

MSDM 5005: Innovation in Practice
Spring 2023-24

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Class Meetings

Wednesdays 7:00pm - 9:50pm

Classroom: CYTG009A (Near Subway)

Course Overview

As the world is going through rapid digital transformation, the practice of data science has become one of the most in-demand competences.

This course introduces key practice-related topics to students who plan to bring data practice and innovation into their professional careers. These topics include data collection, organization, distill and data-based action.

In addition, this course introduces the role of data in fields of smart city, education, and food and beverages industry. Speakers from a wide range of fields will be invited to share their personal journeys and firsthand experiences of how data disrupted and continues to disrupt their industries. Through these intimate and exclusive conversations, students are given opportunities to see data from different perspectives. This allows one to learn to see opportunities, embrace risks and take appropriate action.

This is an experiential course where students will work as a team to apply knowledge, skills and attitudes into their projects.

Intended Learning Outcomes

Upon successful completion of this course, students will be able to:

- Enhance team building skills and cultivate the willingness to take risk and learn from failure
- Create solutions for the community/customers
- Increase awareness towards career development and appreciate alternative track of career paths as innovators and entrepreneurs
- Understand the concepts of sharing economy and concepts related to innovation
- Enhance skills in social research, field work and library research
- Appreciate technological innovation and its opportunities, impacts and benefits to the society

This course requires a significant amount of teamwork as most activities and assessment are based on teams. Throughout the process, students will build their skills in leadership, teamwork and negotiation. All are essential to a successful innovator.

Weekly Schedule

Week	Date	Topic
Week 1	Jan 31	Welcome & Introduction
Week 2	Feb 7	The Art of Data Collection
Week 3	Feb 14	Developing a Winning Data Strategy & Planning
Week 4	Feb 21	Data Validation & Quality
Week 5	Feb 28	Leveraging Data Visualization
Week 6	Mar 6	Innovation in Practice x Foruma 1
Week 7	Mar 13	Midterm Guidance
Week 8	Mar 20	Midterm
Week 9	Mar27	Presentation & Visualization in Business
Week 9	Apr 3	NO CLASS - Midterm Break
Week 10	Apr 10	Data in Action
Week 11	Apr 17	Data in Action
Week 12	Apr 24	Final Guidance
Week 13	May 1	NO CLASS - Labor Day
Week 14	May 8	Final Presentation

*Schedule subject to changes, announcement will be made in class and on Canvas

Team Formation

You will be assigned into groups of 4-5, with members with different strengths. The diversity enables a well-rounded team and facilitates peer learning across disciplines. Please be respectful and appreciate the differences and similarities among your team members.

Assessments

Individual Assessments (65 points)

1. Attendance (5 points)

Attendance will be taken throughout the course. As an experiential course, in-person participation is of high importance.

For absence with valid reason (e.g. joining a competition, job interviews, etc.) Please email the TA at least 24 hours before class.

If you are sick on that day, please send us a doctor's note as soon as possible. Failure to complete the above action will be considered as absent.

Emails shall be sent to Mr. Shu ZHOU at szhoubk@connect.ust.hk

2. Speaker Reflection (15 points)

Why: “We do not learn from experience. We learn from reflecting on experience.”

How: Make the speaker session yours by connecting your personal thoughts, emotions and experience with the speaker’s sharing.

What: After each speaker session, you are required to:

Step 1: Write a piece of reflection of no less than 100 words.

Guideline on reflections:

- Do NOT recap/ summarize the session
- Focus on specific points/ insights that had an impact on you
- Include two entrepreneurial mindsets you find most relevant to your reflection from below:

Mindset	Definition
curiosity	Eagerness in learning and discovering
fearlessness	Ability to navigate ambiguity and take calculated risks
speed	Sense of urgency and ability to move agilely
integrity	Doing right things the right way
resilience	Embracing failure and adversity
grit	Hardworking and perseverance with passion
leadership	Understanding how to lead and how to be led
service	Giving and contributing to a greater good/community
passion	Intense enthusiasm towards a cause
humility	Recognition of values in others

Step 2: insert your reflection piece onto Prof E’s engine and have a dialogue of at least 5 exchanges.

