SOSC2800: Cognitive Science

Course Syllabus

The Teaching Team

Instructor

Name: Prof. HSIAO Janet Hui-wen
Office: Rm 3374, Lift 15
Email: jhhsiao@ust.hk
Consultation: By appointment

Teaching Assistants

- Ms. YANG Alice Yumeng (yyangib@connect.ust.hk)
- Ms. HUNG Jennifer (jenniferhsy@ust.hk)

Consultation: By appointment

Lecture Information

Lecture Time: Fri 9:00 - 11:50am
Venue: Rm 2304, Lift 17-18 (76)
Pre-requisites: SOSC 1960 or SOSC 1980 or SOSC 1969
(Students with fundamental computer science/linguistics/philosophy/neuroscience knowledge may take this course with waiver)

Course Description

Cognitive Science is the interdisciplinary scientific study of the mind and mental phenomena across artificial intelligence, psychology, linguistics, philosophy, anthropology, education, and neuroscience. This course introduces students to the broad domain, goals and methods of Cognitive Science, showing how different disciplines converge and integrate in their enquiry into how the brain works. Lectures will present case studies highlighting research findings which show how similar questions about the functioning of the human mind are answered from the perspective of each contributing discipline in the context of the technological advances that are increasingly shaping our lives and society.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Develop basic understanding of core findings from across the interdisciplinary field of Cognitive Science.
2. Develop research skills and the ability to understand research findings from a variety of the constituent disciplines that make up the field of Cognitive Science, including Artificial Intelligence, Psychology, Linguistics, Neuroscience, Philosophy, Anthropology, and Education, and the ability to critically evaluate such research.
3. Critically reflect upon their own conceptions of the nature of the mind and mental phenomena, and whether these views are supported by theories and empirical evidence.
4. Work as a member of a team to investigate and study the mind and mental phenomena.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. For late assignment submissions, there will be a deduction of 5% for every hour they are overdue. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments Components

Assessment for this course will be 53% coursework and 47% exam. Multiple-choice questions will be used for less than 30% of the total course assessment.

Assessment Task	Contribution to Overall Course Grade	Due Date
Assignments & discussions		
Discussion answer submission	16%	01/05/2026
Discussion participation	14%	01/05/2026
Group project		
Oral presentation	10%	24/04/2026
Individual essay	20%	22/05/2026
Exam assessment		
Midterm exam (closed-book)	20%	27/03/2026
Final exam (closed-book)	20%	08/05/2026

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Assignments & discussions Discussion answer submission Discussion participation	ILO1, ILO2, ILO3	The assignments and discussions assess students' ability to explain and apply cognitive science theories to the understanding of the mind and mental phenomena (ILO1, ILO3), and critically evaluate the research findings (ILO2).
Group project Oral presentation Individual essay	ILO1, ILO2, ILO3, ILO4	The presentation and essay assess students' ability to work in a team to demonstrate knowledge of current research and issues in cognitive science (ILO1, ILO4), demonstrate skills of scientific reasoning (ILO2), and critically reflect on what they learnt about such research (ILO3).
Exam assessment Midterm exam (closed-book) Final exam (closed-book)	ILO1, ILO2, ILO3	The exams assess students' ability to demonstrate the fundamental knowledge related to cognitive science (ILO1, ILO3), and to understand research findings from various constituent disciplines that make up the field of cognitive science (ILO2).

Grading Rubrics

The *coursework assessment* will consist of three parts:

- *Assignments & discussions (30%)*

Discussion answer submission (16%) and discussion participation (14%). The marks for discussion participation will be assessed according to the following criteria:

- Intellectual contribution (40%): Consistently demonstrates a thorough understanding of course materials and provides insightful analysis and critical comments to advance group discussion.
- Group discussion skills (30%): Participates actively and constructively to move discussion forward, and consistently appreciates others' contributions and engages with their ideas sensitively.
- Communication of ideas (30%): Articulates ideas at all times.

The discussion answer submitted by each student will be graded according to the understanding of the reading (50%) and analysis and synthesis with new ideas (50%). In total there are 8 submissions.

We will use the Lucid whiteboard for class participation. Please see more details on the Section Lucid White Board.

- *Group project (30%)*

10% for an oral presentation of the group project, and 20% for the individual essay.

The oral presentation will be assessed according to the following criteria:

- Addressing the task (10%): Clearly identifies and addresses the main issues and approaches.
- Understanding, analysis, synthesis, and application of knowledge (20%): Critically engages with issues based on comprehensive understanding of relevant concepts and theories with effective analysis, synthesis, and application of knowledge.
- Argumentation (20%): Examines the issues from all important perspectives with clear logic and evidence, and addresses counter-evidence or rival positions.
- Structure/organization (20%): Provides a clear outline of the structure of the presentation with clear transitions.
- Delivery (20%): Engages the audience and adheres to the time limit strictly.
- Presentation mechanics (10%): Delivers the presentation with accurate language, clear pronunciation, and fluent speech without noticeable grammatical errors.

