ISOM2500 Business Statistics (L1 & L2)
Spring Semester 2025

Course Outline

Instructor	Dr. Jason MW HO Senior Lecturer Department of Information Systems, Business Statistics, and Operations Management (ISOM)
Office Location	LSK 4082B
Office Hours	Tuesday & Thursday, 1400-1500
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Class Schedule[1] and Location

L1	1630 – 1750 (Tue & Thur)	4 February – 8 May 2025 (except April 1 & 3, and May 1)	2464
L2	0900 – 1020 (Tue & Thur)	4 February – 8 May 2025 (except April 1 & 3, and May 1)	LSK G012

Course Description

Statistics play an important role in every discipline that utilizes data. The diverse areas involving application of Statistics include Science, Medicine, Engineering, Business, among others. This course is designed to teach fundamental concepts and methods in statistical thinking and reasoning, from which students can understand the business and economic situations, and make informed decision wisely and effectively, when facing data from various sources that quantify relevant information to a problem in the business world.

[1] During the semester, there are 2 computer lab sessions apart from regular lectures. Refer to the end of this document for more information.

Intended Learning Outcomes (ILOs)

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

ILO1: Understand and master basic theoretical concepts and methods in statistical thinking and reasoning, so as to decide what statistical techniques are most appropriate to use in a given situation based on knowledge of their advantages and limitations.
ILO2: Apply both descriptive and/or basic inferential methods in Statistics to solve a real problem in business environment.
ILO3: Interpret and present statistical results that are either self-produced or provided by others.
ILO4: Be ready to learn multiple linear regression in subsequent courses.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due Date
In-class participation	5	Week 1 to 13
Homework assignment	15	Week 7, Week 13
Midterm examination	30	17 Mar 2025
Final examination	50	Fall term examination period; exact date to be announced by AR

Mapping of Course ILOs to Assessment Tasks:

Assessment Task	Mapped ILOs	Explanation
In-class participation	ILO1	This task emphasizes on and assesses students' understanding of the basic concepts in Statistics
Homework assignment	ILO1, ILO2, ILO3, ILO4	Homework allows students to solve a real problem in business environment, involving formulation of the problem in statistical terms, selection of an appropriate technique to apply in a given situation, analysis of the data, presentation and interpretation of results of the statistical analysis.
Midterm examination	ILO1, ILO2, ILO3	Midterm examination evaluates students' ability in mastering basic concepts and theory in Statistics, application of descriptive methods, and interpretation of statistical results.
Final examination	ILO1, ILO2, ILO3, ILO4	Final examination evaluates students' ability in mastering basic theoretical concepts, application of both descriptive and inferential methods in Statistics, interpretation of statistical results, and understanding the basics of simple linear regression.

More information about each Assessment Tasks:

Assessment Task	More Descriptions
In-class participation	• Your participation will be assessed according to contributions to in-class discussion and learning via answering some simple questions.
Homework assignment	• 2 sets of homework assignments. • All use of generative AI is restricted. • Students should form groups of 3 students and contribute equally to completion of the assignments jointly. • Students can report any free-riding or irresponsible behavior of group members to TA via email with sufficient supporting evidence. Once verified, students with such behavior will receive lower individual mark. • **Group formation in Canvas** should be completed by end of **Feb 18.**
Midterm examination	• Closed-book • Help sheet (2 pieces of A4-size paper with any content on both sides) allowed • Scheduled on **17 March 2025 (MON), 8-9pm**
Final examination	• Closed-book • Help sheet (2 pieces of A4-size paper with any content on both sides), and papers • Physical copies of Z table and t table with no annotations allowed • **Date and venue to be announced**

Final Grade Descriptors:

Grade	Short Description	Explanation
A	Excellent Performance	Demonstrates a comprehensive grasp and understanding of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics upon analyzing any data, and presentation and interpretation of results of statistical analysis of the data.
B	Good Performance	Shows a high level of understanding of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics upon analyzing any data, and presentation and interpretation of results of statistical analysis of the data.
C	Satisfactory Performance	Possesses adequate knowledge of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics upon analyzing any data, and presentation and interpretation of results of statistical analysis of the data.
D	Marginal Pass	Has threshold knowledge of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics upon analyzing any data, and presentation and interpretation of results of statistical analysis of the data.
F	Fail	Demonstrates a lack of understanding of fundamental statistical concepts, insufficient knowledge in selection and application of appropriate descriptive and inferential methods in Statistics upon analyzing any data, and poor skills in presentation and interpretation of results of statistical analysis of the data.

Communication and Feedback

- Channel your enquiries in regards to
    - administration and logistics of the course (e.g., issues about in-class participation, submission and grading of homework assignments, absence in exams, free-riding issue, etc.) to TA.
    - teaching and learning materials discussed in lectures to course instructor.
- Marks and feedbacks for individual assessed tasks will be communicated via Canvas within two weeks of submission.
- Any discrepancies in assessment marks posted in gradebook of Canvas should be reported to TA without any delay.

Late submission Policy

To ensure fairness for students who submit homework assignments on time, a penalty for late submission according to records in Canvas (with no exception due to whatsoever reason) is listed as follows:

- Late submission within 6 hours: 25% penalty will be applied.
- Late submission between 6 to 24 hours: 50% penalty will be applied.
- Late submission for more than 24 hours will not be accepted.

Course Materials

- Class slides, and other teaching materials available on course Canvas in HKUST iLearn (https://ilearn.ust.hk/iLearn/home.html), or HKUST iLearn App on App Store or Google Play
- Recommended Textbook: ***Statistics for Business Decision Making and Analysis*** (2nd ed), Robert Stine, Dean Foster, Pearson (2014)
    - You may access either hard-copy or e-version of the textbook through UST library. Please visit: https://julac-hkust.primo.exlibrisgroup.com/discovery/search?vid=852JULAC_HKUST:HKUST&tab=Everything&search_scope=HKUST_catalog_primo&query=any,contains,Statistics%20for%20Business%20Decision%20Making%20and%20Analysis
- Practice questions in Canvas, and problems/exercises at the end of each Chapter in textbook
- Required software: MS Excel

Course AI Policy

Restrict all use of generative AI for assessment: You are prohibited from using generative artificial intelligence (AI) to produce any materials or content related to all take-home assessments, such as homework assignments.

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.

Course Plan

Module/Activity	Date	Chapters in Textbook
Module 1. Overview	Feb 4	1
Module 2. Data and Variation	Feb 4, 6, 11	2, 3, 4
Module 3. Probability	Feb 13, 18, 20	7, 8
Module 4. Discrete Random Variables	Feb 25, 27	9, 11
Module 5. Continuous Random Variables	Mar 4, 6, 11	12
Module 6. Sampling and Sampling Distribution	Mar 13, 18	13, 14
Midterm Examination	**Mar 17 (MON), 8-9pm**	
Module 7. Standard Error and Confidence Interval	Mar 25, 27	15
Module 8. Hypothesis Testing	Apr 8, 10, 15	16
Module 9. Fitting Equation to Data	Apr 17, 22, 24	19, 22
Module 10. Inference in Simple Linear Regression	Apr 29, 6	21

Computer Labs

- 2 online computer lab sessions on MS Excel will be scheduled after the Add/Drop period and toward the end of the semester, respectively. Exact dates will be announced in due course.
- Real-time attendance is not mandatory. Video recordings will be available in Canvas.
- Knowledge in MS Excel will be required in group assignments, but not in examinations.