

## Course Outline

<b>Course Code</b>	: MKT4721
<b>Course Title</b>	: Customer Analytics & Visualization
<b>Semester</b>	: Semester 1, AY 2024/2025
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### Overview

Business managers utilize marketing data to assess the return on their investments and better understand their customers. Against this background, the course is designed to meet the increasing needs of industry and recruiters in applying quantitative and analytical skills for understanding consumer decision-making. Emphasizing on interpretation and the proper use of the various types of customer-based empirical methodologies covered, the primary aim of this course is to equip students with new skills and tools that will provide them with important quantitative acumen for understanding consumer analytics and visualization.

Students are also offered the opportunity to analyse real-world marketing problems in the following ways. First, the course takes students through various advanced marketing and consumer decision analyses to better understand the marketplace. Specifically, the course combines academic knowledge with hands-on learning as students are offered the opportunity to work on real-world datasets in their group projects. As such, the knowledge and skills acquired through the course can help students in honing their analytical and problem-solving abilities, which, in turn, should enhance their future success in the workplace. Second, the course also maintains a “hands-on” learning teaching philosophy where students will be exposed to various datasets and tools to better understand the developments in statistical science and hence examine solutions to important issues faced in consumer analytics and visualization.

### Course Objectives

By the end of the course, students will be able to:

- Understand various types of statistical and economic analysis applied to marketing data.
- Define and understand how to identify and target market segments, evaluate product and pricing decisions, as well as the allocation of marketing resources.
- Show how data can be used in managerial decision-making.
- Use predictive and decision-based analytics software to organize and analyse data.
- Clearly communicate the managerial insights and appreciate how consumer research impacts business decisions.

### Assessment

The final grade that you will receive for this course will be based on your performance both as an individual and as a member of a team. In particular, the final course grade will be computed in accordance with the following components and their corresponding weightages:

<b>Class Participation</b>	<b>10%</b>
<b>Individual Activities</b>	<b>25%</b>
<b>Group Project</b>	<b>40%</b>
Presentation	15%
Report	20%
Peer Assessment	5%
<b>Final Test</b>	<b>25%</b>

### **Class Participation**

Each student will be graded for their participation both in terms of the quality and the frequency of their contributions. This grade covers comments raised by the student, student's comments to other students' comments, and answers to the questions posed. More information on the evaluation criteria of the class participation component will be discussed in class.

### **Individual Activities**

The objective of the individual activities is to provide you with the opportunity to recap on what you have learned in the week's session. There will be a total of nine individual activities throughout the course. Given that all the nine individual activities will have the same weightage, your grades for the individual activities will be calculated based on your average performance across the best five individual activities that you have participated in. Thus, please be aware that you WILL NOT receive a grade for the individual activities component if you have participated in less than five individual activities. An individual activity will be either in the form of a quiz or an exercise. While a quiz assesses the extent to which you have acquired new knowledge from the materials covered in the week's session, an exercise, which may involve analysing data and interpreting results, evaluates your ability to apply the newly acquired knowledge in solving real-world marketing problems.

### **Group Project**

The aim of the group project is to equip you with the skills and experiences in applying the knowledge that you have acquired throughout the course to work on real-world problems using open-source dataset(s) of your choice. You are free to form your own team or choose to be randomly assigned into a team.

The deliverables of the group project consist of an oral presentation and a written report. Your participation in the group project is also subject to peer assessment, where your grade for the group project will be corrected upwards or downwards, depending on your own contribution to the overall team effort. Specific guidelines for the group project will be provided in class.

### **Final Test**

The final test will be a closed-book, closed-notes online exam. Details on the content covered, the structure and the question types will be communicated later.

### **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>

## Schedule and Outline

Week	Topic (Tentative)	Individual Activity
1	<ul style="list-style-type: none"> <li>• Course Setup and Planning</li> <li>• Introduction to Consumer Analytics               <ul style="list-style-type: none"> <li>○ Consumer Analytics: Definition, Importance, and Relevance</li> <li>○ The 'Big Data' Concept: Definition, Opportunities and Challenges</li> <li>○ Data Sources: Primary versus Secondary Data</li> </ul> </li> </ul>	Quiz
2	<ul style="list-style-type: none"> <li>• Survey Design and Testing to Derive Customer Insights               <ul style="list-style-type: none"> <li>○ Questionnaire Design</li> <li>○ Measurement and Scaling</li> <li>○ Sampling</li> </ul> </li> </ul>	Quiz
3	<ul style="list-style-type: none"> <li>• Visualizing Data with Tableau               <ul style="list-style-type: none"> <li>○ Introduction to Business Intelligence Software – Tableau</li> <li>○ Key Performance Metrics in eCommerce</li> <li>○ Build Dashboard to Evaluate Performance of eCommerce Shop</li> </ul> </li> </ul>	Exercise
4	<ul style="list-style-type: none"> <li>• Consumer Analytics Using SPSS               <ul style="list-style-type: none"> <li>○ Introduction to SPSS and Data Setup</li> <li>○ Data Preparation, Inspection and Description</li> </ul> </li> <li>• Overview of Group Project</li> </ul>	Exercise
5	<ul style="list-style-type: none"> <li>• Market Definition and Segmentation I               <ul style="list-style-type: none"> <li>○ Cluster Analysis for Segmentation</li> </ul> </li> </ul>	Exercise
6	<ul style="list-style-type: none"> <li>• Market Definition and Segmentation II               <ul style="list-style-type: none"> <li>○ Discriminant Analysis for Targeting and Classification</li> </ul> </li> </ul>	Quiz
Recess Break		
7	<ul style="list-style-type: none"> <li>• Customer Selection I               <ul style="list-style-type: none"> <li>○ Logistic Regression Models</li> </ul> </li> </ul>	Exercise
8	<ul style="list-style-type: none"> <li>• Customer Selection II               <ul style="list-style-type: none"> <li>○ Recency, Frequency, and Monetary (RFM) Analysis</li> </ul> </li> </ul>	Quiz
9	<ul style="list-style-type: none"> <li>• Customer Selection III               <ul style="list-style-type: none"> <li>○ Customer Lifetime Value (CLV) Analysis</li> </ul> </li> </ul>	Quiz
10	<ul style="list-style-type: none"> <li>• Course Wrap-Up</li> <li>• Guest Lecture by Data Scientist(s) [TBC]</li> </ul>	
11	<ul style="list-style-type: none"> <li>• Consultations for Group Project</li> </ul>	
12	<ul style="list-style-type: none"> <li>• Group Project Due               <ul style="list-style-type: none"> <li>○ Oral Presentations</li> </ul> </li> </ul>	
13	<ul style="list-style-type: none"> <li>• Final Test</li> </ul>	
<p><i>Notes:</i> The schedule and outline is subject to minor changes.</p>		

### General Guide & Reading

- Readings and relevant materials, if applicable, will be made available in advance. There is no required textbook for the course.
- The software for the course will be SPSS and [Tableau](#).