

COURSE OUTLINE

PSYCHOLOGY 367(001): Sensory Systems Term 1, 2016W

Instructor: Dr. Debbie Giaschi *office:* Kenny 3531 *phone:* 875-2345x7807
hours: Tuesdays 12:30 – 1:30 pm
e-mail: giaschi@mail.ubc.ca (for questions NOT related to course content, exams or grades)

Lectures: Tuesdays & Thursdays 11:00 am - 12:20 pm, SWNG 221

Textbook: *Sensation & Perception, 4th edition* (2015) by J. Wolfe, K. Kluender, D. Levi et al.
(1 copy on 2-hour reserve in Koerner Library; other options available on textbook website
sites.sinauer.com/wolfe4e/; 1st [2006], 2nd [2009] and 3rd [2012] editions are not suitable)

Website: connect.ubc.ca (course syllabus, instructional objectives, lecture outlines, lecture slides, additional readings, discussion forum, research group sign-up, grades)

Teaching Assistants:

	Jolande Fooker	Kim Meier	Fakhri Shafai
<i>office:</i>	Kenny 2563	Kenny 3504	Kenny 3504
<i>hours:</i>	Fridays 2-3 pm	Wed. 10:30-11:30 am	Thursdays 1-2 pm

We are also easily reached through the discussion forum for this course on Connect. We will check this forum regularly; all questions about lecture material, assignments and exams should be posted here. Alternatively, you can reach us by e-mail at psyc367ubc@gmail.com. The TAs and Dr. G. will all monitor this account.

Grades

Quiz 1 or 2 (highest mark)	10%
Midterm Exam	35%
Final Exam	40%
<u>Research Projects</u>	<u>15% (see pages 5-7)</u>
total	100%

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** is likely to 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.

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Readings and Lectures: Regular attendance at lectures is expected. You are responsible for reading the material in the textbook BEFORE the lecture in the order in which it appears on the schedule. 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. When it comes to the exams, you are responsible for ALL material covered in class and ALL material assigned from the textbook including figures, definitions, boxes and summaries.

Instructional Objectives: Statements indicating what you should get out of each lecture and the readings will be included in the outline for each lecture (available on our *Connect* website). 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.

Quizzes and Exams: Each quiz will consist of multiple-choice questions. Each exam will consist of multiple-choice and short-answer questions. The midterm exam will include material covered on Quiz 1; the final exam will include material covered on Quiz 2, but not material covered before the midterm exam. Quizzes and exams will not be returned to students, although they may be viewed during the TAs' office hours. Grades will be posted on the *Connect* website as soon as they are available. Correct answers will be reviewed in class.

Missed Quizzes and Exams: One quiz may be missed without penalty. All other absences must be approved by Dr. Giaschi in advance. Students will **not** ordinarily be excused for work-, travel-, family-emergency, childcare-, or sports-related activities. However, students should not write tests when they are seriously unwell. If a medical emergency arises, you must contact Dr. Giaschi **BEFORE** the test (604-875-2345x7807), and obtain a Statement of Illness form from a physician indicating that you were unable to attend school on the day of the test. There will be no make-up quizzes. A make-up midterm or final exam will be scheduled when you are well again. If you show up after a test and inform us that you were sick, you will not receive credit. If you write a test and then blame poor performance on illness, your grade will not be changed. Supplemental exams to improve your grade are not offered in the Department of Psychology.

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 September 6 and December 2. The projects are posted at ubc-psych.sona-systems.com. Please register in this online system by the end of September. 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 psych.ubc.ca/internal/human-subject-pool/ ("Subject Pool Information for Participants"). **Be sure to check your recorded bonus points for this course at the end of the term.** These points will be added to your final course grade, after any scaling that may be required.

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Accommodations: Please let Dr. Giaschi know as soon as possible if you will be seeking accommodation through Access and Diversity or if you have religious obligations that will conflict with this course in any way. Students who plan to be absent for varsity athletics, family obligations or similar commitments cannot assume they will be accommodated and should discuss their commitments with Dr. Giaschi before the withdrawal date (September 20).

Psychology Department's Position on 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. First, 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 (research proposals/reports) that students submit for grading will be scanned and compared to 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 Policies and Regulations section of the UBC Calendar (students.ubc.ca/calendar).

Why take this course?

