

PSY 164J: Cognition & Perception

Winter 2025

Class: MWF 2:40-3:50pm in SCC 147

Labs: T 10:00-11:45am; 2:15-4:00pm in SCC 130

Instructor:

Jeff Coon

Office: Science Center 151

Email: coon@hanover.edu

Office Hours: MWF 1:00-2:30pm, R 10:00-11:00am ([Book Time](#))

Course Description:

Investigates the basic processes by which humans gather information about the surrounding world. Considers psychophysical methods and the major senses. Includes laboratory experience. Satisfies the SL CCR. Partially satisfies the SM CCR. Fee Charged.

Course Overview and Format:

In this course, we will treat the brain as an information processing system, investigating how it obtains the information it uses from the environment around it.

As this is first and foremost a lab course, our focus will be on how we can scientifically study this information processing system. We will use quantitative methods in these labs, but my priority is that you understand how the numbers help us learn about the brain, more than that you do fancy calculations.

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

- analyze the brain as an information processing system from a computational, algorithmic, and implementational perspective.
- apply quantitative psychological methods to study how the brain processes information.

Course Materials:

1. Laptop with internet access, word processing software (.pdf, .doc, or .docx files; no Apple formats or .odf), and spreadsheet software (Excel or Google Sheets should work). Ideally, bring your laptop to class/lab.
2. Access to Moodle (<https://moodle.hanover.edu>) and a Hanover email account. Be sure to check both regularly for course news and updates. There is no official textbook for this course; readings will be available on Moodle.

Course Requirements:

In-class Worksheets - Except for special days (e.g., review, wiggle room), there will always be a worksheet due at the end of class. For full credit, submit a paper copy when leaving the classroom. If you need a bit more time, you can still hand it to me or slip it under my door before I come in the next day for full credit. Late submissions will have ½ credit deducted, as will inadequate completed submissions. If you cannot attend class, you can try to complete and

submit a digital copy on your own for ½ credit. *If you receive half credit, you can get full credit back by scheduling an office hours appt. to discuss the topics from that class.*

Apparent Motion Project - A stop motion film with at least 600 frames. We will spend 2/14 getting started on it in class. More details are attached to the associated assignment on Moodle.

Lab Assignments - Lab assignments will have 2 components: data collection and a report. Data collection will be done in groups of 2 or 3. You must be present in lab to receive full credit for data collection. You will then create a lab report based on your data. A template is provided. Everyone should submit their data worksheet along with their report. **YOUR REPORTS NEED TO BE YOUR OWN WORK**, but your data worksheets can be identical to your group mates'.

Final Project - The last 3 lab sessions will be for you to design and run your own study. The simplest approach is to put your own spin on an experiment or demo we do over the course of the semester, so be thinking about project ideas as we go. You will submit a proposal explaining your idea, and submit a rough and final draft, following the standard lab report procedure. You may complete the project in groups of 2 or 3. You may submit a single proposal as a group, **BUT THE ROUGH DRAFT AND FINAL REPORT SHOULD BE YOUR OWN WORK.**

Exams - There will be 2 exams throughout the semester and a semi-cumulative final exam. Half of the final exam will cover the last set of topics from class. The rest will cover material from the first 2 exams. Your score on this cumulative section can replace your lowest score on those 2 exams. **The final exam schedule is determined by the registrar's office.** Do not commit to travel plans until you know when the final exam will be.

Practice Quizzes - Sample questions that we will go over as a class. Due at the end of the day on which they are assigned. Graded on adequate completion. Accepted late for ½ credit until the day of the relevant exam.

Evaluation and Grading:

In-class Worksheets: 30%

Apparent Motion Project: 2%

Practice Quizzes: 7%

Exams: 36%

Lab Assignments: 20%

Final Project: 7%

Grade	Points
A	93+
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9
D+	67-69.9
D	63-66.9
D-	60-62.9
F	0-59.9

Grades rounded to 1st decimal
(92.95 → 93; 92.94 → 92.9)

Late Policy: Late in-class worksheets can get ½ credit until the day of the associated exam. You can get full credit by scheduling an office hours appointment to discuss topics covered in that class. Late practice quizzes can get ½ credit until the day of the associated exam. Late apparent motion projects will be accepted through the day before we view them for ½ credit; bonus points for particularly creative projects can make it full credit. Late lab reports can be submitted up to 5 days late, with 10% deducted for each day. Late project proposals and rough drafts will not receive credit, but you must submit a rough draft to get a point for improving on it. Final drafts of the project will be accepted up to 5 days late, with 10% deducted for each day.