The individual essay will be assessed by the following criteria:

- Addressing the task (20%): Clearly identifies and addresses the main issues and approaches.
- Intellectual engagement with concepts, theories or issues (40%): Consistently demonstrates thoughtful and critical intellectual engagement with relevant concepts, theories or issues, with clearly articulated argumentation.
- Personal development and reflection (30%): Demonstrates willingness and abilities to reflect on own beliefs and experiences and develops highly perceptive self-understandings.
- Writing mechanics (10%): Uses accurate language with no or very few errors in grammar or vocabulary.

The *exam assessment* will consist of three parts:

- Kahoot quizzes *(Bonus points)*

There will be Kahoot quizzes as in-class exercises, each consisting of 10 multiple choices questions. While they are designed to help students consolidate knowledge and not part of the official assessment, there will be bonus points given to the top 3 winners (1 point to the 1st place, and 0.5 points to the 2nd and 3rd places) at each quiz.

- *Midterm/Final exams (closed-book) (40%)*

The midterm/final exams will each count 20% of the total mark. They will consist of multiple choice, fill in the blank, and short answer questions.

Final Grade Descriptors

Each assessment is designed to assess students' knowledge of a combination of different course objectives. Students' final grade will be given according to the following criteria:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance (total mark 80+)	Students demonstrate consistent evidence of achieving the course objectives and substantial originality in identifying issues and in generating, analyzing, and communicating arguments.
B	Good Performance (total mark 70~79)	Students demonstrate frequent evidence of achieving the course objectives and originality in defining and analyzing issues and in creating solutions.
C	Satisfactory Performance (total mark 60~69)	Students demonstrate evidence of achieving the course objectives, but some important parts are omitted, e.g., misunderstanding of the materials, or lack of critical thinking, etc.
D	Marginal Pass (total mark 50~59)	Students barely demonstrate evidence of achieving the course objectives; have assembled the bare minimum of information, poorly digested, and not well organized in presentation.
F	Fail (total mark < 50)	Students fail to achieve the course objectives and demonstrate faulty understanding of the fundamental concepts.

Course AI Policy

We will be in line with the university policy on the use of GenAI tools such as ChatGPT. Such tools should be used with care, ensuring sufficient student input, to achieve the best learning experience and outcomes. Moreover, usage of these tools needs to be explicitly acknowledged in the References sections of assignments, whenever they have been used. Failure to do so will count as improper referencing or may even constitute plagiarism.

Communication and Feedback

Please note that we will not return any submitted reports or exam papers. However, we will review pre-lecture exercises and the midterm exam questions to help students revise. In addition, students can get individual feedback about the final exam and reports after the semester, by arrangement with the instructor/tutor. Students will be notified when marks are available online.

Resubmission Policy

All written assignments must be submitted online on Canvas; **no email submission will be accepted**. Late submissions, for whatever reasons, will be marked down by 0.5% of the total marks earned for each ***minute*** late. No resubmission is allowed after the deadline. Note that medical conditions do not warrant an extension of the deadline. Technical issues will be considered only if there is an official announcement from Canvas saying that the system is unavailable at the deadline. Thus, please try to finish and submit the coursework as early as possible.

Any dispute on marks you receive on a written assignment or quiz must be made within one week after the marks are available. A review meeting will be arranged among the teaching team, and the decision from the review meeting will be final.

No make-up will be given for any exercise/examination missed. However, if a medical certificate is provided for the absence, a make-up examination may be considered.

Required Texts and Materials

Textbook: Bermudez, J. L. (2024). *Cognitive Science: An Introduction to the Science of the Mind* (4th edition). Cambridge University Press: New York

https://www.cambridge.org/hk/universitypress/subjects/psychology/cognition/cognitive-science-introduction-science-mind-4th-edition?format=PB&isbn=9781009073677
https://www.amazon.com/Cognitive-Science-Introduction-Mind/dp/1009073672

Access from HKUST library:

- https://ebookcentral.proquest.com/lib/hkust-ebooks/detail.action?docID=31853829
- https://julac-hkust.primo.exlibrisgroup.com/discovery/fulldisplay?docid=cdi_askewsholts_vlebooks_9781009075282&context=PC&vid=852JULAC_HKUST:HKUST&lang=en

Lucid whiteboard Access

Please refer to this guide to register for Lucid if you are a first-time user. The Lucid whiteboard for the class is under the "Page" section of our course Canvas. If you encounter any issues, please reach out to TAs for assistance. Note that we will be using Lucid whiteboards again in Week 3 and forthcoming discussion sessions after presentations, so it's important to resolve any access problems beforehand.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Any student who engages in any form of academic dishonesty (e.g., cheating on exams, plagiarism, self-plagiarism, interfering with grading, falsification and fabrication of data in any academic exercise etc.) will receive a grade of F in this course and will be reported to the Disciplinary Committee for further disciplinary action.

About plagiarism: All written assignments will only require a softcopy submission. The softcopy will be checked for plagiarism against a database of articles, books, webpages, and essays submitted by students at HKUST and other universities. No credit will be given for an assignment that contains plagiarized materials. Further penalties will also be applied. These penalties include a zero mark for participation in course tutorials and a zero mark for the course. Plagiarism will also be reported to the Disciplinary Committee for consideration of possible disciplinary action. Note that you also should not use any materials submitted for another course for the coursework in this course without proper acknowledgement (i.e., self-plagiarism). Also, for group projects, all group members are responsible for the group submission and will receive the same penalty if plagiarized materials are discovered.