MATH6145: Presenting Reports 2023/24

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1 Objectives

In this module you will:

- Research in some depth an Operational Research/ Data and Decision Analytics (OR/DDA) topic of your own choosing using books, journals, the internet and other suitable sources:

    - Initially as a group, getting an overall view.

    - Subsequently as an individual, researching some aspect (subtopic) of the topic.

- Write a report individually.

- Give an oral presentation individually.

The assignment therefore gives you the opportunity to practice your skills in independent research; find out more about a topic in OR/DDA that is of interest to you; improve your writing skills, particularly in the writing of academic reports; and practice giving presentations.

2 Key terms, key dates, marking

Topic. The possible topics are visible at https://projects.maths.soton.ac.uk/.

Mentor. An academic staff who usually has reasonable knowledge or expertise on a given topic.

D1- Week 19 Friday (9 February) at 12:00 (Noon). Students rank the topics.

D2- Week 20 Tuesday (13 February). Each student is given a topic and a mentor.

D3- Week 30 Monday (22 April) at 10:00 (first week after Easter Break). Submit report.

D4- Week 31 (or, if need be, week 32). Give presentation.

Marking. Marking weights:

- 70% Report

- 30% Presentation

The assessment criteria for these components are on Blackboard. Please consult this material carefully; for clarification or elaboration, the mentor is the authority.

The first marker is your mentor. Usually, the report is second-marked by another academic, while the presentation is second-marked by a postgraduate (research) student (PGR).

3 Process

3.1 Allocation to Topic and Mentor

Deadline D1: You 'rank' 8 topics by a rank from 1 to 8, where: 1 means 'best' (i.e., most preferred), 2 means 'second-best', and so on, with 8 indicating 'least preferred'.

How to rank. You should rank '1' at least one topic. Please show flexibility by giving the better ranks to as many topics as possible; 'most flexible' is to rank 8 distinct topics as '1'. You need not use the lower ranks such as 8, 7, etc.

Allocation. Based on this input, we allocate (assign) each of you to a topic and a mentor. [1] Some of you may receive a less-than-top choice (rank below 1).

Changes. Due to the large complexity of the allocation, changes would be difficult to impossible. Especially if you get a '4 or better' topic, please do <u>not</u> ask for a change—the topic already matches your interests. A request for a change of a '5 or worse' topic may be considered.

3.2 Activities

The main activities are:

- Briefing (by the Module Lead): Week 19.

- Library-skills Session: Week 20. Led by an Engagement Librarian at the University.

- Two group meetings with the mentor, typically on week 21 and week 23. The mentor will invite you (do <u>not</u> expect these on your timetable).

- Question/Answer Session (with the Module Lead): Week 25.

- Presentation: Week 31 or Week 32. (Details to be confirmed in due course.)

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[1] This is formulated as a combinatorial optimization problem: maximize the number of students allocated to a rank-1 topic subject to constraints (mentors' workload, topic diversity, etc.).

3.3 Support

Library-skills session. This session, run by a professional librarian, mainly aims to develop skill in searching the literature (for example, to find recently-published books, or research papers, on 'revenue management' , 'neural networks', etc.). It may also introduce the University library's academic skills service (https://library.soton.ac.uk/sash), which includes support on writing skills, which you may find useful beyond this module, notably in your summer module (project; case studies).

Basic material on academic writing is available on Blackboard for self-study.

Mentoring. You will carry out the main work independently, while the mentor's role is to give advice where needed and to help if major problems arise. Please do not expect the mentor to comment on (drafts of) your report.

You will meet the mentor in two group meetings (see Section 3.2). No individual meetings are possible, so we suggest you make every effort to attend the group meetings.

4 Report

Your report should have the following features:

- Title page with a concise and informative title, without abbreviations or formulae.

- Abstract stating the purpose of the report and the main conclusions drawn (between 50 and 150 words).

- Numbering. All sectioning (sections, subsections) is numbered (e.g., 1.1, 1.2, 1.3, 2.1, ...). Figures and tables (if any) are numbered and have an informative caption.

- Citing and referencing. See sections 'Citing and referencing' and 'Referencing styles' below.

- All references include a clickable URL or a clickable DOI.

- Between 1,450 and 1,550 words (excludes abstract, figures, tables, references); word count on title page.

- (Optional) Table of contents and list of tables and figures, immediately after the abstract.

