The IA Computer Science Registration Lecture

for

All Computer Scientists
NST students taking the CS option
PBS Students taking the CS option
Course Outline and Lectures
There are **two** IA CompSci examination papers at the end of the year:

- **Paper 1** – taken by everyone here
- **Paper 2** – **Only** for CST and **not** NST/PBS
Paper Topics

Paper 1

Foundations of CS
Object Oriented Programming
Algorithms
Numerical Methods

Paper 2

Digital Electronics
Discrete Maths
Operating Systems
Software and Interface Design
We do **not** use moodle for lecture material. Instead you will find everything on our website, [www.cl.cam.ac.uk/teaching](http://www.cl.cam.ac.uk/teaching)

- Syllabus
- Books
- Lecturer contact details
- Electronic copies of notes
- Electronic copies of examples sheets
- Errata
- Additional material from the lecturer
Lectures

Paper 1 (All)
- **MWF 10-11**
- **Arts School Room A, New Museums Site**

Paper 2 (CST)
- **MWF 12-1**
- **Arts School Room A (Mon) New Museums Site**
  - **Biffen Lecture Theatre (Wed/Fri) Downing Site**
Lectures

Paper 1 (All)
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NOTE: The original timetable email you received has the Paper 2 lecture rooms wrong: this slide is correct!
Recordings

• With modern phones it is tempting to start recording lectures for later perusal. But:

Recordings are forbidden
Unless you have explicit permission from the department and lecturer

• Applies to video AND audio

• Even with permission, you must only use it for private work and destroy it asap without sharing.
Optional Fundamentals Lectures

If you don't have any CompSci experience there are **OPTIONAL Computer Fundamentals** lectures on **Thursdays** that cover some basics.

Look out for emails with more details
Aside: Scientific Computing Course

• As part of the NST Maths course, there is a “Scientific Computing” course with three assessed exercises that count toward the maths option mark.

• The content is *not* arranged or given by this department.

• Information should have been provided in your NST practical allocation email yesterday.
Aside: Scientific Computing Course

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If you do NST Maths you need to do the Scientific Computing course regardless of any CS option.
Practicals ("Ticks")
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Practicals are called **ticks**
Held on Thursdays
Upstairs in the Intel Laboratory

- ML
- Java
- Algorithms
- Digital Electronics

CST: 20 ticks
NST: 10 ticks
Just so we're Clear...

- Cambridge 'weeks' start on a Thursday
- So this is the start of week 1
- Your first practical is next Thursday, at the start of week 2 (more on this later)
- *No, I don't know why either.*
**Ticking Process**

1. **Do tick exercise in allocated session**
   - Sign up **online** for a ticking slot within your session
   - Print solution
   - Meet ticker and go through solution
   - OK

2. **Do tick elsewhere**
   - **Needs correction**

**Ticker takes printout**
The Tick Signup for ML/Java

- Online system for ticking slots
- First come, first served
- Sign up in advance or on the day
Signup Etiquette

- One slot per tick
- Don't sign up until you've completed the work!
- Don't take up multiple slots in advance. If you want to get multiple ticks one week, please sign up on the day
- Tickers try to keep to time but please be patient
Timings for ML/Java in Paper 1

- There is a nominal tick per week (tick one starts next Thursday, which is week 2)
- You must each tick within two weeks of the associated date
  - Tick 1 by end of week 4 session
  - Tick 2 by end of week 5 session
  - Tick 3 by end of week 6 session
  - Tick 4 by end of week 7 session
  - Etc.
Working Elsewhere

- You can do the work for your practicals anywhere
- Doing them here ensures you have access to demonstrators
- You still need to come here in person to get your ticks signed off each week
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This year there are so many of you that we don't have quite enough workstations upstairs!

→ Working at home helps ←

or

→ Bringing your own laptop helps ←
Running Ahead

- Practicals often align roughly to lectures
- But we give you all the ticks at once so you can race ahead if you like
- Beware: you might not learn as much this way. Ticks can be solved in different ways and you might miss the clever subtleties...
Starred Ticks

- Some of the ticks have an extension called a 'star' to challenge you if you find the core tick easy
- These do **NOT** count towards anything exam-wise and are strictly **OPTIONAL**
- But you get kudos for doing them so if you find the core tick easy, why not..?

