

Module Outline

Module Code : DBA4811

Module Title : Analytics for Consulting

Class Date : From 9/1/2023 To 6/5/2023

Semester : Semester 2, Academic Year 2022-2023

Faculty : Adjunct Senior Lecturer Tam Trinh

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Overview

Decisions supported by timely data analyses are the norm in this “Big Data” era. Many industries including (but not limited to) finance, supply chain management, marketing, human resources, and sports, rely on analytics-savvy analysts or consultants to improve efficiency, profitability, customer satisfaction, and performance.

The teaching method will be a combination of lectures, problem-based learning, class discussions, and guest lectures on assigned topics, and case analysis. Individual participation by students is strongly encouraged.

Module Objectives

This course takes a practitioner’s perspective to introduce and integrate knowledge in this area with applications in the various business sectors. It prepares students for the work environment and the diverse challenges faced by business analysts and consultants. The goal is to equip students with the skills to help their clients make distinctive, lasting, and substantial improvements in performance using modern analytics.

Prerequisites

DAO1704 and DAO2702

Assessment

Assessment Components	Weightage
Class Attendance & Participation	30%
Individual Assignment	30%
Group Project	40%

Tentative Schedule and Outline

Lesson/ Week	Session (lesson summary or outline / learning objectives / preparation / cases & assignments / follow-up readings & resources)
1	Persuading with data: Data visualization
2	Winning with data: Linear regression // Individual Assignment 1
3	No class - CNY
4	Choice modeling: Logistic regression / <i>Case study Framingham heart study</i>
5	Model selection: Subset-based, regularization methods
6	Non-linear models I: KNN, Decision trees
7	Non-linear models II / More Applications: Naïve Bayes, SVM, Neural network / <i>Applications</i> // Individual Assignment 2
8	Ensemble methods: Forest, Boosting, Bagging
9	Disruptive innovation: Recommendations, Clustering / <i>Case study Netflix</i>
10	Demystify analytical methods / <i>Case study Target, Kohl</i> // Individual Assignment 3
11	Natural language processing: Sentiment analysis, Text mining / <i>Case study</i>
12	Further applications: Generative AI / Module Wrap
13	Final Group Presentations

Optional Reading (e.g. Case preparation guide, project report guide, main textbook & supplementary materials, etc)

1. Bertsimas, D., O'Hair, A., and Pulleyblank W.R., 2016. *The analytics edge*. Charlestown, MA: Dynamic Ideas LLC.
2. Pochiraju, B. and Seshadri, S., 2019. *Essentials of business analytics*. Springer, Switzerland.
<https://link-springer-com.libproxy1.nus.edu.sg/content/pdf/10.1007/978-3-319-68837-4.pdf>

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

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.

Additional guidance is available at:

- [Administrative Policies](#)
- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>