	Topic	Reading Assignments	Due Dates
1/6	Intro to CogSci	01 – They're made out of meat (Bisson)	Survey by 11:59pm
Lab	Lab 1 – Two Point Discrimination		
1/8	Method of Constant Stimuli vs. Limits	2.1 – Limits and Constant Stimuli	
1/10	Marr's Levels of Analysis		
1/13	The Retina	4.1 – Light 4.2 – Retina 4.3 – Retinal Ganglion Cells	Practice Quiz 1 Two Point Discrimination Lab by 11:59pm
Lab	Lab 2 – Dot Magnitude Estimation		
1/15	Organization of the Eye and V1	5.1 – Optic Nerve and Chiasm 5.2 – Primary Visual Cortex	
1/17	Dorsal and Ventral Streams	06 – The man who mistook his wife for a hat (Sacks) 6.1 – Functional Pathways 6.2 – Figure-Ground and Perceptual Grouping	
1/20	MLK DAY		
Lab	Lab 3 – Color Contrast PSE		Dot Magnitude Estimation Lab by 11:59pm
1/22	Color	7.1 – Color 7.2 – Additive and Subtractive Color Mixing 7.3 – Color Perception 7.4 – Color Constancy 7.5 – Adjustment	
1/24	Evolution of the Eye	08 – Animal eyes	
1/27	Object Recognition; Individual Differences	09 – The detectives who never forget a face (Keefe) 9.1 – Object and Face Recognition	Color Contrast PSE Lab by 11:59pm
Lab	Wiggle Room		
1/29	Review		Practice Quiz 2
1/31	Exam 1		
2/3	Depth and Size	10.1 – Monocular Depth Cues 10.2 – Oculomotor and Binocular Cues 10.3 – Illusions of Size and Depth	
Lab	Lab 4 – Size Constancy		
2/5	Nature vs. Nurture	11 – Immediate susceptibility to visual illusions after sight onset (Gandhi et al.) 11 – Innate face processing (Sugita) 11 – Most people are not WEIRD (Henrich)	
2/7	Confidence Judgements		
2/10	Signal Detection Theory	13.1 – Signal Detection Theory	Size Constancy Lab by 11:59pm
Lab	Lab 5 – Signal Detection		
2/12	Motion	14.1 – Motion Perception 14.2 – MT	Practice Quiz 3
2/14	Apparent Motion		
2/17	Adaptation	16.1 – Motion Aftereffects 16.2 – Light and Dark Adaptation	Signal Detection Lab by 11:59pm
Lab	Visual Distortion; Lab 6 – Motion		

2/19	Motion Lab pt. 2		Midterm Survey
2/21	No Class		
2/24	WINTER BREAK		
Lab	WINTER BREAK		
2/26	WINTER BREAK		
2/28	WINTER BREAK		
3/3	Perception vs. Reality	18 – The neuroscience of reality (Seth)	Motion Lab by 11:59 pm
Lab	Wiggle Room		
3/5	Midterm check-in; Review		Practice Quiz 4
3/7	Exam 2		
3/10	Sound		
Lab	Lab 7 – Frequency Differences		
3/12	Language Perception		Apparent Motion Project by 11:59pm
3/14	Music		
3/17	Attention		Frequency Differences Lab by 11:59pm
Lab	Lab 8 – Attention		
3/19	Attention Disorders		
3/21	Touch and Pain		Practice Quiz 5
3/24	Smell		Attention Lab by 11:59pm
Lab	Project Proposal		Project Proposal by 11:59pm
3/26	Taste		
3/28	Memory and Aversions		
3/31	Monitoring the Body		
Lab	Run Project		
4/2	Attractiveness Judgments		
4/4	Top-down Perception		Rough draft by 11:59pm
4/7	Wiggle Room		
Lab	Finish Project		Project due by 11:59pm
4/9	Exam 3 Review		Practice Quiz 6
4/11	Comprehensive Review		Practice Quiz 7

Accessibility Services for Students with Disabilities:

Hanover College offers accessibility services to students with documented physical, visual, hearing, learning, or psychiatric disabilities. Any Hanover student is eligible for special services or accommodations if: 1) The student self-identifies that he or she has a disability and needs accommodation; 2) The student provides appropriate and verifiable documentation of the disability; and 3) The student provides notification in a timely fashion. For accessibility services, [Email Accessibility Services](#) or call 812-866-6836. The Accessibility Services (AS) office is in the Gladish Center for Teaching and Learning on the first floor of Duggan Library.

