Course Outline

Course Code : DAO2702/DAO2702X/RE2708
Course Title : Programming for Business Analytics/
　　　　　　　　　 Computational Thinking and Programming for Real Estate
Class Date : From 12/8/2024　　To 15/11/2024
Semester : Semester 1, Academic Year 2024-2025
Faculty : Dr. Peng Xiong
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Overview

This module is an introductory course to business analytics and data science. It covers basic Python programming and preliminary statistics, with a great emphasis on addressing practical business problems and real datasets. Data science is an interdisciplinary field that requires business insights and expertise, proficiency in programming, as well as a strong background in mathematics and statistics. Therefore, lectures and tutorials in this semester would focus on trainings in the following perspectives:
- Python programming and Pythonic coding styles
- Analytical and visualization packages
- Math and statistics
- Practical business insights and problem solving skills

Course Objectives

After taking this course, students will be familiar with the basics of Python programming and the fundamentals of statistics. They are also required to understand the Python ecosystem, so that they can use various Python packages to analyse data and explore business insights.

Assessment

Assessment Components	Weightage
Class Participation	10%
Group Project Report	20%
Group Project Presentation	15%
Final Exam	55%

Schedule and Outline

Lesson/ Week	Date	Session (lesson summary or outline / learning objectives / preparation / cases & assignments / follow-up readings & resources)
1	14-Aug-2024	Course Overview and Introduction to Programming
2	21-Aug-2024	Introduction to Python Programming
3	28-Aug-2024	Control Flows of Python Programming
4	04-Sep-2024	Built-in Data Structures I

5	11-Sep-2024	Built-in Data Structures II
6	18-Sep-2024	Functions, Modules, and Packages
7	02-Oct-2024	Lovely Pandas
8	09-Oct-2024	Storytelling with Data
9	16-Oct-2024	Sweet NumPy
10	23-Oct-2024	Review of Probability
11	30-Oct-2024	Random Sampling
12	06-Oct-2024	Confidence Intervals and Hypothesis Testing

General Guide & Reading

Python programming:
- Python data science handbook, by Jake VanderPlas
Data visualization:
- Storytelling with data, by Cole Nussbaumer Knaflic
Interactive learning:
- https://appiora.nus.edu.sg/learndao/

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Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubts, you should consult your instructor.

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