Imperial College London

School of Public Health

MSc Health Data Analytics

Dissertation Handbook
2020-2021

Contents

Aims of the dissertation handbook

The aims of this document are to:

- Assist you in understanding the size and scope of a dissertation;
- Assist you in selecting a research project;
- Assist you in pacing your activities in planning, carrying out and writing up your research;
- Provide guidelines for writing a clear and concise research dissertation.

Dissertation learning outcomes

After completing their dissertations, students should be able to:

- Conduct a literature review that provides synthesised and critical discussion of the key literature in a chosen area;
- Choose a research question that is relevant to the fields of health data analytics;
- Provide a rationale for the research question on the basis of the critical literature review;
- Outline the key elements in planning a research project;
- Set up an analytical plan to investigate a research question;
- Implement statistical models and carefully interpret their results;
- Structure a research report communicating the background to the research project, its aims, the methods used, the findings with its interpretation, and main conclusions;
- In the report, discuss the findings in the context of other literature, and provide a critical comment on the strengths and weaknesses of their own research work.

Planning, conducting and writing a dissertation are significant undertakings and will provide you with research experience. Students who wish to develop their research skills further might consider going on to study for a higher research degree; for example, the qualification of MPhil would provide a student with “capacity” for research and the qualification of PhD would constitute the attaining the status of an “independent researcher”.

What is a dissertation?

The dissertation project needs to be guided by a critical literature review, a well-defined research question or hypothesis and carefully constructed methods for investigation of such a question. This is a small-scale project which should be completed, from design to the execution and write up, in four calendar months (four months full-time). You will also have very limited, if any, funds to conduct this project. In planning your project, you need to be well aware of these limitations.

The research project

The research project is central to the MSc in Health Data Analytics. It provides an education in research and scientific ethos and method. In addition, it provides training in key research techniques. Integral to the project is the preparation of the written dissertation and the oral examination.

A list of possible projects has been circulated. Students may choose to carry out one of these projects. Alternatively, students are welcome to propose their own research idea and develop a project in

conjunction with an appropriate member of academic staff. All proposed projects are reviewed by a panel of assessors to determine their suitability.

Students are responsible for their own research question and should not be directed in this by the interests or methods of the original data collector(s).

If you decide to collect and analyse primary data it is likely you will need to apply for research ethics approval to a NHS research ethics committee (http://www.hra.nhs.uk/about-the-hra/our-committees/research-ethics-committees-recs/) or to Imperial College REC (ICREC) (https://www.imperial.ac.uk/research-ethics-committee/committees/icrec/). Please be aware that, if you find that you need to obtain ethics approval, you will need to have full approval before starting your study. This process is likely to take a few months to complete.

The dissertation

All dissertation work requires consistent attention to four elements: 1) research ethics; 2) laboratory work; 3) support for your project; and 4) the guidelines and requirements for writing the dissertation.

1. Research ethics

You are advised to discuss the ethical implications of the proposed research with your potential supervisor before you select it as your dissertation project. If you are required to obtain approval from a research ethics committee, you should apply for ethics approval as early as possible or consider selecting an alternative project.

All researchers – students and professionals – are obliged to consider the ethical implications of their proposed studies. For NHS based research, there is a system of research ethics committees and guidelines on how to apply to such a committee. For non-health-related research, or research conducted outside the NHS, there is currently no absolute or universally agreed system for determining what will be required to obtain approval for a research project. The book below provides a good introduction to ethics in social science research:
Paul Oliver (2003) *The Student's Guide to Research Ethics* (Maidenhead: Open University Press).

If your proposed study *does* fall under the remit of the NHS Research Governance/ Clinical Trials Regulations and you apply for ethics committee approval, you should include a copy of the committee's letter approving your research as an appendix in your dissertation.

