

ICS 469 Syllabus (WI Focus)
Introduction to Cognitive Science
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UH Semester in London

Course Description: Cognitive science is the study of the mind. It is an interdisciplinary field with multiple methods. It also is a field with very deep historical roots, going back to the Roman and Greek philosophers. Cognitive science is currently an important topic because of advances in brain imaging, advances in AI and machine learning, interest in robotics and social agents, and advances in application areas with subsequent interest and research projects promoted by large companies such as IBM, Google, and Apple. This course introduces basic concepts, central problems, and methods from cognitive science. Identifies contributions from disciplines such as cognitive psychology, linguistics, artificial intelligence, philosophy, and neuroscience. This course has a writing-intensive focus.

Objectives: By the end of the course, the student shall:

- 1) Understand the broad range of approaches to cognitive science
- 2) Understand how different fields define the problem and approach solutions
- 3) Understand how to collect and interpret empirical data relevant to cognitive science
- 4) Understand and have experience using several user evaluation techniques
- 5) Understand the intersection of cognitive science with AI and Robotics
- 6) Be knowledgeable about the basic human information processing systems of perception, cognition, and action
- 7) Be knowledgeable about how attention, affect, and environment influence human behavior
- 8) Be knowledgeable how cognitive science is relevant to contemporary issues in society, technology, and computer science

Required Texts: Friedenberg, J. and Silverman, G. (2016). Cognitive Science: An Introduction to the Study of the Mind. Third Edition. Sage. ISBN 978-1-4833-4741-7. Here is the link to Vital Source where you can rent or purchase the book: <https://www.vitalsource.com/products/cognitive-science-an-introduction-to-the-study-of-jay-friedenberg-gordon-v9781506316581?term=9781483347417>

Class Format: This is a discussion-oriented course. Members of the class take turns providing discussion questions and serving as moderators. Class members are expected to actively participate in class discussions.

Field Trip: A field trip to Bletchley Park will be an integral part of the instruction. Students will meet at the site and will need to budget for transportation and entry fees.

Class Moderator(s): Each week, a student or student team will lead the class discussion on an assigned chapter topic.

Written Assignments: In addition to the weekly written answers to the moderator questions, students will write and submit a final paper that will be graded on:

- Content: Does the student cover the topic thoroughly? Are all the relevant issues discussed?
- Clarity: Is the paper easy to read? Is the argument well structured?
- Grammar and spelling: Are there any spelling or grammatical errors?
- References: Are the arguments well supported? Are all sources cited properly?

Evaluation:

Moderator Duties	10%
Discussion Questions	10%
Answers to Questions	20%
Exam 1	20%
Exam 2	20%
Final Paper	20%

Class Contact Hours: 14 class sessions, one held in conjunction with the field trip equals more than 45 contact hours.

Class Schedule:

<i>Session Number</i>	<i>Topic & Activities</i>	<i>Reading Assignments</i> (Read before class)
Class 1	Introduction to Cognitive Science and ICS 469	Prior to each class, the instructor or moderator provides questions for the next reading assignments. Class will turn in written answers to discussion questions each week. Read chapter 1
Class 2	Chapter 1. Introduction: Exploring Inner Space	Read chapter 2. Turn in answers to Chapter 1 discussion questions
Class 3	Chapter 2. The Philosophical Approach: Enduring Questions	Read chapter 3. Turn in answers to discussion questions for Chapter 2
Class 4	Chapter 3. Psychological Approach: A Profusion of Theories Paper Topic Due	Read chapters 4 and 5. Turn in answers to discussion questions for Chapter 3
Class 5	Chapter 4. The Cognitive Approach I: Vision, Pattern Recognition, Attention and Chapter 5. The Cognitive Approach II: Memory, Imagery, and problem Solving	Read chapters 6 and 7. Turn in answers to discussion questions for Chapters 4 and 5.
Class 6	FIELDTRIP: [Bletchley Park]	
Class 7	Chapter 6. The Neuroscience Approach: Mind as Brain Chapter 7. The Network Approach: Mind as a Web Paper Outline Due	
Class 8	EXAM 1 (Chapters 1-7)	Read chapters 8 and 9
Class 9	Chapter 8. The Evolutionary Approach: Change Over Time and Chapter 9. The Linguistic Approach: Language and Cognitive Science Paper First Draft Due (2 copies)	Read chapters 10 and 11. Turn in answer to discussion questions for chapters 8 and 9
Class 10	Chapter 10. The Emotional Approach: Mind as Emotion and Chapter 11. The Social Approach: Mind as Society Paper	Read chapter 12 and turn in answer to discussion questions for Chapters 10 and 11
Class 11	Chapter 12. The Artificial Approach: The Computer as a Cognitive Entity Peer Review Due	Read chapter 13. Turn in answer to discussion questions for Chapters 12
Class 12	Chapter 13. Intelligent Agents and Robots	Read chapter 14. Turn in answer to discussion questions for Chapter 13
Class 13	Chapter 14. Conclusion: Where Do We Go from Here? Final Paper Due	Turn in answer to discussion questions for Chapter 14
Class 14	EXAM 2 (Chapters 8-14)	

