

# ISOM2500 (L1, L2) - Business Statistics

## Course Outline

### LECTURE

Instructor: Dr. Baoqian PAN, Kris

Room: 5041 (LSK Business building); Email: [ismtpbq@ust.hk](mailto:ismtpbq@ust.hk)

Office Hours: 0.5 hour after each ZOOM lectures; additional official hour via ZOOM for the quiz and final exam will be announced later through CANVAS.

Instructional Assistant: Mr. Elvis LEE

Room: LSK 4065; Email: [imelvis@ust.hk](mailto:imelvis@ust.hk)

Office Hours: send an email to make an appointment.

Lab section: Lab sections will be arranged to help learn Minitab software, Excel add in and practice the exercise. Please pay attention to the Canvas email.

Class meets:

L01: 3-FEB-2021 - 7-MAY-2021

Wed, Fri 3:00PM - 4:20PM

L02: 1-FEB-2021 - 5-MAY-2021

Mon, Wed 10:30AM - 11:50AM

Lab (Tentative schedule, subject to change):

Date and Time: 27-Feb (11:00am-11:50am), 27-Mar (11:00am-11:50am), 24-Apr (11:00am-11:50am), 8-May (11:00am-11:50am)

(Note: All class and Lab will be conducted using live interactive on-line mode on the scheduled timetable through ZOOM.)

### REFERENCE BOOK

Stine and Foster, "Statistics for Business: Decision Making and Analysis", 2<sup>nd</sup> Edition, Pearson.

### SYLLABUS

This syllabus is subject to change in the event of extenuating circumstances.

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, distribution
- Discrete random variables: binomial distribution
- Continuous random variables: normal distribution, t distribution

## Topic 3 Estimation

- Point estimate
- Sampling distribution
- Confidence intervals

## Topic 4 Hypothesis testing

- One sample, statistically significant? Using t test
- Errors of statistical testing: Type I and Type II error
- Two independent samples significantly different? Using t test
- Examining relationships for nominal and ordinal data – Chi-square test

## Topic 5 Simple linear regression

- Basic concept
- Checking model assumption
- Testing beta
- Prediction and Estimation

## **COURSE WEBSITE**

<http://canvas.ust.hk>

## **OBJECTIVES AND INTENDED LEARNING OUTCOMES**

The objective of the course is to introduce the basic and fundamental knowledge of statistics, probability, statistical inference and linear regression. This semester, ISOM 2500 undergoes tremendous change to promote students' interest in statistics. We emphasize on

1. Hands-on experiences on data collecting and analysis through in-class games.
2. Closer connection to real life and business practice through regular class and online class.
3. Concepts and interpretation over computation practice through different formats of evaluation.

## **EVALUATION**

Your grade in the course is based on:

Quiz 1 (10-March)	10%
Quiz 2 (07-April)	20%
Final Exam	50%
Homework	12%
Performance through the Curriculum	8%
<hr/>	
Total	100%

- A. Quizzes 30% (40 minutes each, MCs using CANVAS, open book, random questions and no look back).

There will be 2 quizzes: Quiz 1 10% (cover descriptive statistics and probability) and Quiz 2 20% (cover random variable and estimation).

Note: No make-up quiz will be provided. You can miss one quiz at most. **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, seventy-five percent of the weight of missed quiz will be counted into the final, meaning that:

1) if you miss Quiz 1, then

Your Final Score

$$= \text{Quiz2} * 20\% + (50\% + 7.5\%) * \text{final} + 12\% * \text{Homework} + \text{performance}.$$

2) if you miss Quiz 2, then

Your Final Score

$$= \text{Quiz1} * 10\% + (50\% + 15\%) * \text{final} + 12\% * \text{Homework} + \text{performance}.$$

B. Final Exam 50% (60 minutes, MCs using CANVAS, open book, random questions and no look back. Covers hypothesis testing and linear regression).

**If the final exam is missed, you won't pass the course. No make-up final exam will be provided.**

C. Homework assignment 12%. There will be 4 Group HWs.

Note:

1) There should be 4 persons in each group.

Please submit the soft copy of the assignment to us through CANVAS:

For the soft copy, please sign the name on the cover page of assignment (before the deadline); otherwise, you will have no record for HWs. The excuses, i.e. "forget to sign", "Other members submit the HW without notice" etc. are not accepted.

Note: CANVAS will automatically close the submit channel right after the deadline. It is the supporting evidence to your punctual submission of homework. No argument is allowed for those students who claim that they have submitted the homework but CANVAS did not receive it, or there is no **submit** button. Because the **submit** button is gone automatically right after the deadline. You are strongly recommended to test the **submit** button and submit your homework earlier.

2) Free riding is not allowed.

If you don't join the discussion of HWs, other members from your group have the right to submit HW without your permission and without your name on it. In addition, if you have little contribution in the discussion (e.g. Show up without preparation), your group-mates can send an email to notice me.

Note: you can use ZOOM meeting, WeChat or WhatsApp for discussion. Please keep a record just in case you need to file a complaint.

D. Performance through the Curriculum 8%.

Your active participation is crucial for this course. The class format is live interactive on-line mode though ZOOM, different from watching pre-record videos. We will

have plenty of chances to interact using ZOOM, polling and breakout room will be used. You can ask questions through

- 1) Raise hand
- 2) Public chat
- 3) Private chat to me (when I address your questions, I will not mention your name.)
- 4) Breakout room to discuss with your classmates

#### How to get full mark of performance?

8% = fully attend 18 out of the of 22 lectures (i.e. around 80% to accommodate the flexibility of class participation for the current situation). Notice you have to attend at least 70 minutes to have a valid count for each lecture.

Note: ZOOM on CANVAS markdown all your meeting information automatically, so there is no excuse like “I attended the lecture, but you did not notice me.”

## **GRIEVANCE PROCEDURE**

If you disagree with grades that have been assigned to your work, you have the possibility to meet instructors within one week after the grades have been published on the course website. 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.

Submit your soft copy of assignment to us on Canvas which will be the supporting evidence of your submission of assignment. Late submission will not be accepted.