Nondiscrimination:

Hanover College is committed to providing equal access to its educational programs, activities, and facilities to all otherwise qualified students without discrimination on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity, or any other category protected by applicable state or federal law. An Equal Opportunity employer, the College also affirms its commitment to nondiscrimination in its employment policies and practices. In compliance with Title IX (20 U.S.C Sec. 1681 et seq.) Hanover College prohibits sex discrimination, including sexual harassment. For student related disability discrimination concerns, contact the Gladish Center for Teaching and Learning at 812-866-6840. For other discrimination complaints, including any arising under Title IX, contact the Title IX Coordinator at 812-866-6740 or the Deputy Title IX Coordinator at 812-866-7097.

Statement on Self-Care:

Your success in this course and throughout your college career depends heavily on your personal health and wellbeing. Stress is a common part of the college experience, and it often can be compounded by unexpected life changes outside the classroom. Your other professors and I strongly encourage you to take care of yourself throughout the term before the demands of midterms and finals reach their peak. Before circumstances and conditions become overwhelming, please don't hesitate to speak with me about any difficulty you may be having that may affect your academic performance. Please know as well that there are several support services on campus available to assist you, as needed. You can make appointments with Health Services by calling x-6102. Appointments for Counseling Services can be made online at any time through [MyHanover](#).

Health Services

Christy Ownbey, APRN, CPNP-PC, Director of Health Services
812-866-7082 or ownbey@hanover.edu

Counseling Services

Sara Crafton, Director of Counseling Services
812-866-7074 or crafton@hanover.edu

Ball Family Chaplain

Rev. Catherine Knott, Ph.D
812-866-7087 or knott@hanover.edu

Gladish Center for Teaching and Learning

Katy Lowe Schneider, Associate Provost for Student Outcomes
812-866-7215 or lowe@hanover.edu

Katie Wood, Director of Gladish Center for Teaching and Learning
812-866-6847 or wood@hanover.edu

Campus Food Pantry

Rev. Catherine Knott, Ph.D
812-866-7087 or knott@hanover.edu

Levett Career Center

Jenny Moss, Executive Director
812-866-7397 or mossj@hanover.edu

Academic Integrity/Honesty:

In the event of academic dishonesty, students will receive a 0 for the assignment at minimum. All instances of academic dishonesty are reported to the chair of the Student Academic Assistance Committee, and repeated instances of academic dishonesty will subject a student to additional penalties up to and including dismissal from the College as outlined in the College Catalog.

As stated in the Hanover College Principles, students, faculty, staff, and trustees of Hanover College seek to promote academic, personal, and moral growth within a safe, challenging, and responsive community. This includes a commitment to academic integrity. Violations of academic integrity have a broad impact on the College and will result in College review and action.

Academic dishonesty includes any action with the intent to deceive in order to obtain an unfair advantage, as well as any act of aiding and abetting academic dishonesty. The Hanover College statement on academic dishonesty may be found in the Catalog and in the Student Handbook.

Artificial Intelligence: Tools such as ChatGPT can be quite helpful and are not going away. However, those tools are best used by someone who can evaluate and critique the output. As is commonly said, “you won’t lose your job to AI, you’ll lose your job to someone who uses it better than you.” The primary goal of this class is for you to have an understanding of key concepts in psychology. Anything you submit in this class needs to reflect your own thinking. If AI tools are helpful in developing and refining your thinking, that is an acceptable usage. If you are relying on AI to do the thinking for you (e.g., writing an essay), that is counterproductive in the long term and defeats the purpose of the class. As such, it will be considered academic dishonesty. If you have questions about appropriate use of AI tools, please come speak with me.