PSYC*2390, Course Outline: Winter 2018

General Information

Course Title: Sensation and Perception

Course Description:

This is a challenging course that introduces how it is we come to know about the world through our physical senses (e.g. eyes, ears). The course begins with a discussion of how perception is measured and then moves on to a discussion of the physiological mechanisms of perception as well as illusions, perceptual anomalies, and deficits. The focus in this one-semester course will primarily be on vision and hearing, the two senses that we know most about. *Content objectives:* Everyone has a sensory system. This course will teach you how the sensory systems works and what can go wrong it, how it affects performance, and how it changes with age. You will learn how the nervous system works as it relates to perception and you will also learn how to measure perceptual sensitivity and discrimination. You will also learn some practical information that you may find useful in your day-to-day life which will enable you to recognize symptoms of selected perceptual disorders or understand how the principles of perception can be used by artists, sales-people and human factors engineers. Process objectives: Critical thinking and in inquiry skills (learning to use to evidence to evaluate the truth of statements in perception research), problem solving, visual and methodological literacy, quantitative skills (interpreting graphs, tables, and the mathematical formulas related to the laws of perceptual performance, applying measurement techniques), listening skills (learning through listening, learning to determine what is relevant "on the fly", note taking, learning to know how to recognize when your notes are inadequate and need "fixing up", assertiveness skills to ask for clarification), writing skills (learning how to explain complex and abstract principles in your own words, in a clear and jargon-free manner, using concrete examples, diagrams, graphs, etc. as needed, using an outline to ensure ideas are presented in a clear and logical order).

Credit Weight: 0.5

Academic Department (or campus): Psychology University of Guelph campus

Semester Offering: Winter 2018

Class Schedule and Location:

> Schedule: Tuesday and Thursday 4:00 pm - 5:20 pm.
> Location: WMEM 103 (War Memorial Hall, Room 103)

Instructor Information

Instructor Name: Lana Trick
Instructor Email: ltrick@uoguelph.ca
Office location: MacKinnon Building (new extension) Room 4003
Office hours: Monday, 4-6 pm, Wednesday 1-3 pm or *by appointment

GTA Information

GTA Name: Parco Sin, Pietro Palletta, Emily Weinberger, Noah Bass, Brett Melanson, Kelsey Guenther, Larissa Panettta, and Krista Mitchnick
GTA Email: psin@uoguelph.ca, ppalleta@uoguelph.ca, eweinber@uoguelph.ca, nbass@uoguelph.ca , bmelanso@uoguelph.ca, guentherk@uoguelph.ca ,lpanetta@uoguelph.ca, kmitchni@uoguelph.ca
GTA office location and office hours: By appointment only: Contact via email

Course Content

Specific Learning Outcomes

Critical and Creative Thinking

> 1. Depth and Breadth of Knowledge
>
>> -Describe core concepts in sensation and perception
>>
>> -Understand and apply key concepts in sensation and perception
>
> 2. Inquiry and Analysis
>
>> -Ask appropriate questions related to the sensation and perception; Finds relevant evidence.
>
> 3 Problem Solving
>
>> -Use information to find ways from sensation and perception to solve practical or creative problems.

Literacy

> 4 Methodological literacy**:** The ability to understand, evaluate, and apply appropriate methodologies for rigorous psychological science
>
>> -Recognize and describe basic research methodologies in perception and their relative strengths and limitations

5. Quantitative literacy: the ability interpret numerical data (including formulas).

6 Visual literacy: The ability to effectively interpret, evaluate, use, and create images and graphs.

Communication

7. Reading Comprehension (e.g. reading the text materials)

8. Listening skills (a component of Oral communication).

-determine the key points in an auditory presentation (on the fly) by listening

-summarize information in a clear and concise way so that you can later access the information

- ask questions of the speaker when you required clarification.

9 Written Communication.

-explain complex abstract processes in simple, clear, and jargon-free language, presenting ideas in a logical order, using concrete examples, and diagrams, graphs when necessary (see Visual literacy).

