School of Physics and Astronomy
The University of Edinburgh

MSc in Theoretical Physics
MSc in Mathematical Physics
2020/2021

Assessment of dissertation

The total mark for the Dissertation has three components:

1. **Supervisor's mark: 50%**

   The supervisor's mark is a combination of a project performance assessment (20%), which reflects how well student has met the challenge of the dissertation and learnt from their experience, and an assessment of their dissertation report (30%).

   Details of the supervisor's marking process and the grade descriptors used will be posted on the Dissertation wiki.

2. **Second assessor's mark: 40%**

   The written dissertation report will also be assessed by another member of staff, who is knowledgeable about the general subject area, but who has not been involved in the planning or day-to-day running of the project.

   The second assessor's marking process and the grade descriptors used will be posted on the Dissertation wiki.

3. **Dissertation presentation mark: 10%**

   This will be based on the quality of the presentation and the slides, and on the student's response to questions from the assessors. Further details will be provided separately.

Report preparation

The style suggested is that of a formal technical report or scientific paper. The main body of the report should be written at the level appropriate to a trained physicist working in the same general area, for example particle theory, condensed-matter theory, astrophysics. However, the introduction and conclusion should be intelligible to someone working in a different area.

When planning and writing the report, students should be selective about what they include. Your dissertation should be no longer than 15,000 words. In terms of pages, 30 pages are okay. 50 pages are ok. But it definitely shouldn't be more than 50 pages! This limit does not include supplementary material such as appendices and listings of computer programs.

The font should be easily legible, normally 12pt.

In addition, relevant appendices may be included, but it should be considered carefully whether they are strictly necessary. Appendices do not count towards the word limit. Writing should be as concise as is consistent with clarity of explanation. The report should show evidence that the general context of the work has been appreciated, how it fits into the overall subject, as well as evidence of technical competence in carrying out the work itself. Remember that the report will also be assessed by a second assessor. Both assessors will need to be convinced that students know what they are doing and why. The introduction and conclusion of the report are therefore very important.

The dissertation report should begin with an abstract. This is where you summarise what is in your thesis. A good length is 100 words; it should not be more than 200 words.

A suggested report structure is (something like):

- Abstract

- Introduction

- Background and method

- Derivation and results

- Discussion

- Conclusion

- Appendix A

- References

You can vary the structure within reason, but don't deviate from the above too much. For example, the dissertation template uses a slightly different structure. Be sure to discuss your proposed structure with your supervisor.

In projects describing mostly mathematical work it is not necessary to give all intermediate steps, but enough detail should be included (either in the main text or in appendices) to allow a person competent in the field to follow the general route taken and, if necessary, reconstruct missing steps. If this requirement seems incompatible with the length guidelines given above, consult your supervisor for further advice. In describing any computer programmes you have written, enough information on the structure of the programme should be provided for a competent person to see how it works. A full listing should normally be given as an Appendix.

Projects can vary greatly in their degree of open-endedness, depending on the subject area of the project, and also, to some extent, on the student. The supervisor's assessment of the obstacles a student has had to face is taken into account when marking projects. Hence a project that reports valid but negative conclusions (*e.g.*, this type of calculation cannot explain those data, or this computational method will not give good results for the following reasons) may nonetheless receive high marks.

Reports must be typeset, preferably using LaTeX, but Microsoft Word, Apple Pages and Libre Office are all acceptable. Isolated exceptions, e.g. in labelling of figures, are acceptable.

More substantial exceptions should be discussed first with the dissertation supervisor and the course organiser.

It is suggested that students submit a first-draft of one section, of around 5-10 pages to their supervisor. Supervisors are encouraged to give detailed feedback to students on the content of of this section and on their writing style. Students may also submit a project report outline of no more than 5 pages to their supervisor. Supervisors may discuss this outline thus providing a guide for writing the final report; however, since the report must be students' own work, students should not ask their supervisor, or any other member of staff, to read your report in detail before handing it in. Supervisors may make "broad brush" comments at the level of subsections, but they must not go through the report line-by-line making comments with a red pen.

Finally, you should note that reports invariably take longer to write than anticipated. Therefore you are advised to start writing the final report as soon as possible after discussing your report outline with your supervisor. Most of the marks are awarded for the dissertation report, so don't leave it until the last minute. Make notes as you go along; writing your notes in LaTeXas you go along will speed up the wroting process towards the end. You don't need to have your final results (or indeed any results!) before you start writing.

Brian Pendleton
July 03, 2021