ISOM2500 Business Statistics (L1, L2 & L3)
Spring Semester 2024

Course Outline

Instructor	Professor Jason Man Wai HO Senior Lecturer Department of Information Systems, Business Statistics, and Operations Management (ISOM)
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Class Schedule[1] and Location

L1	1330 – 1450 (Mon) 0900 – 1020 (Fri)	2 Feb – 10 May 2024 (except 12 Feb, 18 & 29 Mar, 1 & 5 Apr)	LSK G012
L2	1200 – 1320 (Mon & Wed)	31 Jan – 8 May 2024 (except 12 Feb, 18 Mar, 1 & 3 Apr, 1 May)	LSK G012
L3	0900 – 1020 (Mon & Wed)	31 Jan – 8 May 2024 (except 12 Feb, 18 Mar, 1 & 3 Apr, 1 May)	LTF

Course Objective

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. Facing abundant amount of data that quantify relevant information to a problem in the business world, we must understand basic concepts and methods in statistical thinking and reasoning so that we can analyze the situation and make informed decision wisely and effectively.

Upon completion of the course, you should be able to

- Understand basic concepts and methods in statistical thinking and reasoning so that you are able to decide what statistical techniques are most appropriate to use in a given situation, and state their advantages and limitations;
- Know how to interpret and present statistical results that are either self-produced or provided by others;

[1] There are 2 computer lab sessions apart from regular lectures.

- Know how to apply both descriptive and/or basic inferential methods in Statistics to solve a real problem in business environment;
- Understand that Statistics is not simply about doing calculations or using statistical softwares;
- Be prepared to pick up multiple linear regression in your subsequent courses;
- Overcome any anxiety you may have about dealing with data and learning Statistics.

Course Materials

- Class PowerPoints, 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)
- Required software: MS Excel

Learning Approach

- Lectures are designed to give an overview of the methodology and related concepts, aided by directed discussion. Their introduction in a relevant context will be followed by discussion of their applications to facilitate the learning process.
- Following lectures is a must.
- Reading teaching materials and textbook after attending lectures helps consolidate understanding of the subject matters.
- The learning process is further enhanced by proactively and repeatedly engaging in problem solving, utilizing exercises or problems from the textbook.

Assessment

Your final grade will be based on the following activities:

1	Midterm Examination[2]	20%	Closed-book, with help sheet (2 pieces of A4-size paper with any content on both sides) allowed. **19 Mar (TUE), 8:30-9:30pm**
2	Final Examination	60%	Closed-book, with help sheet (2 pieces of A4-size paper with any content on both sides) allowed. **Date and venue to be announced**
3	Assignment[3]	15%	There will be 2 sets of homework assignments. All use of generative AI is restricted. Students should form groups of 3 students to finish the assignments jointly. Free-riding or irresponsible behavior may result in lower individual mark. **Group formation should be completed in Canvas by end of 18 Feb**.

[2] Feedback will be provided within 10 working days after submission.
[3] Feedback will be provided within 10 working days after submission.

4	Participation	5%	Classroom participation is crucial to a lively and effective learning environment. Your participation will be assessed according to contributions to in-class discussion and learning via use of iPRS (available in HKUST iLearn) and/or Canvas quiz.

Academic Integrity

Without academic integrity, there is no serious learning. All HKUST members (students & staff) should hold a high standard of academic integrity. Academic integrity is of the greatest importance, and thus there should be ZERO tolerance for academic dishonesty in this course. Any violation will lead to serious consequences. Please ensure a strict adherence to the HKUST Academic Honor Code at all times (see https://registry.hkust.edu.hk/resource-library/academic-honor-code-and-academic-integrity).

Course Plan

L1:

Module/Activity	Date	Chapters in Textbook
Module 0. Overview	Feb 2	1
Module 1. Data and Variation	Feb 2, 5, 9	2, 3, 4
Module 2. Association and Dependence	Feb 16	5, 6
Module 3. Probability	Feb 19, 23	7, 8
Module 4. Discrete Random Variables	Feb 26; Mar 1	9, 11
Module 5. Continuous Random Variables	Mar 4, 8, 11	12
Module 6. Sampling and Sampling Distribution	Mar 15, 22	13, 14
Midterm Examination	**Mar 19, 8:30-9:30pm**	
Module 7. Standard Error and Confidence Interval	Mar 25; Apr 8	15
Module 8. Hypothesis Testing	Apr 12, 15, 19	16
Module 9. Fitting Equation to Data	Apr 22, 26, 29	19, 22
Module 10. Inference in Simple Linear Regression	May 3, 6	21

L2 & L3:

Module/Activity	Date	Chapters in Textbook
Module 0. Overview	Jan 31	1
Module 1. Data and Variation	Jan 31; Feb 5, 7	2, 3, 4
Module 2. Association and Dependence	Feb 14	5, 6
Module 3. Probability	Feb 19, 21	7, 8
Module 4. Discrete Random Variables	Feb 26, 28	9, 11
Module 5. Continuous Random Variables	Mar 4, 6, 11	12
Module 6. Sampling and Sampling Distribution	Mar 13, 20	13, 14
Midterm Examination	**Mar 19, 8:30-9:30pm**	
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; May 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.
- Real-time attendance is not mandatory. Video recordings will be available in Canvas.