

PSYCH 403

ADVANCED PERCEPTION

Winter, 2024

LEC B3 TR 11:00a.m.-12:20p.m. BS M-141

Instructor: Dr. Karsten A. Loepelmann (he/him)

Email: kloepelm@ualberta.ca

Office: BS P-231

Hours: Mon. 12:00-1:00p.m. or by appointment

Class Website: <https://sites.ualberta.ca/~kloepelm/psych403/>

TA: Tim Woerle

Email: woerle@ualberta.ca

Office: BS P-TBA

Hours: by appointment

Prerequisites

The **required** prerequisite for this course is PSYCH 367: Perception (formerly PSYCO 267), and STAT 151 or 161 (or equivalent); **no** exceptions or waivers. See [UAlberta Calendar](#) section University Regulations:

Registration: [Prerequisite Course Requirements](#).

Course Description & Learning Outcomes

How do we take the incoming flow of information contained in the energy and chemicals around us, and construct an inner version of reality? This course is an intensive exploration of select theoretical, empirical, and applied issues in vision science and perception, including visual perception, time perception, face perception, synesthesia, perception and art, the perception of food and eating, and the neuroscience of stage magic. You will learn the theoretical and empirical contributions required to understand current conceptual schemes and disputes. To do this, you will be able to take multiple points of view: the nature of the physical stimuli; the structure and function of the sense organs and receptors, and neural paths from receptors to the brain; how the sensory information is represented and processed; and what it means to perceive. Specific learning objectives will be given in lectures for each topic.

Assessment

10 Online Quizzes, worth 10% (1% each)

2 PeerWise Questions, worth 2% (1% each)

Final Exam, worth 39%

2 Blog Post Assignments, worth 20% (10% each)

Midterm Exam, worth 29%

Online Quizzes (10, worth 1% each): The quizzes are intended to keep you up to date on the required readings, and to familiarize you with written assessment. Quizzes will be written online via eClass. Each quiz will be open for a 1-day (24-hour) window. You will have **10 minutes** to write a short answer to a question based on the assigned readings. Marks will be based on participation, not correctness of your answers.

Blog Post Assignments (2, worth 10% each): For each assignment, you will choose a peer-reviewed primary research journal article on a topic in sensation or perception, published in 2019-2024. Then you will write a blog post to summarize the article in a way that is understandable to the general public, and explain its relevance or importance. More information is provided in the [Blog Post Assignment document](#).

PeerWise Questions (2, worth 1% each): You will write two multiple-choice questions based on course content and submit them on the [PeerWise](#) website, where they will be available to the rest of the class for practice and review. PeerWise also allows for upvoting and downvoting of questions. The student writing the top-ranked question in each set will receive a bonus mark of 1%. More information is provided in the [PeerWise document](#).

Midterm Exam (worth 29%): The midterm will assess understanding of material covered in the assigned readings and lectures. Although there is much overlap between the readings and lectures, it is not a complete overlap; some content is covered only in one or the other. You are responsible for **all** material. The midterm will consist of short-answer questions and an essay question. If you miss a midterm due to incapacitating illness or severe domestic affliction, then the weight of the excused exam may be added to the final exam (you must complete and [digitally sign](#) this [statutory declaration form](#)). Documentation must be provided within **two** working days of the missed exam. **No** makeup exams or assignments are accepted. See [UAlberta Calendar](#) sections Academic Regulations: [Attendance](#) and [Examinations \(Exams\)](#).

Final Exam (worth 39%): See the Office of the Registrar's [exam schedule](#) for official date, time, and location. The final exam will have short-answer and essay questions based on ~~the entire course, with an emphasis on~~ the material covered after the midterm. If you miss this exam, you must apply to your Faculty Office for a deferral of the final exam within **two** working days of the final exam date. See [UAlberta Calendar](#) sections Academic Regulations: [Attendance](#) and [Final Examinations](#).

Schedule of Classes

(* indicates a quiz day)

