



HKUST
BUSINESS SCHOOL
香港科大商學院

WORLD CLASS IN ASIA

ISOM 4000A: AI and the Future of Work

Fall 2020

Professor Ohchan Kwon

Class Time and Location

- First class on September 7; Final class on December 4
- Meets every Monday 4:30 – 5:50 p.m. and Friday 12:00 – 1:20 p.m.
- Canvas web page: <https://canvas.ust.hk/courses/33009>
- Zoom links for online class: https://canvas.ust.hk/courses/33009/external_tools/2420
- Announcement, (some) assignments, and discussions via [Microsoft Teams](#)

Course Overview

Artificial Intelligence (AI) and other data analytics tools have been advanced dramatically in recent years. In particular, some of these technologies are conducting many cognitive tasks that only humans could do before, such as prediction, evaluation, and decision making. It is widely believed that they will fundamentally transform many business practices.

This course provides students with the necessary technical and managerial backgrounds to become leaders in the AI-transformed economy. In the first and second modules, we discuss what AI technologies are, and how AI is creating value by enhancing efficiency and reducing (some) bias in humans. It also discusses challenges that organizations face in implementing AI, and what actions they can take. In the third and fourth modules, we cover AI applications across functions, such as hiring, investment, and innovation, to understand how firms and governments can use AI to enhance their operations. The final module considers how students should design their careers to remain competitive in the era of AI.

Course Readings

I recommend the following book (AGG hereafter) as a main reference.

Agrawal, Ajay, Joshua Gans, and Avi Goldfarb. *Prediction machines: the simple economics of artificial intelligence*. Harvard Business Press, 2018.

Other background reading materials will be posted on Canvas and Teams before each class. This course includes one Harvard Business School (HBS) case. I will announce how you can access those materials shortly.

Requirements, Grading, and Due Dates

Grading will be based upon the following components; 1) class participation (40%), 2) mid-term exam (30%), and 3) final group project (30%).

1. Class Participation (40+%)

- In-class participation (10%)
- Community participation (30%)
- Etc bonus points (~5%)

This course is designed to be an interactive, discussion-based one. Participation is a critical element of this course because we learn from diverse perspectives. Such principle must hold even when the course is offered in either online or hybrid mode. Therefore, I assign 10% of total scores based on your in-class participation.

In reality, students may face difficulty in participating in online environments for a variety of reasons. Similarly, the instructor faces difficulty in encouraging continuous participation from students. To maintain high-quality teaching, this course uses digital technologies actively. In particular, we will use [Microsoft Teams](#) for continued discussions before and after class. To encourage your participation here, I assign 30% of total scores based on your community participation.

For each topic, there are two main groups that you can participate in. First, you can ask clarification questions related to concepts and examples covered in classes in “Clarifications” group. I will then address ambiguity either in class or on Teams. Second, you can post examples and news that are not directly mentioned but seemingly related to concepts in class in “Discussions” group. Here, everyone can share their thoughts. I will mention high-quality posts during class as well.

Furthermore, there will be occasional surveys I will send you before class. These surveys are designed to help you prepare for class discussion. Answering the questions will not take much time once you understand the underlying concepts introduced during the lecture and read the assigned readings carefully. Responding to these surveys in a timely manner will be counted as another source of class participation.

For both categories, your participation will be evaluated based on ✓+ / ✓ basis. ✓+ is given if the comment or question is contributing significantly to the class discussion and classmates’ learning. All other participation will receive ✓. Notice that there is no penalty for “wrong” answers, so please do participate without feeling pressure.

2. Mid-Term Exam (30%)

The mid-term exam is scheduled on October 16 (tentative). The exam will cover materials in Module 1 and 2. It consists of questions which are a combination of multiple choices, true/false, short essays, and case analysis questions. The details will be announced in late September.

3. Team Projects (30%)

A group project is designed for students to apply the framework discussed in the course to real-world cases. To accomplish the goal, teams of five students will be asked to 1) identify a company or other organization trying to implement AI for strategic reasons, and 2) apply concepts in the course to understand whether such efforts are likely to succeed or fail, and why.

Students will be assigned to a group by the instructor's discretion. We will begin team formation shortly after the add/drop period.

Last but not least, all team members are expected to contribute sincerely. After the team project assignment, I will administer a survey asking about team dynamics and adjust team project scores accordingly.

Communication Policy and Office Hours

I strongly encourage you to contact me or TA regarding any issues related to this course. For issues or questions related to course contents, please consider using the course discussion forum on [Microsoft Teams](#) first. By doing so, every classmate can follow any important discussions between you and myself. Course-related information from my end will be communicated through this channel as well.

For issues that you do not want to disclose to other classmates, the best way to contact me is simply sending me a message on [Microsoft Teams](#). If you contact me via my email address ohchankw@ust.hk, please begin your email subject with [ISOM4020]. You can also use office hours, which are by appointment.

For other technical issues, please contact TA first. This course's TA is Hilary Cheung. He can be reached at imhilary@ust.hk.

Course Outline and Readings

Module I. Overview of AI

Class 1	Course Overview & Logistics	September 7 Mo
Class 2	What Is Artificial Intelligence (AI)	September 11 Fr
Class 3	Fundamentals of AI Technologies (1)	September 14 Mo
Class 4	Fundamentals of AI Technologies (2)	September 18 Fr
*** September 19 – Add/Drop Period Ends ***		
Class 5	Task Substitution by AI	September 21 Mo

Module II. Key Frameworks

Class 6	Efficiency	September 25 Fr
Class 7	Bias	September 28 Mo
*** No Class on October 2 – Public Holiday ***		
Class 8	Other Issues to Consider	October 5 Mo
Class 9	Assessing the Benefits and Risks of AI	October 9 Fr
Class 10	(Back-up Class)	October 12 Mo

Class 11 Mid-Term Exam October 16 Fr

Class 12 Mid-Term Exam Debrief October 19 Mo

Module III. How AI Affects Different Industries and Tasks

Class 13 AI and Management Practices October 23 Fr

***** No Class on October 26 – Public Holiday *****

Class 14 AI in Finance October 30 Fr

Class 15 AI in Finance (cont'd) November 2 Mo

Guest Speaker: Hanui Kim (Chief Business Development Officer, Qraft Technologies)

Class 16 AI in Health Care November 6 Fr

Class 17 AI in Government November 9 Mo

Class 18 AI in Creative Industries November 13 Fr

Module IV. How AI Affects Macroeconomic Trends

Class 19 Impacts of AI on Geography November 16 Mo

Class 20 Impacts of AI on Labor Markets and Income Inequality November 20 Fr

Module V. Course Wrap-up

Class 21	Designing Your Career in the Age of AI	November 23 Mo
Class 22	(Back-up Class)	November 27 Fr
Class 23	Student Presentations	November 30 Mo
Class 24	Student Presentations	December 4 Fr