1 Introduction

This document is intended to help you understand what you can expect and what is expected of you during the dissertation component of the MSc programmes in the School of Mathematics. You should read it at the start of the dissertation component and near the end, when you are preparing to submit. You should also read the relevant University policies on the presentation of MSc dissertations (see below).

2 Supervision

This section identifies the responsibilities of your supervisor and yourself during the period of your dissertation.

Depending on your programme, your dissertation counts for either 60 or 90 credits. Hence, it is a serious piece of work and you must have a high degree of self-motivation.

You should establish appropriate supervision arrangements with your supervisors at the start of the project. Contact your supervisor as soon as possible to arrange a first meeting when you can discuss a rough timetable. The frequency of the meetings should be dependent on the nature of the project and will be agreed with you subject to the supervisor’s discretion. A normal level of supervision might be half-hourly meetings each week or hourly meetings each fortnight, but this may vary depending on your supervisor and the nature of your dissertation topic; the frequency of meetings may also change over the course of the dissertation component. Your supervisor can also be accessible at other appropriate times for advice and for responding to difficulties you may raise, subject again to the supervisor’s discretion. However, arrangements need to be fluid, as academic staff have many other things to do beside project supervision (including holidays). If your supervisor expects to be absent for a significant period of time (eg 3 weeks or more) then he/she should consider arranging alternative temporary substitute supervision. As a matter of courtesy to your supervisor you should always arrive on time for your arranged meetings. You should never fail to turn up at a meeting without good reason. If you have to cancel an appointment then you should endeavour to contact your supervisor in advance.

If you are unhappy at any stage with the supervision you are receiving then you should, in the first instance, contact your programme director; however, changing your supervisor may not always be possible.
2.1 The responsibilities of your supervisor are to:

1) Discuss the project with you and, in particular, to make sure that in general terms the project is feasible within the time available.

2) Indicate, at the beginning of the project period, if necessary, useful, relevant reading.

3) Give guidance about: the nature of the project and the standard expected, the planning of the work required, relevant existing literature, sources and requisite research techniques.

4) Maintain contact through regular meetings (the frequency of such meetings is subject to his/her discretion and should be agreed in advance; one meeting each week or one meeting every two weeks would be considered normal).

5) Be accessible at other appropriate times, for example by email or during office hours, subject to discretion.

6) Notify you when they will be absent from the School for more than a few days, and consider making alternative supervision arrangements during long (e.g. over 3 weeks) absences.

7) Give advice on the necessary completion dates for successive stages of the work, so that you submit your dissertation by the required deadline.

8) Answer all reasonable requests for advice, in particular regarding plagiarism and general advice on academic writing.

9) Where feasible and reasonable, make you aware when work or progress in your research is below standard. However, note that you are ultimately responsible for the standard of your dissertation.

You can normally expect your supervisor to provide a critical reading and detailed feedback on at least one substantial portion (e.g. one chapter) of your dissertation. This would normally include correction of English where necessary, but does not include full proof-reading.

Note: dissertations must attain a good standard of English. It is not the responsibility of the supervisor to ensure this. It is your responsibility to ensure that spelling and grammar are free of errors. If your written English is too poor to be routinely corrected, then your supervisor may advise you on appropriate remedial action, for example attending courses provided by the University's Language Centre.
You should not expect your supervisor to provide repeated detailed correction of your dissertation; this would give you an unfair advantage over other MSc students.

2.2 Your responsibilities are to:

1) Take the initiative in raising problems or difficulties, bearing in mind that prompt discussion and resolution of problems can prevent difficulties and disagreements at a later stage.

2) Maintain progress of your work in accordance with the stages agreed with your supervisor.

3) Maintain written records of the progress of work and discussions with your supervisor in order to facilitate the writing of a dissertation.

4) Remain in Manchester for the duration of your project work, except by prior agreement with your supervisor (which will normally only be given in exceptional circumstances).

5) Making your supervisor aware of any circumstances likely to affect your work.

6) Being familiar with the University, Faculty and School regulations and policies that affect you, including the University's policy on the presentation of MSc dissertations and the University's policy on plagiarism.

7) Allowing adequate time for the binding of your dissertation.

8) Recognize that your dissertation is an examined piece of work which will be marked by two examiners. In many ways, therefore, the dissertation is just like any other examination that you undertake. It is you, and no one else, who must sit a conventional, written examination. Similarly, it is you alone who must write the examined dissertation.

9) Your supervisor gives help and advice on how to carry out the research. However, the supervisor has to strike a balance on the amount of help he/she can offer. If your supervisor gives too much help, the dissertation reflects (to an unacceptable extent) his/her work and abilities as well as your own. The purpose of the project is to examine your (not your supervisor’s) abilities. As stated above, you must understand that you undertake this within the principle that a dissertation is your own work.

10) In other words, it is your sole responsibility to demonstrate that you can write a dissertation of satisfactory (Masters) standard. This is a
responsibility that you cannot and should not share with any other person - be it another student, your supervisor, or anyone else.

3 Submission and notice of submission dates and timetable

Your submission deadline is given in your programme handbook.

