

PSYCH 258

COGNITIVE PSYCHOLOGY

Fall, 2024

LEC A1 MWF 11:00-11:50am TL B1

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

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Office: BS P-231

Hours: Mon. 2:00-3:00, or by appointment

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Office: TBA

Hours: by appointment

Class Website: <https://sites.ualberta.ca/~kloepelm/psych258/>

Prerequisites

The prerequisites for this course are PSYCH 104 or SCI 100; **no** exceptions or waivers. See [UAlberta Calendar](#) section University Regulations: Registration: [Prerequisite Course Requirements](#).

Course Description & Learning Outcomes

What goes on in our minds when we are thinking, remembering, and solving problems? In this course, you will explore theoretical and experimental topics in cognitive psychology, the study of human information processing. These topics include a brief history of the field, cognitive neuroscience, attention, perception, memory, knowledge representation, concept learning, reasoning, problem solving, and intelligence. You will analyze issues such as basic research design, the use of models and paradigms, the role of theory and empirical evidence, and interdisciplinary influences. Finally, you will be able to apply your understanding of cognitive psychology to areas like eyewitness testimony, artificial intelligence, complex sociotechnical systems, and more. The skills you develop will help prepare you for [success in the 21st century workplace](#). Specific learning outcomes will be given in lectures for each topic.

Assessment

Online Labs (worth 15%): The online lab assignments are a hands-on experience that relates research findings to theoretical concepts, which will develop your scientific research, data visualization, digital literacy, and written communication skills. You must do the online lab experiments, and submit your results and answers to questions about the lab via eClass. More information (including due dates) is in the [Online Labs document](#).

Midterm Exams (worth 25% each): The midterms will assess material covered in the assigned readings and lectures. Although there is much overlap between the textbook and lectures, it is not a complete overlap; some content is only covered in one or the other. You are responsible for **all** material. The midterms will consist of multiple-choice questions. 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. Unacceptable reasons include, but are not limited to personal events such as vacations, weddings, or travel arrangements. **No** makeup exams or assignments are accepted. See [UAlberta Calendar](#) sections Academic Regulations: [Attendance](#) and [Examinations \(Exams\)](#).

Cumulative Final Exam (worth 30%): See the Office of the Registrar’s [exam schedule](#) for official date and time. The 2-hour final exam will be cumulative; it will have multiple-choice questions based on the entire course, with an emphasis on the material covered after the second 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](#).

ePoll Participation (worth 5%): You earn marks by participating in ePolls in class (not according to how many questions you answer correctly). There are 14 quizzes; each quiz is worth 0.35714286% (i.e., 5%/14). The weight of any missed polls will be automatically added to your final exam. To use [ePoll](#), you must have an internet-connected device (e.g., laptop, tablet, phone).



Schedule of Classes

Date:	Topic:	Assigned Readings:	Online Lab Due:
Sept 4-6	Introduction to cognitive psychology	Chapters 1 & 2	
Sept 9-13	Cognitive neuroscience	Chapter 3	
Sept 16-20	Perception	Chapter 4	#1: RT Tasks due Sept 16
Sept 23-27	Attention Short-term and working memory	Chapter 5 Chapter 6	
Sept 30-Oct 4	No class (National T&R Day): Mon. Sep. 30 Short-term and working memory cont'd MIDTERM 1: Friday, October 4	Chapter 6 cont'd (Chapters 1-6)	#2: Visual Search due Tues Oct 1
Oct 7-11	Long-term memory	Chapter 7	
Oct 14-18	No class (Thanksgiving Day): Mon. Oct. 14 Long-term memory cont'd	Chapter 7 cont'd	#3: Numerical Memory due Tues Oct 15
Oct 21-25	Autobiographical memory	Chapter 8	
Oct 28-Nov 1	Conceptual knowledge Visual imagery & propositions	Chapter 9 Chapter 10	#4: Mental Rotation due Oct 28
Nov 4-8	Visual imagery & propositions cont'd MIDTERM 2: Wednesday, November 6 Problem solving	Chapter 10 cont'd (Chapters 7-10) Chapter 12	
Nov 11-15	No classes (Fall Term Reading Week)		
Nov 18-22	Problem solving, expertise, & creativity	Chapter 12 cont'd	#5: Fitts’s Law due Nov 18
Nov 25-29	Reasoning & decision making	Chapter 13	
Dec 2-6	Human and artificial intelligence	Sinnett et al. (2016)	#6: AI due Dec 2
Dec 9	Human factors psychology	Stone et al. (2017)	

As per the exam schedule, the final exam is scheduled for **Thursday, December 19, 2024 at 1:00pm** in TL B1.

You must verify this date on [Bear Tracks](#) when the final exam schedule is posted.

(Deferred final exam will be held Tuesday, January 7, 2025 at 12:30pm in BS P-231.)

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	87-100%
A	4.0	83-86%
A-	3.7	79-82%

B+	3.3	75-78%
B	3.0	70-74%
B-	2.7	67-69%

C+	2.3	62-66%
C	2.0	57-61%
C-	1.7	53-56%

D+	1.3	44-52%
D	1.0	40-44%
F	0.0	0-39%

Required Textbook & Readings

Textbook (TopHat online-only textbook CAD\$83.50; for Fall, 2024, use join code 782021)

Barenholtz, E., Burton, C., Mavica, L., & Wehe, H. (2022). *Cognitive psychology*. Tophatmonocle Corp.
<https://tophat.com/catalog/social-science/psychology/full-course/cognitive-psychology-elan-barenholtz/2626/>



Required readings (posted on eClass):

Sinnett, S., Smilek, D., & Kingstone, A. (2016). Intelligence. In S. Sinnett, D. Smilek, & A. Kingstone, *Cognition* (6th edition) (pp. 375-393, 399-403). Oxford University Press Canada.

Taulli, T. (2019). AI foundations. In T. Taulli, *Artificial intelligence basics: A non-technical introduction* (pp. 1-17). Apress.

Stone, N. A., Chaparro, A., Keebler, J. R., Chaparro, B. S., & McConnell, D. S. (2017). Introduction to human factors. In N. A. Stone, A. Chaparro, J. R. Keebler, B. S. Chaparro, & D. S. McConnell, *Introduction to human factors: Applying psychology to design* (pp. 1-31). CRC Press.

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, using AI (e.g., large-language models like ChatGPT) 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 [Accommodations + Accessibility](#) 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., practice and review questions) is available in the textbook and 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*.

Privacy Policies

To use the online textbook, you are subject to [Tophatmonish Corp's Privacy Policy](#). To use the Online Psychology Laboratory (OPL), you are subject to the [APA Privacy Policy](#). To use ChatGPT you are subject to [OpenAI's Privacy Policy](#). When using any of these resources, your information may be held outside of Canada, and may be subject to another country's laws.