UNSW Course Outline

MARK5826 Product Analytics - 2024

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General Course Information

Course Code : MARK5826
Year : 2024
Term : Term 2
Teaching Period : T2
Is a multi-term course? : No
Faculty : UNSW Business School
Academic Unit : School of Marketing
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Today's data-rich environment and advances in data analytics have enabled product idea generation from the crowd, innovative "data"-based products or services development, and effective marketing of new product ideas on crowdfunding platforms. Now, "data" itself may

form part of the “core material” of new products or services.

This course integrates the principles of product development with data analytics by covering (1) new product idea generation using natural language processing such as sentiment analysis or topic modelling to analyse product reviews, (2) user-centric design plan (3) data product or service development such as recommendation algorithms, (4) product attribute optimisation using A/B test or conjoint analysis, and (5) advertising new product ideas on crowdfunding platforms.

For course projects, you will exercise hands-on data analytics and marketing technology tools to conduct exploratory product data analysis and visualisation.

Course Aims

Basic statistical knowledge and skills (up to typical regression analysis) is assumed before starting this course. The pre-requisite for this course is COMM5005, COMM5011, ECON5248 or equivalents.

MARK5826 integrates the principal of product development and big data analytics from new product idea generation and marketing new product idea, to data product development and product management. The aim is to produce marketing data scientists who can work as Marketing, Product and Brand Managers, Entrepreneurs, or Business Analyst.

MARK5826 offers data analytics toolbox for new product idea generation and development, while MARK5813 and MARK6102 courses conceptual foundation and qualitative approach. Next, MARK5822 covers overall marketing analytics. But, MARK5826, 5827, and 5828 focuses on specific data analytics for product, customer, and advertising-related decision making, respectively.

Course Learning Outcomes

Course Learning Outcomes	Program learning outcomes
CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]	• PLO1 : Business Knowledge • PLO2 : Problem Solving
CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]	• PLO1 : Business Knowledge • PLO2 : Problem Solving
CLO3 : Use advanced data analytics to develop new data products or services. [PLO 1, 2]	• PLO1 : Business Knowledge • PLO2 : Problem Solving
CLO4 : Make data-driven product/service decisions. [PLO 1, 2]	• PLO1 : Business Knowledge • PLO2 : Problem Solving
CLO5 : Clearly and effectively communicate data-driven business value. [PLO 3]	• PLO3 : Business Communication

Course Learning Outcomes	Assessment Item
CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]	• Participation – Individual • Customer Problem Identification – Individual Report • New Data Product Development – Group Presentation • Product A/B Test – Individual Report
CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]	• Participation – Individual • Customer Problem Identification – Individual Report • New Data Product Development – Group Presentation • Product A/B Test – Individual Report
CLO3 : Use advanced data analytics to develop new data products or services. [PLO 1, 2]	• Participation – Individual • New Data Product Development – Group Presentation • Product A/B Test – Individual Report
CLO4 : Make data-driven product/service decisions. [PLO 1, 2]	• Participation – Individual • New Data Product Development – Group Presentation • Product A/B Test – Individual Report
CLO5 : Clearly and effectively communicate data-driven business value. [PLO 3]	• Customer Problem Identification – Individual Report • New Data Product Development – Group Presentation

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates	Program learning outcomes
Participation – Individual Assessment Format: Individual	15%	Start Date: 11/06/2024 12:00 AM Due Date: 30/06/2024 12:00 AM	• PLO1 : Business Knowledge • PLO2 : Problem Solving
Customer Problem Identification – Individual Report Assessment Format: Individual	15%	Due Date: Week 6: 01 July - 07 July	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication
New Data Product Development – Group Presentation Assessment Format: Group	30%	Start Date: Not Applicable Due Date: Week 10: 29 July - 04 August	• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication • PLO4 : Teamwork
Product A/B Test – Individual Report Assessment Format: Individual	40%	Due Date: Week 8: 15 July - 21 July	• PLO1 : Business Knowledge • PLO2 : Problem Solving

Assessment Details

Participation – Individual

Assessment Overview

As you participate in lectures and tutorials more, you can learn more. Each week, we build knowledge and skills. Therefore, you need to digest your learning each week and demonstrate ongoing active involvement by interacting with peers and lecturer/tutor to share views that warrant further thought. The specific grading rubrics will be specified in the course outline.

Course Learning Outcomes

- CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]
- CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]
- CLO3 : Use advanced data analytics to develop new data products or services. [PLO 1, 2]

- CLO4 : Make data-driven product/service decisions. [PLO 1, 2]

Detailed Assessment Description

Online multiple-choice quizzes are scheduled in both Week 3 and Week 5. You must finalize your attempts to complete it by 5pm Sunday of that week. The quiz will be disabled after this time so make sure that you have completed it before then. My advice is to complete it a few days early to avoid any glitches that may occur.

Assessment Length

1 hour for each quiz

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Customer Problem Identification – Individual Report

Assessment Overview

You will identify customer problems using natural language processing such as sentiment analysis or topic modelling.

