ISOM2500 Business Statistics Syllabus

2021/2022 Fall Semester

Instructor Information

Instructor	Email	Office Location & Office Hours
Kohei KAWAGUCHI (Lecturer)	kkawaguchi@ust.hk	LSK6070, appointment basis
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Communication rule

- I set up a Slack workspace for communicating with students. I share the link to the workspace in the first lecture.
- I post teaching materials and communicate with students on the Slack workspace.
- Slack should be the primary way of contacting me. If you send me a message by email, I may not respond to you.
- I will be responsive during the day but will be slow in the evening and weekend.
- You can make an appointment to see me in the office or zoom.
- During the class, you can post questions in the Slack workspace. I will respond to the questions as much as possible. Let's make sure no one is behind the class.

General Information

Description

This is an introductory business statistics course for first year students.

Expectations and Goals

The objective of this course is to equip students with basic concepts and methods in statistical thinking and reasoning so that they can handle uncertainty intelligently in the business environment effectively. These basis concepts and methods include descriptive statistics, probability, statistical inference, and linear regression.

The course adopts the following approaches to meet the objectives:

1. Emphasize concepts understanding and results interpretation through different methods of evaluation.
2. Closer connection to real life and business practice through the new content of lectures
3. Hand-on experiences on data collection and analysis through excel work.

This course is the first step to be a business analyst. If you finish this course, you will be able to handle almost all data and problems you will encounter in the real-life business. After finishing this course, you will be ready to step up to learn more modern and sophisticated statistics and machine learning techniques and proper programming languages such as R and Python, in the advanced courses.

I, in principle, provide the data to replicate all the results in the lecture slides and the video showing how to implement each analysis. Therefore, an eager student can review the material by her/himself to fully understand the data analysis using Excel.

Class Time

Mon 13:30-14:50, Fri 9:00-10:20.

Course Materials

Lecture notes, HW assignment, and practice questions will be posted on the Slack workspace.

Recommended Materials

Textbook: "Statistics for business, decision making and analysis, 2nd edition", by Stine and Foster.

Required Software

Excel

Evaluation

1. Approximately A range for >= 90, B range for >= 80, and C range for >= 50.
2. **Midterm 30%**: There are two quizzes. The exams are cumulative, but the first exam **mainly** tests Part I (15%) and the second exam **mainly** tests Part II (15%), respectively. The questions in the exam include both multiple-choice and discussions. The questions **do not** ask how to use excel. The exams are closed-book. I provide mock exams and review in the class. The problems are like the end of chapter problems in the textbook.
3. **Final Exam 40%**: The exam is cumulative but **mainly** covers Part III. The questions in the final exam include both multiple-choice and discussions. The questions **do not** ask how to use excel. The exams are closed-book. I provide the mock exam and review in the class. The problems are like the end of chapter problems in the textbook.
4. **Assignments 30%**: I assign one exercise per chapter. The main purpose of the assignments is to assess whether the students understand the concepts and can use excel to solve problems. Each exercise has 5% point. For each student, I give scores based on the best 6 submissions if you submit more than 6 assignments. The deadline will be 1 week for each exercise.
5. You will need a very strong reason, substantiated by supporting documents, to miss any exam. Considering the advantage of having more time to prepare, the make-up exam, if permitted, is expected to be more difficult than the original exam.
6. Students in Hong Kong are not allowed to attend the class online. Only students outside Hong Kong who got the approval in advance can do so.

Academic Integrity

Without academic integrity, there is no serious learning. Thus, you are expected to hold the highest standard of academic integrity in the course. You are encouraged to study and do homework in groups. However, no cheating, plagiarism will be tolerated. Anyone caught cheating, plagiarism will fail the course.

Please make sure adhere to the HKUST Academic Honor Code at all time (see http://www.ust.hk/vpaao/integrity/).

Schedule

Course Schedule

In total, we have 25 classes. The classes are all recorded and will be available online.

Topic	Reading
Orientation	Articles
1 Introduction	Ch.1
2 Data	Ch.2
3 Describing categorical data	Ch.3
4 Describing numerical data	Ch.4
5 Association between categorical variables	Ch.5
6 Association between quantitative variables	Ch.6
7 Probability	Ch.7
8 Conditional probability	Ch. 8
Review for midterm I	
Midterm I	Chapters up to the date
9 Random variables	Ch.9
10 Association between random variables	Ch.10
11 Probability models for counts	Ch.11
12 The normal probability model	Ch.12
13 Samples and surveys	Ch.13
14 Sampling variation and quality	Ch.14
Review for midterm II	
Midterm II	Chapters up to the date
15 Confidence intervals	Ch.15

16 Statistical tests	Ch.16
19 Linear patterns	Ch.19
20 Curved patterns	Ch.20
21 The simple regression model	Ch.21
Review for final exam	
Final exam	