Guideline to use Prof E:

- The goals are to (1) gain additional resources to deepen your learning (2) attain inspiration on how to turn your insights into actions
- You must document the entire conversation through screencaps (into one PDF)

Step 3: Submit the following onto Canvas 3 calendar days after the speaker sessions:

- 1) Speaker reflection (100 words, word/PDF)
- 2) Conversation with Prof E (screenshots, PDF)

3. Personal Development Journal (10 points)

Why: Reflecting on your own reflection will give you a sense of development, and insights on future goals.

How:

Step 1: Spend time on reading your speaker reflections, peer evaluation feedback and project assignments.

Step 2: Produce a 500-word journal on the course with the following prompts:

- 1) What is your overall feeling before, during and after taking this course?
- 2) How has this course changed you?
- 3) What are the top 3 takeaways you have from this course?
- 4) What is your favorite part of this course?
- 5) What is your least favorite part of this course?
- 6) What are your action plans after taking this course?

Welcome to include more in your reflection. Please follow the WHAT-SO WHAT-NOW WHAT method to reflect the impacts of this course on you. Do NOT recap/ copy what you had written before.

Step 3: Feed your personal development journal into the Prof E engine, and have at least 5 exchanges. The goals are (1) deepen your learning (2) inspire future actions. Document the conversation through screencap and put it in one PDF.

Step 4: Submit onto canvas the followings:

- 1) 500-word personal development journal (word/ PDF)
- 2) Conversation with Prof E (screenshots, PDF)

4. Midterm Peer Evaluation & Final Peer Evaluation (5 points each)

Why: Feedbacks are gifts and honest feedback are the best gifts for personal growth.

How: Provide quantitative and qualitative feedback to each member to help them grow.

What:

Assign a mark for the performance of the member (0-10)

Provide each member with:

- One compliment with specificity (E.g. I appreciate your creative input and enthusiasm)
- One criticism with specificity and how to improve (e.g. Your tardiness has a negative impact on the team. It will be great if you could show up on time)

Please note that if you do not give feedback, you will NOT receive feedback or marks.

5. Technical Workshop Assignments (25 points)

More details will be discussed in class. Some assignments are individual and some group.

Group Assessments (35 points)

6. Midterm Presentation (15 points)

As a team, you will represent a formula 1 racing team to provide strategies for the first race in Saudi

Arabia 2024. You are expected to provide data-supported strategies in the following criteria:

- (1) Tire Strategies
- (2) Race Strategies
- (3) Driver Strategies

More details will be discussed in class. A presentation deck along with data materials shall be submitted before the presentation.

7. Final Presentation (20 points)

As a team, you will represent a formula 1 racing team to provide strategies for the three races in 2024 (Japan, China, Miami). You are expected to provide data-supported strategies in the following criteria:

- (1) Tire Strategies
- (2) Race Strategies
- (3) Driver Strategies

More details will be discussed in class. A presentation deck along with data materials shall be submitted before the presentation.

Assessment summary

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Aa Name	# Score	Tags
 Attendance	5	Individual
 Speaker Reflection	15	Individual
 Personal Development Journal	10	Individual
Midterm	15	Group
Midterm Peer Evaluation	5	Individual
Final	20	Group
Final Peer Evaluation	5	Individual
Workshop	25	Individual Group

Academic honesty

You are expected to uphold the HKUST Academic Honor Code and show the highest level of integrity in your work. Plagiarism – copying other people’s work without proper citation or any other form of academic dishonesty is strictly prohibited. Please check the academic integrity website for more information on how to avoid plagiarism: <http://www.ust.hk/vpao/integrity/>.

Free-rider policy

You are expected to be a good team player and pull your weight in the team. Free-riding can be reported when:

- Over 50% of the team agrees that there is a free-riding situation (e.g. 3 out of 5; 3 out of 6)
- Evidence showing free-rider has been confronted and given opportunities to correct, but with no or little improvement is shown
- Proposed solution from the team

Once a free-rider is reported, a meeting will be called inviting all members to go through evidence and explore potential solutions or consequences. The ultimate decision will be upon instructors' discretion.

Use of Generative AI

You are encouraged to use generative AI in this course with the following rules:

- You must disclose when you use AGI
- Documentation will be needed including screenshots of conversations with AGI/ prompts used
- Facts provided by AGI should be verified through external fact checking (e.g. credible sources). You are encouraged to use the school's access to databases