10. Integrative Communication

-relate concepts in sensation and perception to the other things you know, including your own personal experiences

For each of the following objectives of this course, the relevant learning outcome is listed afterwards. On successful completion of this course, students will be able to do the following:

A. Describe the various different methodologies used to ask questions about perception (neuropsychological, psychophysical, cognitive: Learning outcomes: 1, 2, 7-9)

B. Measure perceptual sensitivity and discrimination using the classic techniques of psychophysics and signal detection and present the data in the form of tables or graphs. Interpret the results of graphs and devise tests to measure these abilities in practical situations. (Learning outcomes: 1, 2, 4-9)

B. Interpret formulas, graphs, and tables that present information about perceptual abilities. Interpret circuit-diagrams that display how neurons code information in the brain. (Learning outcome (Learning outcomes: 1, 2, 4-8)

C. Describe the psychophysical laws of perception in their own words and explain what they mean in terms of day-to-day performance in simple jargon-free language, using concrete examples of their own creation. Differentiate between perceptual sensitivity and decision

processes (response bias) and indicate how each is represented in signal detection theory, using examples from your own experience (Learning outcome: 1, 3, 4-5, 7-10).

D. Describe the processes involved in sensory processes and perception, starting from those involved in changing energy from one form to another (transduction) to interpretation of the information so that it can be used in object recognition and perceptual-motor coordination. Indicate the structures in the body and the brain that are involved in the process and describe what each structure does. Explain the basis of individual differences in perception (Learning outcomes: 1, 7-9)

E. Identify the weak points in the system, that is, places where the senses produce inaccurate information (illusions) that may have impacts on day-to-day performance. Identify instances where this may have an effect on your performance or others around you (Learning outcomes; 1, 7-10)

F. Recognize the symptoms of selected perceptual disorders and indicate the effect the disorder has on performance in day-to-day tasks. Students will identify the disorder and the affected structure and indicate what can be done to prevent or alleviate the condition. Learn to recognize early signs of problems in yourself and others. (Learning outcomes: 1, 7-10).

G. Indicate the basis of age-related changes in perception and what this means for performance in day-to-day tasks. Recognize the effects of these age-related changes in yourself and others around you (e.g. your parents) as it affects how they perceive the world. (Learning outcomes: 1, 7-10).

H. Apply the principles of perception to solve practical or creative problems. For example, use the pictorial depth cues to give the illusion of depth in a picture, use light mixing to create colours that cannot be mixed in a pallet, design a toy for a newborn infant so that the infant will be able to best see it. (Learning outcomes; 1, 3, 7-10).

These specific outcomes are evaluated on exams and in Top-Hat questions that are administered during class but the skills needed to achieve these outcomes are practiced and developed in the worksheets. The worksheets require problem solving as well as integrating the information. Although students do not have to hand these worksheets in, their importance in helping to prepare for the exams (that have similar questions) is strongly stressed.

Lecture Content:

The table below lists the content of the lectures and the associated readings from the text. Please note that these dates are tentative. Although exam dates will not change, it is possible that it may take more or less time to cover the various topics in a given year. In the event that we get off schedule, please see the class website (Courselink D2L) to see the readings and material required for a given exam.

Date	Content	Goldstein text (10th edition or custom version of the 10th edition)
Jan 9, 11 (Be sure to attend. Lectures start on the first day because we will be having the first exam on Jan 25) *Practice Top Hat Questions before the official start of Top Hat on Jan 16	Introduction to Perception Beginnings of the Perceptual processing Review: Understanding and measuring the neural basis of perception (the action potential)	Chapters 1 -2 Appendices A-D
Jan 16, 18 Top Hat Questions 1-2 (one per class).	Beginnings of the Perceptual Processes Measuring perception	Chapters 1-2 Appendices A-D
Jan 23, *25 No Tap Hat questions this week	Chapters 1-2 Appendices A-D Exam 1*: Jan 25	
Jan 30, Feb 1 Top Hat Questions 3-4 (one per class)	Neural processing and perception	Chapter 3
Feb 6, 8 Top Hat Questions 5-6 (one per class)	Cortical Organization	Chapter 4
Feb 13, 15 Top Hat Questions 7-8 (one per class)	Perceiving Colour	Chapter 9
READING WEEK (No classes Feb 20 and 22)		
Feb 27, Mar 1* Top Hat Question 9 (Feb 27)	Perceiving Depth and Size (up to section on Binocular depth perception) *Exam 2: March 1	Chapter 10
Mar 6, 8 Top Hat Questions 10-11 (one per class)	Perceiving Depth and Size (Remainder of Chapter 10) Perceiving Objects and Scenes	Chapter 10 Chapter 5
Mar 13, 15 Top Hat Questions 12-13 (one per class)	Perceiving Objects and Scenes Attention	Chapter 5 Chapter 6
Mar 21, 23 Top Hat Questions 14-15 (one per class)	Perceiving Motion Hearing I	Chapter 8 Chapter 11

