Cognitive Science (ACN/HCS/PSYC 6330.001)

Spring 2025

General Information

Instructor
Dr. Kendra Seaman | Contact Info: kendra.seaman@utdallas.edu
Please call me Dr. Seaman or Professor Seaman, she/her
Virtual Office Hours: Thursday by appointment | MS Teams
Live Office Hours: Tuesday by appointment | GR 4.306
Make an appointment (24 hours in advance).

Meeting Time: Tuesdays 1:00-3:45 pm, CR 1.212
Prerequisites

- None

Course Modality and Expectations

This is special type of blended/hybrid class: a flipped class. In a flipped class, students are expected to *prepare* to participate in class by watching video lectures, reading articles, or doing other tasks that will inform the activities that will take place during class time. These preparatory activities can be accessed on ELearning at https://elearning.utdallas.edu/ using your NetID and password. ***This does not mean that you can complete the course online; you will be expected to attend and participate in in-person classes, and complete the other course requirements outlined in this syllabus.***

Course Overview

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Cognitive science is the interdisciplinary study of the mind and intelligent behavior. The core disciplines that make up cognitive science are philosophy, psychology, computer science, linguistics, and neuroscience. This course will introduce you to the basic ideas of cognitive science, about some controversial issues, and how cognitive scientists work to better understand the mind. We will cover a range of topics, including language, memory, reasoning, emotion, consciousness, and cognitive neuroscience.

Course Learning Objectives.
Upon completing this course, students should be able to:

- Describe and explain the nature of cognitive science related fields as scientific disciplines.
- Describe and analyze major theoretical perspectives and overarching themes of cognitive science-related fields, discuss their historical development, and describe their most recent developments.
- Locate, accurately summarize, and evaluate bodies of scientific literature in cognitive science.
- Use critical thinking to evaluate scholarly literature.

Readings.
Rather than using a textbook, this course will make use of journal articles, largely from the field's leading journal, *Trends In Cognitive Science,* to illustrate the diversity of the field. All of the articles are available free of charge from the UTD library's website.

Bayne, T., Seth, A. K., Massimini, M., Shepherd, J., Cleeremans, A., Fleming, S. M., ... & Mudrik, L. (2024). Tests for consciousness in humans and beyond. *Trends in Cognitive Sciences*.

Biderman, N., Bakkour, A., & Shohamy, D. (2020). What Are Memories For? The Hippocampus Bridges Past Experience with Future Decisions. *Trends in Cognitive Sciences*, *24*(7), 542–556.

Hagendorff, T., Fabi, S., & Kosinski, M. (2023). Human-like intuitive behavior and reasoning biases emerged in large language models but disappeared in ChatGPT. *Nature Computational Science*, *3*(10), 833-838.

Hogendoorn, H. (2022). Perception in real-time: predicting the present, reconstructing the past. *Trends in Cognitive Sciences*, 26(2).

Miller, G. A. (2003). The cognitive revolution: A historical perspective. *Trends in Cognitive Sciences*, *7*(3), 141–144.

Palminteri, S., & Lebreton, M. (2022). The computational roots of positivity and confirmation biases in reinforcement learning. *Trends in Cognitive Sciences,* 26(7), 607-621.

Rouhani, N., Niv, Y., Frank, M. J., & Schwabe, L. (2023). Multiple routes to enhanced memory for emotionally relevant events. *Trends in Cognitive Sciences,27*(9).

Ryskin, R., & Nieuwland, M. S. (2023). Prediction during language comprehension: What is next?. *Trends in Cognitive Sciences,* 27(11).

Course Requirements

Exams (30% of grade). Two non-cumulative online exams will be given on the lecture material and readings. Exams will occur at the UTD Testing Center on the dates indicated on the "Course Schedule" below. Per the testing center rules, students must schedule an exam 48-hours in advance (https://ets.utdallas.edu/testing-center). ***If you neglect to schedule your exam OR show up late to your exam appointment and are not allowed to begin the exam, a make-up exam will not be allowed. You will receive a 0.*** Each exam counts for 15% of the final grade.

Exploratory Research Projects (30% of grade). There will be two exploratory research projects. The purpose of these assignments is to allow you to further explore an area of interest related to cognitive science. Each exploratory project should cite 3-5 peer-reviewed journal articles. *At least* one article should be an empirical research paper and *at least* one should be a literature review or meta-analysis. You will be placed in a group the first week of class to determine the deadlines for your exploratory projects (see course schedule below).

