ISOM2500 Business Statistics (L4)
Spring Semester 2025

Course Outline

Instructor	Carsten CHONG Assistant Professor Department of ISOM
Office Hours	By appointment
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Class Schedule and Location

15:00 – 16:30 (Wed & Fri)	LSK 4619

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.

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.

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, and be able to decide what statistical techniques are most appropriate to use in a given situation, and state 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 more advanced courses.

Assessment and Grading

Assessment Task	Contribution to Overall Course grade	Details
Homework assignments	Pass/fail	See below for details
In-class quizzes	20%	See below for details
Midterm examination	30%	March 17, 2025, 8-9pm
Final examination	50%	Will be announced by AR

Grading Rubrics

Grade	Short Description (Overall mark out of 100)	Explanation
A	Excellent Performance (>85)	Demonstrates a comprehensive grasp and understanding of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics, analysis of the data, presentation and interpretation of results of the statistical analysis.
B	Good Performance (>70)	Shows a good knowledge of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics, analysis of the data, presentation and interpretation of results of the statistical analysis.
C	Satisfactory Performance (>55)	Possesses an adequate understanding of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics, analysis of the data, presentation and interpretation of results of the statistical analysis.
D	Marginal Pass (>40)	Has threshold knowledge of fundamental statistical concepts, selection and application of appropriate descriptive and inferential methods in Statistics, analysis of the data, presentation and interpretation of results of the statistical analysis.
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, and analysis of the data, and poor skills in presentation and interpretation of results of the statistical analysis.

Homework

- There are weekly homework assignments, generally assigned on Fridays and due on **Friday, at noon**, the following week.
- The purpose of these homework assignments is for you to learn and practice the material in class, which is why each homework assignment will be graded as "**pass**" or "**fail**".
- Recognizing that making mistakes is part of the learning process, we will grade a homework assignment as "pass" if you demonstrate **substantial effort** in solving each of the problems in the homework assignments.
- Examples:
    - If you detail all the steps in your argument but reach a wrong conclusion because of a mistake you make, this counts as "pass".
    - If you write down the correct answer (e.g., the final result) but do not provide any explanations even if we ask you to, this counts as a "fail".
    - If you only solve 5 out of 6 questions, this counts as "fail".
- Fair play: part of the substantial effort criterion is that **you need to handwrite the solutions on paper**. Afterwards please scan and upload your solutions to Canvas as a **single pdf file**.
- Please keep all your handwritten homework papers until the end of the semester. I may ask you to show me your physical homework copies. Failure to produce them, for whatever reason, can lead to a "fail" in the corresponding homework assignment(s).
- A **late** or **missing** homework assignment counts as "fail". Make sure to check out the lateness policy below.
- You get a "pass" or "fail" for each individual assignment that is due in one week or more after you join this class. Based on that, I will determine your total homework score for the course: it will be "**pass**" if you pass all individual homework assignments **except at most two**; otherwise, your total homework score will be "fail".
- If your total homework score is "pass", nothing happens. If your total homework score is "fail", I will reduce the score for your in-class quizzes **by 20%** when calculating the final grade for the course.

Quizzes

- There will be two in-class quizzes, each accounting for 10% of your final grade.
- They will take place on **Feb 26** and **Apr 16**.
- Remember: If you fail more than two individual homework assignments, your in-class quizzes score will be reduced by 20%.
- Quizzes will be **closed-book with no aids whatsoever allowed**.

Midterm and Final Exams

- Tentative date for the midterm exam: **March 17, 2025, 8-9pm**.
- Date for the final exam: Will be announced by the university
- Both exams will be closed-book with **2 pieces of A4-size paper** with any content on both sides allowed.
- For the final exam, you are allowed to bring **z-/t-tables** (more details in due course).
- For both the midterm and the final exam, you are allowed to use a **non-programmable calculator** that **cannot access the internet**. Calculators with internet access (even if you don't use the internet) are prohibited.

