SYLLABUS

PSYC215: SENSATION AND PERCEPTION --- WINTER 2017

The course is about the principles of sensory information processing and perception. It will also provide an introduction to the methods required to study the complex relations between the physical world of light, sound and other energies, and the subjective experience of objects and events. Topics include a short history of the field and a summary of the methodology of psychophysics, which is then followed by a thorough discussion of the mechanisms underlying touch, somatosensation, the chemical senses, hearing, and vision.

CONTACT INFORMATION

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Class hours and location:
Sterling Hall Rm B
Tuesdays from 2:30 – 4:00
Fridays from 4:00 – 5:30

COURSE OBJECTIVES

This course is an introduction to how we make sense of sensory input – our only source of information about the world. We will:

- explore how sensation differs from perception;
- investigate different theoretical traditions that have attempted to account for perceptual phenomena;
- survey the methods that are used to study sensation and perception;
- trace the functional and anatomical organization of the different sensory modalities, from sensory transduction and signal transmission, through stages of information processing, to perception.

We will cover the basic principles involved in seeing and hearing, in touch, taste and smell. Many principles are common to more than one sensory modality, and will be emphasized. Throughout, we will emphasise that the goal of perception is behaviour. Perception is our only means of extracting information from the environment, allowing us to experience the discrete objects, people and events “out in the world” that drive our behaviour.

TEXTBOOK

We will be using a textbook by **George Mather** from the University of Sussex in the UK: **Foundations of Sensation and Perception** to guide us through the course. Use the text as a reference for the contents presented in class, but do not entirely rely on the book. Do not rely on the printouts of the slides that will be posted on the course website either. Taking notes in class is essential for you to consolidate the content that is being offered to you.

The table below gives you an overview of the course contents. The page numbers listed are the textbook pages relevant for the lecture and the quiz. They refer to the 3rd edition. Small changes might apply. Watch the course's OnQ website.

LECTURES

Reading of assigned book chapters will be mandatory before the start of each new week. Additional material will be taught in class, for which a basic knowledge of the book content is highly desirable. When textbook material is replicated, it is because:

- it is particularly important or interesting;
- it is hard to understand without further explanation;
- it is not present at all in the textbook, or not well enough.

Come to the lectures! It will save you time. If you read over the text book chapter before class and then attend the classes themselves you will be well prepared for the quizzes and short answer questions, and you can also go confidently into the final exam without too much additional learning.

TUTORIALS

We have organized a number of short tutorials on selected topics that will take place this semester. Attendance to six tutorials over the semester, as well as completion of associated worksheets, is mandatory. Each tutorial is designed to involve minimal amount of work prior to the session, which lasts an hour and fifteen minutes. The objectives of each tutorial will be outlined early in the term. Each student has been assigned a time slot for tutorials, which can be seen on the SOLUS account.

EVALUATIONS

TUTORIALS (5% PER TUTORIAL, 30% OF TOTAL MARK)

Tutorials are an opportunity to gain in-depth knowledge about selected topics, and foster your ability to think clearly and logically, with regards to testing hypotheses and designing experiments. Fifteen to 30 minutes will be reserved at the end of each tutorial where you will complete a short assignment. This will take the form of a well-defined problem, which can be answered using concepts learned during the tutorial. For example, you might have to design an experiment that uses a psychophysical method of your choice, or create an experiment that allows testing a hypothesis based on Bayes' rule.

QUIZZES (18% OF FINAL MARK)

There will be short multiple choice question quizzes in every class, using the iClicker system. They refer directly to the contents of the previous lecture including the assigned reading. Questions are often similar to the study questions provided in the online materials that accompany your textbook. Some questions are taken directly from there. Only the 18 best quizzes out of 22 will count towards your final mark.

One purpose of the quizzes is to provide you with an incentive to come to class. The mark that you get is both recognizing your knowledge, but also your attendance in class. Coming to class just for the quiz and then leave right after is considered cheating!

SHORT-ANSWER QUESTIONS (ONLINE, 3% PER QUESTION, 12% OF TOTAL MARK)

Every other week, I will ask you a short question which you can answer on less than half a page. Please refer to the course website for when these questions become available/unavailable. Once started, the question can be answered in 10-15 minutes, but it will stay open for 20 minutes. If a quiz is not submitted after 20 minutes has passed, it will receive

a score of zero. Please ensure a good internet connection before starting a quiz. The quizzes are open-book and are designed to test knowledge of the textbook reading material for that week. At the completion of the term, the two lowest marks will be dropped, and a final cumulative mark on the remaining 4 questions will constitute 12% of the final grade.

FINAL EXAM (40% OF FINAL MARK)

The final exam will cover all 12 weeks of the course. It will comprise:

- 50 multiple-choice, true/false, and fill–in-the-blank questions;
- five short answer questions (which you can pick out of 6);
- two essay questions (which you can pick out of 3).

