

Oxford University Department of Computer Science
Undergraduate Supervisory Committee

Examination Conventions for Finals, Part C 2020

Version	Action	Date
Version 1.0	Published MT19	
Version 1.1	Update to written paper rubrics at 1	25/02/20
Version 1.2	Clarification to qualitative descriptors for Computer Science Project section 2.3 and link to Safety net added	7/5/20

Please see also Safety Net announcement at, <https://www.cs.ox.ac.uk/covid19-student-advice/Safety%20Net%20Policy%20Part%20C.pdf>

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 C, in Computer Science

Final Honour School, Part C, in Mathematics and Computer Science

Final Honour School, Part C, 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

The following optional Computer Science subjects are going to be examined by a written paper:

Computational Game Theory

lasts for three hours. Candidates should answer no more than two questions.

Probabilistic Model Checking

lasts for three hours. Candidates should answer no more than two questions.

2 Marking

2.1 Marking scheme for written papers

For most 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. Essay-type questions without a model solution will be double marked.

≥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
<40	Fail	A very poor answer that fails to address considerable areas of the question

2.2 Submitted Assignments (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.

<p>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.</p>
<p>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.</p>
<p>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.</p>
<p>Fail:</p> <p>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.</p> <p>0–29 The candidate has either attempted only a fragment of a mini-project or has shown an inadequate grasp of basic material</p>

Qualitative Descriptors for Mini-Projects

2.3 Computer Science Project

Each project report will be blind marked by at least two markers, excluding the supervisor. Each marker will independently write a brief report on the dissertation, giving careful consideration to context, contribution, competence, criticism and clarity. Each marker will independently suggest an overall mark, in accordance with the standard Computer Science project marking scheme. The markers will then agree on a final mark, and write a brief report on how they arrived at this mark. Where the markers 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

90–100: The candidate shows remarkable ability and extraordinary insights. Dissertations in this band will be worthy of publication in a highest-ranking conference or journal.

80–89: The candidate shows outstanding problem-solving skills and outstanding knowledge of the material over a wide range of topics, and is able to use that knowledge innovatively and/or in unfamiliar contexts.

70–79: The candidate shows excellent problem-solving skills and excellent knowledge of

the material over a wide range of topics, and is able to use that knowledge innovatively and/or in unfamiliar contexts.
Upper Second Class 65–69: The candidate shows very good problem-solving skills, and very good knowledge of much of the material over a wide range of topics. 60–64: The candidate shows good problem-solving skills, and good knowledge of much of the material over a wide range of topics.
Lower Second Class 50–59: The candidate shows basic problem solving skills and adequate knowledge of most of the material.
Third Class 40–49: The candidate shows reasonable understanding of at least part of the basic material and some problem solving skills. Although there may be a few good answers, the majority of answers will contain errors in calculations and/or show incomplete understanding of the topics.
Fail 30–39: The candidate shows some limited grasp of basic material over a restricted range of topics, but with large gaps in understanding. There need not be any good quality answers, but there will be indications of some competence. 0–29: The candidate shows inadequate grasp of the basic material. The work is likely to show major misunderstanding and confusion, and/or inaccurate calculations; the answers to most of the questions attempted are likely to be fragmentary only.

To arrive at these marks, the examiners and assessors are asked to consider the following factors:

- *Context:* The dissertation should demonstrate, as far as is relevant, a good understanding of the context in which the work was undertaken. It should be evident that the student understood both the problem and the problem domain, and that the choice of approach was informed and intelligent. The examiners would like to be convinced that the student has a good general knowledge of the field.
- *Competence:* The student should demonstrate, in the text of the dissertation that they are able to apply the ideas and the techniques that they have studied. The examiners will look for evidence of understanding, and appropriate application of techniques. They would like to be convinced that the student has shown competence in investigating the chosen topic.
- *Contribution:* The dissertation should have some value in itself. This may arise in different ways: the dissertation may present a fresh application, an extension to a theory, a new solution, or a new approach to a problem. The value will depend

upon the extent of achievement: the nature of the application, the utility of the extension, the elegance of the solution, or the coherence of the approach.

- *Critical Evaluation:* The dissertation should provide appropriate critical assessment of the work that has been done and the process of doing it.
- *Presentation:* If the dissertation is to succeed as a demonstration of knowledge and understanding, and if the examiners are to be convinced of the competence of the student, a certain degree of clarity and organisation is required. Part of the value of the dissertation lies in its accessibility: if it is to make a worthwhile contribution, then it must be readable for another member of the cohort that's taken a similar schedule of courses whilst also maintaining sufficient detail to document the work and support assessments made. For these reasons, and because clarity of exposition may in itself reflect a greater degree of effort and understanding, the examiners would like to be convinced that the dissertation is presented in a lucid and scholarly manner.

The report must not exceed 10,000 words plus forty pages of additional material. 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 markers 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

39-0	Fail
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For Part C examinations, there is no Pass degree.

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 marks
4 - 24 hours	10 marks
24 – 48 hours	20 marks
48 – 72 hours	30 marks
72 – 96 hours	40 marks
96 – 101 hours	50 marks

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 or page limit prescribed by the relevant regulation, or, for mini-projects, indicated in the relevant rubric, 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

The Examination Board shall deal wholly with cases of poor academic practice where the material under review is small and does not exceed 10% of the whole.

Assessors should mark work on its academic merit with the board responsible for deducting marks for derivative or poor referencing.