Course Learning Outcomes

- CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]
- CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]
- CLO5 : Clearly and effectively communicate data-driven business value. [PLO 3]

Detailed Assessment Description

After customers purchase and use products or services, they often share their experiences on online review platforms. Many companies attempt to identify customer problems and unmet needs from large-scale product review data by using natural language processing techniques such as topic modeling and sentiment analysis. Recent machine learning methods enable the automatic categorization of text data, although these methods are not yet perfect. Your task is to identify customer problems based on your analysis and generate new product or service ideas.

Assessment Length

500 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

New Data Product Development – Group Presentation

Assessment Overview

By applying design-thinking process, your group will identify customers' pain points and their unmet needs in each stage of customer journey, and then suggest potential solutions. Then, your group will plan new product roadmap and develop a new data product.

Course Learning Outcomes

- CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]
- CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]
- CLO3 : Use advanced data analytics to develop new data products or services. [PLO 1, 2]
- CLO4 : Make data-driven product/service decisions. [PLO 1, 2]
- CLO5 : Clearly and effectively communicate data-driven business value. [PLO 3]

Detailed Assessment Description

This assessment provides you with the opportunity to apply the concepts learned in class to develop and communicate new data products. Your group will identify customers' pain points and unmet needs in each stage of the customer journey and suggest potential solutions. Then, your group will plan a new product measurement framework, develop a tracking plan, and test your product. Finally, your group will communicate your work using video recording. In classes, all of us will watch the recorded videos and then discuss them together.

Assessment Length

15 minutes

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Product A/B Test – Individual Report

Assessment Overview

Before launching new products, company test their new products many times. Based on the base product which your group developed in the assignment 2, you will test different version of product compared to the base product. Your classmate will evaluate these two versions. Finally, you will report the result of this product A/B test.

Course Learning Outcomes

- CLO1 : Apply relevant product and customer data analytics for new product/service idea generation. [PLO 1, 2]

- CLO2 : Critically evaluate options to offer product solutions to meet customers' unmet needs. [PLO 1, 2]
- CLO3 : Use advanced data analytics to develop new data products or services. [PLO 1, 2]
- CLO4 : Make data-driven product/service decisions. [PLO 1, 2]

Detailed Assessment Description

You are provided with a dataset from a recent A/B test performed by a company on two variants of a product. Your task is to prepare a detailed report that covers the following:

- Intro: Objectives of the A/B test
- Methodology: Explain the statistical methods used for the analysis
- Results and discussion: Perform a statistical analysis to determine which product performed better
- Conclusion and recommendations: Summarize the key findings and propose actionable recommendations based on the test outcomes
- Appendices (if applicable): Include any additional data, code, or calculations used in your analysis

Assessment Length

1500 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

General Assessment Information

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Course Overview & New Product Development
Week 2 : 3 June - 9 June	Lecture	Product Metrics Framework
	Tutorial	Setting Up Mixpanel
Week 3 : 10 June - 16 June	Lecture	A/B Testing
	Tutorial	Behavioural, Acquisition, Retention Metrics
Week 4 : 17 June - 23 June	Lecture	Tracking Plan
	Tutorial	Analyse Product Data with Mixpanel
Week 5 : 24 June - 30 June	Lecture	SQL for Product Manager
	Tutorial	Practise SQL Relational Databases
Week 6 : 1 July - 7 July	Lecture	New Product Idea Generation
	Tutorial	Setting Up Orange & Hands-on Text Analysis
Week 7 : 8 July - 14 July	Lecture	Predicating Product Portfolio
	Tutorial	Hands-on Classification Analysis
Week 8 : 15 July - 21 July	Lecture	Modelling User Space
	Tutorial	Hands-on Clustering Analysis
Week 9 : 22 July - 28 July	Lecture	Recommendation System Application
	Tutorial	Hands-on Association Rules Analysis
Week 10 : 29 July - 4 August	Tutorial	Course wrap-up and Presentation

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

Course Resources

Recommended Resources

Mixpanel intro and analysis: https://docs.mixpanel.com/docs/what-is-mixpanel

Orange data mining: https://orangedatamining.com/

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Yu-Ting Lin		Available upon email request	Available upon email request	Consultations are available upon email request	No	Yes

Other Useful Information

Academic Information

COURSE POLICIES AND SUPPORT

The Business School expects that you are familiar with the contents of this course outline and the UNSW and Business School learning expectations, rules, policies and support services as listed below:

- Program Learning Outcomes
- Academic Integrity and Plagiarism
- Student Responsibilities and Conduct
- Special Consideration
- Protocol for Viewing Final Exam Scripts
- Student Learning Support Services

Further information is provided on the key policies and support page.

Students may not circulate or post online any course materials such as handouts, exams, syllabi or similar resources from their courses without the written permission of their instructor.

STUDENT LEARNING OUTCOMES

The Course Learning Outcomes (CLOs) – under the Outcomes tab – are what you should be able to demonstrate by the end of this course, if you participate fully in learning activities and successfully complete the assessment items.

