Cognitive Science (ACN/HCS/PSYC 6330.001)

Spring 2023

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: Tuesdays 11:00 AM – 12:00PM | JO 3.308
Make an appointment (24 hours in advance).

Meeting Time: Tuesdays 1:00-3:45pm, 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 Blackboard 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.

Basyouni, R., & Parkinson, C. (2022). Mapping the social landscape: tracking patterns of interpersonal relationships. *Trends in Cognitive Sciences*, 26(3), 204-211. https://doi.org/10.1016/j.tics.2021.12.006

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. https://doi.org/10.1016/j.tics.2020.04.004

Clarke, A., & Tyler, L. K. (2015). Understanding What We See: How We Derive Meaning From Vision. *Trends in Cognitive Sciences*, *19*(11), 677–687. https://doi.org/10.1016/j.tics.2015.08.008

Cleeremans, A., Achoui, D., Beauny, A., Keuninckx, L., Martin, J. R., Muñoz-Moldes, S., … de Heering, A. (2020). Learning to Be Conscious. *Trends in Cognitive Sciences*, *24*(2), 112–123. https://doi.org/10.1016/j.tics.2019.11.011

Genon, S., Reid, A., Langner, R., Amunts, K., & Eickhoff, S. B. (2018). How to Characterize the Function of a Brain Region. *Trends in Cognitive Sciences*, *22*(4), 350–364. https://doi.org/10.1016/j.tics.2018.01.010

Glimcher, P. W. (2022). Efficiently irrational: deciphering the riddle of human choice. *Trends in Cognitive Sciences*, 26(8), 669-687. https://doi.org/10.1016/j.tics.2022.04.007

Miller, G. A. (2003). The cognitive revolution: A historical perspective. *Trends in Cognitive Sciences*, *7*(3), 141–144. https://doi.org/10.1016/S1364-6613(03)00029-9

Palminteri, S., & Lebreton, M. (2022). The computational roots of positivity and confirmation biases in reinforcement learning. *Trends in Cognitive Sciences*, 26(7), 607-621. https://doi.org/10.1016/j.tics.2022.04.005

Zwaan, R. A. (2014). Embodiment and language comprehension: Reframing the discussion. *Trends in Cognitive Sciences*, *18*(5), 229–234. https://doi.org/10.1016/j.tics.2014.02.008

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 (24% 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.

Exploratory Research Presentation (4% 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.

Journal Club Discussions (20% of grade). Many weeks, there will be a primary research article assigned to *all* class members to read and discuss in class. These "journal club" style discussions will be led by a small group of students. *All students are expected to participate in the discussion each week, not just the week they are assigned to lead the discussion.* 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. Group members will complete a peer evaluation of each group leader's contribution to the planning and implementation of the journal club discussion.

Discussion Participation (8% of grade). When not leading a discussion, you are expected to participate in the discussion of the article. 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 (14% of grade). To ensure understanding of the online lecture materials, quizzes will be embedded in the online lessons. Quizzes will be available from the end of class (3:45PM Tuesday) until their deadline (the beginning of the next class period, 1:00PM the following Tuesday). These quizzes must be completed before the beginning of the class period; any activities completed after this time will receive no credit. Quizzes will be assessed for accuracy, but you will be able to resubmit as many times as you want to achieve the grade you desire.

Reflection Journal (12% of grade). To improve your awareness of your own learning and strengthen your writing skills, you will complete an online reflective journal throughout the class. Each journal entry will be limited to 100-500 word (~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 with the topic before encountering the course material. In the second entry, you will describe 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, difficult, or challenging about the course material. These reflective journal entries will be composed during class time 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 make every effort to keep an up-to-date and accurate reflection of your course grade on Blackboard. 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 opportunities. No extra credit opportunities will be granted.

Late assignments. *Exploratory Research Project*s are due at the beginning of class (1:00pm) on the date assigned during Week 2. Any project component that is turned in on the due date, but after the beginning of class, will be reduced by one letter grade (10%). Each additional day the paper is late, 10% more will be deducted. *Reflection Journal* entries will be due at the end of each class period. Any entry that is turned in on due date, but after the end of the class period, will receive half (50%) credit. Any entry received after the due date will not 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.

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 Blackboard will be the primary source of information for the course. Course announcements will also be made via email and posted on Blackboard. For specific questions that are not answered in the syllabus or on Blackboard, you are encouraged to post a question in the "Questions for Instructor" discussion board on Blackboard. 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 Blackboard discussion board. Please do not wait until the last minute to send inquiries. Unanswered last minute inquires will not excuse you from an assignment. If you would 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 is a violation of 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.

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 syllabus will be posted on Blackboard.

Course Schedule

Week	Class Date	Topic	Journal Article	ERP Presentation Group
1	January 17	Intro to Cog Science		
2	January 24	History of Cog Science	Miller 2003	
3	January 31	Methods and Neuroanatomy	Genon et al 2018	1
4	February 7	Neural networks		2
5	February 14	Vision	Clarke & Tyler 2015	3
6	February 21	Speech and Audition		4
7	February 28	Language	Zwaan 2014	5
8	March 7	*Midterm Exam*		
	March 14	*No class - Spring Break*		
9	March 21	Memory Part 1		6
10	March 28	Memory Part 2	Bidermann et al 2020	1
11	April 4	Reasoning and Decision making	Glimcher 2022	2
12	April 11	Computational modeling	Palminteri & Lebreton 2022	3
13	April 18	Attention, Consciousness and Imagery	Cleeremans et al 2020	4
14	April 25	Emotion and Motivation		5
15	May 2	Social cognition	Basyouni & Parkinson 2022	6
16	May 9	*Final exam*		