



University
of Exeter

COURSEWORK SPECIFICATION

ECMM443/COM2015 – Intro to Data Science

Module Leader: Xiaoyang Wang

Academic Year: 2025/26

Title: Data Science Research Proposal

Submission deadline: Wednesday 12th November 2025 12:00 pm

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

- Demonstrate competence in handling, exploring and visualising complex datasets.
- Discuss the roles and impact of data science in industry and society.
- Describe some of the main topics and techniques used in data science.
- Identify some ethical issues associated with data science in society and business.
- Use Python to explore data.
- With some guidance employ basic data science techniques to explore data.
- With some guidance use basic techniques in sub-disciplines of data science, such as machine learning, statistics, network analysis, machine vision and high-performance computing.
- Communicate ideas and techniques fluently using written means in a manner appropriate to the intended audience.
- Communicate ideas effectively in oral presentations.
- Work effectively as part of a team.

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](#).

Use of AI tools in AI-Integrated Assessments.

Assessment Title: ECMM443/COM2015 Research Proposal

Module Code and Name: ECMM443/COM2015 Introduction to Data Science

The University of Exeter is committed to the ethical and responsible use of Generative AI (GenAI) tools in teaching and learning, in line with our academic integrity policies where the direct copying of AI-generated content is included under plagiarism, misrepresentation and contract cheating under definitions and offences in [TQA Manual Chapter 12.3](#).

This assessment overall falls under the category of **AI-Integrated** in the University's Guidance on use of GenAI in Assessment.

This is because *you are required to effectively use GenAI tools* in order to successfully achieve the module's intended learning outcomes, as per your assessment brief.

However the final 1 page reflective review is classed as **AI-minimal** and you are required to complete this without the assistance of AI.

The development of **the Research Proposal is an AI-Integrated task** in the University's Guidance on use of Gen AI in Assessment. This means:

You may use GenAI tools ethically and responsibly in accordance with the boxes checked below.

- ☒ *To develop ideas*
- ☒ *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 identify trends and themes as part of data analysis*
- ☐ *To generate images, figures or diagrams*
- ☒ *To proofread and correct spelling or grammar errors*
- ☒ *To format citations or references*
- ☐ *To translate material into English in line with guidance from your module lead. Unless this box is checked, you must never use AI translate more than a word or short phrase into English.*
- ☒ *OTHER To generate and review code.*

The completion of **the 1 page reflection is an AI-Minimal task** in the University's Guidance on use of Gen AI in Assessment. This means:

You may use AI tools for checking spelling and grammar mistakes only, with no other impact on the structure or content of the assessment.

This is because using GenAI tools outside of these uses prevents fair assessment of your ability to achieve module learning outcomes.

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 for your records. 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.

ASSIGNMENT BRIEF

The module team want to collect some datasets by surveying the University of Exeter community. The aim is to use these as publicly available datasets for exploratory data analysis and statistical analysis for students taking the module.

You must decide upon a research question (pick an area that you have an interest in) and write a research proposal for collecting this dataset.

For example you could choose topics such as:

- *Does use of ChatGPT increase student grades in both coursework and exams?*
- *How do first year university grades correlate to high school grades?*
- *What is the average salary of University of Exeter graduates 5 years after graduating?*
- *What is the best revision strategy for exam success?*
- *How do students travel to campus?*
- *What is the best place for students to live while studying?*
- *How do students communicate with each other in the modern age?*
- *How accurate are the University module descriptors?*
- *How good are University of Exeter staff at responding to student enquiries?*

The module team's aim is to select some of these proposals, and follow the plans provided to conduct the surveys and collect data for analysis.

Timeline for completion

You may start the coursework once we have covered the topics involved. These will be covered in weeks 1-5 of the module.

A formative group exercise to get feedback from your peers on your draft work will be conducted in week 7.

The final version of your coursework is due the following week, on Wednesday 11th November 2025 in week 8.

REQUIREMENTS

The submitted research proposal must include the 8 documents below uploaded as a zip file (page limits indicated in italics).

1 - Context.pdf

(2 page PDF including figures and bibliography)

This should start an **Introduction** section that explains briefly the context and motivation for your survey.

It should then have a **Data Visualisation Research** section. This section should comprise of two or three referenced plot examples showing how authors publishing similar work have displayed their results in effective ways. This is to help you plan how to present the results of your proposed survey, and you do not need to write any comments in this section.

2 - Plan.pdf

(2 page PDF including bibliography)

A data management plan and ethical & privacy review.

3 - Survey.pdf

A document setting out the proposed survey questions. The number of questions is up to you but survey should take at most 5 minutes to answer.

4 - DataGenerator.ipynb

A code notebook that can generate a csv of simulated survey responses.

5 - DataAnalysis.ipynb

A code notebook that can load in the generated survey data and create four suitable figures (with caption) that enable the reader to see how you plan to explore the data and illustrate the key results.

6 - Figures.pdf

(2 page PDF)

Student puts figures (may be multi-plots) from the code notebook into a PDF with captions explaining what they show (including e.g. meaning of p-values or annotated values).

7 - Reflection.pdf

(1 page PDF)

Provide a reflection on usage of AI, how you improved following a peer review exercise, and what remaining issues you feel would benefit from review (see details later).

8 - Prompts.pdf

This should contain the record of AI Prompts / Output links as specified by the University Gen AI regulations.

All items must be uploaded but grade will be principally based on reviewing the Plan, Figures and Reflection documents.

DESCRIPTION OF CONTENTS: PLAN.PDF

This document should include a Data Management Plan that includes the following sections:

Public Good

Describe the justification for the proposal in terms of the benefit to the public.

