

ISOM 2600: Introduction to Business Analytics

SPRING , 2020

**Department of Information Systems,
Business Statistics and Operation Management**

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

Tutor: Mak Chun Cheong, Isaac, imccmak@ust.hk

Class meets:

- **L4:** Tu 1:30PM - 3:20PM

Course Description

Main Contents:

- This course introduces basic and modern analytical concepts and methods for the business practice. It covers statistical tools in descriptive analytics and predictive analytics, including multiple linear regression, classification and clustering. This course provides students with the fundamental concepts and tools needed to understand the emerging role of business analytics in organizations and shows students how to apply basic business analytics tools, and how to communicate with analytics professionals to effectively use and interpret analytic models and results for making better business decision. Emphasis is placed on applications, concepts and interpretation of results, rather than theory and calculations. Students use python for data analysis.

Objectives:

- To gain an understanding of how managers use business analytics to formulate and solve business problems and to support managerial decision making.
- To select and apply appropriate statistical models in the analysis of quantitative and qualitative data from a variety of business scenarios.
- To learn how to solve business problems by statistical modelling and analysis.

Course Materials

- A. Required textbook: "Python Data Science Handbook " authored by Jake Vanderplas ;
- 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 (40%): Students are allowed to work individually or in group (group size ≤ 3). All are required to submit on canvas.
- C. Final Project(50%):
- D. Peer Evaluation: in the middle of April. Peer evaluation score of each student is the average of all other group members. Downgrade one grade (i.e. A to A-) if score ≥ 4 , downgrade 2 grade (i.e. A to B+) if score ≥ 3 .

Item	Poor	Below Average	Average	Above Average	Excellent
1: Participated in Team Meetings (1 mark)	0.2	0.4	0.6	0.8	1
2: Was Helpful and Co-operative(1 mark)	0.2	0.4	0.6	0.8	1
3: Submitted Work on Time(1 mark)	0.2	0.4	0.6	0.8	1
4: Worked Efficiently(1 mark)	0.2	0.4	0.6	0.8	1
5: Overall contribution(1 mark)	0.2	0.4	0.6	0.8	1

Course Organization

- **Part I:Regression Analysis**

- Multiple Linear Regression Model
- Regression for Nonlinear Pattern
- Variable Selection

Assignment I, and II

- **Part II: Classification Analysis**

- Evaluation of Performance
- K-Nearest Neighbor Method
- Naive Bayesian Classifier
- Logistic Regression Model

Assignment III

- **Part III: Clustering Analysis**

- K-Means clustering
- Hierarchical clustering

Assignment IV

Final Project

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.