Exam Briefing 2021/22 (for Part 1A students)

Or Everything you need to know about the exams other than the questions

Department of Computer Science and Technology
Introduction

- **Who am I?**
  Alan Mycroft: Chief 1A Examiner (among various other things)

- **Why are we here?**
  To try and make the whole exam process a bit less scary

- **Who are you?**
  Computer Scientists (116 of you) taking:
  - (CompSci) **Papers 1&2&3**; plus
  - (NatSci) Mathematics **Papers 1&2**
Mixed online and in-person exams.

Note the early start (and being in-person) for Maths papers!

The text above is excerpted from: www.cambridgestudents.cam.ac.uk/your-course/examinations/all-students-timetable

This should also have been sent to you on your examination confirmation form (yellow card)
Practical Matters – Where?

- Where? (CS) Papers 1, 2 and 3 = Online exam in 2022

[Source: Cliparts Zone – acknowledging my sources shows I’m a proper CompSci]
Practical Matters – Where?

- Where?  Mathematics Papers 1&2 = In-person exam
Practical Matters – Where – Do a ‘Dry Run’

- Where? Papers 1, 2 and 3 = Online in 2022
  Do the practice paper and practise scanning and uploading
  This is planned for Fri 27 May 2022

- Where? Mathematics Papers 1&2 = In-person in 2022
  Visit the Sports Hall a day or two beforehand (even if you’re not sporty!)
  08:30 on exam day is not the time for Google Maps
Online exams – CompSci Rules

- Details: https://www.cst.cam.ac.uk/teaching/exams/guidance-2122
- Papers will be released on Moodle at the start of each 3-hour exam;
- There is a four-page limit for typed answers; there is no limit for hand-written (and scanned) answers.
- You must complete a coversheet (see later) on each of the answers submitted here too, but in digital form;
- Each file needs to be named correctly;
- After the exam there is a short window for uploading answers before penalties for lateness start being applied.
• **Follow the Computer Science Tripos Honour Code** for online exams:

1. We take it as a principle that maintaining the integrity and fairness of examinations should be regarded as a collaboration between students and the Department.
2. The students undertake that they will not help others in examinations and will not receive any help from others (students or non-students).
3. Students will actively contribute to ensuring that all students adhere to the code.
4. Students will keep to the conditions of the assessment and will accurately report those conditions where asked.
5. The Department will not make any attempt at remote invigilation of online examinations.

• You can access notes and online references freely, but you should acknowledge text quoted other than from lecture notes. Do not communicate with people (or sites like domyhomework.com)

• The penalties for academic misconduct are very severe.
Online exams – Rules and advice

• So, if I can use the internet, what’s the point in revising?

• Can’t I just cut & paste from Wikipedia?


• Short answers:

• 1. you’ll run out of time (searching wastes time compared to memory)

• 2. if you cut & paste (other than lecture notes) you’ll need to acknowledge sources – otherwise you’d be plagiarising – and you’d rapidly exceed the 4-page limit for non-handwritten text.
In-person exams – Things to take with you

- Id
- Your candidate number (also needed for online exams)
- Clothes

11. Candidates shall be dressed decently and not in a manner that is likely to create a disturbance in the examination room, or to distract the attention of other candidates.

[Clothing requirements are less onerous for online exams]
- Pens, pencils
In-person exams – Things *NOT* to take with you

- Mobile phone  -  £50 fine!

(and no Apple/Android smart watches either)

- Food
  4. A candidate may take a small screw-top bottle of water to his or her desk for consumption during an examination session provided that no disturbance is thereby caused to other candidates. Except with the written consent of the Secretary of the Board of Examinations no other items of food or drink may be taken into an examination room. A Supervisor, Invigilator, or Examiner has authority to deprive a candidate of unauthorized items until the examination session is ended.

- Books or papers

- Any means of data storage or retrieval

- Any radio or audio equipment

(check in advance if you have Bluetooth-enabled hearing aids)
In-person exams - Calculators

- You are **NOT** allowed to take a calculator into
  - NatSci Maths papers 1 & 2

- The red text below usually applies for in-person CompSci exams other than the Maths papers above, but is irrelevant for online exams (as you can use better online calculators):
  - You are allowed to take an approved calculator into
    - Computer Science papers 1, 2 & 3
  - Approved calculators must be marked by the Department (go to Student Administration)
  - Only the following will be approved: Casio fx 991, fx 115, fx 570 (any versions)
UNIVERSITY OF CAMBRIDGE
DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