Mar 27, 29 Top Hat Questions 16-17(one per class)	Hearing I and II	Chapter 11 Chapter 12 (sound localization)
Apr 3, 5 Top Hat Question 18 (Apr 3)	Cutaneous Senses OR Chemical Senses (based on Class vote).	Chapter 14 OR Chapter 15 based on class vote
Final Exam April 16, 2018 at 8:30 am		

Labs: none
Seminars: none

Course Assignments and Tests:

Assignment or Test	Due Date	Contribution to Final Mark (%)	Learning Outcomes Assessed
Worksheet 1	Jan 24	0%	1-10 Study tool for Exam 1
Exam 1	Jan 25	30%	1-2, 4-10
Worksheet 2	Feb 28	0%	1, 5-10 Study tool for Exam 2
Exam 2	Mar 1	30%	1-2, 5-10
Worksheet 3	Apr 5	0%	1-10 Study tool for Exam 3
Exam 3	Apr 16, 8:30 am	30%*	1, 3-10
Top-Hat questions during lecture	Jan 16, 18, 30, Feb 1, 6, 8, 13, 15, 27, Mar 6, 8, 13, 15, 20, 22, 27, 29, Apr 3	10% (Best 12 Top Hat questions out of 18)	1, 3-9

Additional Notes (if required):

Final examination date and time: April 16, 2018 at 8:30 am (in the morning!)

Final exam weighting: 30%

Course Resources

Required Texts:

Goldstein, E.B. (2017). Sensation and Perception. 3rd Custom Edition. Nelson Education. Canada. Note: The cover has a scene from nature on it and it is predominantly green.

In this course, a custom version of the text has been created especially for this class in order to reduce costs for students. (This custom version is half the cost of a regular text. It is soft-cover and it only includes the chapters used in this one term course. You are saving close to $100 on the price of the text. The original text was designed for a two-term course.) For this custom version, the ISBN Is 0176774076   (13 digit ISBN: 9780176774073)

This custom version is based on excerpts from the 10th edition Goldstein text (Goldstein, E.B. (2017) Sensation and Perception, 10th edition (ISBN: 0176774076). Note that earlier editions of Goldstein have different pagination and materials, so that they will not do for this course. (They will not prepare you for the exams.)

There are copies of the text in 3-hour reserve in the library (these can be used while in the library). In fact, there is one of the custom copies and two versions of the hard copy original (the complete 10th edition text that served as the basis of the custom copy).

Recommended Texts: none
Lab Manual: none

Other Resources:

1. Courselink website . Online materials (diagrams, exercises) will be provided on the Courselink website (D2L website).

2. TopHat software. We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit tinyurl.com/TopHatStudentGuide for the Student Quick Start Guide which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system. An email invitation will also be sent to your school email account. If you don't receive this email, you can register by visiting the course website

TBA tophat.com/e/ 410519

 If asked, note that the 6-digit join code they are ask about is **410519** for this class.

Top Hat will require a paid subscription (see below), and the standard pricing for the cheapest option is $26 for 4-months of unlimited access. For a full breakdown of all subscription options available please visit www.tophat.com/pricing.

Field Trips: none

Additional Costs:

Course Policies

1. Attendance: Regular attendance at lectures is required. Some of the lecture material is not in the text and there will be questions from lecture on exams. It is each student's responsibility to be there and take notes. Note-taking is an important skill, one that will serve you well in other courses and later in life. (Employers value this skill.) The ability to determine what is relevant "on the fly" as you listen, to record things as you go in such a way that you understand your own writing, is conducive to success in other domains. One goal for this course is to improve note-taking skills. However, if you aren't there, you can't improve your skills. Each student is responsible for acquiring his or her own notes (under no circumstances will the instructor provide you with notes). However, if you have trouble understanding your notes, or if you have difficulties understanding the material or determining what is important in the lecture or text, the instructor will be happy to go over your notes with you. During that time, you and the instructor can work on strategies to help you improve your note taking skills. Please sections below on policies related to Group Work as it relates to sharing notes.