Date:	Topic:	Assigned Readings:
Jan 9, 11	Introduction to vision science	Stone (2012a): Vision: An overview
Jan 16, 18*	Theoretical approaches to perception	Palmer (1999a): Theoretical approaches to vision
Jan 23, 25*	Neurophysiology of vision	Stone (2012b): Eyes; Stone (2012c): The visual brain
Jan 30, Feb 1*	Functional architecture of perception; Brightness, lightness, & edge detection	Enns (2004): Edges
Feb 6, 8*	Blog Post #1 due: Tue., Feb. 6 The raw primal sketch Perceptual organization	Palmer (1999b): Processing image structure Frisby & Stone (2010): Seeing figure from ground
Feb 13, 15*	Depth perception PeerWise Question #1 due: Fri., Feb. 16	Mather (2016): Depth perception
Feb 20, 22	No classes (Winter Term Reading Week)	
Feb 27, 29	Midterm Exam: Tues., Feb. 27 Time perception	(based on all above readings and lectures) Wallisch (2008): An odd sense of timing
Mar 5, 7*	Object perception	Bruce et al. (2003): Object recognition
Mar 12, 14	Face perception	Snowdon et al. (2012): The perception of faces
Mar 19, 21*	Synesthesia	Cytowic & Eagleman (2008): Inside a synesthete's brain
Mar 26, 28*	Perception and art The psychology of food & eating	Goldstein (2002): Pictorial perception and art Logue (2015a): The nose knows (and so does the tongue)
Apr 2, 4*	Blog Post #2 due: Tue., Apr. 2 The psychology of food & eating	Logue (2015b): This or that: Choosing what we eat and drink
Apr 9, 11*	Neuromagic PeerWise Question #2 due: Fri., Apr. 12	Martinez-Conde & Macknik (2008): Magic and the brain

As per the exam schedule, the final exam will be held on **Thursday, April 25, 2024 at 2:00p.m.** in **BS M-141**. You must verify this date on [Bear Tracks](#) when the final exam schedule is posted. (Deferred final exam will be held Friday, May 3, 2024 at 10:00a.m. in BS P231.)

Grading

The University of Alberta letter grading system will be used to assign final grades, based on your overall weighted mean. This grade translation is approximate; the instructor reserves the right to use expert judgment to adjust the grades as necessary.

A+	4.0	90-100%	B+	3.3	75-80%	C+	2.3	60-62%	D+	1.3	46-49%
A	4.0	85-89%	B	3.0	69-74%	C	2.0	55-59%	D	1.0	40-45%
A-	3.7	81-84%	B-	2.7	63-68%	C-	1.7	50-54%	F	0.0	0-39%

Required Readings

All required readings are available in a print coursepack from the bookstore, and are posted on the eClass website for this course. This is a Zero Textbook Cost course.



- Stone, J. V. (2012a). Vision: An overview. In J. V. Stone, *Vision and brain: How we perceive the world* (pp. 1-15). The MIT Press.
- Stone, J. V. (2012b). Eyes. In J. V. Stone, *Vision and brain: How we perceive the world* (pp.17-32). The MIT Press.
- Palmer, S. E. (1999a). Theoretical approaches to vision. In S. E. Palmer, *Vision science: Photons to phenomenology* (pp. 45-73, 85-93). The MIT Press.
- Stone, J. V. (2012c). The visual brain. In J. V. Stone, *Vision and brain: How we perceive the world* (pp. 112-133). The MIT Press.
- Enns, J. T. (2004). Edges. In J. T. Enns, *The thinking eye, the seeing brain: Explorations in visual cognition* (pp. 120-163). W.W. Norton and Company.
- Palmer, S. E. (1999b). Processing image structure (4.3: Computational Approaches). In S.E. Palmer, *Vision science: Photons to phenomenology* (pp. 171-185). The MIT Press.
- Frisby, J. P., & Stone, J. V. (2010). Seeing figure from ground. In J. P. Frisby & J. V. Stone, *Seeing: The computational approach to biological vision* (2nd ed.) (pp. 155-172). The MIT Press.
- Mather, G. (2016). Depth perception. In G. Mather, *Foundations of sensation and perception* (3rd ed.) (pp. 323-352). Psychology Press.

-
- Wallisch, P. (2008, February/March). An odd sense of timing. *Scientific American Mind*, 19(1), 37-43. <https://doi.org/10.1038/scientificamericanmind0208-36>
- Bruce, V., Green, P. R., & Georgeson, M. A. (2003). Object recognition. In V. Bruce, P. R. Green, & M. A. Georgeson, *Visual perception* (4th ed.) (pp. 265-287). Psychology Press.
- Snowden, R., Thompson, P. & Troscianko, T. (2012). The perception of faces. In R. Snowden, P. Thompson, & T. Troscianko, *Basic vision: An introduction to visual perception* (Revised ed.) (pp. 299-331). Oxford University Press.
- Cytowic, R. E., & Eagleman, D. M. (2009). Inside a synesthete's brain. In R. E. Cytowic & D. M. Eagleman, *Wednesday is indigo blue: Discovering the brain of synesthesia* (pp. 199-233, 268-273). The MIT Press.
- Goldstein, E. B. (2005). Pictorial perception and art. In E. B. Goldstein (Ed.), *Blackwell handbook of sensation and perception* (pp. 344-378). Blackwell Publishing.
- Logue, A. W. (2015a). The nose knows (and so does the tongue). In A. W. Logue, *The psychology of eating and drinking* (4th ed.) (pp. 45-62). Brunner-Routledge.
- Logue, A. W. (2015b). This or that: Choosing what we eat and drink. In A.W. Logue, *The psychology of eating and drinking* (4th ed.) (pp. 109-126). Brunner-Routledge.
- Martinez-Conde, S. & Macknik, S. L. (2008, December). Magic and the brain. *Scientific American*, 299(6), 72, 74-79. <https://doi.org/10.1038/scientificamerican1208-72>

