

Course Title	:	Marketing Analytics
Course Code	:	MKT3006
Recommended Study Year	:	2 or 3
No. of Credits/Term	:	3
Mode of Tuition	:	Sectional Approach
Class Contact Hours	:	3 hours per week
Category in Major Prog.	:	Elective - BSc in Data Science Programme
Prerequisite(s)	:	CDS1003 Probability and Statistics 1 <u>or</u> BUS1102 Statistics for Business
Co-requisite	:	Nil
Exclusion	:	Nil
Exemption Requirement	:	Nil

Brief Course Description:

Marketing is evolving from an art to a science. Many firms collect massive information about consumers' choices and how they react to marketing campaigns, but few firms have the expertise to intelligently act on such information. This course introduces students to state-of-the-art marketing analytics and demonstrates how to practically apply these analytics to real-world business decisions. The purposes of this course are to (1) present various marketing analytics that aid students in interpreting data from various sources, such as customer transactions and social media, (2) introduce some commonly used marketing analytics, such as RFM, Customer Lifetime Value and Sentiment Analysis, and (3) enable students to gain the competency to interact with and manage a marketing analytics team.

Aims:

This course aims to:

1. Demonstrate to students' how to develop marketing strategies and make resource allocation decisions driven by quantitative analysis;
2. Strengthen students' ability to plan data collection method and apply various analytical methods;
3. Enable students' to conduct market segmentation, RFM, market response model, paid search advertising, and product recommendation systems;
4. Help students' to draw managerial implications for business applications;
5. Enrich students' understanding of ethical issues in marketing research, and
6. Encourage collaboration with other students through group work.

Learning Outcomes (LOs):

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

1. Learn the scientific approach to marketing with hands-on use of technology such as customer database, analytical tools, and computer systems to collect, manage, and analyze customer information;
2. Develop an understanding of the data available to marketers, its use, and limitations, and be exposed to methods for measuring performance of marketing efforts;
3. Acquire hands-on experience with tools and software that analyze and solve complex marketing problems;
4. Locate, manage, and evaluate marketing information from multiple channels and data sources;
5. design a data-centric marketing approach that can be integrated with company's marketing mix programmes; and
6. Communicate and coordinate team tasks effectively while working in a team and collaborating with others

Indicative Contents:

1. Introduction to Marketing
 - Understanding Marketing
 - Strategic Marketing Process
 - Identifying Market segments and Targets
2. A brief review of Statistical Foundations of Marketing
 - Descriptive Statistics
 - Distributions
 - Generalized Linear Models
 - Optimization
3. Product Analytics
 - Pricing and Revenue Management
 - Points-of-Sales (POS) data
 - Deciding strategic pricing model
 - Implementing marketing tools to support pricing strategy
 - Next-Product-To-Buy Model
 - Recency, Frequency, Monetary (RFM) Analysis
 - Market Response model
4. Assortment Optimization
 - Panel and Point-of-Sales data
 - Shelf-space optimization
5. Customer Analytics
 - Customer lifetime Value

- Google Analytics on Customer Online Behavior
 - Recommendation Systems
 - Market Basket Analysis
6. Channel Analytics
- Online Data (Website, Social Media, and Mobile)
 - Offline Data (Retail Outlet and Traditional media)
7. Marketing Budget Optimization across channels
- Search engine optimization (organic search)
 - Paid Online channel (paid search)
 - Paid Offline channel (TV, newspaper)
8. Managing the delivery of analytics projects
9. Future of Marketing Analytics

Teaching Method:

This course makes use of lecture, discussion, and exercises to learn the materials. Computer workshops and lab sessions are provided to increase students' understanding on how to apply marketing analytical concepts to solve business problems. There are also guest lectures by business analysts and marketing managers. It takes a hand-on approach with real-world databases and equips students with analytical tools that can be used immediately on the job.

Assessment:

Class Participation	15%
Individual Assignments	25%
Group Project	30%
Final Examination	30%
Total	100%

Measurement of Learning Outcomes:

	Class Participation	Individual assignments	Group Project	Final Examination
Learn the scientific approach to marketing with hands-on use of technology (LO1)	x	x		x
Develop an understanding of the data available to marketers, its use, and limitations, and be exposed to methods for measuring performance of marketing efforts (LO2)	x	x		x
Acquire hands-on experience with tools and software that analyze and solve complex marketing problems (LO3)		x	x	x
Locate, manage, and evaluate marketing information from multiple channels and data sources (LO4)		x	x	x
Think critically and design data-centric marketing approach (LO5)			x	x
Work in a team and collaborate with others (LO6)			x	

Required/Essential Readings:

1. Winston, Wayne L. *Marketing Analytics : Data-Driven Techniques with Microsoft Excel.* Indianapolis, IN: John Wiley & Sons, 2014.

