

ISOM 2500: Introduction Business Statistics

FALL , 2020

Department of Information Systems,
Business Statistics and Operation Management

Instructor: Prof. Xuhu Wan, LSK Building, Room 4072, Ext.7731, imwan@ust.hk.

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Class meets:

- **L3:** TuTh 12:00AM - 1:20PM

Course Description

Main Contents:

- This course is about how to reach a conclusion from the uncertainty or find and explain patterns from randomness of data. We not only discuss theoretical concepts and methods of statistics but also learn to develop statistical intuition.

Objectives:

- Describing the patterns in data
- Univariate modeling of data patterns
- Bivariate modeling of data patterns
- Multivariate modeling of data patterns
- Testing models with data

Course Materials

- A. Required textbook: “Statistics for Business, Decision Making and Analysis,” authored by Stine and Foster ;
- B. Class notes and exercise questions are downloadable from course website (<http://canvas.ust.hk/>).

Evaluation

Your overall grade will be based on the following:

- A. Participation (10%): In-class poll.
 - 0% if miss more than 60% of polls
 - 5% if miss more than 40% but less than 60% of polls.
 - 7% if miss more than 30% but less than 40% of polls.
 - 10% if miss less than 30%
- B. 4 assignments (10%): Students are allowed to work individually or in group (group size ≤ 4). All are required to submit on canvas.
- C. 1st Quiz(10%): in the middle of March.
- D. 2nd Quiz(20%): in the middle of April.
- E. Final(50%):

Course Organization

- **Part I: Patterns of Univariate Data**
- Types of data and data visualization
- Central tendency, variation and skewness of data
- Relative Frequency and empirical distribution
- **Part II: Univariate Modeling with Random Variable**
- Variable and types of variable
- Probability and distribution of variable
- Independence and Conditional Probability
- Bayes rule
- Expectation and Variance

First Quiz

- Discrete Random Variables: Bernoulli and Binomial
- Continuous Random Variables: Uniform, Normal
- Random sample
- Distribution of sample mean and central limit theorem
- Effect Size
- Confidence Interval
- **Part III: Testing of Univariate Model**
- Significance I
- Significance II
- Testing on the mean of model
- Two-sample test for the comparison of two models

Second Quiz

- **Part IV: Patterns and Modeling of Bivariate Data**
- Pattern of Bivariate data
- Conditional expectation and correlation
- Simple Regression I
- Simple Regression II
- Testing of Simple Regression Model
- **Part V: Patterns and Modeling of Multivariate Data**
- Patterns of multivariate data and multiple regression model
- Final Synthesis of regression model

Final

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.