COURSE SYLLABUS

PSYCHOLOGY 368 (001): Perceptual Processing
Term 2, 2019W

Calendar Description: Perceptual phenomena and their underlying brain mechanisms *[3 credits]*

Prerequisites: Psyc 367

Instructor: **Dr. Debbie Giaschi** *office:* Kenny 3531 *phone:* 875-2345x7807
hours: Tuesdays 12:40–1:40 pm

Teaching Assistants:	**Oliver Jacobs**	**Klint Fung**
office:	Kenny 3010	Kenny 1707
hours:	Fridays, 12-1 pm	Thursdays, 4-5 pm

We are also easily reached through Canvas *using* Piazza. *All questions about lecture material and exams should be posted publicly, either anonymously or with your name attached, for the rest of the class to see. Questions of a personal nature should be posted privately (but not anonymously) for only Dr. Giaschi to see. Please sign up at* http://piazza.com/ubc.ca/winterterm22019/psyc368001

Lectures: Tuesdays & Thursdays, 11:00 am - 12:20 pm, FNH-60

Textbook: *Sensation & Perception, 5th edition* (2018) by J. Wolfe, K. Kluender, D. Levi et al.

Note: this is the same book that was used in Psyc 367 in 2018 and 2019 (hardcover ~$200 new https://shop.bookstore.ubc.ca/courselistbuilder.aspx; ebook rental or loose-leaf~$100; 1 copy on 2-hour reserve in Koerner Library; 1st [2006], 2nd [2009], 3rd [2012] and 4th [2015] editions are not suitable)

Learning Management System: https://canvas.ubc.ca/

(for access to: course syllabus, lecture outlines, lecture objectives, lecture slides, textbook demonstrations, additional readings, *Piazza*, grades)

Grades

Midterm Exam 1	**25%**
Midterm Exam2	**25%**
Final Exam	**35%**
Research Project Paper	**15%**
Total	**100%**
Human Subject Pool participation	**3%**

Note: supplemental exams to improve your grade are not offered in any course in the Faculty of Arts.

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Course Learning Outcomes: This course will provide you detailed knowledge about

- object perception;
- colour vision;
- depth perception;
- motion perception;
- spatial orientation perception;
- attention;
- haptic perception;
- hearing complex sounds;
- speech and music perception;

through lectures, readings, in-class demonstrations, and a research project.

Readings and Lectures: Some of the material covered in class is not in the textbook, and some of the material in the textbook will not be covered in class. In addition, not everything covered in class will be in the lecture slides. It is, therefore, essential that you both attend class and read ahead in the textbook (see Schedule on page 5). A version of the slides will be available on *Canvas (Modules)* at least the evening before each lecture. These are provided as a courtesy to facilitate your note taking, but they may not be identical to the ones shown in class. If you do have to miss a class, you are responsible for getting notes from another student. When it comes to exams, you are responsible for ALL material covered in class and ALL material assigned from the textbook including figures, definitions, boxes and summaries.

Lecture Objectives: Statements indicating what you should get out of each lecture and the readings will be included on the first slide for each lecture and in the lecture outline, which will be available on *Canvas (Modules)* the evening before. These objectives are to guide your studying and to make it unnecessary for you to ask us what you need to know for the exams. Many students choose to treat each objective as an exam question and attempt to answer it. We recommend this method of studying, but we do not have a list of correct answers.

Exams: Each exam will consist of multiple-choice and short-answer questions. Students are expected to use the terminology introduced in this course in their short answers. Only minor deviations from correct spelling will be accepted. The midterm exams will NOT be cumulative. The *Final exam* will be cumulative and cover the entire course. Exams will not be returned to students, although they may be viewed during the TAs' office hours. Grades will be posted on *Canvas* as soon as they are available. Correct answers will be reviewed in class; photographing of test material is not permitted.

