

PSYCH 2E03: Sensory Processes

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Office hours	Fridays, 2:00 – 3:00 PM
Course Website	Avenue to Learn (avenue.mcmaster.ca) Please check this site regularly for notifications and updates.

**If you require this information in an alternate/accessible format, please contact Dr. Piskuric at (905) 525-9140 ext. 21331.*

Teaching Assistants – TBA

Please email the TAs using your McMaster email, and use the term “PSYCH 2E03” in the subject heading. Emails that do not conform to these guidelines *may not be answered*.

Course Description

This course will provide an introduction to the 5 special senses: vision, audition, touch, taste and smell. The major focus will be on understanding the mechanisms by which external stimuli are sensed by receptor cells, and the neural pathways involved in sensory processing (subcortical and cortical). We will also discuss techniques to measure perception (e.g., psychophysics), as well as practice acquiring perceptual data through in-class demonstrations and investigations.

Intended Learning Outcomes

By the end of this course, you should be able to:

1. Compare and contrast the transduction mechanisms of the 5 main sensory modalities.
2. Describe the organization of each sensory system from sensory receptor to cortex.
3. Describe common themes in sensory processing (e.g., parallel pathways).
4. Explain some perceptual phenomena (e.g., illusions, the cocktail party effect) based on an understanding of sensory processing.
5. Describe some psychophysical methods used to measure sensory perception.
6. Work effectively and cooperatively within a team.
7. Understand some basic principles in experimental design.
8. Present psychophysical data graphically and in tabular format.

Course Format

This course consists of 3 50-minute lectures per week.

Tu, Thu, Fri 8:30 – 9:20 JH3/376

Prerequisites

PSYCH 1X03, 1XX3 with a grade of at least C+ in each, and one of BIOLOGY 1A03, 1M03, 1P03 or Grade 12 Biology U; or ISCI 1A24; or registration in Arts & Science, the B.H.Sc. (Honours), the Honours Music (Music Cognition) or any Honours Cognitive Science of Language program.

Antirequisites

PNB 2XA3

Textbook

Chaudhuri, A. (2011) *Fundamentals of Sensory Perception*. Oxford University Press Canada

Lectures will (for the most part) be derived from this textbook. You are required to read the chapters corresponding to lecture material (see Course Schedule below).

Course Assessment (%)

Avenue "Quizzes"

9 (3 x 3%)

In this course, practice problems will be provided in the form of Avenue "quizzes". Quizzes will be available for 2 weeks; you are permitted to discuss the problems with your peers, though each student must complete and submit their own Quiz. Note that you must click the "submit" button in order for your answers to be submitted; clicking "save" does not submit your quiz. See Course Schedule for due dates.

Avenue quizzes submitted after the due date will not be accepted and will receive a grade of "0". Given appropriate documentation (i.e., MSAF), the weight of a missed quiz will be redistributed to the final exam.

In-Class Investigations 24 (3 x 8%)

In-class Investigations are fun activities that will demonstrate perceptual aspects of touch, taste and vision. Through these activities, you will (i) practice applying course content, (ii) learn about experimental design, (iii) practice analyzing and presenting data in graphical and tabular format, and (iv) gain an understanding of how principles of perception apply to your daily life. You will work in groups 3-4 to gather data for analysis and discussion, to be submitted ~1 week after the in-class activity. See Avenue for more detailed instructions.

Late In-Class Investigations will receive a penalty of -10% per day, including weekends. Accommodations for missed Investigations will not be accepted unless each member of the group submits an MSAF.

Tests

36 (2 x 18%)

There will be 2 tests written during class time. Tests may include a combination of multiple choice, matching, labeling, and short answer questions. See Course Schedule for test dates.

There are no make-up tests in this course. Pending appropriate documentation (i.e., MSAF), the weight of missed tests will be redistributed to the final exam.

Midterm Review Policy

You may view your midterm exam during scheduled exam review office hours only. You will be asked to show your McMaster student ID. A copy of the answer key will be available at this time.

Final Exam

31%

This course has a final, cumulative examination. The exam will be scheduled by the registrar and held during the examination period at the end of the semester.

Poster Bonus

+3%

Student groups are invited to submit a bonus poster at the end of the term pertaining to either the touch or vision in-class activity. The posters will be graded using the same rubric as the taste activity posters. Students can earn *up to* 3 extra percentage points on their final mark. Bonus posters may be submitted until the last day of class, Wednesday, December 6th.

Academic Accommodation of Students With Disabilities

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for [Academic Accommodation of Students with Disabilities](#).

Other Student Services

The **Student Wellness Centre** (<http://wellness.mcmaster.ca>) provides a range of counseling options, medical services, and wellness programs. The **Student Success Centre** (<http://studentsuccess.mcmaster.ca>) offers academic, personal, and professional support through a variety of programs, tools and resources.

Seeking Help

Please ask the course Instructor or TAs for help at any time if you need it. As a learner, it is your responsibility to recognize when you need help and then ask for it.

