

University of Waterloo
Department of Psychology
PSYCH 306 Perception
Spring 2018
Monday & Wednesday, 4:00 to 5:20 p.m.; MC 1056

Instructor and T.A. Information

Instructor: Linda Carson

Office: ECH 1108

Office Phone: 519-888-4567 extension 38383

Office Hours: Tuesdays from 4:00 to 5:30 p.m., or by appointment

Email: lccarson@uwaterloo.ca

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.	Jatheesh Srikantharajah	Sam Gualtieri
Email	j2srikan@uwaterloo.ca	samantha.gualtieri@uwaterloo.ca

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 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
 - Conduct a modest experiment in perception and report your findings in a lab report written in APA style
- 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 both the textbook and the use of the PsyCog CD. Weekly textbook readings will be part of the testable content in the course. The PsyCog CD includes experiments that will be the basis of a major assignment. Used copies are fine. Sharing with a classmate is fine. Both of these have been used in previous offerings of PSYCH 306 so you should be able to find bargain copies in the used bookstore.

- **Sensation & Perception**, Third, Fourth or Fifth Edition, by Wolfe, Kluender, Levi, Bartoshuk, Herz, Klatzky, Lederman & Merfeld; looseleaf edition, hardcover or ebook
 - I will put a few copies of the textbook on reserve in Dana Porter Arts Library.
 - [The companion website](#) to the textbook, *Sensation & Perception*, is free. It provides extra explanations and activities that will help you understand and remember course content better. The website also provides study questions (and answers) for each chapter.
- **PsyCog: Explorations in Perception and Cognition** (not compatible with Mac OS X 10.7), by Wytttenbach
 - I will put a copy of PsyCog on reserve in Dana Porter Arts Library.
 - The DP and DC libraries each have a CD/DVD drive available for three-hour loan.
 - You can install the software from the CD onto your own computer.

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](#), but if you are fond of books, detail, or psychology, you could refer to the book itself, which is available for sale and in several campus libraries, including Dana Porter.

American Psychological Association. (2009). *Publication manual of the American psychological association*. American Psychological Association (APA).

Course Requirements and Assessment

Assessment	Date of Evaluation	Weighting
Writing about perception	Tuesday May 22	15%
Test in class	Monday June 11	15%
Information & consent letter	Monday June 18	0%
Conducting an experiment	Wednesday July 4	15%

Assessment	Date of Evaluation	Weighting
Reading and hypothesizing	Monday July 23	15%
Final Exam, cumulative	To be scheduled by the Registrar's Office during the exam period	40%
Research participation bonus(es)	Scheduled through REG/SONA	Up to 4%
Total		100%

Assignment 1: Writing about perception, due May 22

For this assignment, you will write a two-page paper about a specific prescribed topic in perception, conduct a literature search for related journal articles, and provide a reference list, in APA style. Details on LEARN and in class. Please submit a PDF to the dropbox folder on LEARN.

Test in class: June 11

This test will cover the course material to date and provide a good model of the final exam. It will include a variety of short and long answer questions based on the textbook and classes. Details in class.

Assignment 2: Conducting an experiment

For this assignment, you will conduct a small experiment in human perception (using the PsyCog CD).

Step 1. Information & consent letter due June 18

For this part of Assignment 2, you will compose an information & consent letter for your study. This is your contribution to the ethics clearance process for this assignment. When you have completed this letter to your TA's satisfaction, you may begin data collection. Details on LEARN and in class. Please submit a PDF to the dropbox folder on LEARN.

Step 2. Lab report due July 4

For this part of Assignment 2, you will conduct an experiment in human perception (using the PsyCog CD) and write a lab report on your work, in APA style. Details on LEARN and in class. Please submit a PDF to the dropbox folder on LEARN.

Assignment 3: Reading and hypothesizing, due July 23

For this assignment, you will choose and read a recent peer-reviewed journal article on perception. You will write a synopsis—paying particular attention to the hypothesis, method and results—and then propose a follow-up study. Details on LEARN and in class. Please submit a PDF to the dropbox folder on LEARN.

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 4% in this course through research experience. Details below.

Final exam, date to be announced

The final exam will be a cumulative test of your mastery of all of the course content and your ability to extend and apply your knowledge of perception. The exam will include a variety of short and long answer questions based on the textbook and classes. Details in class.

