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## Policy on Dissertations for BSc(Hons) in Applied Mathematics BSc(Hons) in Mathematics or BA(Hons) in Mathematics

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The requirements for BSc(Hons) in Mathematics, BSc(Hons) in Applied Mathematics and BA(Hons) in Mathematics include a 30-point dissertation, taught as MATHS 776A and MATHS 776B (or MATHS 776 if taken over a single semester). This document outlines the policy of the Department of Mathematics for the organisation and assessment of dissertations.

The dissertation is intended to satisfy the requirement for a research component in the Honours degree. According to the New Zealand Qualifications Authority: “Research in the context of a Bachelor’s Honours degree develops a student’s ability to design and undertake a project under supervision, and to report on this in an appropriate form. It sharpens the student’s analytical and communication skills and provides a supported introduction to planning, conducting and reporting on the type of independent research that may be undertaken at higher levels.”

A dissertation specifically in the area of Mathematics or Applied Mathematics will generally involve reading background material on a particular question, problem, topic or theme, then using the acquired knowledge and skills to perform a detailed study of this question, problem, topic or theme.

A grade in the ‘A’ range will usually require a high quality of presentation and at least one of the following: an original research contribution (either theoretical or experimental); a novel synthesis of existing knowledge; clear evidence of an excellent understanding of advanced material.

The effort required for successful completion of a dissertation should be comparable with that required for 30 points of lecture courses, i.e., about 10 hours per week per semester for two semesters, or about 240 hours in total.

### Supervision and assessment

For each dissertation, one member of academic staff from the Mathematics Department will be appointed by the Postgraduate Coordinator as supervisor. Co-supervisors and advisors may also be involved. Supervisors and students are expected to meet regularly, with weekly meetings being recommended.

Assessment of the dissertation is done by an examiner and assessor approved by the Postgraduate Committee. At least one of these must be external to the University of Auckland. Under normal circumstances, the examiner will be a member of academic staff from the Mathematics Department and the assessor will be external to the University. Some research groups in the department use a common assessor for all dissertations submitted in the same semester.

The examiner and assessor are each expected to provide a short (1–2 page) report on the dissertation, including and justifying a recommended grade range. The Postgraduate Committee decides the final grade.

Dissertations must be submitted by the **last day of exams** in the semester of enrolment in MATHS 776B. An electronic copy of the dissertation in PDF format should be emailed to the Postgraduate Coordinator.

## Oral presentations

All students are required to make an oral presentation on the content of their dissertation. This is usually on a day during the first week of the second semester of enrolment.

This presentation will not contribute to the grade awarded for the dissertation, but is regarded as an important component of the student’s research education and training. It is expected that supervisors and examiners will be present at these oral presentations. The oral presentation should be about 15 minutes in length, which includes time for questions. The student speakers should include a brief introduction to the field of research and describe the work done so far for their research project.

## Elements of a dissertation

A dissertation should not exceed **35 pages** (excluding Appendices). It should include an introduction that gives a context for the subject of the research. It should also include a description of the work undertaken in the research project, including methods used and results obtained. A conclusions section, that relates the work back to the context of the subject and/or describes avenues for further study, should also be provided.

Dissertations should be intelligible to readers with mathematical maturity who are not experts in the field. Dissertations are required to be produced electronically using Word or L<sup>A</sup>T<sub>E</sub>X or another word-processing package. Links to [L<sup>A</sup>T<sub>E</sub>X and Word templates for dissertations](#) are provided on the departmental website (see [www.math.auckland.ac.nz/en/for/current-students/pgdocuments.html](http://www.math.auckland.ac.nz/en/for/current-students/pgdocuments.html)).

Every dissertation should contain the following:

### 1. Title page

The title should be centred in the top third of the title page. The student’s name should be centred in the middle third of the title page. Information regarding the degree, subject, university and date should be centred in the lower third of the title page. For instance, a statement such as “A dissertation submitted in partial fulfilment of the requirements for the degree of BSc(Hons) in (Applied) Mathematics, The University of Auckland, 2021” should be included.

### 2. Abstract

This should contain a succinct summary (not more than 350 words) of the aim, methods, findings and conclusions of the dissertation.

### **3. Main text**

This must be divided into a logical scheme that is consistently followed throughout the work. For example, the text may be divided into sections and subsections.

### **4. Appendices**

This is an optional section for any additional material that does not fit conveniently into the body of the text (e.g., copies of computer programmes if these are an appropriate part of the presentation of the work).

### **5. List of references**

It is important that citations be consistent in style, although there are various possible acceptable styles. Supervisors can provide more information about a style appropriate for each dissertation.

### **6. PDF conversion**

Dissertations should be exported, converted or compiled into PDF format before submission.

Careful proofreading for grammar, punctuation, spelling and general consistency is essential. A high standard of presentation is very important, and plenty of time should be allowed for this process before submission. In general, time spent on achieving a perfectly word-processed dissertation is unlikely to be rewarded with an increase in marks, but time spent on writing a clear, concise, logical report is likely to be rewarded with a better grade.

Unacknowledged copying or plagiarism is not acceptable and is treated as an examination offence. Plagiarism means using the work of others and presenting it as your own without explicitly acknowledging or referencing where it came from. Submitting someone else's unattributed or less than fully attributed work or ideas is not evidence of your own grasp of the material and cannot earn you marks. Further information on **academic integrity and copyright** can be found online (see <https://www.auckland.ac.nz/en/students/forms-policies-and-guidelines/student-policies-and-guidelines/academic-integrity-copyright/university-regulations-statutes-guidelines.html>).