> N.B. For UK studies of NHS staff, the ethics rules have been relaxed (2012). The latest guidance states that: "Research involving staff of health or social care services, who are recruited by virtue of their professional role, and healthcare market research are generally excluded from the scope of REC review".
>
> See Section 1.89 of PDF document on NRES website:
> http://www.hra.nhs.uk/documents/2013/09/does-my-project-require-rec-review.pdf

Students should be aware that obtaining ethical approval could be a lengthy process, long enough to prevent a project being completed within the academic year. Ethics committees may reject applications that are incomplete or inadequate in any way. It can take up to 60 working days to gain an

approval even for a complete and adequately presented research ethics committee application form. **Under no circumstances should research be conducted where ethical approval has been denied.**

Students considering a change in direction for their projects should know that Ethical Committees must be informed about any change to approved study designs. Any proposed changes will need to be approved before research is conducted. Substantial changes will require a completely new application. Changes to the project design thus involve extra work and will delay the start of projects. It is therefore in students' interests to design a sound study that they will be able to carry out without revision.

Research projects to avoid for dissertations:
The time involved in obtaining ethical approval and potential for a rejected application to delay or prevent a research project from being carried out means that students should be wary of deciding on a research design that will:

- Involve human subjects in an NHS setting (patients and their families);
- Involve people who may be considered vulnerable because they are distinguished from the general population by some status or group membership e.g. drug users;
- Gather personal details or focus on sensitive issues;
- Survey or interview patients/ people receiving treatment, advice or social care;
- Use identifiable medical records;
- Use datasets that allow record linkage or any possible identification of individuals by deduction;
- Study tissue samples;
- Involve the use of drugs;
- Involve animals.

Research projects that do not require you to obtain approval from an external committee:

- Projects that use only evidence that has been published or is available to students from libraries or other public document sources;
- Projects that use only data from existing sources (secondary data);
- Projects that only use hypothetical data (e.g. simulation or most modelling projects)

2. Laboratory work

IF you are undergoing laboratory work, please be aware of the following:

The principles of COSHH (http://www.hse.gov.uk/coshh/) apply to the handling of human blood and tissue, so where possible and practical blood which has been screened for Blood Borne Viruses should be used: in which case hepatitis B vaccination is **not** considered necessary.

When a risk assessment for a student project identifies the use of unscreened blood or tissue, vaccination will form part of the "hierarchy of control"- it has therefore been agreed that the **risk assessment should inform the recommendation for Hepatitis B vaccine**. In this case, the student will need to submit a Biological Agents questionnaire, which will be followed up with advice and vaccination recommendation

If students are undertaking short term lab experiments prior to commencing their project, the risk of accidental exposure should be controlled by avoidance of sharps and use of PPE (personal protective equipment); in the unlikely event of an accidental exposure, students will be able to commence a course of post exposure vaccination.

3. Support for your project

The dissertation is essentially an independent piece of work that the student should be proud of. Many graduates give the title of their dissertation or a brief outline of it in their CV. Students who are interested in taking research degrees for MPhil or PhD will also find that considerable interest is taken in their MSc dissertation. Dissertation students should therefore see themselves as junior researchers gaining experience in a university setting. They will have their own dissertation supervisor(s) and there may be opportunities later on to discuss and present their own projects in seminars and research team meetings.

Responsibilities:

Students

- Ask relevant questions to ensure that the project is viable and a good match to their interests and abilities;
- Ensure a reasonable amount of time available in personal schedules to complete the dissertation within the recommended timetable;
- Set achievable goals to guide your project and write up;
- Meet the dissertation milestones set for each term;
- Monitor your progress and keep your supervisor informed of your progress;
- Organise and attend **at least 2 meetings per month** with the project supervisor (ensure supervisor's annual leave and time away from the office is accounted for in your study plan);

You should attempt to tie in your supervision sessions with the dissertation milestones. Suggestion of format for organising supervision sessions:

Pre-project meeting(s): student and supervisor agree to work together on project and supervision meeting dates and times are agreed for the project period including dates for submission of a draft of the dissertation for supervisor feedback. Availability of data is confirmed (any problems with data availability should be brought to the attention of the Course Organiser).

Supervision meeting 1- provisional project proposal: student and supervisor critically discuss the project outline and establish that data are available. If data are not available at this point the student should discuss options for alternative projects with the Course Organiser.