> *Exploratory Research Papers (20% of grade)*. Each exploratory paper will be limited to 750-1000 word (~3-4 pages at 12-point font). You will submit these papers via eLearning. Each paper will be worth 10 points and graded using the rubrics posted on eLearning.
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> *Exploratory Research Presentation (10% of grade)*. In class, the day your paper is due, you will give a 5-minute informal presentation to the class. Each presentation will be worth 2 points and graded using the rubrics posted on eLearning. If you choose to use a slide deck for your presentation, it must be uploaded to the appropriate folder on Microsoft Teams before class begins.

Journal Club Discussions (20% of grade). In many weeks, a primary research article will be assigned to *all* class members to read and discuss in class. A small group of students will lead these "journal club" style discussions. *All students are expected to participate in the discussion each week, not just the week they are assigned to lead it.* Group/article assignments will be made during the second week of classes.

> *Discussion Leadership (12% of grade)*. Discussion leaders will present a summary of the paper and then will lead the discussion of the article. If your group chooses to use a slide deck for your presentation, it must be uploaded to the appropriate folder on Microsoft Teams before class begins.
> Group members will complete a peer evaluation of each group leader's contribution to the planning and implementation of the journal club discussion.
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> *Discussion Participation (8% of grade)*. When not leading a discussion, you are expected to participate in the article's discussion. This can include asking clarifying questions, answering questions posed by the discussion leaders, critiquing the experimental design or analysis, and/or discussing the results and implications of the paper.

Quizzes (10% of grade). Quizzes will be embedded in the online lessons to ensure understanding of the online lecture materials. Quizzes will be available from the end of class (3:45 PM Tuesday) until their deadline (the beginning of the next class period, 1:00 PM the following Tuesday). These quizzes must be completed before the start of the class period; any

activities completed after this time will receive no credit. Quizzes will be assessed for accuracy, but you can resubmit as many times as you want before the deadline.

Reflection Journal (10% of grade). You will complete an online reflective journal throughout the class to improve your awareness of your own learning and strengthen your writing skills. Each journal entry will be limited to 100-500 words (~1-2 pages at 12-point font). For each class topic, you will complete two entries. In the first entry, you will describe your prior experience and understanding of the topic before encountering the course material. In the second entry, you will tell how that understanding changed or expanded based on the class lectures, discussion, or presentations, how the course material may be applied to your own experiences and research interests, and what you find the most interesting, complex, or challenging about the course material. These reflective journal entries will be composed during class and submitted via eLearning. Journal entries for each class topic will be worth 1 point.

Course Policies

Grading
As alluded to above, your final grade will be based on Exams (30% of grade), Exploratory Research Projects (24% of grade), Journal Club Discussions (20% of grade), Quizzes (14% of grade) and Reflection Journals (12% of grade). Grades of individual assignments will be based on absolute performance, not on the relative performance of others in the class (i.e. there will not be a curve). At the end of the semester, final grades will be computed by taking the proportion of the points earned for the course requirements. If your final score has a fractional part that is exactly .5 or greater, I will round up to the nearest whole number. If your score has a fractional part lower than .5, I will round down. Your final letter grade will be based on the following grading scale: A 93-100%; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 73-76; C- 70-72; D+ 67-69; D 63-66; D- 60-62; F <60.

Feedback. All grades will be posted on the course website as soon as they are available. I will keep an up-to-date and accurate reflection of your course grade on eLearning. Occasional grading errors may occur, so please bring concerns about your grade to my attention (privately) as soon as possible.

Extra Credit. Please do not ask for any extra credit. No extra credit opportunities will be granted.

Late assignments. *Exploratory Research Projects* are due at the beginning of class (1:00 pm) on the date assigned during Week 2. If the ***paper*** is turned in on the due date but after the start of class, it will be reduced by one letter grade (10%). If the ***paper*** is late, 10% more will be deducted for each additional day. If the ***presentation*** is not given on the due date, 50% will be deducted and rescheduled to the following week. The presentation will receive a zero if it is not given the following week. *Reflection Journal* entries will be due at the end of each class period. Any entry turned in on the due date but after the end of the class period will receive half (50%) credit. Only entries received after the due date will receive credit. Exams, discussions, and quizzes will not be accepted late.

Life Happens Policy. $#*& happens. You have a one-time extension on any exploratory research paper or Reflection Journal entry. To evoke this:

1. Email the professor with the subject line, "Cog Sci – Life Happens request for extension" **at least 24 hours before the established deadline**.
2. You can provide any level of explanation you feel comfortable with.
3. Tell us the assignment you'd like an extension on.
4. Propose a new deadline (date and time) that will allow the opportunity to succeed on the assignment, **up to *7* days past the original deadline**.
5. Please wait for confirmation from me to finalize the extension.

