Oxford University Department of Computer Science

Undergraduate Supervisory Committee

Examination Conventions for Finals, Part A and B 2019

Examination conventions are the formal record of the specific assessment standards for the course or courses to which they apply. They set out how examined work will be marked and how the resulting marks will be used to arrive at a final result and classification of an award.

This document establishes the examining conventions to be used in the following public examinations:

Final Honour School, Part A and B, in Computer Science

Final Honour School, Part A and B, in Mathematics and Computer Science

Final Honour School, Part A and B, in Computer Science and Philosophy

Conventions for papers that fall under the responsibility of the Mathematical Institute or the Faculty of Philosophy are as set out in their examinations conventions.

1 Rubrics

On 2-hour option or core Computer Science papers, candidates should answer up to two questions from three. *Compilers* is examined by written report on practical work which will count for 35% of the mark, and by a 2-hour written paper where candidates answer two questions from three. The paper will count for 65% of the marks.

2 Marking

2.1 Marking scheme for written papers

For all Computer Science papers, model solutions are provided. Each script is marked by an examiner or assessor and is checked independently to ensure that all parts have been marked and the marks and part-marks have been correctly totaled and recorded.

≥70	Class I	A very good answer that is structured, innovative and comprehensive
60-69	Class II(i)	A good answer that includes major points and their significance

50-59	Class II(ii)	An answer where good progress has been made but missing some important aspects.
40-49	Class III	A weak answer that omits several major points
39-30	Pass	A very poor answer that fails to address considerable areas of the question
<30	Fail	A totally inadequate answer.

Qualitative descriptors for questions.

2.2 Mini-Projects

First Class (70–100): The candidate has demonstrated an excellent understanding of almost all of the material covered with a commensurate quality of presentation and has completed almost all of the assignment satisfactorily, further subdivided by:

- 90–100 The candidate has shown considerable originality and insight going well beyond the straightforward completion of the task set.
- 80–89 The work submitted shows a near-perfect completion of the task at hand, but does not meet the additional requirements above, or does but has some defects in presentation.
- 70–79 The work submitted is of a generally high order, but may have minor errors in content and/or deficiencies in presentation.

Upper second class (60-69): The candidate has demonstrated a good or very good understanding of much of the material, and has completed most of the assignment satisfactorily, without showing the level of excellence expected of the above USM range.

Lower second class (50-59)**:** The candidate has demonstrated an adequate understanding of the material and an adequate ability to apply their understanding, without showing the level of understanding expected of the above USM range.

Third class (49-40): The work submitted, while sufficient in quantity, suffers from sufficient defects to show a lack of adequate understanding or ability to apply results.

Pass:

30–39 The candidate, while attempting a significant part of the mini-project, has displayed a very limited knowledge or understanding at the level required.

Fail:

0–29 The candidate has either attempted only a fragment of a mini-project or has

shown an inadequate grasp of basic material

Qualitative Descriptors for Mini-Projects

2.3 Computer Science Project

Each project dissertation will be blind marked by at least two assessors, including at least one examiner, but excluding the supervisor. Each assessor will independently write a brief report on the dissertation, giving careful consideration to context, contribution, competence, criticism and clarity Each assessor will independently suggest an overall mark, in accordance with the standard Computer Science project marking scheme. The assessors will then agree on a final mark, and write a brief report on how they arrived at this mark. Where the assessors can not agree on a mark, a third reader should be used to moderate.

Projects are marked on a scale from 0 to 100.

First class (70-100): For a mark in this range the project should satisfy nearly all the following main criteria:

- addresses a well-rounded collection of relevant *concerns,*
- uses appropriate *technology*
- shows some aspects of *originality*
- involves a significant amount of *analysis* or *assessment* of results,
- is written up in a *clear report*.

The range of first class marks is further subdivided as follows:
(90-100): The candidate shows remarkable ability and true insights. The project satisfies all of the main criteria above and both of these additional criteria:

- is worthy of publication in a reputable conference or journal

(80-89): The candidate shows outstanding problem-solving skills and outstanding knowledge of the material, and uses that knowledge effectively. The project is worthy of publication in a workshop. The project report satisfies all the main criteria above, but not the additional criteria for 90+.
(70-79): The candidate shows excellent problem-solving skills and excellent knowledge of the material, and uses that knowledge effectively. The project report satisfies nearly all the main criteria above (but may have minor errors in content and/or deficiencies in presentation).

Please note that only rarely project reports are awarded a mark over 90. Normally, only about 5% of project reports are awarded a mark in the range of 80-90.