Part I: Structure of Papers 1 and 2 in 2022

<table>
<thead>
<tr>
<th>Paper 1</th>
<th>Paper 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section A</strong></td>
<td><strong>Section A</strong></td>
</tr>
<tr>
<td>Attempt 1 question</td>
<td>Attempt 1 question</td>
</tr>
<tr>
<td>1 Foundations of Computer Science</td>
<td>1 Digital Electronics</td>
</tr>
<tr>
<td>2 Foundations of Computer Science</td>
<td>2 Digital Electronics</td>
</tr>
<tr>
<td><strong>Section B</strong></td>
<td><strong>Section B</strong></td>
</tr>
<tr>
<td>Attempt 1 question</td>
<td>Attempt 1 question</td>
</tr>
<tr>
<td>3 Object-Oriented Programming</td>
<td>3 Operating Systems</td>
</tr>
<tr>
<td>4 Object-Oriented Programming</td>
<td>4 Operating Systems</td>
</tr>
<tr>
<td><strong>Section C</strong></td>
<td><strong>Section C</strong></td>
</tr>
<tr>
<td>Attempt 1 question</td>
<td>Attempt 1 question</td>
</tr>
<tr>
<td>5 Introduction to Probability</td>
<td>5 Software and Security Engineering</td>
</tr>
<tr>
<td>6 Introduction to Probability</td>
<td>6 Software and Security Engineering</td>
</tr>
<tr>
<td><strong>Section D</strong></td>
<td><strong>Section D</strong></td>
</tr>
<tr>
<td>Attempt 1 question</td>
<td>Attempt 2 questions</td>
</tr>
<tr>
<td>7 Algorithms 1</td>
<td>7 Discrete Mathematics</td>
</tr>
<tr>
<td>8 Algorithms 1</td>
<td>8 Discrete Mathematics</td>
</tr>
<tr>
<td><strong>Section E</strong></td>
<td><strong>Section D</strong></td>
</tr>
<tr>
<td>Attempt 1 question</td>
<td>Attempt 2 questions</td>
</tr>
<tr>
<td>9 Algorithms 2</td>
<td>7 Discrete Mathematics</td>
</tr>
<tr>
<td>10 Algorithms 2</td>
<td>8 Discrete Mathematics</td>
</tr>
</tbody>
</table>

Attempt five questions on each paper. For Paper 2 answer one question from each of Sections A, B and C, and two questions from Section D.
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Part Ia: Structure of Paper 3 in 2022

Paper 3

Section A
Attempt 1 question
1 Databases
2 Databases

Section B
Attempt 1 question
3 Introduction to Graphics
4 Introduction to Graphics

Section C
Attempt 1 question
5 Interaction Design
6 Interaction Design

Section D
Attempt 2 questions
7 Machine Learning and Real-world Data
8 Machine Learning and Real-world Data
9 Machine Learning and Real-world Data

Attempt five questions on the paper, one question from each of Sections A, B and C, and two questions from Section D
NST Mathematics Papers

The paper has two sections, A and B. Section A contains short questions and carries 20 marks in total. Section B contains ten questions, each carrying 20 marks.

You may submit answers to all of section A, and to no more than five questions from section B.

The approximate number of marks allocated to a part of a question is indicated in the right hand margin.

Write on one side of the paper only and begin each answer on a separate sheet. (For this purpose, your section A attempts should be considered as one single answer.)

Questions marked with an asterisk (*) require a knowledge of B course material.

Note: five B questions plus the A questions – more than CS papers – so budget 30 mins for section A and 25 mins for each section B.
Practical Matters – What if I answer more questions?

I am asked this question every year, hence this slide.

All questions submitted are marked, but only 5 marks per paper will count.

Which 5 are entirely **at the discretion of the examiners**.

The questions chosen will obey the sectioning rules (e.g. 1 from Section A, etc), and will not necessarily be those with the highest marks.

*It is the opinion of the examiners that you are better off spending any extra time you feel you might have by attempting to improve your 5 answers than by starting and submitting an extra question.*
Practical Matters – Who’s who?

- Supervisor
- Invigilators & Assistants
- Examiners – only present for first 30mins, but you can ask questions after that.
- Proctor (rare)
- (not in the room) Assessors
In-person exams – what happens when

- **Aim to be outside 30-15 mins early.** You may be admitted before the advertised time. (You will be allowed in *up to* 30 mins late)

- You will only see the exam cover. An invigilator will tell you when you can open the exam paper and start.

