

University of Westminster
School of Electronics and Computer Science

SUBJECT TO EXTERNAL EXAMINER APPROVAL

5DATA004C Data Science Project Lifecycle (2024/25)	
Module leader	Mr Fouzul Hassan
Units	Group Coursework
Weighting:	70%
Qualifying mark	30%
Description	Students will be assessed on their ability to work as a team to respond to a project brief and deliver an analytical solution using relevant theory and professional practice.
Covered Learning Outcomes	<p>LO1 Apply systems thinking approaches to plan a technical solution to an industrial problem, identifying project requirements, environmental or technical constraints, and the views of different internal and external stakeholder groups.</p> <p>LO2 Demonstrate a thorough knowledge of key project management concepts and principles; using appropriate tools and technical diagrams to support organisation of tasks and distribution of activities between team members.</p> <p>LO3 Develop a work-plan and meet deadlines; recognise the responsibilities, benefits, and importance of supporting equality, diversity and inclusion (EDI); apply professional codes of conduct; perform leadership tasks and carefully document and communicate a technical design and its testing.</p> <p>LO6 Record self-learning and activities of the team through the use of logbooks, minutes of meetings, social sites and other novel means.</p> <p>LO7 Demonstrate an awareness of competing deployment and handover strategies; assessing the impact to the client organisation and ways in which project failure risks can be mitigated or eliminated.</p>
Handed Out:	14th February 2025
Due Dates	<p>1pm 27th February 2025</p> <ul style="list-style-type: none"> - Initial Draft Project Analysis for ML (formative feedback from module leader) <p>1pm 20th March 2025</p> <ul style="list-style-type: none"> - Draft Project Report for client (formative feedback from client) <p>11am-1pm 24th March 2025</p> <ul style="list-style-type: none"> - Live presentation showcase for client (formative feedback) <p>1pm 3rd April 2025</p> <ul style="list-style-type: none"> - Final Project Report (summative, marked) - Technical Code, Solution and Implementation Files (summative, marked)
Expected deliverables	<ol style="list-style-type: none"> 1. Final Project Report 2. Technical Code, Solution and Implementation Files

Method of Submission:	<u>Final Project Report</u> Single electronic file containing coursework answers (in either PDF of DOCX format) <u>Technical Code, Solution and Implementation Files</u> Uploaded to a GitHub repository. A link to your teams GitHub repository should be included in your Final Project Report.
Type of Feedback and Due Date:	Written feedback on the submission will be provided within 3 weeks after the submission (the mark and comments via BB Rubric). All marks remain provisional until formally agreed by an Assessment Board.

Assessment regulations

Refer to the course handbook or Part 3 of the university Academic Regulations handbook for a clarification of how you are assessed, penalties and late submissions, what constitutes plagiarism etc.

Penalty for Late Submission

If you submit your coursework late but within 24 hours or one working day of the specified deadline, 10 marks will be deducted from the final mark, as a penalty for late submission, except for work which obtains a mark in the range 40 – 49%, in which case the mark will be capped at the pass mark (40%). If you submit your coursework more than 24 hours or more than one working day after the specified deadline you will be given a mark of zero for the work in question unless a claim of Mitigating Circumstances has been submitted and accepted as valid.

It is recognised that on occasion, illness or a personal crisis can mean that you fail to submit a piece of work on time. In such cases you must inform the Campus Office in writing on a mitigating circumstances form, giving the reason for your late or non-submission, and if applicable, the relevant documentary evidence with the form. This information will be reported to the relevant Assessment Board that will decide whether the mark of zero shall stand. For more detailed information regarding University Assessment Regulations, please refer to the following website: <http://www.westminster.ac.uk/study/current-students/resources/academic-regulations>

GROUP COURSEWORK

OVERVIEW

In this coursework assignment, students will **work in groups** and undertake a small-scale data science project with an external organisation.

Students should refer to the file “Allocation of Students.pdf” on Blackboard to check their assigned group. Where possible, students have been assigned to a group containing the person they nominated in learning week 2. Submissions by individuals or groups other than those published by the module leader will **not be accepted**.

To ensure successful completion of the coursework, it is important that group members work jointly and contribute to all group tasks. Group members may be awarded different marks based on their individual contribution and personal reflection of the work-based learning experience.

PROJECT BRIEF

KJ Marketing is a leading retail supermarket chain in Sri Lanka, operating 22 outlets across urban and suburban regions. The company offers a diverse selection of products, including dry goods, fresh produce, and luxury items, catering directly to end consumers.

In recent years, traditional marketing strategies have proven ineffective in engaging the company's evolving customer base. To enhance its marketing efforts, KJ Marketing aims to adopt a **personalized marketing strategy** tailored to individual customer preferences.

To support this initiative, the company has provided **historical sales data** containing average monthly sales per customer across different product categories. Your objective is to **develop an analytical solution** that accurately classifies new customers into predefined customer segments based on their purchasing behavior.

A detailed description of the client can be found in the “**KJ Marketing - Octave Project Brief.pdf**”. Data and other resources supplied by the client can be found in the folder “Octave - KH Marketing Project Resources”.

YOUR TASK

For this work-based learning project, you are considered as a data science consultant in training.

Your task is to work as part of a 4–5-person team to deliver the expected project outcomes described in the project brief assigned to your group.