Grading Policies

1. Worksheets: Worksheets are an important resource to help you achieve the desired learning outcomes for this course. They also help you perform better on exams. Your chances of understanding and remembering the material covered will be much better if you have to work with it, using the information to solve some problem, finding the relevant information to answer some question, integrating it with your own experiences as they relate to sensation and perception. The worksheets are designed to help you prepare for the exams, and they will sometimes require you to apply the information you learned or make creative use of it. Worksheets will contain questions that have a similar format to the ones you will encounter on the exam and they will cover a sampling of the material. (It is impossible for single worksheet to ask every possible question.) Answering these worksheet questions will require that you to first locate the relevant places in the text or notes and then apply the information to the problem. The worksheets can help you identify gaps in your notes. (If you find gaps, contact the instructor and you and she can work together to fill in the gap. This is an important part of learning to take notes: Learning how to ask questions and fix them up.) Worksheets can also help you know when you have missed information in the text readings (skimming through material without comprehension). The worksheets themselves will not be graded but the instructor would be happy to look over your worksheet or talk to you about the questions if you

are not sure of the answer. She will clarify the question and direct you to place in your notes or the text where the question is answered. If your notes or inadequate she will help you fix them up and she will explain the required concepts. However, she will not answer the question for you (doing all the work for you) or she would be robbing you of the benefit of doing the worksheet.

The best way to use the worksheets is to complete the questions just after the material is covered in lecture or after you have also read the material in your text. Generally students who do the worksheets (understanding the material and coming up with their own answers rather than just copying down what someone else has said) achieve better marks and they are much more likely to remember the information after they complete the course. If there are questions about the worksheets, be sure to email them to the instructor by no later than 1 day before the exam at 2:00 pm EST. Otherwise there is chance that she will not have enough time to respond to your question before the exam. (Naturally, you can also visit her during office hours or set up an appointment.) Please see sections below as it relates to policies on Group Work related to worksheets.

2. In-class exercises (TopHat). In almost every class there will be in-class exercises where students will be required to answer course-related questions, and they will be marked on their response. We will be using the TopHat software system to administer these exercises, and you will be answering using your cell phone, Smart Phone, IPad, or laptop computer. (See above). Generally these occur every class except for the first and last class and the days on which exams occur. (See course schedule for detail.) However, there will be Top Hat questions on the first day of class as well, but this will be a "practice" session to allow people to get used to the Top Hat system. Students must attend the class and answer the question themselves to be eligible for a mark on the in-class exercises because feedback (the answers) will be discussed in class immediately after the exercise. This is partly a participation mark, and it is there to encourage you to attend class, take good notes, and keep up with your readings. Your grade will be based on the average score on the best 6 classes worth of Top Hat questions. There are typically 2 questions per class, which means the 12 Top Hot questions. This means the remaining 3 classes worth of Top Hat questions (6 questions) can be considered "make-ups". You can use these 6 makeup questions to compensate for classes missed due to illness, compassionate reasons, religious holidays, technical problems, etc.

For the in-class exercises, each student is expected to answer the question on their own, without help from other students (or the internet). Otherwise it will be considered academic misconduct (see discussion below).

3. Exams will be part multiple-choice and part short essay. (The short essay part will be worth 25% of the exam.) Exams will not be cumulative though there are some types of information you cannot afford to forget (e.g. how a neuron works, what a threshold is). When studying for

exams, be aware that you will be responsible for both the information presented in lecture and that presented in text. Although there is some overlap, there is also information presented in the text and not in lecture and vice versa. Generally, the highest priority should be given to information presented in both lecture and text, followed by that presented only in lecture, following by that presented only in the text. Note that each student must take all three exams in this course. In the event that you miss an exam due to illness or serious personal issues, contact the instructor immediately and a makeup exam will be rescheduled for you. (It is your responsibility to inform the instructor if you miss an exam and she will then make the arrangements for the makeup exam.) Generally make-up exams occur during office hours the week following the exam). If you feel that an exam question has been mis-marked, the instructor would be happy to mark it again for you if you ask. (Your mark may not necessarily go up but she will provide detailed comments to explain what went wrong in efforts to help you for next exam.) If you are having trouble with exams, it is strongly recommend that you come visit the instructor. She will go your exam point by point with you and work together with you devise a strategy to improve your performance in later exams.

4. This is an opportunity for students who have been attending class regularly, but who have "blown" one of the midterms. Sometimes it takes time to determine what is expected in a course -- furthermore, anyone can "blow" a specific exam. That is why in the last two weeks of scheduled classes I give students the opportunity to take 10% of the weighting off their worst midterm in the year and add it to the final exam, providing they have been attending classes. This means that your worst midterm would be only worth 20% of your grade and the final would be worth 40% of the grade.