- You should read the whole paper before you start writing.

- Allow roughly 30 mins per question \((180 \div 5 = 36)\) for CS papers, do similar calculations for Section A/B for the two Maths papers.

- There will be a 5-minute warning before the end of the exam.

- You must stop writing when instructed at the end of the exam.

- You may then fill in the cover sheet (if you haven’t already).

- You may leave once your paper is collected. (You may leave earlier but not in the first 30 mins)
In-person exams – the desk

- On your desk will be:
  - The exam paper
  - A stock of writing paper
  - A stock of clearly marked rough working paper (probably!)
  - A card with your name and examination number, and the number of your desk
  - Some cover sheets
  - Some tags
CST0
COMPUTER SCIENCE TRIPOS  Part IA

Monday 6 June 2022  14:00 to 17:00 BST

COMPUTER SCIENCE  Paper 1

Answer one question from each of Sections A, B, C, D, and E.

Submit each question answer in a separate PDF. As the file name, use your candidate number, paper and question number (e.g., 1234A-p1-q6.pdf). Also write your candidate number, paper and question number at the start of each PDF.

You must follow the official form and conduct instructions for this online examination
NATURAL SCIENCES TRIPOS          Part IA

Monday, 10 June, 2019  9:00 am to 12:00 pm  NST0, CST0

MATHEMATICS (1)

Before you begin read these instructions carefully:

The paper has two sections, A and B. Section A contains short questions and carries 20 marks in total. Section B contains ten questions, each carrying 20 marks.

You may submit answers to all of section A, and to no more than five questions from section B.

The approximate number of marks allocated to a part of a question is indicated in the right hand margin.

Write on one side of the paper only and begin each answer on a separate sheet. (For this purpose, your section A attempts should be considered as one single answer.)

Questions marked with an asterisk (*) require a knowledge of B course material.

At the end of the examination:

Tie up all of your section A answer in a single bundle, with a completed blue cover sheet.

Each section B question has a number and a letter (for example, 11Z). Answers to these questions must be tied up in separate bundles, marked R, S, T, V, W, X, Y or Z according to the letter affixed to each question. Do not join the bundles together. For each bundle, a blue cover sheet must be completed and attached to the bundle, with the correct letter R, S, T, V, W, X, Y or Z written in the section box.

A separate green master cover sheet listing all the questions attempted must also be completed. (Your section A answer may be recorded just as A: there is no need to list each individual short question.)

Every cover sheet must bear your examination number and desk number.

Calculators are not permitted in this examination.

STATIONERY REQUIREMENTS         SPECIAL REQUIREMENTS
6 blue cover sheets and treasury tags
Green master cover sheet
Single-sided script paper
Rough paper

You may not start to read the questions printed on the subsequent pages until instructed to do so by the Invigilator.
Practical Matters – Cover sheet (in-person form)

COVER SHEET

Candidate Number | 1 2 3 4 X
Desk Number       | 100
Examination (e.g. Tripos and Part) | COMPUTER SCIENCE
Subject / Paper Number and Title | PAPER 1
Section (where applicable) | A
Questions Attempted | 0 3 5 7 9

During the examination
• You must not have any electronic device unless indicated on the question paper
• Read carefully the instructions on the question paper
• Ask an invigilator if you need extra paper
• Write legibly

After the examination
• Complete all the sections above
• Number your pages, and fasten them to this cover sheet with the tag provided
• You may take away your question paper, unless instructed otherwise
• You may not take away any stationery
Some people find the cover sheet confusing because the instructions telling you how to fill it in are on the front of the exam paper, NOT on the cover sheet itself. This is because all exams use the same cover sheet, and some subjects want them filled in differently.

For Maths papers, use one blue cover sheet for each section you attempt – i.e. a subset of \{A,R,S,T,V,W,X,Y,Z\} – and a green overview cover sheet. [This protects against answers getting lost]

For (online) CS papers 1,2&3 complete the online coversheet. The traditional small red text below does not apply for online exams

To emphasise – We want a cover sheet per question (i.e. 5) – We do not want a cover sheet per paper (i.e. 1), or a cover sheet per section (i.e. 4)

Please fill in the numbers of all questions attempted on all cover sheets. This is so we can tell if a question answer gets lost!
Also – *don’t write your name on your answers or on the cover sheet* - candidate number only.