Supervision Meeting 2- key findings from the literature and review of methods: student presents key findings, and student & supervisor discuss any revisions of proposal as needed. Student discusses any training needs.

Supervision meeting 3- exploring and cleaning of data

Supervision meeting 4- discussion of the analytical plan

Supervision meeting 5- data analysis- discuss final results

Supervision meeting 6- overall discussion

Supervision meeting 7- final points-last draft

- Imperial College Graduate School asks those students who are carrying out summer projects with external organisations to adhere to a general code of good practice. Students are expected to communicate with the internal co-supervisor regularly and to return to the College **at least** 2 weeks before the submission deadline to review progress with the co-supervisor;
- Work full-time in the department/agency of the host research team/supervisor or to choose a campus location at Imperial College for their work (after discussion with the supervisor(s));
- Complete and submit the dissertation by the deadline;
- Submit supervision record forms on time after each meeting with the supervisor;
- Report any serious concerns about supervisors to the Course Organiser.

Dissertation Supervisor

- To be available to meet their student twice a month for project supervision. This can take the form of face-to-face meetings, phone calls, emails or review of student work;
- Assist the student in developing a project of suitable size and scope for the dissertation;
- Monitor the student's progress;
- Encourage the student to discuss any major disruption or delay in achieving dissertation milestones with the Course Organiser;
- Provide timely feedback (within a 2-week time frame for any piece of written work that has been submitted for comment);
- Keep a record of the supervision sessions and notes of meetings and phone conversations;
- Expect to read one draft of the full dissertation, if it is submitted in good time, and provide constructive feedback on general standard and focus- however, the supervisor should avoid doing the work for the student;
- Make arrangements for a well-qualified co-supervisor to meet the student if the main supervisor is expected to be away from the college for more than two weeks at any time.

Course Organiser, Teaching Fellows and Course Administrator

- Collect project ideas from internal and external supervisors;
- Propose/introduce potential internal supervisors for student devised projects;
- Monitor progress of projects;
- Make arrangements for the oral examinations and markers for the dissertation;

- Compile final marks and comments from markers and report these to the final exam board meeting;
- Support students and advise on any personal difficulties that they may encounter during the process of working on the dissertation;
- Prepare individual feedback reports of dissertation markers' comments and provide these within a few weeks of completion of Course to the students and supervisors.

4. Guidelines for writing and submitting your dissertation

WARNING: The process of writing and submitting a dissertation always takes much longer than you think it will. You are advised to start well in advance of the submission date and to become familiar with all the essential requirements.

What is expected?

Your MSc thesis should be a substantial piece of work and it will be judged on the level of demonstrated understanding, application and potentially extension of already existing techniques to a new set of circumstances. Some of the techniques required to address a particular research topic may not have been covered in the lectures and practicals. In this case, you will be expected to familiarise yourself with new methodologies if needed, and to consolidate knowledge imparted in the course. You should aspire to produce a dissertation of publishable quality.

Plagiarism

The thesis should be written in your own words. All written material will be uploaded onto the plagiarism software Turnitin. The College Board is informed of all the cases where plagiarism is identified and suspected via this software. A report is produced by the head of the exam board, followed by a report from the dissertation supervisor.

Please refer to the Student Handbook for information on referencing and to Imperial College information on plagiarism here:
http://www3.imperial.ac.uk/library/subjectsandsupport/plagiarism/pgtaught

Plagiarism online course
Students who have not taken the online plagiarism course or who cannot recall its content are strongly advised to study it before writing their dissertation.

How to submit your dissertation

You will need to submit two electronic copies through Blackboard (one through Turnitin and an assessment portal) on or before the deadline. Please submit your electronic copies through the following the steps:

1. Log onto Blackboard Learn.
2. Click on 'Dissertations' on the main menu (left hand side).
3. Click on 'MSc Dissertation'.
4. Follow the instructions to upload your dissertation copies. Please note that as the dissertation is a summative assessment, it will be marked anonymously by two markers. Therefore, when

submitting your dissertation, please use your **CID number** only as the submission title and name your file using the CID number.