However, notice that this is a gamble, and there is a possibility that your term grade will suffer if you do worse on the final exam than you did on your worst midterm. This is not a decision to be made lightly. Consequently, I will not reweight your grades in this way unless you sign a form ("the contract book") that indicates to me in writing that you give me permission to reweight your grades in this way. I will bring "the contract book" to class during the last two weeks of class (classes March 27, 29, Apr 3 or 5) – I wait until the last two weeks because by then you should have a feeling for the difficulty of the material for the final. On Mar 27 or 29, or April 3 or 5 either immediately before class, at the break at the middle of the class, or immediately after the class to get your grades reweighted you will be given a chance to sign the "contract book", where you give me permission to re-weight your grades. Under no circumstances will I allow you to sign by email or phone. I need your physical signature -- otherwise how do I know it is you? Notice that this means that you must there at one of those classes (Mar 27, Mar 29, April 3, or 5) in order to be eligible to sign the "contract book", where you indicate that you want me to reweight your grades and you are aware of the risk. (If you are not present at either of the last two lectures, that means you have missed 50% of the material that is on the final exam, and consequently it is not in your best interests to sign the contract book, especially given that the final exam covers more material and has a higher weighting on lecture material than the other exams to that point. You are only eligible for this opportunity ("the contract book") if you have been participating in class/ putting in the effort/ doing things that would make it likely to have your grade improve. Missing both of the last two

classes (two weeks worth of class in this course, and 50% of the material on the final exam) will make it very unlikely that your grade will improve through this arrangement and in fact, there is good chance that your mark will go down. (That will happen if your grade on the final will be worse than in the exams so far.)

Course Policy on Group Work:

a. Some students to prefer to work on their own. Others find it motivating and enjoyable to join a study group. Study groups typically work best when they are not too large (2-3 is about ideal). That way, everyone gets a chance benefit -- everyone gets a chance to participate (to talk). That is because one of the best ways to learn something is to try to explain it to someone else. Also, sometimes you don't know you don't make sense until you try explaining things to someone else. Consequently, it would be best if everyone got a chance to do some talking. Furthermore, group work can help you know if there are gaps in your notes (you can "pool" notes). However, it is important that each student in the group can answer the worksheet questions in his or her own words. There is little benefit to parroting the answer of some other student word-for-word. Group work is definitely not permissible on exams, where word-for-word identical answers will be flagged as possible instances of cheating. One way to ensure your answer is different from others is for you to come up with your own creative example of the concept in question. (Also, making up your own example forces you to really think about the information.)

b. Please notice that selling your worksheets (or buying your worksheets) will be considered as instances of academic misconduct. If you are to benefit from the worksheet, you need to do the work yourself. (See below.)

c. Please notice that although you can lend students your notes if they miss the occasional lecture, you cannot sell your course notes. That is because one of the Learning Outcomes for the course is teaching listening skills and note taking. If students just rely on other people, that means it will be impossible for them to learn for themselves, and you will be preventing them from learning the material they were supposed to learn in this course. This will be considered academic misconduct.

d. Each student is responsible for doing their own work for in-class (TOP HAT) exercises and exams. Any "collaboration" here will be regarded as academic misconduct (see below).

Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration: [Academic Consideration, Appeals and Petitions](#)

However, please note that in arrangements have already been made to accommodate Top Hat questions missed due to illness or compassionate reasons. Your mark is based on the best 12 Top Hat questions though 18 are administered. Thus, there are already 6 make-up questions (3 weeks worth of makeup questions). That means that if you miss due to illness or compassionate reasons all you have to do use some of the "makeup" questions that have been already scheduled for the term. Consequently I have already provided a way for you to compensate for missed Top Hat questions by putting in 6 more questions than you are required to submit for your grade.

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar: [Academic Misconduct Policy](#)

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment.

Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the [Student Accessibility Services](#) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email csdexams@uoguelph.ca or the [Student Accessibility Services Website](#)

Course Evaluation Information

Please refer to the [Course and Instructor Evaluation Website](#) .

Drop date

The last date to drop one-semester courses, without academic penalty, is March 9, 2018. For regulations and procedures for Dropping Courses, see the [Schedule of Dates in the Academic Calendar](#). [Current Undergraduate Calendar](#)