Human subject pool (HSP) participation: To learn more about psychology and earn up to 3 bonus points toward your course grade, you may participate in research projects between January 6 and April 8. The projects are posted at https://ubc-psych.sona-systems.com/Please register in this online system by the end of January. You can earn your first ½ point by completing a pretesting survey that will make you eligible for a wider variety of studies. In a given term, you may earn no more than 1 point for online studies (not including pretesting). As an alternative to participating in studies, you may complete a library writing project which consists of reading and summarizing a research article from the journal *Psychological Science*. Each written summary counts as 1 hour of participation. More information on both research participation and the library option can be found at https://psych.ubc.ca/undergraduate/human-subject-pool/. **Be sure to check your recorded bonus points for this course before the online system closes at the end of the term.** These points will be added to your final course grade, after any scaling that may be required.

Accommodations: If you will be seeking accommodation through the *Centre for Accessibility*, please provide your accommodation letter to Dr. Giaschi as soon as possible, and before the first midterm exam. If you anticipate a *religious observance* will conflict with an exam, at least 2 weeks advance notice must be provided to Dr. Giaschi in writing. If you have *conflicting responsibilities* that will interfere with your attendance in this course, please discuss this with Dr. Giaschi before the withdrawal date (January 17); supporting documentation may be requested.

***Academic Concession*:** If you need to miss an exam or request a research project extension due to conflicting responsibilities, medical circumstances or compassionate grounds, please refer to the UBC calendar entry: http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,329,0,0. For Arts students, if you miss marked coursework (research project, midterm exam) for the first time and the course is still in-progress, immediately submit a https://students-2016.sites.olt.ubc.ca/files/2019/09/Student-Self-Declaration-Form-1.6-Arts.pdf to Dr. Giaschi so that your in-term concession case can be evaluated. If this is not the first time you have requested concession or if classes are over, fill out the Arts Academic Advising's https://students.air.arts.ubc.ca/academic-concession-form/ immediately, so that an advisor can evaluate your concession case. If you are a student in a different Faculty, please consult https://students.ubc.ca/enrolment/academic-learning-resources/academic-concessions. Science students should submit the self-declaration form (available on *Canvas*) to Dr. Giaschi. **There will be no make-up midterm exams. Instead if concession is granted, that 25% of your final grade will be equally distributed across the remaining exams.** *Dr. Giaschi will not grant concession for an exam that you have already written, or for absences due to travel or other social plans.*

If you miss the final exam, a make-up exam must be written; you will also need to apply for deferred standing in the course through your faculty academic advising office.

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University, Departmental and Course Policies:

Overview: UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on https://senate.ubc.ca/policies-resources-support-student-success

Academic misconduct: The UBC Calendar defines cheating as "*dishonest or attempted dishonest conduct at tests or examinations, in which use is made of books, notes, diagrams or other aids excluded by the examiner. It includes communicating with others, copying from the work of others and purposely exposing information to other students who are taking the test or exam*." Plagiarism is "*the presentation or submission of the work of another person, without citation or credits, as the student's own work*".

Cheating, plagiarism and other forms of academic misconduct are very serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. The Department has implemented software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to *TurnItIn*--a service designed to detect and deter plagiarism. All materials (term papers, lab reports, etc.) that students submit for grading will be scanned and compared to over 4.5 billion pages of content located on the Internet or in TurnItIn's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for every student in their class. In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript. All work in this course, unless otherwise specified, is to be original work done independently by individuals.

For details on pertinent University policies and procedures, please see the Campus-wide Policies and Regulations section of the Vancouver Academic Calendar (www.calendar.ubc.ca/).

Scaling of grades: In order to reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms regarding grade distributions. According to departmental norms, the mean grade in a 300-level class is 70 for a good class, 68 for an average class, and 66 for a weak class, with a standard deviation of 13. Scaling may be used in order to comply with these norms; grades may be scaled up or down as necessary by the professor or department at the end of the course.

Copyright: All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of Dr. Giaschi or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline. *Video or audio recording of lectures is not permitted.*

Electronic devices: Laptops and similar devices can be effective learning tools and are welcome in class. However, if you are using them for non-class-related activities it can be distracting for others. So, if you plan to use devices for any non-class-related activities, please sit towards the back of the room. Cell phones should be kept in *silent mode* at all times and never answered during class; they must be stored during exams.