Submitted dissertations are the property of Imperial College London and can be made available for consultation at Imperial College Libraries. Please note submissions after the deadline will not be accepted.

Format

Before you start to write your dissertation, it is a good idea to look at some previous ones to see what the finished product should look like. Ask the School Teaching Administrator, Jo Tite, to let you see some of the best examples (you may not remove these from the School Office).

The dissertation should be typed in 12pt in an acceptable font (Times New Roman, Garamond, or Arial), with lines 1.5 spaced and with margins 2.0 at the top, bottom and sides. Each major section (Introduction, Methods etc.) should start at the top of a new page. Paragraphs should be made clearly visible either by indenting the first line (by 5 spaces) or by leaving an additional blank line between paragraphs. The British spelling is preferred.

Length

The dissertation length should be **between 9,000 and 11,000 words** for the main text (excluding tables and figures in the main text). If the dissertation word count falls outside the upper word limit, markers will not read any additional text.

What is included in the word count?

- Headings of sections;
- Main text;
- Citations in the body of the text;
- Footnotes;

What is excluded from the word count?

- Title page;
- Lists of contents/tables/figures/abbreviations/references;
- Abstract;
- Acknowledgements;
- Tables and Figures, and their captions;
- References;
- Appendices.

Structure

The dissertation should be broadly divided into the following sections:

- Title Page
- Acknowledgements (please remove project supervisor's name from the copies to be marked)
- Table of Contents
- List of Tables if applicable
- List of Figures if applicable

- List of Abbreviations
- Summary/abstract – this should be no longer than 500 words and it should contain the following sections: Background; Aims/Objectives; Methods; Results; and Conclusions.
- Literature review
- Methods
- Results
- Discussion
- Conclusions
- References
- Appendices

However, when the dissertation involves a series of subjects that cannot be summarised under a single heading, the thesis may be structured into separate chapters, where each chapter begins with an introduction followed by a number of pertinent subsections.

Important note: every thesis must have a substantive methods chapter

Title /cover page
You should use the cover page template for written assignments, which is provided on Blackboard and contains:

- The College logo;
- The title of your dissertation;
- Your CID (do not print your name or the name of your supervisor on the dissertation);
- Degree for which the dissertation is being submitted;
- Date of submission;
- Word count

Abbreviations
You should list all the abbreviations that you have used in your thesis, using the standard form whenever available. Abbreviations should be described in full the first time they are used in the dissertation and you should then use them consistently throughout the text. Once you have defined an abbreviation, always use the same abbreviation and avoid reverting to the full description in an ad hoc manner.

Acknowledgements

As in any piece of published research work, it is important to be transparent about any inputs into the work, including any conflicts of interest and external support. This section should include academic acknowledgements (and non-academic- personal- acknowledgements if you wish). Remember to **remove project supervisor's name and that of any other external collaborators** from the copies to be marked - do not provide any information that would compromise your anonymity.

Students are therefore encouraged to prepare 2 drafts of the dissertation:

(1) without names - for marking (this copy will not be distributed to others; it will be held on file in the Department)
(2) with names inserted in the Acknowledgements etc. - for distribution after results have been released.

The academic acknowledgements need to state what part of the work has been carried out entirely by you, and what work has had some input from others (e.g. data collection, any help with statistical analyses etc.). You should also state how much support you have received from your supervisor, the number and type of meetings you've had, the number of drafts that have been reviewed, and any other information that's relevant to disclose.

Abstract
This should give a brief and clear summary of the purpose of your study, the methods and techniques that you chose to use, the major findings and a discussion of the technical aspects and academic significance of these results. Abstracts should be no longer than 500 words.

Introduction
This should provide the background literature to the study, together with a discussion of the specific work, published and unpublished, that motivated your own project. A final paragraph should introduce the specific aims and objectives of your research work. It is important that you are able to undertake a thorough review of the available literature on your chosen topic. This is the first stage of your exploration and constitutes the foundation of your project. The review has at least three purposes. It can be used to:

- Outline current theories and concepts (useful for generating topics and research questions);
- Provide results and data from previous studies (helpful in providing background to the research);
- Provide examples of successful and unsuccessful research designs, approaches, methods, techniques and research instruments.

