STOR601 Research Topics I and II

We hope you find the research topic sessions stimulating. We thought it would be useful to put down in one document all you need to know about the choices of topics, what is assessed, how it is assessed and when its assessed.

Choices
Please pick one topic from statistics and one from OR for Research Topics I and II. Research Topic II is more in depth and so select the area you are most interested in for that Topic. Your selections do not need to cover a whole area of one of the presentations, but can look instead at substantial sub-areas.

Some areas, such as statistical learning (bandits) and clustering, are at the interface, so if you are not sure if this counts as statistics or OR please ask, but in these cases we will be flexible but do not want you picking another area in either statistics or OR that is then too closely linked to this. For more details of the separate choices see below.

Dates for selection of topics:
- **Topic I 17:00 on Friday 4th February 2022**
- **Topic II 17:00 on Friday 11th February 2022**

Please email Jon in each case with your choice of topic. We will aim to give approval for Research Topic II by end of Wednesday 16th February.

Research Topic I: Report

Students are encouraged to speak briefly with the lecturer who presented their selected topic to help them identify some starting points for their work.
With the report we want to emphasise we are aiming for a brief overview and so the report has been limited to 8 pages maximum (including all titles/author details, all figures, tables, references, appendices).

The overall report will be structured as follows:
- A 1 page (max, in LaTeX 11pt, 1.5 line spacing - sensible margins) overview of the report with the target being that this is accessible for public dissemination.
- A 7 page (max, in LaTeX in 11pt, 1.5 line spacing - sensible margins) report summarising the area, with references included in the page count.

Each element of the report should be self-contained. We expect references to be given in full, with standard layout conventions. Deductions will be given for reports with departures from the above layout specifications, e.g. 5% loss for a report with changed line spacing and margins.

Assessment of the overview and the main body of the report will be made by the STOR601 coordinators with their marks for the two components corresponding to 5% and 10% of the overall mark for STOR601 respectively. The mark for Research Topic I will be the sum of these marks, i.e., a weighted average (1/3 to 2/3rds) of the two marks (%) for the two components.

Assessment criteria for the main body of the report

Markers will make judgements about the report according to the following headings:
- Background and motivation
- Literature review and referencing
- Clarity and accuracy of exposition
- Evidence of understanding of the topic
- Overall organisation/layout and presentation.

Assessment Benchmarks for main body of the report

80-100%:
Accurate and complete, demonstrating understanding in depth. Well ordered, using
good English. In addition there is evidence of either
(i) excellent summary of literature closely linked to methodology covered in taught material in the MRES;
or
(ii) review of advanced/complex literature that has not been taught.

70-80%:
Accurate and engaging review, demonstrating understanding in depth or material beyond the taught
material in the MRES. Well ordered, using good English.

60-70%:
Accurate review, showing understanding based on an ability to absorb and analyse information and to
support arguments. Good English. Some pieces of information or examples occasionally lacking accuracy.

50-60%:
Limited review but accurate. Information presented clearly but lacking overview or evidence of
independent understanding.

40-50%:
Weak summary of some literature presented, with occasional lapses of accuracy or logic in the
presentation.

30-40%:
Weak review with lapses in accuracy and logic. Some evidence of knowledge and understanding of the
subject.

20-30%:
Weak review with serious omissions and errors. Some evidence of knowledge and understanding of the
subject. Poor presentation.

10-20%:
Serious omissions or major errors, though some material relevant to the task.
Evidence that the task has been understood in part at least.

0-10%:
Little or no hint of any relevant knowledge.

Assessment criteria for the overview

Markers will make judgements about the report according to the following headings:

- Accessibility (i.e., avoids use of acronyms or specialized language)
- Clarity of exposition for a broad audience
- Ability to convey substance of the main report
- Ability to engage the non-specialist reader

Assessment Benchmarks for Overview

90-100%: Meets well all 4 criteria.
80-90%: Meets well 3 criteria and only partially meets 1 criteria
70-80%: Meets well 2 criteria and only partially meets 2 criteria
60-70%: Meets well 2 criteria and only partially meets 1 criteria
50-60%: Meets well 1 criteria and only partially meets 2 criteria
30-50%: Meets well 1 criteria and only partially meets 1 criteria or partially meets 2 criteria
0-30%: Partially meets 1 criterion

Research Topic II: Report

Again, with the report we want to emphasise we are aiming for quality not quantity. To help guide you on this we have a maximum page length of 20 pages in 11pt (in 1.5 line spacing and sensible margins). We would expect most good reports to be 15 pages or more, but there is no minimum length limit.
The reports will be marked by the expert in the area with the 601 coordinators responsible for calibrating these marks to ensure consistency of marking. The report will carry 25% of the STOR601 mark.
As with Research Topic I it is recommended that students speak with the lecturer who presented their selected topic to help them identify some starting points for further research. Typically one or two (max) additional meetings may be required.

