COURSE SYLLABUS

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YEAR COURSE OFFERED: 2025
SEMESTER COURSE OFFERED: Spring
DEPARTMENT: Philosophy
COURSE NUMBER: 4930 – 14323
NAME OF COURSE: Philosophy of Cognitive Science
NAME OF INSTRUCTOR: Cameron Buckner

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The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

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Time and location: T Period 4 10:40-11;30,
H Period 4-5 10:40-12:35 MAT 0115
Office hours: T/H 12:45-1:45 FLO 330B
Instructor e-mail: cameron.buckner@ufl.edu

Summary

Cognitive science is the interdisciplinary study of the mind, involving the cooperation of psychology, computer science, philosophy, neuroscience, anthropology, and more. In this course, we will review major philosophical and methodological questions that arise in cognitive science, especially regarding the ways in which findings from so many different sciences with different methods could fit together in a coherent way. We will discuss how cognitive science began as a response to behaviorism in American psychology, and cover the major questions it confronts, including: what counts as a good "cognitive" explanation, could computers or robots have minds, can our minds extend beyond our brains, are psychological and neural descriptions of minds at odds with one another, and does cognitive science need to appeal to "representations" (like concepts, memories, maps, etc.)? We will review the answers to these questions provided by the major paradigms in the history of cognitive science, including classical computationalism, connectionism (including its recent incarnation as "deep learning"), dynamicism, and predictive coding approach.

No philosophical background is required, but an introductory course in Logic, Psychology, Neuroscience, Biology, or Computer Science is highly recommended.

Please note that all lecture notes for this course are available on the course's Canvas site.

Course objectives:

1. Understand the historical foundations of and major theoretical approaches in cognitive science, the interdisciplinary study of the mind.
2. Develop a basic vocabulary for understanding and evaluating these frameworks by drawing upon theories and concepts from philosophy of mind and science.
3. Recognize arguments for various positions on explanation of mental activities and be able to charitably defend and critique them.

4. Formulate original arguments, anticipate objections, and respond to them in a conscientious manner.
5. Read and discuss complex texts from historical sources and contemporary works in cognitive science.
6. Speak and write persuasively on abstract and conceptually difficult issues at the intersection of philosophy and cognitive science.
7. Understand recent advances in artificial intelligence by applying conceptual and explanatory frameworks learned in class to interactions with state-of-the-art AI tools.

Major Assignments/Exams

Weekly Responses	10%
Exam 1	20%
Midterm Paper (4-5 pages)	20%
Group Project	30%
Final Exam	20%

Weekly responses

Each week, students will be required to complete a response assignment on Canvas. Response papers will typically walk you through the week's readings and ask a few brief questions to highlight key points and concepts. Responses will typically be assigned on Monday, and will be due on Thursday.

Paper

Undergraduates will complete one paper, with topics chosen from a list passed out roughly at week 5. Papers will be due roughly two weeks after they are assigned. For advice on how to write a philosophy paper, this is an excellent resource:
http://www.jimpryor.net/teaching/guidelines/writing.html

Project

Group projects will be organized around week 10. Groups will consist of 3-4 members. In the last week of class, each group will deliver a presentation of about 30 minutes' duration. Each group needs to introduce the class to a philosophical issue that arises with the use of recent developments in artificial intelligence. Topics will be developed in consultation with me. The presentation needs to assess how well a state-of-the-art AI system models some cognitive capacity—such as inference, memory, imagination, planning, emotional understanding, conceptual categorization, etc. Your verdict on how well it models that capacity can be a split decision. Each group is expected to do some of their own research. At the end of the course, each group member will also turn in an individual 5-page paper explaining their contributions to the group and their final assessment of the central issue. Grades on the group project will be determined by a rubric which includes a peer evaluation.

Exams

Undergraduates will take two in-class essay exams: one mid-term and one final. These will be handwritten in class on Blue Books. A list of possible topics will be handed out roughly 1 week before the exam date, from which the essay questions will be chosen.

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Grading scale

Grading of each assignment will be based on a 100 point scale. Grades for group projects will be derived from the grading template rubrics, which you can see and consider ahead of time. For final letter grades, I reserve the discretion to round up grades near a cutoff line in final averages for students who have reliably turned in assignments and/or improved their performance towards the end of the course.