Methods
This section should describe and explain the statistical, mathematical, laboratory and/or field techniques used in achieving the objectives of the thesis. This section should give sufficient detail such that someone else could reproduce the results. The methods section or chapter is used to justify the choice of methods and also to demonstrate your understanding of the limitations of the methods you have used. If you are carrying out analyses of secondary data you will need to make this clear and to give some information on when, how and why the primary data were collected.

Results
The exact manner in which you present your data will depend upon the nature of the data. However, the following general rules apply to all studies. All essential data should be concisely described in the text. Details should be presented as Figures (e.g. histograms, scatter-plots etc.) and Tables. Figures and Tables should each be titled and numbered (e.g. Fig. 1, Fig. 2 etc., Table 1, and Table 2, etc.) and should be referred to in the appropriate position in the text. The titles should be informative and self-contained.

Discussion

There are two aspects to a discussion: technical and academic.
For the technical part you should discuss the advantages and disadvantages of the techniques that you used. You should also discuss the problems (there are always some!) that you encountered, why you think these arose and how you tried to solve them.

For the academic part you should summarise the major findings of your research data, and then discuss your interpretation of these data and what you feel is their significance in the context of work that has been published in the literature.

Finally, you should discuss future work that could be done to answer the unanswered questions that remain at the end of your work, and the direction in which you think this research might lead.

A paragraph with concluding remarks is valuable.

Referencing

- As you write your dissertation you should reference any sources of information, examples and quotes.
- Referencing style should conform to academic standards and you will need to follow formal conventions. We recommend you to use either the Vancouver or the Harvard Style, depending on the type of your project, but you must be consistent in your reference style throughout the text. Most biomedical journals use the Vancouver style, while Harvard is more often used in social science. Please see the following link for current information on the choice of referencing styles you may use (from Imperial College library): http://www3.imperial.ac.uk/library/subjectsandsupport/referencemanagement
- We strongly suggest you keep track of references while you are drafting your document, as it is often challenging and time-consuming to do so later.
- We recommend you to use referencing software, like Endnote, which is available via the College IT department.

Tables and Figures

A discretionary use of statistical output, tables and figures is recommended – marks will be deducted if a judicious choice of output is not demonstrated. Output from statistical programmes should be transferred to tables or text (and not included directly).

- Tables and figures must be appropriately labelled and numbered (e.g. Fig. 1, Fig. 2 etc., Table 1, Table 2 etc.).
- Headings of Tables should be placed *above* the Table, and Headings of Figures should be place *below* the Figure.
- It is good practice to restrict the number of lines in the tables. Inspect good epidemiological journals (e.g. BMJ, Am J Epidemiol) for examples of how to do so.
- You must refer to every Figure and Table that is part of the main project from the text.
- It is not always necessary to present information in tables or figures. It might suffice to summarize results in the text only.

- Don't repeat all information that you present in the figure and table in the text in words. Instead, describe what the table or figure shows in the results section.
- Tips on how to choose, prepare and layout tables and figures can, for instance, be found here. You might also want to have a look at examples of poorly designed figures to better grasp what to avoid.
- Researchers are required to obtain permission and acknowledge sources in full when they use data from an external (published or unpublished) source.

Appendices

Appendices are not included in the total word count for the dissertation. Appendices are not necessarily read or marked. These should contain information that will aid the reader's understanding of the project but are not essential to the overall project. Examples: questionnaires used, search strings used in systematic reviews, literature quality appraisal tools used, maps of the region where the project was undertaken, diagrammatic illustrations of models, large tables, series of graphs and excerpts of interview transcripts etc.