CLOs also contribute to your achievement of the Program Learning Outcomes (PLOs), which are developed across the duration of a program. PLOs are, in turn, directly linked to UNSW graduate capabilities. More information on Coursework PLOs is available on the key policies and support page. For PG Research PLOs, including MPDBS, please refer to the UNSW HDR Learning Outcomes.

Academic Honesty and Plagarism

As a student at UNSW you are expected to display academic integrity in your work and interactions. Where a student breaches the UNSW Student Code with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the

process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the Working with Academic Integrity module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

Submission of Assessment Tasks

SPECIAL CONSIDERATION

You can apply for special consideration when illness or other circumstances beyond your control interfere with your performance in a specific assessment task or tasks, including online exams. Students studying remotely who have exams scheduled between 10pm and 7am local time, are also able to apply for special consideration to sit a supplementary exam at a time outside of these hours.

Special consideration is primarily intended to provide you with an extra opportunity to demonstrate the level of performance of which you are capable. To apply, and for further information, see Special Consideration on the UNSW Current Students page.

Special consideration applications will be assessed centrally by the Case Review Team, who will update the online application with the outcome and add any relevant comments. The change to the status of the application immediately sends an email to the student and to the assessor with the outcome of the application.

Please note the following:

1. Applications can only be made through Online Services in myUNSW (see the UNSW Current Students page). Applications will not be accepted by teaching staff. The lecturer-in-charge/ course coordinator will be automatically notified when your application is processed.
2. Applying for special consideration does not automatically mean that you will be granted a supplementary exam or other concession.
3. If you experience illness or misadventure in the lead up to an exam or assessment, you must submit an application for special consideration, either prior to the examination taking place, or prior to the assessment submission deadline, except where illness or misadventure prevent you from doing so.
4. If your circumstances stop you from applying before your exam or assessment due date, you must apply within 3 working days of the assessment or the period covered by your supporting documentation.

5. Under the UNSW Fit To Sit/Submit rule, if you sit the exam/submit an assignment, you are declaring yourself well enough to do so and are cannot subsequently apply for special consideration.
6. If you become unwell on the day of – or during – an exam, you must stop working on your exam, advise your course coordinator or tutor and provide a medical certificate dated within 24 hours of the exam, with your special consideration application. For online exams, you must contact your course coordinator or tutor immediately via email, Moodle or chat and advise them you are unwell and submit screenshots of your conversation along with your medical certificate and application.
7. Special consideration requests do not allow the awarding of additional marks to students.

Further information on Business School policy and procedure can be found under "Special Consideration" on the key policies and support page.

LATE SUBMISSION PENALTIES

For assessments other than examinations, late submission will incur a penalty of 5% per day or part thereof (including weekends) from the due date and time. An assessment will not be accepted after 5 days (120 hours) of the original deadline unless special consideration has been approved. An assignment is considered late if the requested format, such as hard copy or electronic copy, has not been submitted on time or where the 'wrong' assignment has been submitted.

For assessments which account for 10% or less of the overall course grade, and where answers are immediately discussed or debriefed, the LIC may stipulate a different penalty. Details of such late penalties will be available on the course Moodle page.

FEEDBACK ON YOUR ASSESSMENT TASK PERFORMANCE

Feedback on student performance from formative and summative assessment tasks will be provided to students in a timely manner. Assessment tasks completed within the teaching period of a course, other than a final assessment, will be assessed and students provided with feedback, with or without a provisional result, within 10 working days of submission, under normal circumstances. Feedback on continuous assessment tasks (e.g. laboratory and studio-based, workplace-based, weekly quizzes) will be provided prior to the midpoint of the course.

Faculty-specific Information

PROTOCOL FOR VIEWING FINAL EXAM SCRIPTS

UNSW students have the right to view their final exam scripts, subject to a small number of very specific exemptions. The UNSW Business School has set a protocol under which students may view their final exam script. Individual schools within the Faculty may also set up additional local processes for viewing final exam scripts, so it is important that you check with your School.

If you are completing courses from the following schools, please note the additional school-specific information:

- Students in the **School of Accounting, Auditing & Taxation** who wish to view their final examination script should also refer to this page.
- Students in the **School of Banking & Finance** should also refer to this page.
- Students in the **School of Information Systems & Technology Management** should also refer to this page.

COURSE EVALUATION AND DEVELOPMENT

Feedback is regularly sought from students and continual improvements are made based on this feedback. At the end of this course, you will be asked to complete the myExperience survey, which provides a key source of student evaluative feedback. Your input into this quality enhancement process is extremely valuable in assisting us to meet the needs of our students and provide an effective and enriching learning experience. The results of all surveys are carefully considered and do lead to action towards enhancing educational quality.

QUALITY ASSURANCE

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential.

TEACHING TIMES AND LOCATIONS

Please note that teaching times and locations are subject to change. Students are strongly advised to refer to the Class Timetable website for the most up-to-date teaching times and locations.