Upper second class (60-69): A project report that achieves most of its aims, but does not address some of the appropriate concerns, or follows an obvious implementation path, or has not been thoroughly tested or assessed, or is written up in a less clear report.

Lower second class (50-59): A project that may represent a start on a feasible plan, but leaves substantial parts still to be completed. Alternatively, a project that fails to address many of the appropriate concerns, or is far too unambitious, lacks any analysis, or is very unclear.
Third class (40-49): A project, perhaps with fragments only of a program, and a plan that remains vague. Alternatively, a project that shows poor understanding of the relevant area, or contains serious errors, or is very incomplete.
Pass (30-39): Marks below 40 may be awarded for very insubstantial reports indicating little serious engagement with the material. (30-39): The project report, while sufficient in quantity, suffers sufficient defects to show a very limited knowledge or f understanding at the level required.
Fail (0-29): The project report shows an attempt at only a fragment of a project or has shown an inadequate grasp of basic material.

To arrive at these marks, the assessors are asked to consider the following questions:

- **Context**: does the report show a good appreciation of the context to the work, giving suitable motivation, relevant background and appropriate references?

- **Competence**: does the report demonstrate competence in the use of appropriate techniques, tools or technology at a suitable level of expertise?

- **Contribution**: does the report show that the student has made some original contribution to the topic, designing and implementing an appropriate system?

- **Criticism**: does the report provide appropriate critical assessment and evaluation of the work that has been done, and the process of doing it?

- **Clarity**: is the report written in a way that is readable and clear for the non-specialist, but with appropriate level of detail to document the work done?

The report must not exceed 10,000 words plus forty pages of additional material (e.g. diagrams, program text). The word count may exclude any table of contents, all mathematical equations and symbols, diagrams, tables, bibliography and the texts of computer programs. However any preface, footnotes, and appendices must be included. The certificate of authorship must also include a statement as to the word length, and of the method by which the figure was reached. Project assessors may deduct marks for any failure to meet these conditions.

2.4 Mathematics Dissertation

Please consult the Mathematics Examination Conventions on the website of the Mathematical Institute.

2.5 Philosophy Thesis

Please see Appendix A below.

3 Moderation and classification

The Examiners translate the raw marks on each paper into University Standardised Marks (USMs) out of 100.

Agreed final marks for individual papers will be expressed using the following scale:

70-100	First Class
69-60	Upper second class
59-50	Lower second class
49-40	Third Class
39-30	Pass
29-0	Fail

4 Scaling

For written examination papers, the Examiners may choose to scale marks where in their academic judgement:

a) a paper was more difficult or easy than in previous years, and/or
b) an optional paper was more or less difficult than other optional papers taken by students in a particular year, and/or
c) a paper has generated a spread of marks which are not a fair reflection of student performance on the University's standard scale for the expression of agreed final marks, i.e. the marks do not reflect the qualitative marks descriptors.

Such scaling is used to ensure that candidates are not advantaged or disadvantaged by any of these situations. In each case, examiners will establish if they have sufficient evidence for scaling. Scaling will only be considered and undertaken after moderation of a paper has been completed, and a complete run of marks for all papers is available.

If it is decided that it is appropriate to use scaling, the examiners will review a sample of papers either side of the classification borderlines to ensure that the outcome of scaling is consistent with academic views of what constitutes an appropriate performance within in each class.

Detailed information about why scaling was necessary and how it was applied will be included in the Examiners' report and the algorithms used will be published for the information of all examiners and students.

5 Penalties

5.1 Short-weight convention and departure from rubric

The maximum deduction that can be made for short weight should be equivalent to the proportion of the answer that is missing.

Where a candidate has failed to answer a compulsory question, or failed to answer the required number of questions in different sections, the complete script will be marked and the issue flagged. The board of examiners will consider all such cases so that consistent penalties are applied.

5.2 Penalties for non-attendance

Failure to attend an examination will result in the failure of the whole Part C.

5.3 Penalties for late or non-submission

The scale of penalties agreed by the board of examiners in relation to late submission of Mini-Projects or Project reports is set out below. Details of the circumstances in which such penalties might apply can be found in the *Examination Regulations* (Regulations for the Conduct of University Examinations, Part 14.)

Lateness	Cumulative penalty
Up to 4 hours	1%
4 - 24 hours	10%
24 – 48 hours	20%
48 – 72 hours	30%
72 – 96 hours	40%
96 – 101 hours	50%

Failure to submit a required element of assessment will result in the failure of the whole Part C.