Recommended/Supplementary Readings:

1. Rackley, Jerry. *Marketing Analytics Roadmap: Methods, Metrics, and Tools.* Berkeley, CA : Apress, 2015.
2. Grigsby, Mike. *Marketing Analytics : A Practical Guide to Real Marketing Science.* London : Philadelphia : Kogan Page, 2015.
3. Venkatesan, Rajkumar, Paul Farris, and Ronald T. Wilcox. *Cutting-edge Marketing Analytics : Real World Cases and Data Sets for Hands On Learning.* Upper Saddle River, New Jersey : Pearson Education, 2015.
4. Siegel, Eric. *Predictive Analytics : The Power to Predict Who Will Click, Buy, Lie, or Die.* Hoboken, New Jersey : Wiley, 2016.

5. Hemann, Chuck. *Digital Marketing Analytics : Making Sense of Consumer Data in a Digital World*. Indianapolis, Ind. : Que, 2013.
6. Jeffery, Mark. *Data-driven Marketing : The 15 Metrics Everyone in Marketing Should Know*. Hoboken, N.J. : John Wiley, 2010.
7. Soman, Dilip and Sara N-Marandi. *Managing Customer Value : One Stage at a Time*. Hackensack, NJ: World Scientific Publication, 2010.
8. Shepard, David. *The New Direct Marketing: How to implement A Profit-driven Database Marketing Strategy*. New York, McGraw Hill, 1999.

Important Notes:

- (1) Students are expected to spend a total of 9 hours (i.e. 3 hours of class contact and 6 hours of personal study) per week to achieve the course learning outcomes.
- (2) Students shall be aware of the University regulations about dishonest practice in course work, tests and examinations, and the possible consequences as stipulated in the Regulations Governing University Examinations. In particular, plagiarism, being a kind of dishonest practice, is “the presentation of another person’s work without proper acknowledgement of the source, including exact phrases, or summarised ideas, or even footnotes/citations, whether protected by copyright or not, as the student’s own work”. Students are required to strictly follow university regulations governing academic integrity and honesty.
- (3) Students are required to submit writing assignment(s) using Turnitin.
- (4) To enhance students’ understanding of plagiarism, a mini-course “Online Tutorial on Plagiarism Awareness” is available on <https://pla.ln.edu.hk/>.

Rubrics of MKT3006 - Marketing Analytics

Assessment Task	Criterion	Very Good	Satisfactory	Unsatisfactory
Class participation	Communicates ideas effectively in both individual exercises and group discussions. Shows command of course materials. Shows ability to raise questions and think critically. Displays an active level of class participation	<ul style="list-style-type: none"> - Demonstrates excellent ability to raise question and think critically - Show excellent command of all aspects of the course - Show excellent problem solving skills 	<ul style="list-style-type: none"> - Shows fair command all aspects of the course, with the ability to describe important concepts and applications in marketing analytics. - Show acceptable problem solving and case analysis skills 	<ul style="list-style-type: none"> - Show poor command of all aspects of the course. - Demonstrates poor ability to raise question and think critically - Show little problem solving skills
Individual Assignments	Real life case studies are provided to students. Students need to apply marketing analytical skills to solve the business problems.	Thoroughly identify the business problems and apply analytical methods to assess and solve marketing problem	Assess the issue but does not thoroughly consider the impact from analytical perspective or consider both alternative views	Does not assess the issues or does not analyze the problem correctly
Group project	Command of concepts and applications in database marketing and analytical skills, ability to apply course content in practical situation and to evaluate the quality of database marketing applications by companies, attitude to team work, writing skills	<ul style="list-style-type: none"> - show excellent command of concepts and application in database marketing - demonstrate excellent ability to apply course content in practical situations 	<ul style="list-style-type: none"> - show acceptable command of concepts and applications in database marketing - able to apply course content in practical situation and to assess the quality of database marketing application by firms 	<ul style="list-style-type: none"> - show poor command of concepts and applications in database marketing - not able to apply course content in practical situations to assess the quality of database marketing applications by firms
Final Exam	The examination is designed to evaluate the student's grasp on marketing analytical concepts and knowledge, as well as the ability to apply them to solve business problems	<ul style="list-style-type: none"> - show excellent command of analyzing the customers, competitors, and other business environments independently. - able to recognize all of the marketing concepts 	<ul style="list-style-type: none"> - show acceptable command of analyzing the customers, competitors, and other business environment independently. - able to recognize some of the marketing concepts and their applications 	<ul style="list-style-type: none"> - show poor command of analyzing the customers, competitors, and other business environment. - not able to recognize marketing concepts and their applications