

ISOM2600 – Introduction to Business Analytics

Spring 2021

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Prerequisites

ISOM2500 Business Statistics
ISOM2020 Coding for Business

Course Description

This course presents classical approaches for analyzing complex data from business domain, including multiple regression, data transformation, classification methods, and clustering analysis. All of these approaches will be analyzed in the context of Marketing, Finance and other important business domains. Python is the programming tool for computation.

Course Objectives

On successful completion of the course, students will be able to:

- Use the concepts underlying the quantitative tools which deal with complex data from business domain, and put those tools together with data to draw meaningful conclusions.
- Use Python in a more effective way for analyzing data

Syllabus

0. Introduction to Business Analytics, Review of Simple Linear Regression, and Data Preprocessing
1. Introduction to Multiple Regression
 - Multiple regression
 - Inference, Prediction, and Model checking
2. Fitting Nonlinear Pattern
 - Log-transformation
 - Use Indicator and Interaction variables in regression
3. Model Selection
 - Best subset
 - Model evaluation: Adjusted R-squares, C_p , AIC, BIC
4. Classification
 - Evaluation Criterion for Classification
 - Logistic Regression
5. Clustering Analysis
 - Hierarchical Clustering
 - K-means Clustering

Course Materials

Reference Books: Jack Vanderplas (2016), Python Data Science Handbook, 1st Edition, O'Reilly Media.

Evaluation

Assignment 1 (3 students/group)	18%
Assignment 2 (3 students/group)	20%
Final Exam (Individual)	50%
Class Participation	12%

Final Grade

Your final grade will be given based on the distribution of the students' total scores in ISOM2600.