5.4 Penalties for over-length work

Where a candidate submits a piece of written coursework which exceeds the word limit prescribed by the relevant regulation, the examiners, if they agree to proceed with the examination of the work, may reduce the mark by up to one class (i.e. from a 1st to a 2:1, or its equivalent).

5.5 Penalties for poor academic practice

Less serious instances of poor academic practice can be dealt with by the examiners through the deduction of a maximum of 10 marks for a particular piece of work. More serious cases, and cases where the penalty applied by the examiners would result in failure of the assessment and the programme, must be referred to the Proctors.

Detailed guidance can be found here:

https://www.admin.ox.ac.uk/media/global/wwwadminoxacuk/localsites/educationcommittee/documents/policyguidance/Plagiarism_procedures_guidance.pdf

6 Treatment of practicals

Practicals play no part in the classification, provided that candidates achieve a pass mark for their practical work. Candidates who do not achieve a pass mark for their practical work may, at the discretion of the Examiners, be deemed to have failed the examination.

Reports on practicals are marked by the demonstrating staff as each practical has been completed, and the Examiners receive these marks, together with the practical reports themselves. The demonstrating staff are not appointed as Assessors for the purpose of marking practicals, and it is therefore Examiners' responsibility to determine what credit is given for each piece of practical work. The marks given by the demonstrating staff will serve as a guide, using the table below.

The Examiners will give no credit for practical work that was not submitted for marking by the deadline and signed by a demonstrator, unless there are extenuating circumstances.

The following numerical procedure is suggested for processing the marks. Each practical is marked on a scale S+, S, S- that is explained in the Course Handbook. These marks will be converted to numbers using the following scale:

S+	100
S	60
S-	20

The borderlines for passing the practicals are 40 for a Pass and 70 for a Distinction.

7 Progression Rules and classification conventions

7.1 Qualitative descriptors of classification bands for candidates in Computer Science, or Mathematics and Computer Science

First class	(100-70) The candidate shows excellent skills in reasoning, deductive logic and problem-solving. He/she demonstrates an excellent knowledge of the material, and is able to use that innovatively in unfamiliar contexts.
Upper second class	(69- 60) The candidate shows good or very good skills in reasoning, deductive logic and problem-solving. He/she demonstrates a good or very good knowledge of much of the material.
Lower second class	(59-50) The candidate shows adequate basic skills in reasoning, deductive logic and problem-solving. He/she demonstrates a sound knowledge of much of the material.
Third class	(49-40) The candidate shows reasonable understanding of at least part of the basic material and some skills in reasoning, deductive logic and problem-solving.
Pass	(39-30) The candidate shows some limited grasp of basic material demonstrated by the equivalent of an average of one meaningful attempt at a question on each unit of study. A stronger performance on some papers may compensate

	for a weaker performance on others.
Fail	(29-0) Little evidence of competence in the topics examined; the work is likely to show major misunderstanding and confusion, coupled with inaccurate calculations; the answers to questions attempted are likely to be fragmentary only.

7.2 Qualitative descriptors of classification bands for candidates in Computer Science and Philosophy

First class	Average USM at least 70, or adjusted average USM of 70 and an average USM on Computer Science papers of 60. The candidate shows excellent skills in reasoning, deductive logic and problem-solving. He/she demonstrates an excellent knowledge of the material, and is able to use it innovatively in unfamiliar contexts.
Upper second class	(69- 60) The candidate shows good or very good skills in reasoning, deductive logic and problem-solving. He/she demonstrates a good or very good knowledge of much of the material.
Lower second class	(59-50) The candidate shows adequate basic skills in reasoning, deductive logic and problem-solving. He/she demonstrates a sound knowledge of much of the material.
Third class	(49-40) The candidate shows reasonable understanding of at least part of the basic material and some skills in reasoning, deductive logic and problem-solving.
Pass degree	(39-30) The candidate shows some limited grasp of basic material demonstrated by the equivalent of an average of one meaningful attempt at a question on each unit of study. A stronger performance on some papers may compensate for a weaker performance on others.

Fail	(29-0) The candidate shows little evidence of competence in the topics examined; the work is likely to show major misunderstanding and confusion, coupled with inaccurate calculations; the answers to questions attempted are likely to be fragmentary only.

7.3 Progression and Resits

A candidates who fails to satisfy the examiners the Examiners in Part C may retake Part C on at most one subsequent occasion.

8 Final outcome rules

The average USM is rounded to the nearest integer, with fractions of exactly half a mark being rounded up.

Candidates who have initially failed any element of the examination will not be eligible for the award of a Distinction.