In addition to learning a huge amount about your sensory systems, you will learn to:

- collect information supported by evidence, and analyze data
- recognize when previous knowledge has to be re-evaluated as a result of new discoveries
- fit newly gained information into a growing framework of understanding
- communicate effectively in writing in a manner acceptable to the audience
- collaborate effectively with other contributing participants in group work
- manage projects and course work together with other commitments

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Lecture Schedule and Assigned Readings 2016W

Date	Topic	Reading
Sept 6	Imagine UBC Day (no class)	
8	Introduction	Chpt 1 (p. 18-29)
13	Psychophysics-classical methods	Chpt 1 (p. 3-9)
15	Psychophysics-modern improvements	Chpt 1 (p. 9-11); <i>Cornsweet</i>
20	Psychophysics-signal detection; Light	Chpt 1 (p. 12-18); Chpt 2 (p. 31-32)
22	Eye and optics	Chpt 2 (p. 32-38)
	<i>sign up for research group/proposal topic (available Sept 21)</i>	
27	Retina	Chpt 2 (p. 38-51)
29	quiz (Sept 8-27 material); Visual acuity	Chpt 3 (p. 53-59)
Oct 4	Visual pathways	Chpt 3 (p. 59-74)
	<i>individual proposal due</i>	
6	Visual cortex	Chpt 3 (p. 74-87)
11	Sound and the ear	Chpt 9 (p. 261-268)
13	Inner ear	Chpt 9 (p. 268-278)
18	<i>plan group experiment; group proposal due</i>	
20	Midterm exam (Sept 8-Oct 13 material)	
25	Auditory pathways; Loudness	Chpt 9 (p. 279-283)
27	Pitch; Hearing loss	Chpt 9 (p. 283-289)
Nov 1	Sound localization	Chpt 10 (p. 291-302)
3	Somatosensory system and perception	Chpt 13 (p. 389-402)
8	<i>conduct group experiment</i>	
10	Touch; Pain	Chpt 13 (p. 402-410); <i>Basbaum</i>
15	quiz (Oct 25-Nov 10 material); <i>group analysis</i>	
17	Olfactory system	Chpt 14 (p. 427-445)
22	Smell	Chpt 14 (p. 446-454)
24	Odour Hedonics; Gustatory system	Chpt 14 (p. 454-465); Chpt 15 (p. 467-480)
29	Taste	Chpt 15 (p. 480-493)
Dec 1	Vestibular system	Chpt 12 (p. 349-366)
	<i>individual research report due</i>	
6-21	*** Final Exam (Oct 25-Dec 1 material; 2 hours)***	

The *Cornsweet (1962)* and *Basbaum & Julius (2006)* articles can be downloaded from the Lecture Material page on *Connect*

Chpts 4-8, 11 and pages 303-319, 367-386, 411-425 will be covered in Psyc 368

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Guidelines for Research Projects

After the lectures on psychophysical methods for measuring perception, you will demonstrate your knowledge in a multi-part research project.

1. choose a research group:

This will be done through *Connect* (“Research Groups” on sidebar) starting **Wednesday, September 21**.

Students will assign themselves to groups (6 students/ group) according to the general topics listed below. The purpose of signing up is to give you a topic on which to write your proposal. This is also the group you will work with for the experiments.

Topics: *visual detection, visual discrimination, auditory detection, auditory discrimination, touch detection, touch discrimination, odour detection, odour discrimination, taste detection, taste discrimination*

2. propose an experiment:*

This is a non-collaborative document due **Tuesday, October 4** at the beginning of class.

Each student will choose a specific aspect of perception to study, within their group topic (e.g. sour taste detection, visual contrast discrimination, auditory pitch detection, lemon odour discrimination). Each student will also find a published paper on their chosen topic that gives an expected threshold value (with units) for this aspect of perception. The purpose of this exercise is to practice designing a psychophysical experiment and to do some library research. You will receive feedback from the TAs on October 18 during class.

Choose a psychophysical method (constant stimuli, adjustment, limits, staircase). Choose a paradigm (yes-no, forced-choice [**many people confuse these**]). Describe your research question or objective, and predict the threshold value (with units) you will obtain based on the reference you have found. Describe the stimuli you will use, the procedure for stimulus presentation, and the calculations/graphs required to determine threshold based on the method you have chosen (these 3 elements comprise 70% of the mark for this assignment). This is just a proposal, so you do not need to collect or analyze any data. There is no specific format to follow, but be sure to include all 7 elements described above plus the full reference citation for your prediction (authors, year, title, journal, volume, pages). Provide enough detail for a naïve person to conduct the experiment and the analysis. Do NOT attempt to duplicate the method used in the paper that is the source of your prediction.

