

ISOM2500 – BUSINESS STATISTICS

Course Syllabus

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.

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
Homework assignment	20	Week 2 - 13
Midterm examination	25	16 October 2025, 8:45-9:45pm
Final examination	55	Fall term examination period; exact date to be announced by AR

Mapping of Course ILOs to Assessment Tasks:

Assessment Task	Mapped ILOs	Explanation
Homework assignment	ILO1, ILO2, ILO3, ILO4	This task 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
Homework assignment	• 10 sets of assignments (as Quizzes on Canvas), with 1 set on each Module of the course • At most 10 True/False questions or/and Multiple-choice questions in each set • Marks of the best 6 out of 10 sets count 20% of overall course grade • All use of generative AI is restricted
Midterm examination	• Closed book • Help sheet (2 pieces of A4-size paper with any content on both sides) allowed • Scheduled on 16 October 2025 (Thursday), 8:45-9:45pm • Absence policy: ○ Students must (i) obtain prior approval from the course instructor by providing a legitimate reason with relevant supporting documents, or (ii) submit a valid medical certificate justifying their absence to teaching assistant (TA) within 3 days of the exam date ○ Students who meet the above condition (i) or (ii) will not attend any make-up examination. They must attend the final examination, and their final examination score will count $25\%+55\% = 80\%$ of their overall course performance

Final examination	• Closed book • Help sheet (2 pieces of A4-size paper with any content on both sides) allowed • Physical copies of Z table and t table with no annotations allowed • Date and venue to be announced • Absence policy: ○ Students must fill in and submit a specific form to report their case, providing appropriate documentation, to the Academic Registry within 1 week of the scheduled exam date. Refer to the following webpage for more information - https://registry.hkust.edu.hk/resource-library/extenuating-circumstances-affecting-assessment
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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 regarding
- - administration and logistics of the course (e.g., issues about submission or grading of homework assignments, absence in exam, 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, no late submission of assignments according to records in Canvas (with no exception due to whatsoever reason) will 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: ***Business Statistics: A Decision Making Approach, Global Edition*** (11th ed), David Groebner, Patrick Shannon and Phillip Fry, Pearson (2023). Refer to [this announcement](#) for some more information about the textbook. Click [HERE](#) to order your textbook.
- Practice questions on 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	Sep 3	1
Module 2. Data and Variation	Sep 5, 10	2, 3
Module 3. Probability	Sep 12, 17, 19	4
Module 4. Discrete Random Variables	Sep 24, 26; Oct 3	5
Module 5. Continuous Random Variables	Oct 8, 10, 15	6
Midterm Examination	Oct 16 (Thur), 8:45-9:45pm	
Module 6. Sampling and Sampling Distribution	Oct 17, 22	7
Module 7. Standard Error and Confidence Interval	Oct 24, 31	8
Module 8. Hypothesis Testing	Nov 5, 7, 12	9
Module 9. Fitting Equation to Data	Nov 14, 19, 21	14
Module 10. Inference in Simple Linear Regression	Nov 26, 28	14

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 of MS Excel commands may be needed in homework assignments but will not be included in examinations.