8.1 Computer Science and Mathematics and Computer Science

Computer Science core papers	2 hours	weight 10
Maths core paper A0 (Part A)	1.5 hours	weight 8
Maths core paper A2 (Part A)	3 hours	weight 16
Maths options paper (Part A)	1.5 hours	weight 8
Computer Science options	2 hours	Weight 14
Mathematics options (Part B)	1.75 hours	weight 14
Computer Science Project (Part B)		weight 42

In Computer Science, each candidate takes four core courses (weight 40), a total of ten 2-hour options courses (weight 140) and a project (weight 42). This makes a total weight of 222, so that the weighted mean of the marks is computed by multiplying the marks

for individual courses by the weights shown above, adding them all up, and then dividing the total by 222. The result is an overall weight of 18% for examinations taken in the second year and 82% for examinations taken in the third year.

In Mathematics and Computer Science, each candidate takes two Computer Science core courses (weight 20) and four Maths papers in Part A (weight 40 together), and a total of ten options courses (weight 140). The total weight is therefore 200, and the overall weights are 30% for examinations taken in the second year and 70% for examinations taken in the third year.

8.1 Computer Science and Philosophy

CS course	2 hours	weight 14
Philosophy course	3 hours	weight 28

In Philosophy and Computer Science, Part A, each candidate takes two Computer Science courses (*Models of Computation and Algorithms*) (total weight 28). For Part B, Each candidate takes four, six, or eight Computer Science subjects and five, four or three Philosophy courses, respectively (total weight 196).

This makes a total weight of 224, so that the weighted mean of the marks is computed by multiplying the marks for individual courses by the weights shown above, adding them all up, and then dividing the total by 224.

The examiners will also calculate an adjusted average USM using a weight of 42 for each Philosophy course so that the weighted mean of the marks is computed by multiplying the marks for individual courses, adding them all up, and then dividing the total by either 294, 280 or 266 depending on whether the candidate has taken five, four or three Philosophy courses, respectively.

9 Mitigating circumstances notices to examiners

Where a candidate or candidates have made a submission, under Part 13 of the Regulations for Conduct of University Examinations, that unforeseen circumstances may have had an impact on their performance in an examination, a subset of the board (the 'Mitigating Circumstances Panel') will meet to discuss the individual applications and band the seriousness of each application on a scale of 1-3 with 1 indicating minor impact, 2 indicating moderate impact, and 3 indicating very serious impact. The Panel will evaluate, on the basis of the information provided to it, the relevance of the circumstances to examinations and assessment, and the strength of the evidence

provided in support. Examiners will also note whether all or a subset of papers were affected, being aware that it is possible for circumstances to have different levels of impact on different papers. The banding information will be used at the final board of examiners meeting to decide whether and how to adjust a candidate's results. Further information on the procedure is provided in the *Policy and Guidance for examiners, Annex C* and information for students is provided at www.ox.ac.uk/students/academic/exams/guidance

10 Details of Examiners and rules on communication with examiners

Prof. Alessandro Abate (Chair of Examiners)
Prof. Tom Melham
Prof. Alex Rogers
Prof. Bernardo Cuenca Grau

Candidates should not under any circumstances seek to make contact with individual internal or external examiners.

11 Appendix A:

Philosophy Marking Conventions

Submitted work (theses/extended essays)

1st: 100 to 70 Upper: 84+	Exceptional work displaying originality, outstanding analytical and argumentative skills, superior command of a wide range of facts and arguments relevant to the question, excellent organisation and presentation, lucid and precise expression
Middle: 81, 78	Excellent work offering high-level analysis, independent and rigorous argument, critical understanding of a wide range of relevant material, transparent organisation and presentation, lucid and precise expression.
Lower: 75, 72	Strong work displaying a high standard of analysis and argument, critical insight, and a thorough command of the relevant material; transparent organisation and presentation; clear and precise expression.
2i: 69-60 Upper: 69 to 65	+ Effective analysis and argumentation, demonstrating thorough command of relevant material; transparent organisation and presentation of material; clarity of expression. **-** Occasional imprecision in argumentation or expression; or lack of depth; or minor omissions; or lapses in focus
Lower: 60-64	**+** Clearly structured and generally coherent discussion, offering a mostly accurate analysis of central arguments and themes, and a justified conclusion. - Occasional lapses in argumentation; writing may be somewhat pedestrian or showing unclarity or imprecision of expression; some omissions or infelicity in organisation of material and/or presentation (e.g. missing or incomplete references, misquotations or misattributions).
2ii: 59-50 Upper: 59 to 55	*+* Adequate, if somewhat basic, analysis and understanding of key concepts and arguments; generally cogent and well-structured treatment of topic. - Lacking in scope, depth or precision; pat or pedestrian representation of thoughts and arguments; important inaccuracies or omissions; some lapses in argumentation and/or presentation. **+** Discussion showing a reasonable grasp of basic material and arguments,

