ISOM2500 (L3) - Business Statistics

Syllabus

OBJECTIVES AND INTENDED LEARNING OUTCOMES

The objective of the course is to introduce the basic knowledge of statistics, including topics like descriptive statistics, probability, statistical inference, and linear regression. Through the learning process, students will develop critical and independent thinking. Together with the analytical tools, students may be able to handle uncertainty and analyze data efficiently in the real business world.

To achieve the goals, beyond the provision of a solid understanding of concepts and toolboxes, we study a substantial amount of practical examples in the business world, to help students gain first-hand experiences with data.

LECTURE

Instructor: Professor Lucy Xia
Email: lucyxia@ust.hk
Office Hours: Thursday 10:00-11:00; LSK 4082

Instructional Assistant: Mr. Elvis LEE
Email: imelvis@ust.hk
Office Hours Tuesday 11:00-12:00; LSK 4065

Class meets at Classroom 2306
15:00 – 16:20 Tuesday, Thursday

REFERENCE BOOK

Stine and Foster, "Statistics for Business: Decision Making and Analysis", 2nd Pearson.

COURSE WEBSITE

http://canvas.ust.hk

COURSE MATERIALS

Topic 1 Data description
- - Recognizing the type of data
- - Using graphs to see the characteristics of data
- - Summarizing messy data into neat numbers

Topic 2 Probability
- - Probability
- - Random variable, distributions

Topic 3 Random variables
- - Discrete random variables: Bernoulli, Binomial distribution
- - Continuous random variables: Uniform, normal distribution, t-distribution

Topic 4 Estimation
- - Point estimate, Sampling distribution
- - Confidence intervals

Topic 5 Hypothesis testing
- - One sample, statistically significant?
- - Errors of statistical testing: Type I and Type II errors
- - Two independent samples significantly different?
- - Examining relationships for nominal and ordinal data

Topic 6 Simple Linear regression
- - Basic concept
- - Checking model assumption
- - Prediction and estimation

EVALUATION

Your grade in the course is based on:

Quiz 1 (March 17 in class)	20%
Quiz 2 (April 16 in class)	20%
Final Exam (TBD)	40%
Homework	12%
Participation	8%
Total	100%

A. Quizzes 40% (30 minutes each; multiple choice questions)

Note: No make-up quiz will be provided. Absence from the quiz will not be excused except for medical reasons supported by proper documentation submitted no later than 24 hours after the exam is taken. In that case, the weight of missed quiz will be counted towards the final.

B. Final Exam 40% (120 minutes; **comprehensive**, i.e., covers all the materials with more weights on hypothesis testing and linear regression; multiple choice questions)

The final exam date will be determined by the University. If the final exam is missed without medical reasons supported by proper documentation (have to be submitted no later than 24 hours after the exam is taken), you won't pass the course.

C. Homework assignment 12%: there will be 3 Group HWs, each worth 4%.

- Elvis will send out announcements about the assignment of groups and the way of submitting HWs. Late HWs will not be accepted.
- Free riding is not allowed. If you don't join the discussion of HWs, other members of group have the right to submit HW without your permission, then your HW score will be 0. In addition, at the end of the semester, there will be peer evaluations from your group-mates. If you have little contribution in the discussions, which will be reflected through low peer ratings, your HW grades will be discounted.

D. Participation 8%.

Your active participation is crucial for this class. I will distribute cards when you answer questions, and collect the cards at the end of each class to record your participation. If you return the cards to me at a later time after the lecture finishes, your participation will not be counted.

Out of respect for the other students in our class, it is important that each of us pay our full attention on the class, for the entire class period. Please be mindful of the following guidelines: arrive at class on time, being certain to leave yourself enough time to get situated before class begins. Once you are in class, leave the class only when absolutely necessary.

GRIEVANCE PROCEDURE

If you disagree with grades that have been assigned to your work, you have the opportunity to meet with instructors within one week after the grades have been published on the course website. Please be specific about what it is that you don't agree with.

ACADEMIC INTEGRITY

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating of information facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of other groups, or tampering with the academic work of other groups. All exam answers must be your own, and you must not provide any assistance to other students during exams. Current university policy on academic dishonesty is "if a student is discovered cheating however minor the offence, the course grade will appear on the students' record with an X, to show that the grade resulted from cheating." This X grades stays on the record until graduation. If the student cheats again and "earns" another X grade, the student will be dismissed from the university.