Further tips on academic writing

- Inspect good examples of comparable texts before starting to write and identify their structure.
- You might want to check out the Academic Phrasebank, which, as a general resource for academic writers, provides you with content-neutral and generic examples of phrases that are often used in academic writing.
- The Centre for Academic English run excellent summer workshops on writing mechanics. Keep an eye out for timetable here: https://www.imperial.ac.uk/study/pg/graduate-school/students/masters/professional-development/
- If you are asked to prepare a project in the form of an academic article, you might wish to read through the recommendations or the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals formulated by the International Committee of Medical Journal Editors: http://www.icmje.org/icmje-recommendations.pdf .
- Narrow your focus and concentrate on your research question. Long lists and summaries of facts usually lead to shallow texts, and it is better to discuss a restricted set of key ideas in more detail.

Dissertation marking

The dissertation and oral examination of the project provides one-third of the final MSc grade (30 ECTs). A copy of the marking scheme is provided in the Appendix. The examiners will look principally at:

- The rationale for the project and literature review
- Understanding and application of the methods selected
- The analysis and critical interpretation of data/findings

Timetable

This is very important; four months is quite short to carry out a research project and write up your work in a nicely presented format. You will be working full-time on your project and the following timetable has been designed to help you plan your time efficiently and effectively.

February/April	Start thinking about your project titles, talking to members of the academic staff about their proposed titles, or one proposed by you. Read the background literature, start organising the data.
May	Begin full-time project (organise data as you get it) and continue background reading.
June	Continue project and write draft of Introduction and Literature Review.
July	Finish project and write draft Methods, and Results sections. Submit to supervisor. Discuss Introduction/Methods with supervisor.
First week in August	Write draft Discussion and submit to supervisor by 5th August. Discuss Results and Discussion sections with supervisor.
Second week in August	Do all corrections to thesis.
Remaining time	Complete the dissertation, including Reference list and all Tables and Figures. Write figure legends. Prepare Table of Contents. Edit, proof read, edit, and proof read again!!

Deadline

On or preferably before 1.00pm on Tuesday, 24th August 2021- Submit your thesis on Blackboard, by 1:00pm at the absolute latest. The online submission will be closed after 1.00pm and it will be impossible to submit.

It is essential that your thesis is submitted by 1.00 p.m. on this day. **IF YOU SUBMIT LATE, YOU WILL BE AWARDED A MARK OF ZERO unless there are mitigating circumstances that are valid and could not have been avoided. If you suspect that you may not be able to complete on time because of circumstances outside your control, please contact the Course Administrator or Course Organiser in good time!**

September - Your oral examination (presentation) will be held during the second/third week of September. You should use your time between submission and presentation / examination to read your thesis and read around the relevant areas in preparation of your *viva voce* examination. Also, prepare for your viva by discussing possible questions with your personal tutor, supervisor, or appropriate research group in order to obtain enough practice and feed-back before the day. On the day of the viva voce examination you will have the opportunity to provide feed-back about the course to the External Examiner and/or Course Director and/or Chair of the Board of Examiners to be included in his/her report.

Oral presentation

All students will be required to orally present their dissertation. You will be required to use appropriate application for the presentation of your material (for example, PowerPoint) and the presentation will contribute towards your final course mark.

The Prize

A prize is awarded for the best MSc dissertations. Each prize is worth £100. All dissertations with distinction level marks will be considered by the Chair of the Examination Board and the External Examiner.

Common problems and pitfalls

You will probably be aware of your own strengths and weaknesses. For example, you may be an organised person in your working life but prone to being too ambitious. Or you may be very good at listening to people, but not the most punctual person. It is important that you take these strengths and weaknesses into account when you are producing your research timetable. This may mean leaving more time to writing, discussing and editing the report so you are sure to make the final deadline.

Common problems and pitfalls that are encountered by students (and also by professional researchers) include:

- Not having a sufficiently focused or feasible research question;
- Not getting access to research data in good time;
- Taking on too much data collection;
- Having too much data to analyse;
- Not leaving enough time for writing and editing.