- We use anonymous marking based on your BCN (blind candidate number)

Please write numbers and your BCN legibly on the cover sheet
Practical Matters – Illness/incapacity/mitigating circumstances

- If a problem occurs in the time before the exams that is likely to disturb your revision or performance in the exam itself tell your Tutor ASAP.

- Your college may submit a warning letter, which will be used as evidence if you apply for an allowance after the exams. (An allowance is a mark or class adjustment granted in certain circumstances, in particular on account of “illness or other grave cause”.)

- If it is a medical matter see a GP as the GP may be asked to provide a note.

- If a problem occurs on the day contact your college Porters’ Lodge.

- Do not attend an in-person exam if you suspect you have Covid-19.

- If a problem occurs in the exam hall put your hand up and inform an invigilator. If a problem occurs during an online exam contact your Tutor (or Porter’s Lodge) by telephone.
Practical Matters – What can I ask the examiners?

- You can’t ask questions like this:
  - What is the answer to Question 3?
  - Is the answer to Question 3 “x”?
- But you can ask, for example:
  - Is this question correct as printed?

\[ \text{Simplify } F = \overline{A}.\overline{B}.C.\overline{D}.E + A.C.D + A.C.\overline{F}.G.\overline{H} + A.B.C.\overline{D}.E + A.C.D.\overline{E} + \overline{E}.\overline{H} \]

In online exams you can’t ask examiners questions at all. You can consult Wikipedia and other existing online sources – but you can’t consult people or submit your question to domyhomework.com
After the exam – What happens?

- Sorting
- Marking
- Checking
- Practical marks
After the exam – Practical marks

All of you should have gained the full set of “units of assessed course work” (aka ticks), as specified in the Head of Department’s notices.

The Marking and Classing document says:

“Mark penalties will be applied to act as a deterrent to missing a tick. The Part IA Examiners are supplied with a final tick list. Each missing tick will receive a penalty of 10 marks (10% of a paper). The maximum penalty is 100 marks (one full paper).”
[History: CST and NST used to share more papers]

There is a problem for NST students – people take different NST subjects with different mark distributions – so just adding up marks isn’t fair unless examiners first normalise means and variances [they do this with an intricate process called Norm Referencing]

It’s no longer an issue with CST (as all students take the same set of papers).

But you may find your Maths paper marks are norm-referenced before the CST examiners get them (this explains which you might get a mark of 72.8 when you only did integer-value questions).
After the exam – Classing I

We have a total mark, now we need to draw class boundaries.

We follow the rules set out in the Marking and Classing document:

www.cl.cam.ac.uk/teaching/exams/classing.pdf

which states that examiners will partition the order-of-merit table thus:

- First: 25%
- Upper Second: 55%
- Lower Second: 12.5%
- Third and Unclassed: 7.5% (unclassed = mark below 40%)
Examiners will actually use graphs like this, scatterplots, to determine the class boundaries.
After the exam - Results

Computer Science results will be published on Friday 8 July, in the afternoon.

They are published on CamSIS.

Initial results will just be the class and paper marks, Directors of Studies will be given more information a day or two later.
Examination Reviews, Informal Mark Check

Once you get your exam marks, if you think we’ve made a mistake you may make an informal request for a mark check.

This should be done through your Director of Studies, who will have to approve it.

For example, if you are sure you should have gained 20 marks on question X, but were awarded 2, then you can ask your DoS to check.

We have done such checks many times over the years and have never found a recording or addition mistake; these things are double or even triple checked.
Examination Reviews, Formal Appeals

There is a formal procedure for appeals:

- If you are unhappy about something concerning the conduct of the exam you need to fill in the **Representations to Examiners Form** within 5 days.
- After the classlist is published if you believe a mistake has been made you need to fill in the **Examination Review Form** within 28 days of publication.

Your Tutor (or CUSU) can point you at the forms and advise you. Any form received will be handled in accordance with the University **Examination Review Procedure**.
After the appeals – Uh oh!

It must be stressed that very very few people fail!

Fewer than 1% in Computer Science

The University will not say “You have failed” – it will simply not publish your name in the classlist. However, you may be granted an allowance to remain.

What happens next is up to your college

All will have some kind of internal appeals procedure but unless you are granted an allowance the rules are straightforward and as you would expect.

The regulations do not allow re-sits
Copies of these slides are available via

https://www.cst.cam.ac.uk/teaching/exams/guidance-2122

Additionally this PDF is available for a few months at my Computer Lab homepage:

http://www.cl.cam.ac.uk/~am21/briefing-2122.pdf