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Lecture Schedule and Assigned Readings 2019W

	Date		Topic	Reading
1.	Jan	7	Introduction; Object perception: middle vision	Chpt 4 (p 106-116)
2.		9	Object perception: recognition	Chpt 4 (p 116-130; web essay 4.1)
3.		14	Object perception: faces, physiology	Chpt 4 (p 98-106,130-132;web essay 4.4)
4.		16	Colour vision: stimuli, trichromacy	Chpt 5 (p 136-151)
5.		21	Colour vision: opponency, deficiency	Chpt 5 (p 151-159; web essay 5.1)
6.		23	Colour vision: cortical processing	Chpt 5 (p 159-172; web essay 5.3, 5.4)
7.		28	Depth perception: cues	Chpt 6 (p 174-190)
		30	**Midterm Exam 1**	**Jan 7 – 28 material**
8.	Feb	4	Depth perception: binocular vision	Chpt 6 (p 190-204)
9.		6	Depth perception: development, disorders	Chpt 6 (p 208-215)
10.		11	Depth perception: size constancy	Chpt 6 (p 204-208; web essay 6.4)
11.		13	Motion perception: types, computation	Chpt 8 (p 256-264)
		18 & 20	Midterm Break	
12.		25	Motion perception: physiology	Chpt 8 (p 264-266)
13.		27	Motion perception: uses, disorders	Chpt 8 (p 266-272; web essay 8.2)
14.	Mar	3	Eye movements	Chpt 8 (p 272-279)
15.		5	Spatial Orientation Perception	Chpt 12 (p 398-419)
		10	**Midterm Exam 2**	**Feb 4 – Mar 5 material**
16.		12	Attention: space	Chpt 7 (p 218-230; web essay 7.3)
17.		17	Attention: time, physiology, disorders	Chpt 7 (p 230-240; web essay 7.1)
18.		19	Attention: scenes	Chpt 7 (p 241-253)
19.		24	Haptic perception	Chpt 13 (p 446-459)
20.		26	Perception of complex sounds ***research project data due***	Chpt 10 (p 330-346)
21.		31	Music perception	Chpt 11 (p 348-357)
22.	Apr	2	Speech production	Chpt 11 (p 357-363)
23.		7	Speech perception ***research project paper due***	Chpt 11 (p 363-376; web essay 11.1)

14-29 **Final Exam** (2.5 hours) **Jan 7 - Apr 7 material**

web essays and textbook demonstrations can be found through Canvas (Modules) *or at* *https://oup-arc.com/access/sensation-and-perception-5e-student-resources*

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General Overview of Research Projects

Students will use the web-based PsyToolkit software for this research project https://www.psytoolkit.org/. The project will be conducted outside of class time.

1. choose a research topic:

Each student will choose 1 of the following 4 topics:

- global vs. local object processing: exploring the global precedence effect using Navon letters (*Navon task*)
- attending in space: exploring covert orienting of attention and inhibition of return using a cost-benefit experiment (*Inhibition of Return (IOR)*)
- visual search: exploring the effect of set size on search time for a conjunction of features (*Visual Search*)
- attending in time: exploring speed limits of attention using a modified attentional blink paradigm (*Attentional Blink paradigm*)

To help you decide, demonstrations and background information for each experiment are available at https://www.psytoolkit.org/experiment-library/

2. read the background journal article(s) on your topic:

These will be available on *Canvas*.

