COURSEWORK SPECIFICATION

COM1011

Fundamental of Maching Learning

Module Leader: **Chico Camargo**

Academic Year: 2025/26

Title: **Coursework 1**

Submission deadline: 12:00pm (noon), 3rd November, 2025

This assessment contributes 30% of the total module mark and assesses the following intended learning outcomes:

- Demonstrating understanding of the core concepts of regression.
- Applying various regression methods to structured datasets, and evaluating their strengths and weaknesses.
- Implementing basic algorithms in Python, using standard libraries (e.g., scikit-learn, pandas, matplotlib).
- Analysing problems from a data-centric perspective, including data preprocessing, feature selection, and model validation.
- Communicating findings clearly, with appropriate use of visualisations and performance metrics.

Plagiarism

This is an individual assessment.

Plagiarism is interpreted by the university as the act of presenting the work of others as one's own work, without acknowledgement. It is considered academically fraudulent and an offence against university discipline. Your attention is drawn to the university's regulations on plagiarism. Your work will be scrutinised for detection of plagiarism.

Generative AI

This assessment has been categorised as AI–Assisted. You can find further information in the University's policies around using AI in assessed work.

You may use GenAI tools ethically and responsibly to assist in the development of an assessment in accordance with the boxes checked below:

☑ To assist with research or information gathering

☑ To help you understand key concepts and theories

☑ To identify trends and themes as part of data analysis
☑ To provide feedback on a draft
☑ To improve the plan or structure of my assessment
☑ To generate images, figures or diagrams
☑ To proofread and correct spelling or grammar errors
☑ To formate citations or references

When writing your assessment, you must never use AI tools:

1. For uses other than those represented by checked boxes in the list above.
2. To translate more than a word or short phrase into English unless agreed above.
3. To upload sensitive or identifying material to an AI tool.
4. To present material that has been generated by AI as your own work or the work of someone else..

When submitting your assessment, you must:

1. Check the box during the submission process, that confirms you have adhered to the university's academic conduct policy and the expectations on use of GenAI in your assessment brief.
2. Treat the AI tool like a citation from any other source.
3. Include a list of all AI prompts and hyperlinks to their output with your references, at the end of your work. You do not need to include the outputs themselves, just the links.
4. Retain the full outputs generated by the prompts you have used during your assignment. These outputs should be accessible at the hyperlinks which you have submitted with your assignment. You may be asked to produce this material in the event of an academic conduct inquiry.

Instructions

1 Project Overview

n this project, you will gain practical experience with key steps in the machine learning workflow. Specifically, you will:

- Apply data preprocessing techniques to prepare raw datasets for analysis.
- Explore and present insights through data visualisation.
- Implement and evaluate a range of regression methods to model and interpret relationships within the data.

The project is designed to strengthen your understanding of both the theoretical concepts and their practical applications, helping you build confidence in applying machine learning methods to real-world datasets.

2 Project Description

You will be provided with a *.ipynb file from ELE with a number of detailed tasks which include both python programming tasks and related questions. Marks for those tasks can also be found in the *.ipynb file. Make sure your code can be executed properly with the provided datasets.

3 Deliverables

Please do all your work in this Jupyter notebook. Make a separate cell for every few lines of code, and use separate cells for text. Save your file in the format 'COMM1011_STUDENTNUMBER.ipynb' and zip it. For example, if your student number is 12345678, save your coursework as 'COMM1011_12345678.ipynb'. Once you have done that, zip the file, producing a file called 'COMM1011_12345678.zip'. This is the file you will have to upload and submit to ELE.

In your Jupyter notebook, please declare how you use GenAI to assist with the coursework, and provide links or references properly according the earlier guidelines.