You should refer to the marking scheme for a breakdown of how marks are awarded.

Make sure to get approval from module leader about your group.

DELIVERABLES

The following deliverables are to be submitted via the module's Blackboard site (submission links are available under section “Assessment and Submission Links”):

1) Initial draft project analysis (formative)

Due: 1pm 27th February 2025

Short report (2-3 pages) containing preliminary analysis, initial thoughts and project plan.

2) Draft project report for client (formative)

Due: 1pm 20th March 2025

An extended report detailing your groups progress to date. It should include details of the analysis that has been carried out and the methodological approach taken.

3) Presentation Slides (formative)

Due: 11am-1pm 24th March 2025

A 10-minute presentation to the client based on the work undertaken to date. This should be no more than 5-7 slides.

4) Final Project Report (summative)

Due: 1pm 3rd April 2025

The completed report, including findings and recommendations. You report **MUST** include a link to a GitHub repository where the code, data and implementation files associated with your project can be viewed. A suggested word count is 3000 words, not including tables, figures and references.

The last page in your report **MUST** contain an individual reflection on your work-based learning experience. In this section, you **MUST** outline the elements or sections of the report that you have contributed to and evidence of participation in group tasks. Refer to the marking scheme for a list of accepted examples. A suggested word count for the individual reflection is 500 words. This section of the report **MUST** be completed individually.

In addition, the following item should be uploaded to GitHub as evidence they have been developed.

5) Technical Code, Solution and Implementation Files (summative)

Due: 1pm 3rd April 2025

Each team should create a GitHub repository and upload a copy of any code, solution, data or implementation files associated with their project. A link to this repository **MUST** be included in the final project report along with the relevant commit ID.

FORMATIVE AND SUMMATIVE FEEDBACK

There are three main opportunities for formative feedback before final submission:

- (i) Written feedback on the initial draft report by the module team.
- (ii) Written feedback on the draft report by the industry client.
- (iii) Verbal feedback by the industry client during the live presentation showcase.

Detailed written feedback on final deliverables will be provided by module team within 3 weeks of submission.

5DATA004W DATA SCIENCE PROJECT LIFECYCLE - GROUP COURSEWORK - MARKING SCHEME			
NOTE: Marks will be allocated in relation to the correctness, completeness, and the quality of the answer provided.			
Criteria	Mark Per Component	Mark Provided	Comments
FINAL PROJECT REPORT	100 marks		
BACKGROUND AND PROBLEM DOMAIN			
<ul style="list-style-type: none"> Background well-researched, including references to external sources (5 marks) Evidence of the application of problem structuring methods, including the use of suitable diagrams/models, to explore the problem domain. (5 marks) The extent to which project objectives are clearly stated, prioritised and within the scope of the project brief (5 marks) 	15		
PLANNING			
<ul style="list-style-type: none"> Requirements and expected deliverables (4 marks) Team roles and responsibilities defined (4 marks) Work breakdown structure (WBS) created and well-presented (4 marks) Project timeline including key tasks and expected durations (4 marks) Identification of potential risks and inclusion of a mitigation plan (4 marks) 	20		
DATA AND METHODS			
<ul style="list-style-type: none"> Exploration of data using suitable diagrams, visualisations or tables (5 marks) Evaluation of data quality (5 marks) 	20		

<ul style="list-style-type: none"> • Presentation of the proposed modelling approach, outlining key tasks and relevant data sources. Any assumptions made are listed (5 marks) • Application of relevant data (pre-) processing techniques and tools (5 marks) 			
ANALYSIS AND RECOMMENDATIONS			
<ul style="list-style-type: none"> • Presentation and analysis of key results (5 marks) • The extent to which results are explained and interpreted in the context of the problem being addressed (5 marks) • Suggested recommendations/way forward are included. All recommendations are clearly evidenced in analysis provided (5 marks) and made accessible for a non-technical reader (5 marks) 	20		
REPORT STRUCTURE AND COMMUNICATION			
<ul style="list-style-type: none"> • The extent to which the report follows a logical and coherent structure, suitably formatted and makes use of an appropriate writing style to communicate the findings (5 marks) 	5		
EVIDENCE OF WORK			
<ul style="list-style-type: none"> • Link to GitHub repository containing code, implementation and solution files developed during the project. Marks are awarded according to the extent to which the code is complete and contains suitable annotations (5 marks) 	5		
INDIVIDUAL REFLECTION (This item MUST be completed INDIVIDUALLY)			
<ul style="list-style-type: none"> • Detail your personal contributions to the project. 	15		

<ul style="list-style-type: none"> • <u>Up to 10 (maximum)</u> pieces of evidence of participation in group tasks • Accepted evidence includes screenshots of group emails, Blackboard messages, uploads to Google Collaborate, uploads to Google Drive and commits to GitHub. Each piece of evidence should clearly show the date. <p>(9 marks)</p> <ul style="list-style-type: none"> • Reflect on the extent to which your contributions aligned with the original Project Plan and where they varied. • Discuss any challenges faced or that you have overcome (with examples) • Discuss what you have learned through your work-based learning experience (academically and/or professionally) • Reflect on how your team work has impacted your collaborative skills, and how feedback from your peers impacted your work <p>(6 marks)</p>			
<p>END</p>			