Lower: 54-50	and a fair attempt to arrive at a reasoned conclusion. - Significant inaccuracies or omissions; major lapses in argumentation (e.g. nonsequiturs, misuse of concepts or evidence affecting overall conclusions); failure to digest material; minor irrelevance; sloppy presentation.
3rd: 49-40 Upper: 49 to 45 Lower: 44-40	**+** Limited treatment of topic showing some familiarity with relevant material and arguments; recognisable structure. - Superficial or incomplete treatment; gaps or mistakes in understanding of key concepts and arguments; poor focus and organisation; some irrelevance; poor presentation. **+** Significant elements of a basic and relevant answer showing some structure. **-** Muddled argumentation, very superficial discussion with poor focus, significant misunderstanding of key concepts and arguments; considerable irrelevance; incomplete answer; substandard presentation.
Pass: 39 to 30	+ Limited attempt to address question showing a basic grasp of some relevant material. - Seriously incomplete answer; fundamental misunderstanding of key arguments or ideas; significant portions of discussion irrelevant or tangential; basic failures of organisation and presentation.
Fail: 29-0 Upper: 29-15 Lower 14-0:	+ Very limited attempt to answer question; some use of relevant material. - Wholly inadequate answer, discussion largely irrelevant; unacceptably poor organisation and/or presentation. - Completely or almost completely irrelevant or ignorant answer. A very short piece of work, providing no or negligible evidence of study.

Philosophy Marking Conventions

Examination performance

1st: 100 to 70 Upper: 84+	Exceptional answer displaying originality, outstanding analytical and argumentative skills, superior command of a wide range of facts and arguments relevant to the question, excellent organisation and

	presentation, lucid and precise expression
Middle: 81, 78	Excellent work offering high-level analysis, independent and rigorous argument, skilled handling of the facts and arguments relevant to the question, transparent organisation and presentation, lucid and precise expression.
Lower: 75, 72	Strong work displaying a high standard of analysis and argument, a thorough command of the facts/figures relevant to the question; transparent organisation and clear language.
2i: 69-60 Upper: 69 to 65	+ Effective analysis and argumentation, through command of evidence, clarity of expression, transparent organisation of material. - Occasional imprecision in argumentation or expression; or lack of depth; or minor omissions; or lapses in focus
Lower: 64-60	+ Well-structured answer offering a generally accurate analysis of central arguments and themes, and well-reasoned conclusion. - Occasional lapses in argumentation; writing may be somewhat pedestrian or unclear or imprecise; some omissions or infelicity in organisation of material.
2ii: 59-50 Upper: 59 to 55	+ Adequate, if somewhat basic, analysis and understanding of key concepts and arguments. - Significantly lacking in scope, depth or precision; pat or pedestrian representation of thoughts and arguments; important inaccuracies or omissions; some lapses in argumentation.
Lower: 54-50	+ Answer showing a basic grasp of relevant material and arguments, and a fair attempt to arrive at a reasoned conclusion. - Serious inaccuracies or omissions; significant lapses in argumentation (e.g. nonsequiturs, misuse of concepts or evidence); failure to digest material; minor irrelevance.
3rd: 49-40 Upper: 49 to 45	+ Limited answer to the question; constructs a rudimentary argument; some evidence of relevant study. - Superficial or incomplete treatment; gaps or mistakes in understanding of key concepts and arguments; poor focus and organisation; some irrelevance.
Lower: 44-40	+ Significant elements of a basic and relevant answer. - Muddled argumentation, very superficial discussion with poor focus, significant misunderstanding of key concepts and arguments; considerable irrelevance; seriously incomplete answer.

Fail: 39-0	
Upper: 39-30	+ Limited attempt to address question showing a rudimentary grasp of some relevant information. - Very incomplete, brief, or poorly organised answer; fundamental misunderstanding of key arguments or ideas, large portions of discussion irrelevant or tangential.
Middle: 29-15	+ Some slight evidence of a proper attempt to answer question; glimpse of relevant material. - Extremely limited and inadequate answer, for instance in note form; discussion mostly irrelevant.
Lower: 14-0	- Completely or almost completely irrelevant or ignorant answer. Nothing or almost nothing written.

The class boundaries and class descriptors for all classes remain the same across all Honour School involving Philosophy.