BINF90007 Bioinformatics Research Project

Thesis examination guide

Andrew Lonie   May 2014

Thesis Assessment

The major assessment component of the MSc (Bioinformatics) Research Placement is a 15,000 word thesis. The Chair of Examiners (usually being the Course Coordinator) will appoint the Panel of Examiners for each Research Project in that stream. At least two examiners will be appointed.

MSc (Bioinformatics) Research Placement theses are assessed over 7 aspects:
1. Explanation of aims and scope of study
2. Grasp of the problem and review of relevant literature
3. Soundness of approach and methodology
4. Presentation and interpretation of results
5. Conclusions and future work
6. Organisation of thesis
7. Clarity and conciseness

Additionally the supervisors are asked to assess these 2 characteristics of the student:
1. Initiative
2. Independence

The examiners report should be two pages in length, following the included proforma. As reports are made available to students, it is recommended that all substantive comments are not written on the thesis itself but are noted in the report. Only minor spelling and grammatical errors should be corrected on the thesis. Major errors of this type should also be noted in the report. The general tone of comments in the report should be positive, free of intimidation and recognise that the student has given this thesis his or her best effort.

In completing the report, assessors should make use of and reference to the 'Assessment Guidelines' and 'Guidelines for Percentage Marks' below.

Assessors should mark thesis as is; that is, without reference to or adjustment based on the context of the research placement. Any such adjustments, if required, will take place in Examiners meeting.

Thesis Report: MSc (Bioinformatics) Research Placement thesis

STUDENT NAME:

THESIS TITLE:

SUPERVISORS:

Assessor instructions
1. Complete the Grading Table by placing ticks in the appropriate boxes for each thesis aspect, referring to the Guidelines below.
2. For each aspect assessed, record supporting comments in the proforma as indicated, again referring to the Guidelines.
3. Award an overall grade for the thesis based on the distribution of ticks and assessors judgement of the thesis, making direct reference to the Guidelines for Percentage Marks.

Grading Table

Category	Fail	Pass	H3	H2A	H2B	H1	H1	H1	H1
Grade	0-49	50-64	65-70	70-74	75-79	80-84	85-89	90-94	95-100
Explanation of aims and scope of study									
Grasp of the problem and review of relevant literature									
Soundness of approach and methodology									
Presentation and interpretation of results									
Conclusions and future work									
Organisation of thesis									
Clarity and conciseness									
Initiative									
Independence									

Comments

<u>Explanation of aims and scope of study</u>
<u>Grasp of the problem and review of relevant literature</u>
<u>Soundness of approach and methodology</u>
<u>Presentation and interpretation of results</u>
<u>Conclusions and future work</u>
<u>Organisation of thesis</u>
<u>Clarity and conciseness</u>
<u>Initiative</u>
<u>Independence</u>

Overall comment	**Overall Grade**
	%

Assessment Guidelines

The table below lists specific qualities that may be used to relate performance across the assessment criteria to indicative grades.

Category	Fail	Low	Med	High
Grade	0-49	50-64	65-74	75-100
Explanation of aims of study	No clear aims	Statement of aims unclear or muddled	Clear statement of aims, but scope unclear	Clear, concise statement of aims and scope of study
Grasp of the problem and review of relevant literature	Has not grasped the problem at all	Unclear on issues, literature review patchy	Some gaps, lacking in detail. Some understanding but some misunderstandings, perhaps not well integrated	Throrough literature review and well atriculated understanding of problem
Soundness of approach and methodology	Poor approach and poor justification	Approach and/or justification for approach questionable	Reasonable approach and methodology but not clear why	Very clear logical articulation of approach
Presentation and interpretation of results	Meaningless or missing	Incomplete interpretation.	Results are adequately described but not placed in a broader context nor critiqued	Critical presentation of the results. Places the results in a broader context
Conclusions and future work	No analysis of outcomes. No extensions to work proposed.	Poor analysis of outcomes. No extensions to work proposed.	Adequate analysis of outcomes. Some analysis of strengths and weaknesses presented. Modest or no extensions to work proposed.	Detailed analysis of the outcomes. Understands both strengths and weaknesses of the findings. Proposes extensions to the work.
Organisation of thesis	Important material frequently missing.	Difficult to read. Important material missing.	Some defects, including completeness, structural oddities or difficult passages.	Well organised, clear logical flow and structure.
Clarity and conciseness	Difficult to read throughout.	Thesis poorly written	Repetition, parts difficult to read	Clear, no repetition, easy to read
Initiative	No initiative	Little initiative	Some initiative, but mostly directed by supervisor	Initiated new approaches, proposed own interpretations
Independence	No independence	Required constant supervision	Required significant hands on supervision	Worked independently with little hands on supervision

