IMPERIAL

MSc in Statistics

Writing your research report

July 2024

Key Dates: Reminder

- **Research Report Submission** – 30 August 2024, 1pm. **90%** of project mark.
- **Oral Presentations** – 10-13 September 2024. **10%** of project mark.
  - Note that these will be in person.
- **Resits** – after thesis submission.
- **Farewell Party and Awards** - 11 September 2024.
- **Partner Visits** – Arrange and book early. Limited funds available, with approval from supervisor and director. Transport Expenses Policy

Marking – Research Reports

Research Report – counts for 90% of your total project mark

Marked by two markers, one being your project supervisor (first marker)

Project supervisor(s) also give an initiative mark

Thesis mark =
0.9 * ([1st marker's mark + 2nd marker's mark]/2) +
0.1 * (Initiative mark)

Oral presentation – counts for 10% of your total project mark

Project supervisors are not the markers of the oral presentations

Initiative Mark awarded by the first marker

Setting Expectations

- Reflects an assessment of the extent of the supervision provided by the supervisor and the independence of the student from direction by the supervisor.
- The term "independence" does not mean working alone or skipping supervisory meetings.
- Highly motivated students that have shown great ownership, leadership and initiative of their work will be awarded a high initiative mark. On the other hand, students that showed limited leadership on the development of the project will be given a lower initiative mark.

Research Report Marking
Setting Expectations

Distinction	85-100	The thesis contains excellent original work, with a significantly novel result. The work is explained excellently, with a very good/comprehensive account of and references to existing work. The conclusions are excellently reasoned and communicated. The quality of writing, plots and presentation is excellent, at the level expected in an academic paper or book.
	75-84	The thesis contains good original work, with a significantly novel result. The work is explained very well, with a very good/comprehensive account of and references to existing work. The conclusions are well reasoned and communicated. The quality of writing, plots and presentation is good, close to a publishable standard without much addition.
	70-74	The thesis contains good original and novel work. The work is explained well, with a good account of and references to existing work. The conclusions are well reasoned and communicated. The quality of writing, plots and presentation is good, close to a publishable standard without much addition.
Merit	65-69	The thesis contains several good original ideas that are either generally straightforward to implement and/or not innovating far enough to complete a significant result. The work is still explained well and with good account of and references to existing work. The report is well written and well presented, but not close to a publishable standard without much addition.
	60-64	The thesis contains some good original ideas that are generally straightforward to implement and not innovating far enough to complete a significant result. There is fair explanation of the work with some account of and references to existing work. The report is written and presented to a satisfactory standard.
Pass	55-59	The thesis contains an explanation of the problem and the work of others on it, a description of some suitable methods for tackling it, but without much independent work of the candidates own.
	50-54	As above but with other shortcomings including incomplete referencing, unclear text or poor presentation.
Fail	40-49	Poor understanding, with many shortcomings including minimal referencing, unclear text, or poor presentation.
		If significant material is quoted, verbatim, from a cited source, without evidence that the student understands it, no mark higher than 49 should be given.
	20-39	Very poor understanding, with many shortcomings including minimal referencing, unclear text, or poor presentation.
	0-19	No evidence of understanding, with many shortcomings including scant references, unclear text, and very poor presentation.