Evaluation Rubric for ICS 390 and ICS 469 Papers

Qualities & Criteria	Poor (1-2)	Good (3-4)	Excellent (5)
<p>Title; Objective or Thesis; Clarity of topic area and theme.</p> <p>weight: 5% of paper grade</p> <p>score (1, 2, 3, 4, or 5) x 1 =</p>	<p>a. There is no reference to the topic, problem, or audience.</p> <p>b. The title is inappropriate and does not describe the topic.</p>	<p>a. The title does not adequately describe the topic.</p> <p>b. The measure is stated but not well connected to the theme of the paper</p>	<p>a. The title is appropriate and adequately describes the topic.</p> <p>b. the title concisely prepares the reader for the paper topic.</p>
<p>Abstract; Problem statement; Orientation to reader.</p> <p>weight: 10% of paper grade</p> <p>score (1, 2, 3, 4, or 5) x 2 =</p>	<p>a. There is no statement of thesis or objective of the research.</p> <p>b. Abstract loosely ties the problem statement and overview with summary</p>	<p>a. The writer makes the reader aware of the overall problem, challenge, or topic to be examined.</p> <p>b. Thesis is stated but clarity and/or focus could be better.</p>	<p>a. The writer introduces the topic and its relevance to (1) the discipline; and (2) the chosen audience. The introduction lays groundwork for the direction of the paper.</p> <p>b. Thesis or objective is clearly stated and appropriately focused.</p> <p>c. Main idea concisely stated</p>
<p>Body Structure; Flow; Organization and Development</p> <p>weight: 20% of paper grade</p> <p>score (1, 2, 3, 4, or 5) x 4 =</p>	<p>a. The paper has little to no direction, with disjointed subtopics.</p> <p>b. Text is repetitious.</p> <p>c. Information seems to be disorganized and has little to do with the main topic.</p> <p>d. Lacks a thesis or controlling idea.</p> <p>e. Sentences do not relate to the paragraph's main idea.</p> <p>f. Paragraphs do not clearly or effectively relate to the paper's thesis or controlling idea.</p> <p>g. Examples are either lacking or ineffective (i.e., do not relate to the main idea in the paper or paragraph)</p>	<p>a. There is a basic flow from one section to the next, but not all sections or paragraphs follow in a natural or logical order.</p> <p>b. Ideas are clear, but there is a lack of extra information.</p> <p>c. Information relates to main topic. Details and amount of information are sparse.</p> <p>d. Includes a basic thesis or controlling idea.</p> <p>e. Sentences mostly relate to the paragraph's main idea.</p> <p>f. Paragraphs generally though not</p>	<p>a. The paper flows from general ideas to specific conclusions and/or vice-versa. All sections follow a logical order. Transitions tie together sections as well as individual paragraphs.</p> <p>b. Ideas are clear, original, and focused. Main idea stands along with details.</p> <p>c. Information clearly relates to the main thesis. It includes several supporting details and/or examples. Sufficient information included.</p> <p>d. Provides a clear</p>