Appendix 1: Dissertation marking guide

Guide for awarding your mark			Marker's comments for student feedback:	Your mark
Abstract: Is the abstract clear, focused, concise and stand alone to the dissertation?	**Poor** Poorly written, incomplete, lacks clarity and focus	0-2		**/5**
	Adequate-good Well written, concise, clear and focussed abstract.	3		
	Excellent- outstanding An exceptionally well written abstract which provides a clear overview of the dissertation acceptable for academic conferences.	4-5		
Project aims: Are the aims /research questions/hypotheses defined clearly and understood in the light of related literature?	**Poor** Incomplete statement of aims	0-2		**/5**
	Adequate - good Aims are clear but may be thinly described or justification for the study could be stronger and better supported	3		
	Excellent - outstanding A highly developed set of aims /research questions. The importance and implications of the study have been sharply defined and supported.	4-5		
Background / context: Has the student consulted, read and understood the related literature? Is the literature appropriately cited and referenced? Has previous research been critiqued?	**Poor** The review is too scanty or irrelevant. There is inadequate referencing of the works of others.	0-8		**/20**
	Adequate Previous research has been reviewed and is correctly referenced on the whole but review may lack depth/critique.	9-11		
	Good-Very good Well-written and constructed, relevant review but may lack sophisticated understanding and critique.	12-14		
	Excellent - outstanding Thorough review, impressive level of understanding and critique. Could have been written by a leader in the field.	15-20		
Methodology: Is the analytical plan sound and justified? Are the methods well described?	**Poor** Major problems with the selection or description of one or more of the key elements	0 - 8		**/20**
	Adequate Key elements are described to sufficient level to understand the methods and measured used. Methods reflect sound scientific practice.	9-11		

Have the models been formulated correctly?	**Good** All key elements are described in sufficient detail. Methods reflect some attention to detail and scientific rigour with a few lapses.	12-14		
	Excellent - outstanding All key elements described in detail Methods reflect cutting-edge research, impressive level of research ability and skill.	15-20		
Presentation of results Has there been judicious choice as to which equations, tables, figures to present? Are legends clear and informative? Sensitivity to model parameters?	**Poor** Major problems with the presentation of the results.	0- 4		**/10**
	Adequate Results presented are internally consistent but there are some problems.	5		
	Good – very good Results are clearly presented, appear accurate and are informative.	6-7		
	Excellent – outstanding Difficult to fault the choice and presentation of results; publication standard.	8-10		
Critical interpretation of results and methods appraisal Has the student demonstrated a critical understanding of the results, their implications/validity? Has methods employed successfully fulfilled the original study aim? Have the results been discussed in the light of the original aims? Are the methods used	**Poor** Major problems with interpretation	0-8		**/20**
	Adequate Enough accurate & critical interpretation is provided	9-11		
	Good – very good Accurate, thorough and critical interpretation.	12-14		
	Excellent – outstanding Interpretation is impressive; shows originality, insight and balance.	15-20		
Appropriateness of the discussion: Has student appreciated the limitations of the data/methods and discussed the subsequent generalisation of results and directions for further work?	**Poor** Weaknesses of the study not considered /scant or incorrect / unsupported consideration	0-5		**/10**
	Adequate Acknowledges some limitations and makes one or more appropriate recommendations. Findings are discussed to some extent in context of previous research.	6		
	Good- very good Well rounded discussion of limitations and implications of the study for further research; discusses in context of relevant research. Perhaps lacks some creativity and or depth.	6-7		

	Excellent – outstanding The discussion represents some of the most sophisticated thinking in the field.	8-10		
Quality of the overall presentation of the work and clarity of argument Is the study of sufficient scope for an MSc dissertation? Is the dissertation a well-organised, well-presented, high quality document demonstrating a suitable level of critical ability?	**Poor** Deficient, disorganised, poorly communicated and/or irrelevant work	0-4		**/10**
	Adequate Demonstrates sufficient understanding of the research topic and research process but there are flaws in the execution or communication of the study.	5		
	Good – very good Good grasp of the research issue and process, sound method and critical interpretation. Some creativity. Possibly of publishable quality with some extra work.	6-7		
	Excellent – outstanding Stylish, impressive, cutting edge dissertation that most masters candidates would not be expected to fulfil. Difficult to fault. Publishable. Could have been written by a leader in the field	8-10		
Total Marks				**/100**