Data Description

What data will you create?

Data Collection

What are your methodologies for data collection?

How will you ensure data quality?

What data standards will you use?

Data storage and security

Where and how will data will be stored, backed-up, transferred, and secured during the active phase (short to medium term) of research?

Data management, documentation, and curation

What are your principles, systems, and major standards for data management and creation? What metadata and documentation will you keep?

Data preservation

How will you ensure the long term storage and preservation of data?

Data sharing and access

How will the data generated be shared and published?

This should be followed by an Ethics and Privacy review that includes the following sections:

Ethics and Privacy

What ethical or privacy related concerns are associated with the proposal?

Justify the identified level of risk and explain how identified risks can be mitigated.

Relevant Policies

Identify and link to the relevant legal policies and frameworks that apply to this study.

NOTES

- The plan and other written documents should be composed in single column format with **2cm** margins. The font size for body text should be no smaller than **11pt**, and text in tables or figures should be no smaller than **9pt**.
- Written documents should be submitted in **PDF** format.
- Code files should be submitted as Jupyter notebooks files in **ipynb** format.

PEER REVIEW STAGE

To refine and get formative feedback on your work you will be assigned a peer review group (groups of four will be assigned in week 3).

You must arrange within your group to meet together for 2 hours each week 7 (3-7th November) on campus and present your work to each other and give feedback.

You should present your work by presenting your draft documents on the projector and talking about 10 minutes talking through your work including how you used AI.

After questions, students should spend 5 mins filling out feedback forms, and then briefly discuss feedback with the student.

The student who presented will also fill out a form, during this time. This will involve looking at the responses a GenAI tool provides when asked to review your work, with the same feedback points your group members have been asked.

Feedback form questions (to be completed on paper forms, one-page)

- 1) What has the student done well, this can include comments on the work, and how the students presented it.
- 2) Think about the student's work and the mark scheme.
How the student can improve their:
 - i) ethics review and plan for data collection and management,
 - ii) simulated data and figures
- 3) Other comments.

After all students have presented and got feedback, students should spend 5 minutes filling out the feedback survey on ELE (links and instructions will be provided by Week 7) which will involve answering the following questions:

Survey (to be completed online)

- 1) After this peer review exercise how do you plan to improve and refine your proposal.
- 2) How does the feedback from your peers compare to feedback from AI?
- 3) How useful have you found this peer review exercise?

extremely useful - very useful - somewhat useful - not really useful - a waste of time

At end of the meeting students must take pictures of all their feedback forms, and a selfie of the group and submit them individually to ELE.

Feedback forms will not be graded, but individuals who fail to evidence expected participation in the peer review process will be capped at 50% for the assignment grade.

SUBMISSION STAGE

After the peer review session you will then finish your assignment by:

- i) acting on the feedback to improve your proposal plan and figures
- ii) write the 1 page reflection document which must include the following labelled sections:

Use of AI - describe how you used AI and checked the outputs, and critically evaluate how useful it was as a tool to help write the proposal.

Peer Review - describe which part of the feedback exercise was most useful and how you acted to improve your work (may be direct feedback you received or something you thought after seeing other proposals).

Focus for review - comment briefly on what issues you feel you would ask the marker to give feedback on (i.e. identify what areas of the submitted report may benefit from review) and why.

MITIGATION AND ALTERNATIVE ASSESSMENT

The usual rules for mitigation and late penalties for the final submission apply. Students should ensure they are ready to upload their work one hour before the final deadline, so that they have time to deal with any technical difficulties in the submission.

Students needing to apply for mitigation the point of the peer review process in week 7 (3rd-7th Nov) may request to be reassigned to join groups that will complete the peer review process in week 8 (10th-14th Nov). The student and hub will handle the mitigation as usual, and if approved or the student uses one of their allowed evidence free extensions, they will then submit one week later without penalty.

Students with ILPs requiring adjustments relating to the assessment tasks should discuss this with the module teaching staff.

MARK SCHEME

80%+	Excellent submission that is significantly above the expected standard
70-79%	Very good submission with no significant issues
60-69%	Submission is a good standard with but has minor issues
50-59%	Submission of satisfactory standard but with major issue / many minor issues
40-49%	Submission evidences work in line with the requirements but has multiple major issues
30-39%	Submission provides some evidence of work in line with the requirements work but has many major issues
0-30%	Submission provides only limited evidence of work towards requirements with little relevant or appropriate content

Criteria for very good submission:

- Student submits all documents as required in the brief.
- Student sets out Data Management Plan and Ethics and Privacy review that would meet the standards required to pass the University of Exeter research proposal review process.
- Student includes code notebook that provides suitable analysis of the simulated data, producing high quality plots that are fully appropriate for illustrating the survey results.
- Student review shows student has reflected critically on their submission, with a clearly written and insightful discussion on the topics requested.

Indicators of work being above the expected standard

- Work is of publication or near-publication quality.
- Evidence of exceptional insight and critical thinking.
- Evidence student has independently extended work beyond requirements set out in brief producing a research output with significant potential impact.

Example of minor issues

- Discussions that need developing to show more critical thinking to meet the level expected of a 70%+ student
- Omissions or oversights in plan, figures that are not fully optimised, higher than acceptable level of issues in typos, bibliography or grammar.

Examples of major issues

- These could include an unsuitable type of plot, or error in coding such that data is misrepresented.
- In terms of written proposal documents students may omit a significant required section, or include inconsistency, misconception or mistake that a student who has covered the module content should not be making.