		<p>always relate to the thesis or controlling idea.</p> <p>g. Examples are included, though may reader need specific details</p>	<p>and compelling thesis.</p> <p>e. Sentences clearly relate to the paragraph's main idea.</p> <p>f. Paragraphs clearly and effectively relate to and support the thesis.</p>
<p>Content Weaving together literature through synthesis via thematic categories that provide exploration/explanation</p> <p>weight: 35% of paper grade</p> <p>score (1, 2, 3, 4, or 5) x 7 =</p>	<p>a. The writer has omitted major sections of pertinent content or content runs on excessively.</p> <p>b. The writer quotes other material excessively.</p> <p>c. The ideas presented have little significance to the discipline and/or the audience.</p> <p>d. Text is repetitious.</p> <p>e. There is no central theme.</p> <p>f. Ideas in the paper are irrelevant or not worthy of the reader's consideration.</p>	<p>a. The writer includes all the sections of pertinent content, but does not cover them in as much depth or detail as the audience/reader expects.</p> <p>b. The significance to the discipline is evident.</p> <p>c. Ideas are clear, but more information is needed.</p> <p>d. Ideas in the paper are mostly (but not all) relevant and worthy of the reader's consideration.</p>	<p>a. The writer covers the appropriate content in depth without being redundant.</p> <p>b. The writer cites sources when specific statements are made.</p> <p>c. The significance of quotes, when used, is apparent.</p> <p>d. The length is appropriate.</p> <p>e. Ideas are clear, original, and focused. Main idea stands out, along with details.</p> <p>f. Ideas in the paper are compelling, even original; they are not self-evident.</p>
<p>Clarity and Correctness of the Writing weight: 15% of paper grade</p> <p>score (1, 2, 3, 4, or 5) x 3 =</p>	<p>a. It is difficult for the reader to understand what the writer is trying to express.</p> <p>b. Writing is convoluted.</p> <p>c. Paper contains spelling and grammatical errors as well as improper punctuation.</p> <p>d. The writing is vague or it is difficult to understand what the writer is trying to express.</p>	<p>a. The writing is generally clear, but unnecessary words are occasionally used. Meaning is sometimes hidden.</p> <p>b. Paragraph or sentence structure is repetitive.</p> <p>c. Much of the writing is clear, but meaning is sometimes hidden.</p> <p>d. Some mistakes in grammar, spelling, and/or punctuation exist, but they do not cause confusion; they suggest negligence,</p>	<p>a. The writing is clear and concise.</p> <p>b. There are no (or very few) mistakes in grammar, spelling, and/or punctuation.</p> <p>c. The writing does not ramble; the paper is carefully written and edited.</p>

	<p>e. Mistakes in grammar, spelling, and/or punctuation cause confusion and show lack of concern for quality of writing.</p> <p>f. Writing rambles; the paper appears hastily written.</p>	<p>not indifference.</p> <p>e. Writing might ramble; the paper is not carefully written.</p>	
<p>Conclusions Synthesis of ideas and culminating in a research question, or suggestions for further research, or finalizing with a clear position.</p> <p>weight: 10% of paper grade</p> <p>score (1, 2, 3, 4, or 5)x 2 =</p>	<p>a. There is little or no indication that the writer tried to synthesize the information or draw conclusions based on the literature under review.</p> <p>b. No research question(s) or suggestions are offered to the reader, or the position is not restated and made clear to the reader as a conclusion.</p>	<p>a. The writer provides concluding remarks that show an analysis and synthesis of ideas and information. Some of the conclusions, however, are not supported in the body of the review.</p> <p>b. A follow-up research question or suggestion is offered to the reader, or the writer's position is restated to make it clear to the reader.</p>	<p>a. The writer makes succinct and precise conclusions based on the review of literature.</p> <p>b. Insights into the problem/topic are appropriate.</p> <p>c. Conclusions are strongly supported within the paper.</p>
<p>Sources & Citations & Proper Format</p> <p>weight: 5% of paper grade</p> <p>score (1, 2, 3, 4, or 5)x 1 =</p>	<p>a. The writer does not include in-text citations for statements made in the review or presents the citations inaccurately</p> <p>b. No attention is given to people-first, non-discriminatory language.</p> <p>c. Sources are primarily from the popular press and/or the paper consists primarily of personal opinions.</p>	<p>a. The writer cites sources within the body of the review and includes a corresponding References list. Some formatting problems exist or some elements are missing.</p> <p>b. The body of the paper consists of a review of the literature.</p> <p>c. There is evidence of attention to people-first, non-discriminatory language.</p> <p>d. Most sources are scholarly and cited, but with some errors.</p> <p>e. Personal opinions are kept to a minimum.</p>	<p>a. The writer includes all necessary citations in the body of the review.</p> <p>b. All sources are accurately documented.</p> <p>c. There is consistent use of people-first, non-discriminatory language.</p> <p>d. The majority of sources are scholarly and cited correctly in both text and reference list.</p> <p>e. Personal opinions are appropriately stated succinctly in the conclusion.</p>
Total Score =			