Missed Work Policy

For absences from classes lasting up to 3 days due to a medical or personal reason:

Using the *McMaster Student Absence Form (MSAF)* on-line self-reporting tool, undergraduate students may report absences lasting up to **3** days and may also request relief for missed academic work worth less than **25%** of the final grade. The submission of medical documentation is normally not required. Students may use this tool to submit a maximum of **one** request for relief of missed academic work per term. Students must **immediately (within 2 days of the missed work)** follow up with their course instructors regarding the nature of the relief. Failure to do so may negate the opportunity for relief. ***The MSAF tool cannot be used to apply for relief for any final examination or its equivalent.***

Students who (1) are absent for more than 3 days, (2) wish to submit more than one request for relief of missed academic work per term, (3) are absent for reasons other than a medical situation, or (4) missed work worth 25% or more of their grade, cannot use the MSAF tool to request relief. They **MUST** report to their Faculty Office to discuss their situation and may be required to provide appropriate supporting documentation. If warranted, students will be approved to use a discretionary version of the MSAF on-line, self-reporting tool.

For absences from classes lasting more than 3 days, for work worth 25% or more, or for the reporting of more than one request for relief per term:

If the reason was medical, the approved McMaster University Medical Form covering the relevant dates must be submitted. The student must be seen by a doctor at the earliest possible date, **normally on or before the date of the missed work** and the doctor must verify the duration of the illness. Relief will not be considered for minor illnesses. If the reason is non-medical, appropriate documentation with verifiable origin covering the relevant dates must be submitted, normally within five working days. In some circumstances, students may be advised to submit a *Petition for Special Consideration (Form A)* seeking relief for missed academic work. In deciding whether or not to grant a petition, adequacy of the supporting documentation, including the timing in relation to the due date of the missed work and the degree of the student's incapacitation, may be taken into account. If the petition is approved the Faculty Office will notify the instructor(s) recommending relief. The student must contact the instructor promptly to discuss the appropriate relief. Failure to do so may negate the opportunity for relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

Academic Dishonesty

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at www.mcmaster.ca/academicintegrity.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

Grades

Grades obtained in PSYCH 2E03 will be converted according to the following scheme.

90-100%	A+	12	63-66%	C	5
85-89%	A	11	60-62%	C-	4
80-84%	A-	10	57-59%	D+	3
77-79%	B+	9	53-56%	D	2
73-76%	B	8	50-52%	D-	1
70-72%	B-	7	0-49%	F	0
67-69%	C+	6			

Notice of changes to course structure

The university reserves the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

The professor reserves the right to change any and all course requirements if the need should arise. Any change in the course requirements will be posted on the webpage, and the details will be announced in class. Any concerns about announced changes should be addressed with the professor as soon as the changes are announced.

Course Schedule

Lec	Wk	Date	Topic	Ch.	Due dates (by 11:59 PM)
1	1	9/7	Intro – What are sensation and perception?		
2		9/8	Principles of perceptual measurement	1	
3	2	9/12	Principles of perceptual measurement	1	
4		9/14	Organization of the nervous system	2	
5		9/15	Electrical activity in neurons	2	
6	3	9/19	Touch – Transduction	3	
7		9/21	Touch – Processing	3	
8		9/22	Touch – Tactile perception	3	
9	4	9/26	Introduction to In-Class Investigation 1		AQ1: Mon. Sept. 25
10		9/28	In-Class Investigation 1: Two-point discrimination		
11		9/29	Touch – Proprioception & pain	3	
12	5	10/3	Touch – Perceptual aspects	3	
13		10/5	Touch – Perceptual aspects	3	ICI1: Thurs. Oct. 5
14		10/6	Taste – Transduction & processing		
6	6	10/9	Reading week – no class		
15	7	10/17	TEST 1		
16		10/19	Taste – Perception; Intro to ICI2	4	
17		10/20	In-Class Investigation 2: Taste buds on a trip		
18	8	10/24	Smell – Transduction	4	
19		10/26	Smell – Processing and perception	4	
20		10/27	Audition – Physics of Sound	5	ICI2: Fri. Oct. 27
21	9	10/31	Audition – The ear; transduction	5	
22		11/2	Audition – Processing	5	
23		11/3	Audition – Hearing dysfunctions	5	
24	10	11/7	Audition – Perception	6	AQ2: Mon. Nov. 7
25		11/9	Audition – Perception	6	
26		11/10	TEST 2		
27	11	11/14	Vision – Light, optics, and the eye	8	
28		11/16	Vision – Light, optics, and the eye	8	
29		11/17	Vision – Visual transduction	9	
30	12	11/21	Vision – The retina; Intro to ICI3	9	AQ3: Mon. Nov. 20
31		11/23	In-Class Investigation 3: Multisensory Integration and Visual Perception		
32		11/24	Vision – Perceptual aspects of retinal function	9	
33	13	11/28	Vision – The retinal projection to the brain	10	
34		11/30	Vision – The visual cortex	10	ICI3: Thurs. Nov. 30
35		12/1	Vision – Higher cortical functions/perception	10	
36	14	12/5			

AQ = Avenue Quiz

ICI = In-Class Investigation