Guidelines for Percentage Marks

H1 80-100%

A thesis graded as 'upper H1' (>85%) is strong in all areas of assessment. Overall the thesis shows: outstanding command of expression and logical argument in a skilfully structured manuscript; superior evaluation and integration of existing literature; evidence of significant insight and original thought in dealing with the critical issues; sophisticated understanding of research methods, with evidence of careful attention to critical design issues in the execution of the project; outstanding presentation and reporting of results; thoughtful and appropriate choice of analytical approach (where appropriate) and clear and coherent interpretation of the thesis data; comprehensive understanding of the importance of the results in the context of the theoretical framework. A 'lower H1' (80-85%) student displays many of the same strengths but is less well-balanced with weakness in some areas.

95-100%

Truly outstanding in every way. In an entire academic career such a student may be encountered only once or twice. The student would be welcome as a PhD candidate in the department or a research practitioner in industry, and would be expected to succeed with a hands-off supervision style.

90-94%

Excellent in every way. Publishable with only minor revisions. In one's academic career such a student may be encountered a handful of times. The student would be welcome as a PhD candidate in the department or a research practitioner in industry, and would be expected to succeed with minimal support.

85-89%

Excellent in many respects. Such students may be in the minority but should be frequently encountered in a typical academic's life. The student would be welcome as a PhD candidate in the department or a research practitioner in industry, and would be expected to succeed with a hands-on supervision style.

80-84%

Ideally such students should form the body of an honours year. The student should succeed as a PhD candidate or research practitioner but would need significant support from the supervisor(s).

H2A 75-79%

A H2A thesis shows a good understanding and exposition in most areas although with some notable weaknesses. The thesis has most of the following characters: the manuscript is well written, logically argued and generally well structured; the evaluation and integration of the existing literature is very sound without being outstanding; reasonable insight and some evidence of original thought in dealing with the critical issues evidence of a solid understanding of research methods; adequate design of the research project, although possibly containing minor but retrievable errors; choice of data analysis that is appropriate for the design (although less well justified than might be expected of H1 standard), and clear presentation of results; generally sound but pedestrian interpretation of results and their relevance to the published literature.

The student should succeed as a Masters (Research) student, but is unlikely to be immediately capable at the PhD or research practitioner level.

H2B 70-74%

A H2B thesis has most of the following characteristics: generally competently written, although some problems exist in the logical organisation of the text and expression; provides an adequate coverage of the literature, although it is more descriptive than interpretive, and arguments are often disjointed; occasional evidence of insight into the issues underlying the thesis or essay, but little evidence of original thinking; basic but somewhat limited understanding of research methods; the design of the research project is generally adequate but is marred by some errors and oversights; reasonable choice of data analysis, although other approaches may have been

more appropriate or powerful; presentation of results lacks clarity; interpretation of results or other studies is adequate but limited.

The student has not demonstrated an aptitude for research and significant involvement from any supervisor(s) is likely. An H2B thesis is written by a student who may be capable of undertaking an MPhil under close supervision.

H3 65-69%
Both a H2B and a H3 are passable, though in both cases there are significant questions about the thesis content. In the case of a H2B thesis however the report reads well and contains all the expected sections. In the case of an H3, the report is also poor. Theses that are graded at H3 and below have most of the following characteristics: the work is not well written and shows flaws in the structuring of logical arguments; coverage of the literature is weak, with insufficient information provided to support the arguments made, or conclusions drawn; little evidence of insight and ideas are highly derivative; knowledge of research methods is deficient; serious flaws exist in the design of the research project, making it difficult for the research to meet its aims; data analysis techniques are inappropriate; the results are poorly presented; interpretations are superficial, show a weak understanding of the results and their relevance to the theoretical framework.

The student is not suited to research.

P 50-64%
The student has submitted a minor thesis of low quality.

The student is not suited to research.

N < 50%
The student has submitted a thesis of unacceptable quality.

The student is not suited to research.