You must submit your dissertation to the Teaching and Learning Office on the ground floor of the Alan Turing Building by the given deadline unless you have been granted an extension for special circumstances.

Extensions for dissertations are granted only if you have very strong medical/mitigating circumstances. You must inform the postgraduate administrator and your supervisor of your application for an extension as soon as you identify the problem. Please note that granting of extensions is not automatic. It depends on whether you have and establish sufficient grounds for mitigation and on whether this warrants an extension. Please note that any problems with your computer or loss of data do NOT constitute a mitigating circumstance and it is therefore your responsibility to back-up all of your work regularly.

Normally if you submit a dissertation after the submission deadline without having been granted an extension then the Teaching and Learning Office will not accept your dissertation and the examiners will award it a mark of zero.

You should submit your dissertation in accordance with the information set out in the University’s “Guidance for the Presentation of Taught Masters Dissertations”. Please ensure you follow these guidelines carefully as your dissertation will not be accepted if it does not adhere to these instructions and hence the publication of your result could be delayed. As well as submitting two paper copies, you will also be required to upload a pdf version of your dissertation to Blackboard. The .pdf and the paper copies should be identical; if they are not then the .pdf will be assumed to be the version you intended to submit. Further details about how to submit your dissertation will be given to you nearer the time.

Warning: The text of your dissertation will be checked for unoriginal content by the University, using appropriate plagiarism detection software.

It is your responsibility to ensure that you submit your dissertation on time. In particular, you should allow sufficient time so that you can get the hardcopies of your dissertation bound.
4 The Dissertation

This section contains some guidance on what may be expected of a satisfactory dissertation.

- The length of the dissertation may vary depending on your programme and on your dissertation topic. A typical dissertation will normally be between 50 and 75 pages (possibly with the addition of tables and appendices), based upon a 12-point font size and 1.5 line spacing (that is, the same font size and line spacing as in this paragraph) – regulations relating to the presentation of dissertation can be found in the university’s booklet “Guidance for the Presentation of Taught Master’s Dissertations”. There is a LaTeX style file available on the School's website that produces dissertations in the correct format.

- As a general rule, the inclusion of computer code is not encouraged unless it is central to the aim of the dissertation.

- If you are writing your dissertation in LaTeX and need to include pictures or diagrams, it is perfectly acceptable to draw them (neatly) by hand. You can scan hand-drawn pictures in as .jpg files and then include them in the electronic copy of your dissertation by using the command \includegraphics[width=10cm]{filename.jpg} in the main body.

- Past experience suggests that the best dissertations are written up as the project progresses. This allows supervisors to comment, which can lead to improvements. Also many students don't seem to realise just how time-consuming writing up can be! Past experience also suggests that taking too much time off does not lead to good dissertations. We suggest you take your longest holiday break in September after submission.

- Past experience also suggests that poor dissertations can often be the result of:
  - a poor record of attendance at supervisions,
  - writing the dissertation at the last minute, particularly where the supervisor has not even seen a first draft.

- Dissertations should normally contain:
  - a cover page which gives the title of the project, a statement, the name of the student, the name of the student’s department/school and the year of submission;
- an abstract;
- a detailed list of contents at the start;
- an introduction to the project and the dissertation;
- proper structure in the main body of the text including section numbering;
- conclusions;
- a full and detailed list of references (bibliography);
- acknowledgement of all persons who have contributed to the development of the project.

- Dissertations must use consistent mathematical notation throughout.

- Some questions that the examiners will be asking are:
  - Does the introduction say clearly what the dissertation is about?
  - How well have you explained the area of work and summarised the relevant literature?
  - Does the dissertation show evidence of learning beyond the material of the taught courses and options?
  - If the dissertation is mainly a survey, is it complete and up to date, and have you shown clearly, by summarising and comparing the literature in your own words, that you have mastered the subject?
  - If the dissertation involves numerical work, is it described clearly enough for someone else to reproduce the calculations, if required, and do the conclusions demonstrate that you understand what has been done?
  - Does the dissertation have a logical structure?
  - Are books and journal articles adequately referenced? Note that a complete bibliography is important for a good dissertation and should not be ignored
  - Where the results of numerical and other work are being discussed is this just a statement of what the results are or does the text contain real interpretation of the results. For example, does the text explain why the results are as they are?

- It is not necessary, and in fact would be quite uncommon, for a dissertation to contain truly original work that would be classified as research. What matters is that it shows your own understanding of the chosen subject (not your supervisor's!).

- Remember, it is your work that is being examined and not the supervisor's. In particular, the supervisor is not there to proof-read your drafts or to teach you to write in English.

- Style and layout are up to you, subject to the constraints on structure detailed above. However, it is a good idea to look through a few journal
articles and note the elements of good style. Remember, the examiners are researchers which means that they are, to a large extent, professional authors and will not appreciate having to navigate a badly laid-out or sloppily-written dissertation.

- The final version of the dissertation should be free of typing and spelling mistakes. Modern word processing packages can check spelling and identify poor grammar. Examiners may tolerate, at their discretion, a small number of errors. However, a large number of spelling mistakes and errors in grammar may be cited by examiners as a reason for stating that the dissertation had been judged as not reaching Masters standard.