Course Outline

This course is based on textbook readings, lectures and assignments. All three provide valuable, testable material. The best way to learn the course content is to read the textbook throughout the term, to attend—and engage in—lectures regularly, and to complete assignments on time. *I promise that the lectures will not re-hash the readings, but explain selected topics in more detail, and supplement the textbook with other content.* Course topics will progress in the order described in the table but, because I cannot be certain how long we will spend on each topic, topic timing is approximate and subject to change. If you complete the textbook readings by the class listed, you can be sure I won't get ahead of you; sometimes, you will get ahead of me.

Class	Date	Topic	Readings due
1	Wednesday May 2	Introduction to the course	
2	Monday May 7	Introduction to perception	Chapter 1
3	Wednesday May 9	Vision	Chapter 2
4	Monday May 14		
5	Wednesday May 16		Chapter 3
May 21 is the Victoria Day holiday and the University is closed			
6	Tuesday May 22	<i>Assignment 1 due</i>	
7	Wednesday May 23		Chapter 4
8	Monday May 28		
9	Wednesday May 30		Chapter 5
10	Monday June 4		
11	Wednesday June 6		Chapter 6
12	Monday June 11	Midterm test, in class	
13	Wednesday June 13		Chapter 7
14	Monday June 18	Attention and search <i>Assignment 2 information & consent letter due</i>	
15	Wednesday June 20	Motion perception	Chapter 8
16	Monday June 25		
17	Wednesday June 27		
July 2 is the Canada Day holiday and the University is closed			
18	Wednesday July 4	Hearing <i>Assignment 2 lab report due</i>	Chapters 9 & 10
19	Monday July 9		
20	Wednesday July 11	Balance	Chapter 12
21	Monday July 16		
22	Wednesday July 18	Touch, proprioception & haptic perception	Chapter 13
23	Monday July 23	Olfaction & taste <i>Assignment 3 due</i>	Chapters 14 & 15
24	Wednesday July 25		

Late Work

Assignments are due by the start of class on the due date. The late penalty is 10% and no assignments will be accepted after 11:59 p.m. on the last day of classes, July 25. *That is, if your assignment is late, you can earn, at best, 90% of the project's maximum value.* Where there are legitimate extenuating circumstances—such as an illness or a family emergency—the late penalty might be waived if you contact the instructor promptly and provide documentation.

Electronic Device Policy

“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)

We study the science of human behaviour, and the science says that multi-tasking diminishes learning and that your Facebook news feed doesn't just hurt your performance, it distracts your neighbours. Electronic devices aren't the problem. Distraction and multi-tasking are the problems. My policy is that, in fairness to your classmates, you shut off all noisemakers in the classroom—ring tones, music, IM alerts, etc.—and that the back row is reserved for people who can't stay off Facebook for 80 minutes. The rest of us are attending to the class as best we can, and being inobtrusive about our distractions. If your distraction is distracting to me or your classmates, I will ask you to leave.

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.

Attendance Policy

The midterm test will be conducted in class. Otherwise, attendance is optional but strongly recommended. All of the lecture content is testable material so, if you do not attend, I recommend that you cultivate the friendship of a classmate who does, and who takes thorough notes.

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

[Mental Health Services](#) aim is to provide holistic programming and services to help you lead a healthy and balanced life. We strive to provide a secure, supportive environment for students of all orientations and backgrounds.

Students suffering from problems with anxiety, depression, problems with sleep, attention, obsessions or compulsions, relationship difficulties, severe winter blues, etc., may make an appointment by phone or in person. Appointments are usually available within two days of initial contact with one of our medical doctors. All contacts are completely confidential.

On Campus

- Counselling Services: 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

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.

You can make multiple appointments throughout the term, or drop in at the Library for quick questions or feedback. To book a 50-minute appointment and to see drop-in hours, visit www.uwaterloo.ca/writing-and-communication-centre. Group appointments for team-based projects, presentations, and papers are also available.

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. 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 Studies (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

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 [72](#) below for further details.

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 Studies 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](#).

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

In the case of illness, students requesting accommodation for course requirements (assignments, midterm tests, final exams, etc.) should do the following:

1. Consult the University's [examination regulations](#) for information about procedures and policies for requesting accommodations
2. Seek medical treatment as soon as possible
3. Obtain documentation of the illness with a completed uWaterloo [Verification of Illness Form](#)
4. 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.
5. (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.

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 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 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

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 six miles on each side of the Grand River.