- global vs. local object processing: 1. Navon, D. (1977) Forest before trees: the precedence of global features in visual perception. *Cognitive Psychology*, 9:353-383. (Expt 3 classic); 2. Kinchla, R. & Wolfe, J. (1979). The order of visual processing: "top-down", "bottom-up", or "middle-out". *Perception & Psychophysics*, 25:224-231. (comparison)
- attending in space: 1. Posner, M. & Cohen, Y. (1984). Components of visual orienting. *In: Attention and Performance Vol X* (Bouma and Bouwhuis, eds.) pp. 531-556, Erlbaum. (Fig 32.2 + 32.3 classic & comparison)
- visual search: 1. Treisman, A. & Gelade, G. (1980) A feature-integration theory of attention. *Cognitive Psychology*, 12:97-136. (Expt 1 classic & comparison)
- attending in time: 1. Raymond, J., Shapiro, K. & Arnell, K. (1992). Temporary suppression of visual processing in an RSVP task: an attentional blink? *Journal of Experimental Psychology: Human Perception and Performance*, 18:849-860. (Expt 2 classic); 2. Duncan, J., Ward, R. & Shapiro, K. (1994). Direct measurement of an attentional dwell time in human vision. *Nature,* 369:313-315. (Expt 2 comparison)

You will include a summary of the main findings of the background article(s) in the Introduction to your research paper.

3. collect and analyze data:

Each student will collect a set of data on themselves or a friend. Detailed instructions for running each task will be provided in a separate document on *Canvas*. Analysis will involve sorting the data into conditions and plotting them in a graph for comparison with previous studies.

4. upload raw data:

Your trial-by-trial data should be downloaded from the PsyToolkit website in a .txt file, then uploaded to *Canvas (Assignments)* before class on **Thursday, March 26.**

5. prepare a research paper:

Each student must hand in their own unique research paper based on their data set. Organize your paper with clearly labeled Introduction (include a description of the classic psychological phenomenon [from background article(s), lecture/textbook material], a summary of the main findings of the comparison background article on your topic [see 2. above], a typical explanation for the phenomenon); Methods (for your PsyToolkit experiment: describe the stimuli, task, viewing conditions, number of trials, what you measured [dependent variable]; include enough detail for someone to recreate your experiment without using the PsyToolkit); Results (summarize your raw trial-by-trial data in a table that shows the average of the dependent variable for each condition; plot these averages in a graph and compare the pattern of your results to the one obtained in the comparison experiment in the background article); Discussion (describe the extent to which you replicated the classic phenomenon; point out any differences between your PsycToolkit experiment and the comparison one, and how these might have affected your ability to replicate the classic phenomenon; discuss whether or not your results are consistent with the typical explanation for the phenomenon; review what is known about the underlying brain mechanisms for your phenomenon based on animal neurophysiology and human neuroimaging studies [cite at least 2 journal articles in addition to the background article(s)]; Reference list (include a full reference citation for each journal article [authors, year, title, journal, volume, page numbers]; do not list an article unless you have cited it).

There is no specific format to follow; the limit is 5 double-spaced pages (12-pt font, 2 cm margins) + the reference list. You may have difficulty finding suitable references if you restrict your search to Google or even Google Scholar. You will have more success with the indexes and databases available through the Library's website at *www.library.ubc.ca*. Web of Science is the best tool for searching forward to find journal articles that have cited your background article.

6. submit your paper to **TurnItIn** *to check for plagiarism:*

To submit your paper on www.turnitin.com, you will need to create a unique user profile, consisting of a username (e-mail address) and password. To protect your privacy, UBC recommends creating an anonymous email address using one of the available free services (gmail, hotmail, etc.), and using an alias or pseudonym instead of your name. This alias must be included on the paper you upload to *Canvas* for marking. At the top right of the *TurnItIn* website, go to **Create Account** and select **Student**. Enter the **Class ID** (*23383007*) and **Enrolment Password** (*paper*) for this course. Prior to uploading, please **delete any identifying information** from the original document. This includes your name and student number in the document, as well as any metadata or hidden data that might be stored in the document itself. You can remove metadata from your Microsoft Word document using **Document Inspector** (Windows) or by clicking on **Word > Preferences > Security**, then selecting **Remove personal information from this file on save** (Mac).

7. upload your paper to **Canvas***:*

The final version of your paper should be uploaded to *Canvas (Assignments)* before class on **Tuesday, April 7.** If you used an alias for your *TurnItIn* submission, be sure to include it at the top of the first page of your paper.

A penalty of 10% per day will be applied to late assignments. Assignments received more than 1 week after the due date will not be marked.