ISOM2500 Business Statistics Syllabus

2020/2021 Fall Semester

Instructor Information

Instructor	Email	Office Location & Office Hours
Kohei KAWAGUCHI (Lecturer)	isom2500.2019@gmail.com	LSK6070, Tue 17:00-18:00
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Communication rule

- I set up a slack workspace for communicating with students. This should be the primary way of contacting me. The link to the workspace is shared in the first lecture.

- Contact me whenever you had anything not clear about the lecture.

- The instructor will be in the zoom during the above office hours for answering questions related to the class. The link to zoom is given in Canvas.

- You can also make an appointment outside the above office hours. But then the instructor's availability is not guaranteed.

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

Tue, Thu, 15:00-16:20, online.

Course Materials

Lecture notes, HW assignment, and practice questions will be posted on the course website in canvas.

Recommended Materials

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

Article: "Big Data: The Management Revolution", by McAfee and Brynjolfsson.

Article: "Competing on Analytics", by Davenport.

Case: "Managing with Analytics at Procter & Gamble", by Davenport, Iansiti, and Serels.

Case: "Predicting Consumer Tastes with Big Data at Gap", by Israeli and Avery.

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 online and open-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 online and open-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. **There is no participation point; thus, there is no penalty in no-show, either.**

6. 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.

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.

Date	Topic	Reading
Part I		
Sep 8	Orientation	Articles
Sep 10	1 Introduction	Ch.1
Sep 15	2 Data	Ch.2
Sep 17	3 Describing categorical data	Ch.3
Sep 22	4 Describing numerical data	Ch.4
Sep 24	5 Association between categorical variables	Ch.5
Sep 29	6 Association between quantitative variables	Ch.6
Oct 6	7 Probability	Ch.7
Oct 8	8 Conditional probability	Ch. 8
Oct 13	Review for midterm I	
	Midterm I	Chapters up to the date
Part II		
Oct 15	**Case study I**	**P&G**
Oct 20	9 Random variables	Ch.9
Oct 22	10 Association between random variables	Ch.10
Oct 27	11 Probability models for counts	Ch.11
Oct 29	12 The normal probability model	Ch.12
Nov 3	13 Samples and surveys	Ch.13
Nov 5	14 Sampling variation and quality	Ch.14
Nov 10	Review for midterm II	
	Midterm II	Chapters up to the date
Part III		

Nov 12	**Case Study II**	Gap
Nov 17	15 Confidence intervals	Ch.15
Nov 19	16 Statistical tests	Ch.16
Nov 24	19 Linear patterns	Ch.19
Nov 26	20 Curved patterns	Ch.20
Dec 1	21 The simple regression model	Ch.21
Dec 3	Review for final exam	
	Final exam	