- The thesis should contain all the necessary diagrams, formulae, tables, charts and bibliography. These items must be clearly presented with appropriate identifying information (titles, equation numbers, labels etc). Sources of data must be given in full detail.

- References should be entered in an appropriate format (see below for examples). Candidates must check to make sure that no references are missing from the bibliography. As with spelling/typing mistakes and poor use of English grammar, omission of references can cause the award of the degree to be deferred.

There are many different acceptable referencing styles. Professional journals and scholarly books provide examples of different acceptable styles and your supervisor can also provide guidance on referencing style.

References to publications in the text or footnotes, other than to newspapers, magazines, or popular periodicals, should be as follows:

‘Smith (1992) reports that …’, ‘Chan et al. (1995) content analyse …’, '(see Fama and French, 1994)' or 'Smith [1] reports that...'; 'Chan et al. [2]' , '(see Farma and French [FF1])'.

Note that “et al.” can be used where there are more than two authors and you are referring to the article for a second or further time. Note also that if the passage that contains the citation is already in parenthesis, we normally omit the parenthesis around the year of the reference. Finally, when you are referring to a very specific point in an article that is incidental to its main contribution, or when you include a quotation from an article, you should give the specific page reference to where this can be found in the original article. For example, “... Beaver (1996, p. 45) refers to ...” or “by Robinson [R, Theorem 6.3]”. You should not list references separately in footnotes. If the footnote itself includes text that contains a reference, you then follow the same procedures as in the main text.

You must make sure that all references appearing in your main text (and footnotes) are listed in the list of references at the end of the main text. The
reference list must be in alphabetical order of the first author’s surname. Examples of types of references are as follows:
For books or monographs:
Author(s), Year (in brackets), Title (underlined), Edition (in brackets), City of publication, Publisher
Example:

For contributions to collective works:

For periodicals:
Author(s), Year (in brackets), Title (between apostrophes), Journal name (underlined), Volume number, issue number, Page numbers
Example:

For references on the web:
Where the reference list contains more than one source from the same author(s) for the same year they should be distinguished by 2000a, 2000b, etc.

References to newspapers, magazines, and popular periodicals:
These should not appear in the reference list, but should be referred to in the text or footnotes as follows, ‘The Financial Times (20 June 2001) reported that …’, ‘Observers also criticized the extent of Gent’s control over Vodafone (Economist, May 2000).’

There are many other acceptable styles of listing references.

5 Mark Scheme

Your dissertation will be marked independently by two examiners. The criteria used are:

Structure (10%). Appropriateness of abstract; clear definition of aims and objectives; organisation and ordering of material; detailed bibliography.
**Presentation (15%).** Clarity of writing; Appropriateness and clarity of graphs, diagrams, illustrations, computer code, etc (if present); Consistency and accuracy of referencing.

**Accuracy (20%).** Correctness of arguments; mathematical precision; factual accuracy

**Content, initiative and volume of work (30%).** Appropriate description of background and prerequisite material, if present; appropriateness of any literature review, critical evaluation of existing literature; selection of material; independent thinking and individual expression; appropriate use and description of research sources and/or methodology; quality and quantity of material given the timescale; choice of references.

**Understanding and critical analysis (25%).** Appreciation of meaning, context, and significance of the work presented; soundness of any conclusions reached.

### 6 Plagiarism

The University's guide to plagiarism states that `plagiarism is the presenting of ideas, work or words of other people without proper, clear and unambiguous acknowledgment.’ The University takes plagiarism very seriously and if you are found to have plagiarised (even inadvertently) then you can expect very serious penalties (such as a mark of zero in your dissertation). You should read the guide on plagiarism in the handbook carefully.

When you write your dissertation you should make it absolutely and unambiguously clear which parts are due to yourself and which parts are due to other people. If the order and structure of the material in one section in your dissertation closely follows that in some text or paper, then you should say so. If you give a proof of a theorem that follows the proof given in some other source, then you should say so and give a reference. It may also be appropriate in your introduction to say what the main sources for each subsequent section of your dissertation are. If in doubt, you should ask your supervisor for guidance.

It is quite unacceptable to copy text from another source (be it a book, paper or another MSc project) without clear and regular references in the text to the source material. **You are expected, when reviewing relevant material, to structure their presentation and explanations in your own unified way, written in your own words rather than copied and pasted with a couple of words changed here and there. Appropriate references must also be given.** Where it is absolutely essential to quote directly from another text, the copied material should be "written in italics and enclosed in quotation marks". If you
state and prove any theorems in your dissertation then you should give
appropriate references. **If you give a proof of a theorem without giving a**
**reference to where the argument came from, then the implication is that**
you are the first person (ever!) to think of this argument and that the
**theorem is solely your own work. If this is not the case, then you should**
give a reference.

If you have any doubts about this then you must seek the advice of your
**supervisor.**

Plagiarism is a serious offence and students found to have committed it will be
**penalised.**

**Warning:** the text of your dissertation will be checked for unoriginal
**content by the University, using appropriate plagiarism detection software.**