

Course Description

Seminar in Cognitive Science 2026/27

Time & Venue

Thu 9:00 am – 11:50 am @ Rm 2610

Instructor

Prof. Janet Hui-wen Hsiao

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Course Information

This course aims to introduce current issues in Cognitive Science to postgraduate students. Cognitive Science is the interdisciplinary, scientific study of the mind and mental phenomena, encompassing Artificial Intelligence, Psychology, Linguistics, Neuroscience, Philosophy, Anthropology, and Education. At each week's class, we will read and discuss research papers from major Cognitive Science journals, including *Trends in Cognitive Science* and *Topics in Cognitive Science*, or other related interdisciplinary journals. This course is open to all graduate students who are interested in learning more about interdisciplinary studies on the mind and behavior.

A brief introduction to Cognitive Science will be provided during the first three lectures. Materials will be taken from this textbook:

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

Full text available online through our library: https://julac-hkust.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991013226357103412&context=L&vid=852JULAC_HKUST:HKUST&search_scope=HKUST_catalog_primo&tab=Everything&lang=en

Course Requirements

Weekly: At each week's class, one or two student(s) will lead a discussion on the assigned article(s). Everyone is expected to finish reading the assigned article(s) BEFORE the class. The presenter(s) should post the assigned article(s) on the corresponding discussion forum on Canvas **one week before the presentation** (Thursday, by 11:59 PM). The presenter(s) should upload the PPT slides to the discussion forum by the beginning of the presentation. On the weekday before the class (**Wednesday**), everyone needs to post 1-2 discussion questions on the corresponding Discussion forum **before NOON** as an after-thought of the

assigned article(s) of that week, which is optional for presenter(s) of that week. At the beginning of each class, students will complete a Kahoot quiz prepared by the instructors, covering materials from the previous week(s), with an opportunity to earn bonus points. During the class, the presenter(s) will give a short presentation of the article(s) as a warm-up for group discussion (about 20 minutes), and also serve as the discussion leader. On the **Monday following the class**, everyone (including the presenters) needs to submit a reflective essay (Max = 1000 words excluding references or figures) on Canvas **before NOON** as an after-thought of the discussion. The order of taking the presenter role will be determined during the organization meeting. The duty of the discussion leader(s) is to provide an encouraging atmosphere and stimulate the group to move beyond the content of the assigned article(s). You are more than welcome to meet with the instructor if you need help to prepare for a discussion session. You are encouraged to explore and pick your own topic; however, a new topic has to be approved by the instructor first.

Please note that you need to lead the discussion at least once. Discussion questions and reflective essays should still be submitted even if you miss a seminar. You need to submit discussion questions and reflective summaries on time. Late discussion questions will result in penalties affecting your discussion participation. For the reflective essay, there will be a deduction of 5% for every hour they are overdue.

Assessments

Assessment for this course will be 10% attendance, 30% discussion participation (including the quality of the discussion question submission), 30% presentation, and 30% reflective essays. Bonus points will be awarded to the top 3 winners in the Kahoot quizzes.

Discussion participation will be assessed by the following criteria:

- Intellectual contribution (40%)
- Group discussion skills (30%)
- Communication of ideas (30%)

Presentation will be assessed by the following criteria:

- Addressing the task (10%)
- Understanding, analysis, synthesis, and application of knowledge (20%)
- Argumentation (20%)
- Structure/organization (20%)
- Delivery (20%)
- Presentation mechanics (10%)

The reflective essays will be assessed by the following criteria:

- Addressing the task (20%)
- Intellectual engagement with concepts, theories or issues (40%)
- Personal development and reflection (30%)
- Writing mechanics (10%)

Students' final grade will be given according to the following criteria:

A: Excellent (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 (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 (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: Poor (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.

Tentative Timetable

Week	Date	Topic	Presenter
1	3 Sept	Introduction (Introduction to Cognitive Science)	Janet
2	10 Sept	Introduction (Chapter 1-2)	Janet
3	17 Sept	Introduction (Chapter 3-5)	Janet
4	24 Sept	Introduction (Chapter 7 & 12) + The Organization Meeting for Presentations *Practice Kahoot quiz	Janet
5	1 Oct	Holiday	-
6	8 Oct	*Kahoot quiz (all Introduction)	
7	15 Oct	*Kahoot quiz	
8	22 Oct	*Kahoot quiz	
9	29 Oct	Class Cancelled	-
10	5 Nov	*Kahoot quiz	
11	12 Nov	*Kahoot quiz	
12	19 Nov	*Kahoot quiz	
13	26 Nov	*Kahoot quiz	
14	3 Dec	Makeup class for Oct 29 (Venue TBA) *Kahoot quiz	

Potential Topics:

Articles from *Trends in Cognitive Sciences*:

1. AI Use

AI Surrogates and illusions of generalizability in cognitive science (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002517>

GenAI and the psychology of work (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325000889>

2. Human Consciousness

On a confusion about there being two types of consciousness (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325003201>

Testing circuit-level theories of consciousness in humans (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002372>

3. AI Consciousness

Identifying indicators of consciousness in AI systems (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002864>

Can only meat machines be conscious? (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002347>

4. Language Processing

The ‘design features’ of language revisited (review, long paper)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002797>

5. Human vs. AI

Better artificial intelligence does not mean better models of biology (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325003493>

Towards large language models with human-like episodic memory (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001792>

6. **Gender Inequality**

Psychological drivers of gender disparities in leadership paths (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002839>

How early beliefs about brilliance shape gender gaps (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001810>

7. **Reading**

Rapid decay of perceptual memory in dyslexia (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002487>

Statistical learning in spelling and reading (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001159>

8. **Visual Cognition**

A neurocomputational account of motivated seeing (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001512>

The unfathomable richness of seeing (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001482>

9. **Social Cognition and Technology**

The hidden costs of human cooperation (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002694>

Complex technology requires cultural innovations for distributing cognition (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002128>

10. **Misinformation and Cognitive Distortion**

The psychology of virality (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001731>

Repairing cognitive distortions in political divides (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325001536>

11. Mental Health

Cognitive modeling of real-world behavior for understanding mental health (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002086>

The adaptive value of stubborn goals (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325002785#s0050>

12. Models of Social Cognition

Autism-related shifts in the brain's information processing hierarchy (review)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S1364661325000877>

A high-dimensional model of social impressions (opinion)

<https://www.sciencedirect-com.lib.ezproxy.hkust.edu.hk/science/article/pii/S136466132500110X>

Academic honesty

Academic honesty: Academic dishonesty will not be tolerated. 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 on the component(s) of assessment concerned or in this course and will be reported to the Department/School/University for further disciplinary action. There will be no exception.

Plagiarism

A softcopy is required for all written assignments. The softcopy will be checked for plagiarism. 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 Department/School/University 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).