Main guidance. The report's key audience is someone who is numerate but not necessarily a specialist in OR/DDA. The reader should be given an appreciation of the range of literature that has been covered; beyond this, you should cover a subtopic, i.e., a narrower area, in greater depth (based on say 2 or 3 papers). No algorithm implementation or data analysis is expected. The essential requirement is: do a literature review, and show that you are able to gain understanding of a reasonably broad technical topic via independent study.

Citing and referencing. Good content often builds on sources, i.e., pieces of work other than the report you are authoring. Referring to your sources properly is important; it involves:

- Citing (included in word count). An <u>in-text citation</u> aims to bring the source into the flow of your text. Examples: a) 'Jones (2015) claims that ...'; b) 'It is known that [X] (Jones 2015)'; c) pointing to a page: '... see Jones (2015, p. 345)' or similar.

- Referencing (excluded from word count). All cited items (sources) are <u>listed</u>, usually in a section titled 'References', appearing at the end. A list entry (reference) identifies unambiguously the source; this is important for readers to be able to consult the source.

Referencing styles. A <u>citation system (style)</u> specifies details (form of in-text citation; form of each entry in the reference list; ordering of the list). Thus, it is clear how the source is part of the author's text, and what that source is. The <u>Harvard citation style</u> is recommended. A detailed guide on the Harvard style is found at http://www.imperial.ac.uk/admin-services/library/learning-support/reference-management/ and on Blackboard. Other guides exist, e.g., https://www.open.ac.uk/library/referencing-and-plagiarism/quick-guide-to-harvard-referencing-cite-them-right.

Plagiarism: Avoid it! "Plagiarism is the representation of another author's language, thoughts, ideas, or expressions as one's own original work" (wikipedia). I just cited the source, wikipedia, by putting it in parentheses immediately after the quotation. <u>Plagiarism is a breach of academic integrity, and is punishable.</u> For the University's code on academic integrity, see http://www.calendar.soton.ac.uk/sectionIV/academic-integrity-regs.html. <u>To avoid plagiarism, whenever your text is influenced by a source, cite the source.</u>

Avoid excessive copying. Even if you cite properly, you should not quote substantial portions of a source in the words of the original author: the report should be your understanding of the topic in your own words. Substantial copying is likely to hurt your learning and module mark.

Process against excessive copying. A tool we use to detect excessive copying is <u>Turnitin</u>: a software aware of millions of works (including Southampton students' past coursework), which compares your report to them; identifies similarities; and summarizes them by a numerical score. There exists <u>no</u> pre-fixed score defining 'excessive copying'. Instead, the higher the score, the likelier it is that the report will not score well in originality (see marking criteria).

Deadline D3: You submit the report. For submission details, please see Section 6.

5 Presentation

Format and audience. Each of you gives a presentation (talk; oral) individually, normally based on slides, lasting 2-3 minutes (the upper limit is strict), followed by a 2-3 minute question-and-answer (Q&A) period. The talk and Q/A should complete in at most 5 minutes per student. The audience includes two markers (normally, your mentor, and another academic staff or PhD student). (Students from other groups may attend, but do not affect the marking.)

Guidance. The context is similar to that in a typical professional presentation. Guidance:

PG1 Markers are equivalents to external clients, or to managers in the company you work for.

PG2 Markers tend to be busy people and may have not (yet) read the report. It is possibly the first time they hear of the project details. Given the report is available to them, they

wish the presentation will define the problem (topic); connect to background (literature); (preferably) explain the problem's significance; and explain what was achieved.

PG3 The presentation (slides and talk) aims to communicate, explain, and 'sell your work' to the audience in a manner not possible through the report. It should complement the report rather than repeat it. Crucial to this is the interaction with the markers.

PG4 In a typical good presentation, the speaker: is comfortable with the material (as possible); is fluent and confident; engages with the audience (see marking criteria). Thus: a) avoid speaking on content you are uncomfortable with; b) practice your presentation in advance.

Deadline D4: Give presentation.

6 Submission of report

The report should be a PDF file (any other form, e.g., Miscrosoft Word, can/should be converted to PDF). Name the file as MATH6145-student ID, e.g. MATH6145-12345678.pdf, and submit via Blackboard. Please keep a copy of the file you submit.

Deadline D3. The deadline is strict, and late submission incurs normal penalties: 10% of the total is deducted per day of lateness, and no credit is given for lateness over 5 days.

Save regularly your work-in-progress. Excuses such as that your files were lost or corrupted, your computer crashed, etc., are not sufficient for special consideration or extension.

If at any time, due to reasons beyond your control (medical, etc) you feel you will be unable to meet the deadlines, please contact your personal tutor as soon as possible.