Determined by the extent of poor academic practice, the board shall deduct between 1% and 10% of the marks available for cases of poor referencing where material is

widely available factual information or a technical description that could not be paraphrased easily; where passage(s) draw on a variety of sources, either verbatim or derivative, in patchwork fashion (and examiners consider that this represents poor academic practice rather than an attempt to deceive); where some attempt has been made to provide references, however incomplete (e.g. footnotes but no quotation marks, Harvard-style references at the end of a paragraph, inclusion in bibliography); or where passage(s) are 'grey literature' i.e. a web source with no clear owner.

If a student has previously had marks deducted for poor academic practice or has been referred to the Proctors for suspected plagiarism the case must always be referred to the Proctors.

In addition, any more serious cases of poor academic practice than described above should also always be referred to the Proctors.

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	70-100 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	60-69 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	50-59 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	40-49 the candidate shows reasonable understanding of at least part of the basic material and some skills in reasoning, deductive logic and problem-solving.
Fail	30-39 The candidate shows some limited grasp of at least part of the material 0-29 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
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	<p>and an average USM on Computer Science papers of 60.</p> <p>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.</p>
Upper second class	<p>60-69</p> <p>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.</p>
Lower second class	<p>50-59</p> <p>The candidate shows adequate basic skills in reasoning, deductive logic and problem-solving. He/she demonstrates a sound knowledge of much of the material.</p>
Third class	<p>40-49</p> <p>The candidate shows reasonable understanding of at least part of the basic material and some skills in reasoning, deductive logic and problem-solving.</p>
Fail	<p>30-39</p> <p>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.</p> <p>0-29</p> <p>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.</p>

7.2 Progression and Resits

A candidate who fails to satisfy the examiners in Part C may retake Part C on at most one subsequent occasion, within a year.

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 or Mathematics and Computer Science*

8.2

Part C Options (Mathematics or Computer Science)	Weight 6
Mathematics Dissertation	Weight 12
Computer Science Project	Weight 18

In Computer Science, each candidate takes five Computer Science option courses (weight 30) and a project (weight 18). This makes a total weight of 48, 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, then dividing the total by 48.

In Mathematics and Computer Science, each candidate takes either six option courses (weight 36) and a mathematics dissertation (weight 12) or five option courses (weight 30) and a Computer Science project (weight 18). This makes a total weight of 48, 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, then dividing the total by 48.

8.2 *Computer Science and Philosophy*

In Computer Science and Philosophy, Part C, each Philosophy paper or thesis is worth 8 units each, each Computer Science taught course is worth 3 units; and a Computer Science project is worth 9 units.

Part C Options Computer Science	Weight 3
Part C Options Philosophy	Weight 8
Philosophy Thesis	Weight 8
Computer Science Project	Weight 9

Candidates complete between 24 and 26 units subject to the following constraints:

- No more than six Computer Science taught courses may be taken;
- Candidates may not take both a Philosophy thesis and a Computer Science project.

The following combinations are therefore permitted:

- Three Philosophy papers (maybe including a thesis) (24 units);
- Two Philosophy papers (maybe including a thesis) and either three Computer Science courses or a Computer Science project (25 units);
- One Philosophy paper (or thesis), and six Computer Science courses (26 units);
- One Philosophy paper, three Computer Science courses and a Computer Science project (26 units);
- Five Computer Science courses and a Computer Science project (24 units).

The average USM is calculated by multiplying each paper mark by its weight, summing, and dividing by 24, 25, 26 or 24, depending on whether the candidate has taken 3, 2, 1 or 0 Philosophy papers.

The Examiners will also calculate an adjusted average USM using a weight of 12 for each Philosophy paper so that the weighted mean of the marks is computed by multiplying the marks for individual papers, summing, and then dividing the total by either 36, 33, 30 or 24 depending on whether the candidate has taken 3, 2, 1 or 0 Philosophy papers respectively. For candidates taking 3 or 0 Philosophy papers, this adjusted average will be the same as the average USM.

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

Dr Ian Horrocks (Chair of Examiners)

Prof. Jonathan Whiteley

Dr Andrzej Murawski

Prof. Roy Crole (External Examiner)

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)

<p>1st: 100 to 70 Upper: 84+</p> <p>Middle: 81, 78</p> <p>Lower: 75, 72</p>	<p>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</p> <p>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.</p> <p>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.</p>
<p>2i: 69-60 Upper: 69 to 65</p> <p>Lower: 60-64</p>	<p>+ Effective analysis and argumentation, demonstrating thorough command of relevant material; transparent organisation and presentation of material; clarity of expression.</p> <p>- Occasional imprecision in argumentation or expression; or lack of depth; or minor omissions; or lapses in focus</p> <p>+ Clearly structured and generally coherent discussion, offering a mostly accurate analysis of central arguments and themes, and a justified conclusion.</p> <p>- 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).</p>
<p>2ii: 59-50 Upper: 59 to 55</p> <p>Lower: 54-50</p>	<p>+ Adequate, if somewhat basic, analysis and understanding of key concepts and arguments; generally cogent and well-structured treatment of topic.</p> <p>- 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.</p> <p>+ Discussion showing a reasonable grasp of basic material and arguments, and a fair attempt to arrive at a reasoned conclusion.</p>

	- 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.

Examination performance

1st: 100 to 70 Upper: 84+ Middle: 81, 78	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 Excellent work offering high-level analysis, independent and rigorous
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<p>Middle: 29-15</p> <p>Lower: 14-0</p>	<ul style="list-style-type: none"> - Very incomplete, brief, or poorly organised answer; fundamental misunderstanding of key arguments or ideas, large portions of discussion irrelevant or tangential. + 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. - Completely or almost completely irrelevant or ignorant answer. Nothing or almost nothing written.
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The class boundaries and class descriptors for all classes remain the same across all Honour School involving Philosophy.