Oral PresentationMarking

Setting Expectations

Delivery and Presentation (out of 20)		Presentation of Technical Content (out of 20)	
Distinction 14-20	A very well-structured talk. Confident and enthusiastic speech. Professionally looking visual aids efficiently and effectively illustrate the points being made. Engaging talk delivered at a suitable pace showing excellent presentation skills.	**Distinction 14-20**	The talk gives a very clear outline of the problem, describing the motivation and the "state of play"' in the literature. The technical content and statistical concepts are conveyed and presented in the student's own words and interpretation. Overall, content is pitched at a level suitable for fellow non-specialist MSc in Statistics students and did not require prior reading of the dissertation to follow. Knowledgeable answers to questions after the talk.
Merit 12-13	As above with 1-2 aspects below that expected of distinction level, for example, student is significantly over-running on time, consistent reading of notes/slides, the student is just reading slides word-for-word, no effort to engage with the audience, excessively wordy or cluttered visual aids, some parts inaudible or unclear, pace inadequate due to too much material.	**Merit 12-13**	As above with 1-2 aspects below that expected of distinction level, e.g., answers fail to show genuine understanding of unresolved issues, no mention of standard practice/state of the literature, talk suitable only for an expert audience or someone who read the dissertation, and sometimes fails to convey technical aspects with clarity.
Pass 10-11	Several aspects mentioned above below expectation or unsatisfactory, but with some delivery that communicates the background/motivation and scope of the student's work.	**Pass 10-11**	Several aspects mentioned above below expectation or unsatisfactory, but with some attempt to convey technical concepts.
Fail 0-9	The presentation fails to communicate both the background/motivation and the scope of the student's work.	**Fail 0-9**	Contains multiple substantial errors in the presentation of the content, lacks any mathematical depth, or otherwise fails to provide evidence of understanding and work.

Oral PresentationMarking

Setting Expectations

85- 100	**Student has shown consistent initiative and independence over the entire period and involving all parts of the research project. Significant original ideas which are very well developed. Overall, students will have shown independence and initiative similar to a first year PhD student in a related area. Students will have fully thought through the project well beyond the initial suggestions provided by the supervisor; they will have found, read and understood a deeper and wider set of background literature than suggested by the supervisor; they will have initiated multiple new and significant ideas to existing methodology; and they will have independently investigated the wider ramifications of the new approach.**
70-84	Student has shown some initiative and independence in most aspects of the work. Original ideas with good development. As above, with 1-2 areas below that expected at high distinction level.
60-69	Student has shown limited initiative and independence, and not consistently throughout the project. Some original ideas, although only partially developed. Students will have thought through the project along the initial suggestions provided by the supervisor but not independently much further; they will have found, read and understood some background literature other than suggested by the supervisor; they will have partially developed new ideas beyond existing methodology; and they will have independently investigated some aspects of the work beyond what was suggested by the supervisor.
50-59	Limited initiative and limited independence. Some evidence of original ideas, although not well developed. Students will have stayed close to the suggestions provided by the supervisor; they may have found, read and partially understood some background literature other than suggested by the supervisor; they will not have attempted new ideas beyond existing methodology; and they will not have independently investigated wider implications beyond those suggested by the supervisor.
40-49	Little initiative and independence, and no real originality. Stays very close to sources.
0-39	Stays too close to sources and/or has shown almost no initiative or independence.

What are we looking for?

- Originality
- Good account of existing work/ Literature review
- Good presentation of the research problem, the conducted work, the results, and final conclusions made
- Good presentation of figures/ tables
- A thesis that is clearly written to an appropriate level
- A thesis that has the reader in-mind!

The project mark is largely based on the thesis, so you need to pay extra attention in preparing the thesis. This means that at some point you will need to stop doing research and focus on the thesis writing.

How are you going to write a good thesis?

Start writing early!

- Define notation from the beginning and be consistent
- Keep records of work done and the papers that you have read

Identify the best structure to present your work.

- Introduction; Methods; Data; Results; Discussion.
- Introduction; Data; Method 1 & Results; Method 2 & Results; Discussion

Also need to include an Abstract, Table of Contents, Bibliography.

Discuss with your supervisors the most suitable structure for your thesis.

How are you going to write a good thesis?

Identify the best length for your thesis!

The thesis would normally not exceed the 12000 words. This is a **guideline**: the appropriate length is a function of the project itself and its subject matter. Excess length disproportionate to the content may be penalised.

Write your thesis with the reader in mind:

Prepare your thesis by assuming that the reader (examiner) is one of your fellow students and you are giving them the necessary information to understand your project!

Present your work at the appropriate level so that any reader, familiar and non-familiar with the topic of your project to be able to follow and understand it.

Writing the report: the LaTeX template

Use LaTeX to write your thesis.