Appendix 2: Master's dissertation presentation mark sheets

Student:

Project Title:

Criteria	Total Marks		Assessment	Mark Range
1- Overall quality of the presentation: clarity of the work and of the argumentation	15		Needs attention	0-7.49
			Adequate	7.5-9.99
			Good	10-11.99
			Excellent	12-15
2- Description of the data and research question: appreciation of the background / context of the study.	10		Needs attention	0-4.99
			Adequate	5-6.99
			Good	7-8.49
			Excellent	8.5-10
3- Description of the model used: clear formulation of the models, their underlying hypotheses and their parametrisations. Justification of the hypotheses.	15		Needs attention	0-7.49
			Adequate	7.5-9.99
			Good	10-11.99
			Excellent	12-15
4- Quality of the results: validity of the results, quality/clarity of their presentation	15		Needs attention	0-7.49
			Adequate	7.5-9.99
			Good	10-11.99
			Excellent	12-15
5- The appropriateness of the interpretation and conclusions: evaluation of the quality of the results and the methods used and their meaning	20		Needs attention	0-9.99
			Adequate	10-13.99
			Good	14-15.99
			Excellent	16-20
6- Ability to justify their work and/or acknowledge, explain possible limitations of the data/analyses and propose alternatives/perspectives and answer panel's questions	25		Needs attention	0-12.49
			Adequate	12.5-14.99
			Good	15-19.99
			Excellent	20-25
Total	**100**		Fail	0-49
			Pass	50-59
			Merit	60-69
			Distinction	70-79
			Outstanding Distinction	80-100

Please give both positive and negative feedback below:

Marker's Name..... Marker's Signature.....

Appendix 3: Descriptions of grade bands

Descriptions of Grade Bands	Mark
FAIL/Poor Too confused, irrelevant, methodologically too poor or too brief (30-39%). Completely disorganised, irrelevant and methodologically unsound or lacks key components of the research process (10-29%) Dissertation does not demonstrate any aspect of a research project (below 10%).	0 - 39
FAIL/Deficient Dissertation *could* be satisfactory but the study has been communicated too poorly or candidate shows confused understanding of the research issue or method.	40 - 49
PASS (lower)/Adequate Dissertation is adequate. It is sufficient for a Master's dissertation but there are some problems with research topic, method, interpretation and/or communication.	50 - 55
PASS (upper)Satisfactory Satisfactory dissertation. Candidate demonstrates understanding of the research topic and research process but did not carry out the study very well or has difficulty communicating the study well in writing or the study has some weaknesses.	56 - 59
MERIT (lower)/Good Good grasp of the research issue and process, sound method and adequate critical interpretation of data/method. Well-written and organised on the whole but there are some concerns about the quality of the work in places.	60 - 65
MERIT (higher)/Very good Very good grasp of the research issue and process, sound method and appropriate critical interpretation of method/data but falls short of excellence. Possibly of publishable quality with some additional work.	66 - 69
DISTINCTION/Generally excellent Shows all the required qualities at distinction level but falls below a consistent level of excellence in one or two areas. The report is written and organised extremely well. It is possibly of publishable quality.	70 - 79
DISTINCTION/Excellent throughout Shows impressive level of understanding, research ability & skill that most Masters candidates would not be expected to fulfill. Interpretation of findings shows originality, insight & balance. Written with mature writing style. It is of publishable quality.	80 - 89
DISTINCTION/Outstanding Could have been written by a leader in the field. Difficult to fault any aspect. Outstanding, cutting-edge dissertation. Stylish, extremely well balanced, excellent critique throughout; it is certainly of publishable quality.	90 -100

Appendix 4: Special fund for essential project costs

There is a small fund to support summer project costs in certain cases.

Project supervisors may apply. Applications can be considered if:

a) the unmet costs will prohibit the completion of the project and
b) there are no alternative funds to support the costs.

Proposals will be judged competitively in terms of merit.

The maximum request is £500.

Please send completed applications, no more than one side A4, to:

Jo Tite, Postgraduate Programmes Coordinator
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by 28th April 2021