

NATIONAL UNIVERSITY OF SINGAPORE
NUS Business School
Department of Analytics and Operations

DBA4811 Analytics for Consulting

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Session: Semester II, 2021/2022

Objectives

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

This course aims to equip students with a scientific/analytical mindset to carry out and to think critically about such analysis, in the context of consultancy. Through case analyses and their presentation, participants will gain exposure to the use of analytics in the following sector – airlines, gaming, retailing, ride-hailing, healthcare, insurance industry. The tools covered

- Data Mining and Statistical Tools: Applications of regression analysis, logistic regression, simulation and regression.
- Business Optimization Models i.e. Productive allocation of scarce resources e.g. Optimal Product / Advertising Mix, Revenue Management, Portfolio / Supply Chain / Cash Flow / Production Network Optimization

The objective of this course is 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 **through analytics**.

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

Prerequisite

DA01704 and DAO2702

Assessment

Team Term Paper	20%
Team Mid-Term Project	20%
Individual case/assignment analyses	40%
Class Participation	20%

Term Paper

Each project team is required to prepare a term paper on a current research topic relevant to the subjects covered in this class. Any paper used for fulfilling requirements of other courses or graduate oral exam MUST NOT be recycled in this class.

The purpose of the term paper is to demonstrate that you can apply the techniques learned in this class to an analytics problem of your choosing. The paper must include a statement of the problem, data or process(es) analyzed, and the principles learned.

The paper should be typewritten, paginated, double-spaced, in Time font, size 12, 1 inch margins (top, bottom, left, and right), and must follow the outline shown below. There is no page limitation, but a good term paper may need 8 to 14 pages of narratives to provide in-depth analysis of a selected topic

Mid-Term Project

Each project team is required to prepare a presentation on a consulting project (made available in class) relevant to the subjects covered in this class.

The purpose of the mid-term project is to demonstrate that you can apply the techniques learned in this class to a real consulting project, and have the ability to deliver the results in a timely manner.

Required Text

Course Reading Packet

Software

We will use open source package throughout this class. Familiarity with Jupyter Notebook or Rstudio will be required.

Lesson Plan

The course will provide quick refresher on the analytics toolkit skills, from data engineering, clustering, regression, text analytics, classification and regression trees, random forest, optimization and simulation skills.

The projects and term paper will allow students to learn the essential skills for analytics professionals, from optimizing team structure, communicating analytics with charts for clients, and Interacting with teams and bringing impact to clients