The Fine Print

Academic Integrity

The University of Alberta is committed to the highest standards of [academic integrity](#) and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the [Code of Student Behaviour](#) (and the [Student Conduct Policy](#)) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All forms of dishonesty are unacceptable at the University. Any offence will be reported to the College of Natural and Applied Sciences; they will determine the disciplinary action to be taken. Cheating, plagiarism, and misrepresentation of facts are serious offences. Anyone who engages in these practices will receive at minimum a grade of zero for the exam or paper in question and no opportunity will be given to replace the grade or redistribute the weights. As well, in the Faculty of Science the sanction for cheating on any examination will include a disciplinary failing grade (no exceptions) and senior students should expect a period of suspension or expulsion from the University of Alberta.

Unauthorized content generation is the production of academic work, in whole or part, for academic credit, progression, or award, whether or not a payment or other favour is involved, using unapproved or undeclared human or technological assistance. In other words, unauthorized use of AI (e.g., ChatGPT, Copilot, etc.) is a form of academic dishonesty and a violation of academic integrity.

Support Services & Accommodations

Students who need additional help in developing strategies for better time management, study skills, or examination skills should contact the [Academic Success Centre](#).

In accordance with the University of Alberta's [Discrimination, Harassment, and Duty to Accommodate Policy](#), accommodation support is available to eligible students who encounter limitations or restrictions to their ability to perform the daily activities necessary to pursue studies at a post-secondary level. Students have both rights and responsibilities with regard to accommodations. Adherence to procedures and due dates is required for the University to provide accommodations. Contact [Accessibility + Accommodations Services](#) for further information.

When an assessment presents a conflict based on [non-medical protected grounds](#), students must [register for accommodations](#) with the Academic Success Centre.

A student who cannot write the final examination due to incapacitating illness, severe domestic affliction or other compelling reasons can apply for a deferred final examination. An application must be made to the student's Faculty office within two working days of the missed examination and must be supported by appropriate documentation or a Statutory Declaration (see UAlberta *Calendar* section Academic Regulations: [Absence from Final Exams](#)).

In cases of temporary conditions that hamper your ability to complete an assignment or write an exam (e.g., a broken arm), the Office of Universal Design and Accessibility Facilitation can help determine what temporary accommodations are required. To request assistance in such cases, contact the Dean of Students Office at doshelp@ualberta.ca.

Deferral of exams or term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of facts to gain a deferral is a serious breach of the Code of Student Behaviour.

Term Work Policy

With the exception of term work for which students did not receive feedback before the posting of final grades, students must initiate a request for reevaluation of term work with the instructor prior to the day of the final exam.

Representative evaluative course material (e.g., sample questions) is available on eClass.

Recording Permissions Policy

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the [prior written consent](#) of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course (e.g., lecture notes) is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Learning and Working Environment

The Department of Psychology, the Faculty of Science, and the College of Natural and Applied Sciences are committed to ensuring that all students, faculty, and staff are able to work and study in an environment that is safe and free from discrimination, harassment, and violence of any kind. It does not tolerate behaviour that undermines that environment. This includes virtual environments and platforms.

The Department of Psychology believes that organizational diversity and excellence go hand-in-hand. We are committed to identifying our limitations as a department in terms of equity, diversity, and inclusion and making actionable changes to overcome these limitations. We want all our constituents to feel welcome, safe, and valued in the core activities of teaching, research, and administration. See the [EDI in Psychology](#) website for more information.

The University of Alberta acknowledges that we are located on Treaty 6 territory, and respects the histories, languages, and cultures of the First Nations, Métis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community.

Other Policies

The [Office of Safe Disclosure and Human Rights](#) (OSDHR) provides confidential disclosure services as well as advising and consulting on any issue relating to human rights, discrimination, harassment, and accommodation issues. There are several ways to contact them, including anonymous options.

Any typographical errors in this course outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar and takes precedence over the final examination date reported in this syllabus.

Policy about course outlines can be found in Academic Regulations: [Course Requirements, Evaluation Procedures and Grading](#) of the University *Calendar*.