Percentage greater than or equal to	Letter
93-100 %	A
90-93 %	A-
87-90 %	B+
83-87 %	B
80-83 %	B-
77-80 %	C+
73-77 %	C
70-73 %	C-
65-70 %	D+
60-65 %	D
50-60 %	D-
< 50 %	F

Required Reading

Andy Clark, *Mindware: An Introduction to the Philosophy of Cognitive Science*, ***2nd Edition***

Recommended Reading (classics to read outside of class for additional context)

Watson, "Psychology as the Behaviorist Views it"
Chomsky, "A Review of B.F. Skinner's Verbal Behavior"
Tolman, "Cognitive maps in Rats and Men"
Lettvin et al, "What the Frog's Eye Tells the Frog's Brain"
Fodor "Special Sciences: Or the Disunity of Science as a Working Hypothesis"
Tversky & Kahneman, "Judgment under Uncertainty: Heuristics and Biases"
Rosch & Mervis, "Family Resemblances: Studies in the Internal Structure of Categories"

List of discussion/lecture topics

Students are expected to have read the chapters or articles indicated. Readings with a "+" symbol are **recommended** for undergraduates and **required** for graduates.

Week	Topic	Readings
Week 1 Jan 14	Mind as Computer	Clark Ch1 Kim, Ch5, "Mind as Computer" +Turing, Computing Machinery & Intelligence

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Week 2 Jan 21	Classical Symbol Systems	Clark Ch2 Newell & Simon, "Computer science as empirical inquiry: Symbols and search" +Dennett, "Cognitive Wheels: The Frame Problem in AI"
Week 3 Jan 28	Rationality, Contents, and Causes	Clark Ch3 Dennett, "Real Patterns" +Dretske, "Psychological and Biological Causes of Behavior"
Week 4 Feb 4	Connectionism	Clark Ch4 MacDonald, "Classicism vs. connectionism" +McClelland, McNaughton, & O'Reilly, "Why the Brain has Complementary Learning Systems"
Week 5 Feb 11 Paper #1 assigned	Deep Learning	Buckner, "Deep Learning: A Philosophical Introduction"
Week 6 Feb 18	Perception, Action, and the Brain	Clark Ch5 Craver, "A Field Guide to Levels" +Franks, "On Explanation in the Cognitive Sciences"
Week 7 Feb 25 Feb 27: *Exam #1*	Robots and Artificial Life	Clark Ch6 Brooks, "Adaptation without Representation" +Webb, "Why not the real iguana?"
Week 8 Mar 4 Paper #1 due	Dynamical Systems	Clark Ch7 Van Gelder, "What might cognition be, if not computation?" +Thelen et al., "A field theory of infant perseverative reaching" *BBS*
Mar 11	Spring Break	01110000 01100001 01110010 01110100 01111001

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Week 9 Mar 18	Language and Cognition	Clark, Ch8 Clark, "Magic Words" + Anderson, "Neural Reuse…" *BBS*
Week 10 Mar 25	Extended Cognition	Clark Ch9 Adams & Aizawa, "The Bounds of Cognition" +Buckner, "A property cluster theory of cognition"
Week 11 Apr 8	Predictive Coding	Clark Ch11 "Recent work on the Nature and Development of Delusions" – Bortolotti & Miyazono + McClelland et al., "Letting Structure Emerge"
Week 12 Apr 15 (Apr 17 Begin presenting group projects)	Mechanistic Explanation	Piccinini & Craver, "Integrating Psychology and Neuroscience" +Sullivan, "Construct Stabilization and the Unity of the Mind-Brain Sciences" +Stinson, "Mechanisms in Psychology-Ripping Nature at its Seams"
Week 13 Apr 22	Group projects	Finish presenting group projects
Final Exam	All material	Tuesday May 9 11:00 AM – 2:00 PM

Class policies

Attendance:

Requirements for class attendance and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Accommodations:

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "Get Started With the DRC" webpage on the Disability Resource Center site: https://disability.ufl.edu/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

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Grading policies:

Grading policies are consistent with the UFL guidelines found in the catalog here: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/ .

Evaluation policies:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/ . Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/ . Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/ .

Academic Honesty:

UF students are bound by The Honor Pledge which states "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the UF Conduct Code website for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Recordings:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal education use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and deliver by an instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentation such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or guest lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless, of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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Health and Wellness:

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450

Academic Resources:

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email ask@ufl.libanswers.com for more information.

Teaching Center: 1317 Turlington Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.

Academic Complaints: Office of the Ombuds; Visit the Complaint Portal webpage for more information.

Enrollment Management Complaints (Registrar, Financial Aid, Admissions): View the Student Complaint Procedure webpage for more information.

Instructional material note:

Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor(s). The instructor(s) is only responsible for these instructional materials.