civic Day holiday and the University is closed	
	August 5	Last day of classes	
	August 6	"study day"	
	August 7	Assignment 4 is due	

### Late Work

Quizzes and assignments are due by 8:30 a.m. EDT on the due date. The late penalty is 10%. *That is, if your quiz or assignment is late, you can earn, at best, 90% of its maximum value.* Where there are legitimate extenuating circumstances—such as an illness or a family emergency—contact the instructor promptly to arrange accommodations.

## **This course is almost entirely asynchronous**

You still have regular deadlines to meet throughout the term, but there is no scheduled “class time,” no midterm and no exam. I have designed the course to support your learning by setting a steady pace throughout the term. You are responsible for weekly readings and other course content, which will be reinforced and tested by weekly open-book reading quizzes. There are four essay assignments evenly spaced throughout the term that will give you the opportunity to think about perception in a more sophisticated way than the reading quizzes.

Quiz and assignment deadlines are almost the only synchronous elements in the course. I will also hold virtual office hours, but you can message me any time through email and the Ask Me Anything (AMA) discussion forum on LEARN.

## **Multitasking affects learning**

In this offering of PSYCH 306, we are all online. We study the science of human behaviour, and the science says that multitasking diminishes learning. Electronic devices aren’t the problem. Distraction and multitasking are the problems. I encourage you to take this into consideration when you prepare to study online. How might you make the most of your time?

*“And the truth is, virtually all multitaskers think they are brilliant at multitasking. And one of the big new items here, and one of the big discoveries is, you know what? You’re really lousy at it. And even though I’m at the university and tell my students this, they say: ‘Oh, yeah, yeah. But not me! I can handle it. I can manage all these,’ which is, of course, a normal human impulse.”* Dr. Clifford Nass, Stanford University (quoted in Dretzin & Rushkoff, 2010)

*“Results showed that students who used laptops in class spent considerable time multitasking and that the laptop use posed a significant distraction to both users and fellow students. Most importantly, the level of laptop use was negatively related to several measures of student learning, including self-reported understanding of course material and overall course performance.”* (Fried, 2008)

*“These analyses indicated that participants who did not use any technologies in the lectures outperformed students who used some form of technology. Consistent with the cognitive bottleneck theory of attention (Welford, 1967) and contrary to popular beliefs, attempting to attend to lectures and engage digital technologies for off-task activities can have a detrimental impact on learning.”* (Wood et al., 2012)

Dretzin, R. (Director), & Rushkoff, D. (Correspondent). (2010). Digital nation: Life on the virtual frontier [Television series episode]. In R. Dretzin (Producer), *Frontline*. Boston, MA: PBS. Retrieved from <http://www.pbs.org/wgbh/pages/frontline/digitalnation/interviews/nass.html>

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education*, 50(3), 906-914.

Welford, A. T. (1967). Single-channel operation in the brain. *Acta Psychologica*, 27, 5-22.

Wood, E., Zivcakova, L., Gentile, P., Archer, K., De Pasquale, D., & Nosko, A. (2012). Examining the impact of off-task multi-tasking with technology on real-time classroom learning. *Computers & Education*, 58(1), 365-374.

## Modified Services

Visit the [University of Waterloo Coronavirus website](#) to stay informed and get the most recent updates for students and instructors, as well as [modified services](#) on campus.

## Contact Health Services

- Health Services Emergency service: located across the creek from Student Life Centre
  - [Health Services Building](#)
  - Call 519-888-4096 to schedule an appointment
  - Call 1-866-797-0000 for free 24/7 advice from a health professional

## Mental Health Services

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](mailto:counselling.services@uwaterloo.ca) / 519-888-4567 xt 32655
- [MATES](#): one-to-one peer support program offered by Federation of Students (FEDS) 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: 519-749-433 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.

## The Writing and Communication Centre

The Writing and Communication Centre works with students as they develop their ideas, draft, and revise. Writing and Communication Specialists offer one-on-one support in planning assignments, synthesizing and citing research, organizing papers and reports, designing presentations and e-portfolios, and revising for clarity and coherence.

Online appointments are run through the online booking system, WOnline, and require headphones, a microphone, and either Firefox or Chrome browsers. [Book a virtual appointment with the WCC here](#).

Students can also book same-day virtual appointments with peer tutors through our online booking system, WOnline. [Arrange a virtual drop-in appointment here](#).

**Please note** that communication specialists guide you to see your work as readers would. They can teach you revising skills and strategies, but will not change or correct your work for you. Please bring hard copies of your assignment instructions and any notes or drafts to your appointment.

### **Official Student Email address**

Students are responsible for all e-mail that is sent to the official uWaterloo email address. Check email regularly for important and time sensitive messages. See "[Official Student E-mail Address](#)" for further details e.g., procedures and warnings regarding forwarding e-mail to other accounts.

### **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.

**Turnitin.com:** Text matching software (Turnitin®) will be used to screen assignments in this course. This is being done to verify that use of all material and sources in assignments is documented. You have the opportunity to pre-screen your own work and use the feedback from Turnitin® to find and fix any errors in quotation and citation before your final submission. Students will be given an option if they do not want to have their assignment screened by Turnitin®. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin® in this course.

**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; 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.

### **Accommodation for course requirements for Psychology courses.**

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

### **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.

## **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 a **"bonus" grade of up to 3%** in this course through research experience. Course work will make up 100% of the final mark and a "bonus" of up to 3% 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 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.

[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 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.

## Territorial Acknowledgement

The Faculty of Arts acknowledges 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 six miles on each side of the Grand River.