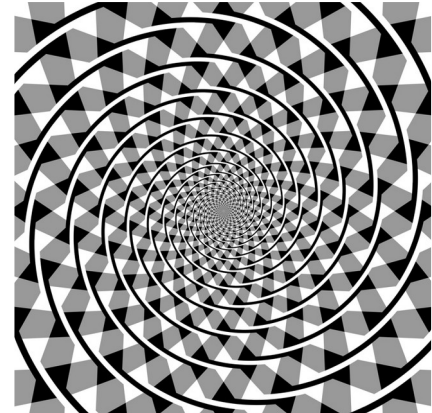


The external world seems immediately available to our senses. Unlike other “higher” cognitive functions like memorizing or problem solving, the act of perceiving does not seem to require any effort. Yet the feat achieved by the perceptual system becomes immediately clear when one tries to build an artificial system that can perceive. Today, we can build a computer to defeat chess grandmasters and jeopardy champions, yet no computer system can outperform a human child on any general vision task. Why is it so?

Through this course, we will gain some appreciation of the enormous task of perception and the underlying processes that realize it. The central question we investigate is the following: how do our senses transform the external world into information that our brains/minds can understand and reliably interpret?

Sensation and Perception is an area of scientific inquiry that spans psychology, biology, physics, and computer science. We will examine the perceptual process at a number of different levels, from single neurons, to neural systems, to behavior and subjective experience. You will have the opportunity to find answers to many questions about yourself and the world around you. Most of all, you will have the opportunity to gain practical knowledge about perception that can enrich your everyday life.



### Basic info.:

**Time:** Monday & Wednesday 3:00-4:20 pm

**Place:** Center for Intl Program 115

**Textbook:** Sensation and Perception, Yantis & Abrams, Worth Publisher, 2nd Edition (2016)

**Assignment:** LaunchPad Solo for Sensation and Perception, accessible via D2L

**Instructor:** Taosheng Liu PhD

**Email:** [tsliu@msu.edu](mailto:tsliu@msu.edu)

**Office:** <https://msu.zoom.us/j/7786539856>

**Office hours:** Wed 1-2pm (and by appointment)

**Teaching assistant:** Sherif Elorabi

**Email:** [elorabis@msu.edu](mailto:elorabis@msu.edu)

**Office:** <https://msu.zoom.us/j/7916952106>

**Office hours:** Mon 11-12 noon (and by appointment)

### Evaluation criteria:

Exams (3 exams, 24% per exam)	72%
Assignments (participation only)	16%
Quizzes (4 quizzes, 3% each)	12%

### Exams:

There will be three in-class exams. Each exam will be composed of multiple choices and short answers. Exams will be conducted on D2L *during scheduled class times*. Exams are closed book and we expect you will adhere to the honor code.

### Assignments:

You will complete 16 interactive activities on LaunchPad. These hand-on activities reinforce the concepts introduced in the class with demonstrations and short experiments. There are multiple choice questions at the end of each assignment. However, we only count your participation, not your performance on these questions. For each assignment, you earn 1% toward the final grade.

**Quizzes:**

There will be 4 online quizzes with multiple choice questions. These quizzes are also closed book tests. You will earn points based on your actual performance. Quizzes are available on the designated dates (see schedule below) for the whole day. However, you have 30 min to complete it once you start.

**Grade scale:**

Final numeric grade is based on a weighted sum of the three components listed above, and the conversion from the raw score to the letter grade is the following:

Letter grade:           4.0   3.5   3.0   2.5   2.0   1.5   1.0   0  
 Raw percentage: 100-----90-----85-----80-----75-----70-----65-----60

\*The upper bound is exclusive and the lower bound is inclusive (e.g., 3.0=80.00%-84.99%)

**Class schedule** (tentative, subject to change)

<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Assignment and due</b>
Jan 10	Introduction	Chap 1	
Jan 12 & 19	Physiology and Psychophysics	Chap 1, Appendix	
Jan 24 & 26	Eye and Retina	Chap 2	Jan 22: A1
Jan 31	Lateral inhibition and lightness perception	Chap 2	Jan 29: A2,A3,A4
Feb 2	Visual cortex (I)	Chap 3	
<b>Feb 4</b>	<b>Quiz 1</b>		
Feb 7	Visual cortex (II)	Chap 3	Feb 5: A5, A6
Feb 9	<i>Catch up &amp; Review</i>		
<b>Feb 14</b>	<b>Exam 1</b>		Feb 12: A7
Feb 16 & 21	Object recognition	Chap 4	Feb 19: A8
Feb 23 & 28	Color perception	Chap 5	Feb 26: A9
Mar 2	Depth perception (I)		
<b>Mar 4</b>	<b>Quiz 2</b>		Mar 5: A10
Mar 14	Depth perception (II)	Chap 6	
Mar 16 & 21	Motion perception	Chap 7	Mar 19: A11
Mar 23	Attention and Awareness	Chap 9	
<b>Mar 25</b>	<b>Quiz 3</b>		
Mar 28	<i>Catch up &amp; Review</i>		Mar 26: A12, A13, A14
<b>Mar 30</b>	<b>Exam 2</b>		
Apr 4 & 6	Sound and auditory system	Chap 10	
Apr 11 & 13	Sound localization and auditory scene	Chap 11	
<b>Apr 15</b>	<b>Quiz 4</b>		Apr 16: A15, A16
Apr 18	Speech and music	Chap 12	
Apr 20	Body and chemical senses	Chap 13, 14	
Apr 25	<i>Catch up &amp; Review</i>		
<b>Apr 27</b>	<b>Exam 3</b>		

\* **Spring break: Mar 7-11**

## Course Policies:

**Make-up Exams and extended due dates:** Make-up exams and extended due dates can be granted under special circumstances. This can include, for example, 1) a documented medical emergency, 2) a schedule conflict that you know about in advance such as a religious holiday or sports travel, or 3) other life challenges such as accidents/emergencies etc. In all cases, please inform me ASAP and provide documentation. In case of a schedule conflict, you must inform me at least a week in advance of exam day. Do not assume I have gotten your email unless I have responded to you.

**Academic Honesty:** The Psychology Department adheres to the policies on academic honesty as specified in General Student Regulations 1.0, *Protection of Scholarship and Grades*; the all-University Policy on *Integrity of Scholarship and Grades*; and Ordinance 17.00, Examinations. (See [Spartan Code of Honor Academic Pledge](#) and/or the MSU Web site: [splife.studentlife.msu.edu](http://splife.studentlife.msu.edu)). Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also <https://www.msu.edu/~ombud/academic-integrity/index.html>).

**Accommodations for Students with Disabilities:** Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at [rcpd.msu.edu](http://rcpd.msu.edu). Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received without sufficient lead time may not be honored.

If you require testing accommodations (additional time, less disruptive room, etc.) you must contact me and present your VISA at least two weeks before the exam date to schedule an alternative exam. Typically, I will schedule for you to take the exam during a special exam session offered by the Psychology Department. Those exams occur in small group settings and are offered every Tuesday at 4:00pm and Thursday at 3:00pm in Giltner 346. If you are unable to make either of those times, or that option does not meet your VISA accommodations, you may be able to schedule to take your exam at the RCPD office. In either case, the exam must be scheduled well in advance, so you need to adhere to the two-week prior notification requirement.

**Class Recordings:** Meetings for the online portion of this course may be recorded. The recordings may be available to students registered for this class. This is intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments. Doing so may result in disciplinary action. If the instructor or another University office plan other uses for the recordings beyond this class, students identifiable in the recordings will be notified to request consent prior to such use.