Class Attendance.
This is a graduate-level class. As such, students are expected to attend and participate in class every class session *in person*. There is no virtual option for in-person courses. Please be courteous to your instructor and classmates by arriving promptly for class and quietly excusing yourself if necessary. If, for any reason you must miss a class, you are responsible for notifying the instructor immediately. Only one excused absence will be granted per student, regardless of the circumstances. After the first excused absence, your grade will be docked accordingly for any delayed presentations or missed discussions.

Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

Course Access and Navigation.
This course can be accessed using your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

Communication.
This syllabus and the course site on eLearning will be the primary source of information for the course. Course announcements will also be made via email and posted on eLearning. For specific questions that are not answered in the syllabus or on eLearning, you are encouraged to post a question in the "Questions for Instructor" discussion board on eLearning. If you chose to email me, please include "Cog Sci Question" in the subject line of the email. I will do our best to return emails **within 3 working days**, but I strongly encourage you to ask questions in the eLearning discussion board. Please do not wait until the last minute to send inquiries. Unanswered last-minute inquiries will not excuse you from an assignment. If you prefer to talk to me directly, please sign up for virtual office hours listed on the first page.

Class Participation.
Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements violates the Student Code of Conduct.

Class Recordings
Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials.
The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Help!
If you are struggling with the course material, it is imperative that you contact either the course Instructor as soon as possible. I am happy to help you develop study skills and identify additional resources if you contact us in a timely matter; however, there is little we can do to help you right before an exam and even less I can do if you wait until the end of the course. Students who find themselves struggling with the writing assignments are encouraged to check out the resources at the Writing Center.

Distance Learning Student Resources. Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

Server Unavailability or Other Technical Difficulties. The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty

which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Academic Support Resources. Any student who may need an accommodation based on the potential impact of a disability should contact the Office of Student AccessAbility to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to the Office of Student AccessAbility.
The information contained in the following link lists the University's academic support resources for all students. Please see http://go.utdallas.edu/academic-support-resources.

Academic Dishonesty and The Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: "*As a Comet, I pledge honesty, integrity, and service in all that I do.*" Academic honesty is expected of all UTD students. UTD policy indicates that "Academic dishonesty includes but is not limited to plagiarism, collusion, cheating, fabrication, facilitating academic dishonesty, failure to contribute to a collaborative project, and sabotage" (https://www.utdallas.edu/conduct/dishonesty/). If you have questions, please contact the instructor or TA.

Acceptable and Unacceptable Use of Artificial Intelligence (AI)
The use of generative AI tools (e.g. ChatGPT, MS CoPilot, Grammarly, Dall-e, etc.) is permitted in this course for the following activities:

- Brainstorming and refining your ideas;
- Finding information on your topic;
- Drafting an outline to organize your thoughts;
- Checking grammar and style;
- Reviewing grammar and spelling.

The use of generative AI tools is not permitted in this course for the following activities:

- Impersonating you in classroom contexts, such as by using the tool to compose discussion board prompts assigned to you.
- Writing a draft of a writing assignment.
- Writing entire sentences, paragraphs or papers to complete class assignments.

You are responsible for the information you submit based on an AI query (for instance, that it does not violate intellectual property laws, or contain misinformation or unethical content). Your use of AI tools must be properly documented and cited to stay within university policies on academic honesty. Any assignment that used generative AI tools in unauthorized ways will be considered academic dishonesty. When in doubt about permitted usage, please ask for clarification.

UT Dallas Syllabus Policies and Procedures.
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the catalog sections regarding the credit/no credit or pass/fail grading option and withdrawal from class. Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.
All changes will be announced in class, and updated versions of the syllabus will be posted on eLearning.

Course Schedule

Week	Class Date	Topic	Journal Article	ERP Presentation Group
1	January 21	Intro to Cog Science		
2	January 28	History of Cog Science	Miller 2003	
3	February 4	Methods and Neuroanatomy		1
4	February 11	Neural networks	Hagendorff et al., 2023	2
5	February 18	Vision	Hogendoom 2022	3
6	February 25	Speech and Audition		
7	March 4	Language	Ryskin 2023	5

8	March 11	*Midterm Exam*		
	March 18	*No class - Spring Break*		
9	March 25	Memory Part 1		4 & 6
10	April 1	Memory Part 2	Bidermann et al 2020	1
11	April 8	Reasoning and Decision making		2
12	April 15	Computational modeling	Palminteri & Lebreton 2022	3
13	April 22	Attention, Consciousness and Imagery	Baynes et al 2024	4
14	April 29	Emotion and Motivation	Rouhani et al., 2023	5
15	May 6	Social cognition		6
16	May 13	*Final exam*		