New LaTeX template on Blackboard for an MSc in Statistics Research Report.

You must use this template to write your report.

Get started as soon as possible with the LaTeX template and bibtex (more on this later)

Writing the thesis: the page limit

Within the provided template:

First few pages (front matter) use Roman numerals (i, ii, iii, iv,...)

Page count starts after front matter (pages 1, 2, 3,…; Arabic numbers)

Can have supplementary materials; provided template will number those sections A1, A2, …

References are part of the main report.

There is a page limit of **35 pages**, as counted by the Arabic page numbers.

Markers are not required to look at the appendix but may choose to do so.

More pages is not always better.

Creating figures for your thesis: Figure basics

Axes should be labelled, and labels should be large enough

Include legends if appropriate (e.g. more than one line)

Figures should have a caption which provides the basic idea of the figure's purpose

Creating figures for your thesis: Figure format

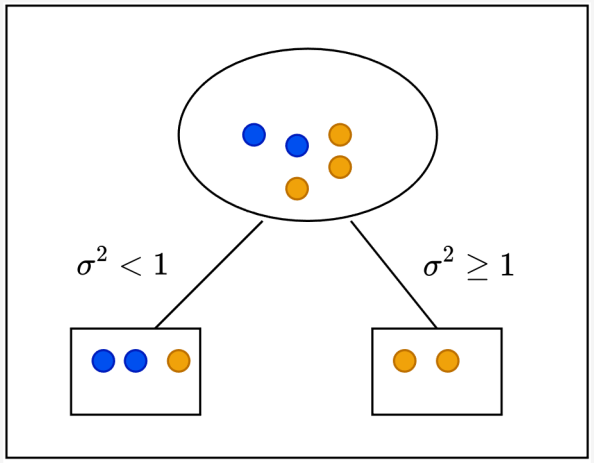
Use **vector-based graphics** (e.g. .pdf or .eps) for your figures.

Otherwise, rasterized graphics (e.g. .jpeg) produce large (in memory) figures, usually at an inferior resolution.

Only in extreme cases will vector-based graphics be large in memory.

If your thesis is > 40MB in size, there will be a problem submitting your thesis.

Images: reference or make your own?



If you wish to use an image from another source (paper, book, internet, etc) in your thesis, **then you must clearly cite the image**, preferably in its caption.

However, this should be done **sparingly.**

If the image appears easy enough to make on your own, **then make it on your own**; a useful website is draw.io or consider using the tikz package in LaTeX.

If an explanatory image is based/inspired by another image you've seen, then **you must clearly state this**, e.g. "based on Figure 2 in (Efron, 1979)".

Referencing your sources

Use `bibtex` there is a `refs.bib` file as part of the thesis template.

Can often find bibtex entries for your references using Google Scholar (but be careful: you may need to edit these entries)

Use `\citet{}` or `\citep{}` as appropriate.

For example, a good book on the bootstrap is Efron and Tibshirani (1994) [\citet], although the idea appeared in an earlier paper (Efron, 1979) [\citep].

When compiling, need to compile pdflatex, then bibtex, then pdflatex again, otherwise references will just appear as question marks.

Other matters

Do I include my code in the thesis? No – though it can be a good idea to include key algorithms in an algorithm environment to demonstrate the method you have implemented in a language agnostic manner.

How many drafts of my thesis is my supervisor going to read? One. Usually in mid-August.

How do I submit my thesis? Turnitin dropbox in Blackboard.

When will I receive my thesis marks/feedback? Feedback will be provided before end of September, and mark release is typically in early October.

Final Guidance
Things to be careful about

Your research report should have a clear story / message

Figures and Tables should be numbered and have captions.

References should be clearly and correctly acknowledged with proper formatting.

Notation should be well defined and consistent

You are responsible for any and all spelling, grammar or syntax errors.

Tip: ask a friend or someone else in your research group to read your thesis and provide feedback.

IMPERIAL

Any questions?

IMPERIAL

Thank you for joining!
See you at the poster session