Marks

- Marks for homework assignments (pass/fail), quizzes and exams will be communicated via Canvas, within one week for homework assignments and two weeks for everything else.
- If you have any questions about your marks, please contact the TA **within one week** of releasing the grades. We reserve the right to deny regrading requests after one week's time.
- Regrading requests need to be substantiated and will be considered based on the merit of your own work. In handling a regrading request, we consider the whole quiz/exam, not just a particular question. Marks can go up or down as a result of a regrading request.
- In the rare circumstance where we discover a grading error, we reserve the right to regrade all exams of the class. As a result, your marks can go up or down even if you have not made a regrading request. This is to ensure all marks are solely merit-based.

Course AI Policy

No restrictions on the use of the internet including generative AI for homework assignments. Use of generative AI or the internet is prohibited for in-class quizzes, midterm and final exam.

Lateness Policy

- If you submit homework late, for whatever reason, it counts as "fail".
- Your homework submission counts as late if **Canvas flags it as late**. Canvas is very strict: If the deadline is 23:59, it might happen that it already flags it as late if you submit at 23:59:01.
- I have seen many reasons why students fail to submit on time: internet failure, falling asleep, forgetting the deadline, mixing up this with another course, traveling (time zone issues), "I submitted on time but Canvas still flags it as late", mild illness, etc.
- Such reasons are already accounted for by the two exceptions you automatically receive. Remember: you can "fail" two homework assignments and still get an overall "pass".
- The only circumstances under which I grant additional exceptions are severe illness (see below) and other extraordinary circumstances of severe gravity (which will be handled case-by-case).

Course Materials

- Class slides, and other teaching materials available on course Canvas
- Recommended Textbook: ***Statistics for Business Decision Making and Analysis*** (2^{nd} ed), Robert Stine, Dean Foster, Pearson (2014)
- Required software: MS Excel

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.

Sickness Policy

- If you miss any quiz or exam without prior approval, you will get **0%** for the missed quiz/exam.
- If you fall sick and as a result are going to miss a quiz, the midterm or final exam, notify me by e-mail or in person **beforehand** and provide a **same-day medical certificate**.
- I will not grant deadline extensions for homework submissions unless you are sick for three or more consecutive days, as documented by a medical certificate. Remember: Mild sickness (for a day or two) is automatically accounted for by the two exceptions you receive.

Recordings and Attendance

I will record classes and post the recordings one week later. I don't take attendance regularly, but if I notice that attendance drops below 75%, I may decide to stop recording classes.

Questions & Contacting Us

- We operate a Q&A forum on Canvas under **Discussions**.
- If you have any **general interest questions** about the course, go to Canvas Discussions and check whether someone has already asked the same question. If not, post your question and we try to answer your question within 1 business day.
- General interest questions include questions about class material, questions about homework assignments or any question where the answer is beneficial to all students.
- If you have a **personal question**, send an e-mail to the TA first. He will handle your question and involve me, if necessary. This applies to, for example, questions regarding your homework/quiz/exam grading.
- If you have a personal question of high sensitivity, you are welcome to contact me directly via e-mail. Typical examples include severe illness, complaints, known absence from quizzes/exams or issues related to academic integrity.
- **Note**: Do not send me or the TA direct messages on Canvas. We won't receive them.

Tentative Schedule

Module/Activity	Date	Chapters
Module 1. Overview	Feb 5	1
Module 2. Data and Variation	Feb 5, 7, 12	2, 3, 4
Module 3. Probability	Feb 14, 19, 21	7, 8
Quiz 1	**Feb 26**	
Module 4. Discrete Random Variables	Feb 26, 28	9, 11
Module 5. Continuous Random Variables	Mar 5, 7, 12	12
Module 6. Sampling and Sampling Distribution	Mar 14, 19	13, 14
Midterm Examination	**Mar 20 (THUR), 8-9pm**	
Module 7. Standard Error and Confidence Interval	Mar 21, 26	15
Module 8. Hypothesis Testing	Mar 28, Apr 9, 11	16
Quiz 2	**Apr 16**	
Module 9. Fitting Equation to Data	Apr 23, 25, 30	19, 22
Module 10. Inference in Simple Linear Regression	May 2, 7	21
Back-up	May 9	