The multiple choice questions will be similar in style and difficulty as the quizzes during class. The short answer questions will be similar to the ones that you answered online during the term. The essay questions are again similar to the short answer questions, but might be a bit broader. While you have only half a page to respond to the short answer questions, you get a full page to respond to the essay questions.

OTHER INFORMATION

MARKING SCHEME

The different assignments will be marked using numerical percentage marks. The final course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
≥ 90	85-89	80-84	77-79	73-76	70-72	67-69	63-66	60-62	57-59	53-56	50-52	≤ 49

ICLICKER

For the weekly quizzes and for occasional polls and short experiments in class, you need an iClicker. If you don't have one yet, you either have to purchase one from the campus book store (about $50), or you may be able to borrow one from the Department of Psychology. Bring a $30 cash deposit and ask for Amanda Miller or Marie Tooley in the General Office.

Make sure you bring your iClicker to class or otherwise you cannot participate in the quizzes.

All iClickers have to be registered to their student before we can use them. Once you have your iClicker, registration can be easily done online at https://www.iclicker.com/register-clicker/. It's a quick and easy process whereby you must enter your Queen's student number and the iClicker's serial number, which is found on the back of the remote. iClickers loaned from the Department of Psychology must be registered on iClicker.com for a non refundable fee of about $10.

MISSED OR LATE ASSIGNMENTS

Missed quizzes will not be repeated. If you bring valid documentation from a health professional, funeral home, coach of sports team, etc. we can add the percentage of a missed quiz to the remaining ones. Note that we evaluate only the 18 best ones out of a total of 22 quizzes anyway.

Please see the instructor or a teaching assistant AS SOON AS POSSIBLE if you are unable to complete work so that we can talk about it. In general, work that is not handed in on time will receive a mark of zero.

REQUEST FOR ACADEMIC ACCOMMODATION

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable

opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact Student Wellness Services (SWS) and register as early as possible. For more information, including important deadlines, please visit the Student Wellness website at: http://www.queensu.ca/studentwellness/accessibility-services/

LOCATION AND TIMING OF FINAL EXAMINATIONS

As noted in Academic Regulation 8.2.1, "the final examination in any class offered in a term or session (including Summer Term) must be written on the campus on which it was taken, at the end of the appropriate term or session at the time scheduled by the Examinations Office."

The exam period is listed in the key dates prior to the start of the academic year in the Faculty of Arts and Science Academic Calendar and on the Office of the University Registrar's webpage. A detailed exam schedule for the Winter Term is posted the Friday before Reading Week. Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel /holiday plans or flight reservations.

ACADEMIC INTEGRITY

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see http://www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities at http://www.queensu.ca/secretariat/policies/senateandtrustees/principlespriorities.html).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1 http://www.queensu.ca/artsci/academic-calendars/2011-2012-calendar/academic- regulations/regulation-1), on the Arts and Science website (see http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity), and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

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COURSE CONTENTS AND SCHEDULE

Week	Topic Covered in Class	Tutorials
Jan 10 & 13	**Introduction and Principles** - Friday: pp. 1-25	Psychophysical Methods
Jan 17 & 20	**Chemical Senses** - Tuesday: pp. 41-47 - Friday: pp.48-55	Psychophysical Methods
Jan 24 & 27	**Body Senses** - Tuesday: pp. 59-70 - Friday: pp. 71-83	Signal Detection Theory
Jan 31 & Feb 3	**Sound and Hearing** - Tuesday: pp. 89-98 - Friday pp. 99-117	Signal Detection Theory
Feb 7 & 10	**The Ear and the Auditory System** - Tuesday: pp. 127-137 - Friday: pp. 137-153	Selective Adaptation
Feb 14 & 17	**Light and Eye** - Tuesday: pp. 159-170 - Friday: pp. 171-185	Selective Adaptation
Reading Week No Tutorials		
Feb 28 & Mar 3	**Visual Physiology** - Tuesday: pp. 197-217 - Friday: pp. 217-230	Loudness *Note the schedule change on SOLUS*
Mar 7 & Mar 10	**Colour Vision** - Tuesday: pp. 241-253 - Friday: pp. 253-263	Loudness
Mar 14 & 17	**Spatial Vision** - Tuesday: pp. 267-286 - Friday: pp. 286-295	Fourier Analysis
Mar 21 & 24	**Shapes and Objects** - Tuesday: pp. 303-318 **Depth perception** - Friday: pp. 323-334	Fourier Analysis
Mar 28 & 31	- Tuesday: pp. 335-335 **Visual Motion** - Friday: pp. 353-372	Stereopsis
Apr 4 & 7	- Tuesday: pp. 372-376 - Friday: Wrap-up, talk about final exam, etc.	Stereopsis