You may have difficulty finding a suitable reference for your predicted result if you restrict your search to Google/Yahoo/MSN 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.

Be sure to include your name, student # and group #. *Marks will be deducted for: not writing on the topic you signed up for, duplicating experiments demonstrated in class, confusing detection and discrimination methods.*

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Guidelines for Research Projects continued

3. plan a group experiment:**

This will be done during class on **Thursday, October 18.**

Each group will design a single experiment to be carried out in class on November 8. You may choose one of the individual proposals from your group members (which will be returned to you with feedback for use during this class), or you may design a new experiment on your topic (your choice of experiment should be guided by the ease of finding a predicted threshold value). All aspects of the experiment, including the stimuli to be used and how each group member will contribute, must be established during class and outlined in a group proposal to Dr. Giaschi. The experiment must be feasible to conduct with materials your group members can bring to class.

The group proposal is due at the end of class either by uploading an electronic version (pdf, doc or docx) to *Connect* ("File Exchange" on your Research Group page) or submitting a hand-written hard copy. Describe your research question or objective, and name your psychophysical method and paradigm. Describe the stimuli you will use, the procedure for stimulus presentation, and the calculations/graphs required to determine threshold based on the method you have chosen. There is no specific format to follow. **The proposal should include a full description of what you plan to do (in enough detail for the reader to do the experiment) and a list of each student's duties for the project (which will also be graded, so be thorough).** *You will be contacted by e-mail before November 3 if we anticipate any problems with your design.*

4. conduct a group experiment:**

This will be done during class on **Tuesday, November 8.**

Please bring all materials required for your experiment to class. You will have the entire class time to collect your data (using your group members as subjects). You should attempt to collect data from all 6 members of your group. If you run into problems, a minimum of 3 usable datasets is required. If you finish early, you may analyze your data as well. Data analysis involves determining psychophysical detection OR discrimination thresholds (depending on your topic) for each subject, then averaging the thresholds for your group. No further statistical analyses should be done. *A list of each group member's duties for the experiment must be signed and handed in at the end of the class.*

5. analyze your data:**

This will be done during class on **Tuesday, November 15** after the quiz.

Groups that do not require this time to complete their data analysis must sign out with Dr. Giaschi before leaving class.

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6. *prepare a research report:**

This is a document due **Thursday, December 1** at the beginning of class.

Each student must submit their own, unique report based on the group data. The purpose of this is to demonstrate a thorough understanding of psychophysical methods for obtaining sensory thresholds. We are not interested in APA format, inferential statistics or a detailed background/literature review.

Each individual report should include the following sections: *Introduction* (research question or objective [detection or discrimination?], sensory modality and specific aspect of perception studied, predicted threshold value based on published result; 15%); *Method and Procedure* (detailed description of: stimuli and equipment, subjects, procedure and task; 25%); *Discussion* (answer to research question, comparison of obtained to predicted result, problems encountered [if any], design improvements, future directions; 30%). *The individual report must be no longer than 5 double-spaced pages (not including your title page and reference). Be sure to include your name, student # and group # on the title page.*

In addition, each group should hand in one hard copy of their *Results* section to Dr. Giaschi at the beginning of class (table of raw data with trial order preserved for each subject [be sure to indicate stimulus value and response on each trial], graph for each subject showing psychometric function [method of constant stimuli only], description of how thresholds were determined from the raw data [include equations and calculations], thresholds for individual subjects, average threshold for all subjects; 30%).

Calculation of Research Project Grades

individual proposal	2.5%
group proposal	2.5%
<u>individual research report</u>	10%
total	15% of final grade

* *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. Students may be asked to provide an electronic version of their assignment to be submitted to TurnItIn to check for plagiarism.*

** *Each student is expected to attend the group planning, experiment and analysis classes. Students who do not contribute to or miss one of these classes will lose 2.5% of their final grade for each class missed, unless they have a documented medical excuse. Students will be asked to rate the contributions of their group members after the individual reports have been handed in. Grades may be adjusted for students whose group indicates that their contribution was minimal.*

Students should retain a copy of all submitted assignments because we will need to keep the marked assignments.