We expect references to be given in full, with standard layout conventions. Deductions will be given for reports with departures from the above layout specifications, e.g. 5% loss for a report with changed line spacing and margins.

Assessment criteria

Markers will make judgements about the report according to the following headings:
- Background and motivation
- Stated aims and their achievement
- Literature review and referencing
- **Identification of potential open problems**
- Clarity and accuracy of exposition
- Evidence of understanding of the topic
- Overall organisation/layout and presentation.

Assessment Benchmarks

80-100%:
Accurate and complete, demonstrating understanding in depth. Well ordered, using
good English. In addition there is evidence of either
(i) innovative summary of literature closely linked to methodology covered in taught material in the MRES; or
(ii) review of advanced/complex literature that has not been taught; or
(iii) identification of interesting novel open research problems.

70-80%:
Accurate and complete review, demonstrating understanding in depth or material beyond the taught material in the MRES. Some open problems identified. Well ordered, using good English.

60-70%:
Comprehensive, although not complete review. Some open problems identified which are essentially incremental. Showing understanding based on an ability to absorb and analyse information and to support arguments. Good English. Some pieces of information or examples go beyond the taught material in either depth or breadth but occasionally lacking accuracy.

50-60%:
Non-comprehensive but accurate. Based largely on course material. Information presented clearly but lacking overview or evidence of independence.

40-50%:
Non-comprehensive but with occasional lapses of accuracy or logic.

30-40%:
Review incomplete, with lapses in accuracy and logic. Some evidence of knowledge and understanding of the subject.

20-30%:
Review incomplete, with serious omissions and errors. Some evidence of knowledge and under-standing of the subject. Poor presentation.

10-20%:
Serious omissions or major errors, though some material relevant to the task.
Evidence that the task has been understood in part at least.

0-10%:
Little or no hint of any knowledge.

These criteria are for guidance only and will not be rigidly applied. No matter what the merits of the report, if it is illegible, ungrammatical, mis-spelt, mis-punctuated or ambiguous, then marks will be deducted.

Length restrictions:

We do mean the page length limits! It is a very good discipline to learn to write to page constraints and consequently concisely. This is a skill that is vital in many areas, e.g. the STOR-i grant bid. To help focus the mind, here are the penalties we will implement in both reports for reports that exceed the maximum length

stated above.

- No penalty for a title page if it only has the report title and author name on it, but if there is text of the report on this page it will count in the page totals.
- 6% for the first page over, 4% for the next, and 2% for all subsequent pages over.
- The page limits **include** all figures and references.

We will work out the equivalent page length of documents in 10pt when converted to 11pt, so please don't play with fonts to try to make the limits.

Plagiarism (lifted word for word from someone else's document!!)

Plagiarism occurs whenever a student appropriates the writings or results of another and dis-honestly presents these as if they were the student's own work by failing to distinguish between common knowledge and knowledge that should be attributed to others. All forms of plagiarism are considered to be serious academic offences. The student should acknowledge assistance given, including that from fellow students or supervisors, and specify the major sources involved, such as textbooks, printed lecture notes, websites.

Research Topic II: Associated talk

You will need to prepare a 10-minute presentation on Research Topic II and we will allocate 5 minutes for questions from the audience. This talk will occur before you complete your report, so simply report on what you have found by then, i.e., an overview of the research area and outlining open research challenges. STOR-i staff and students are invited to the presentations. The talk is worth 10% of the overall mark for STOR601.

Assessment criteria

The STOR601 coordinators will make judgements about the presentation according to the following headings:
- Good delivery style
- Clarity of presentation
- Quality of content
- Engagement with material
- Quality of slides
- Effort made to visualise concepts
- Time keeping
- Answers to questions

Assessment Deadlines:
Research Topic I Report: 16:00 Wednesday 23 February 2022
Research Topic II Talk: Tuesday 3 May 2022 (times to be confirmed)
Research Topic II Report: 17:00 Wednesday 4 May 2022

Last updated Jan 2022