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**Exercise 1** - Recursive Functions Continued

Note that although the following problems will not count towards a 'tick', it is a good idea to attempt them before next week's exercise.

**Remark:** The function `real` converts an integer to a real number. The function `floor` converts a real number `x` to the largest integer `i` such that `i ≤ x`. These functions will be useful in the examples below, which involve both integer and real calculations.

1. Write an ML function `sumt(n)` to sum the `n` terms
THURSDAYS

Group AO, AE
Hardware
10.30-13.00

Group B
ML/Java
16.00-18.00

Group BO, BE
Hardware
13.30-16.00

Group A
ML/Java
14.00-16.00

AO = Group A, Odd numbered weeks only
AE = Group A, Even numbered weeks only
Practical Allocations

- The group assignments are now available at http://www.cl.cam.ac.uk/teaching/1415/Registratn/
- That link will also be emailed to you
- Space is tight. If you want to swap you need to find someone to swap with and email rkh23@cam.ac.uk for permission
Some Study Tips for CS
A Physicist, Engineer and Computer Scientist are travelling in a car when it breaks down.

**Physicist:** *We must have exceeded the elasticity of some component. We must get to a garage.*

**Engineer:** *No! Something will have fallen out of alignment. Let me hammer the engine a bit.*

**Computer Scientist:** *Hmmm. First let's turn the engine off, close all windows, and restart.*
Repetition is Everywhere

- There are a lot of connections in your various CS courses
- You probably won't see them at first, esp. if you're new to the subject
- But when you come to revise, things often slot into place and you realise we present the same ideas many times in different ways
- So what may seem complex and impenetrable at first often ends up being obvious and easy (ish)
Programming is a skill

- Skills need practice
- It is a good idea to install the necessary software on your own machines and play around with programming in addition to the coursework
- We have guidelines on setting up various programming environments online
Lectures should be Active not Passive!

- We give you lecture notes and some of you will take this as a cue to just kick back and listen in lectures.
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5% chance of info retention

Longman, D. and Atkinson, R. College Learning and Study Skills. 1999. Wadsworth/Thomson Learning
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34% chance of info retention!

Longman, D. and Atkinson, R. College Learning and Study Skills. 1999. Wadsworth/Thomson Learning
Giving us Feedback
Feedback 1: SSCOF

- **Staff-Student Consultative Forum**
  - Allows you to give feedback to the department on anything from ticks to room temperature.
  - You elect a CST and an NST/PBS representative to this committee. They will periodically ask for your input.
Feedback 2: Course Feedback

- We use electronic questionnaires after each course to gather specific feedback and improve.
  - Please take the time to fill them out – we need statistically significant data!
  - The results are viewed by the Tripos Management Committee, the lecturer and (if they are fit to release) you!
Feedback 3: Urgent Feedback

- Sometimes there's something that needs fixing ASAP and can't wait for the feedback forms or SSCOF

- [http://www.cl.cam.ac.uk/teaching/hotline.html](http://www.cl.cam.ac.uk/teaching/hotline.html)

- This gives you an *(anonymous)* urgent feedback form that is sent immediately to the important people who can help
Professional Bodies

• Computer Science in the UK has two main professional bodies: the IET and the BCS

• Both have accredited our course so you are all eligible to join them. More details on the registration pages

- Can get chartered status
- Student: £32 for one year
- £52 for up to four years
- www.bcs.org/student

- Can get chartered status
- Student: £20 for one year
- £50 for up to four years
- www.theiet.org/join
What to do ASAP

1) Check you know **where** your lectures are
2) Check you know **when** your lectures are
3) Check your @cam email **regularly** for information
4) Check you can log onto the **MCS** (Managed Cluster Service)
   http://www.ucs.cam.ac.uk/desktop-services/mcs
5) Reread these slides, which are available at
   http://www.cl.cam.ac.uk/teaching/1415/Registratn/
6) **Consider installing poly/ML on your own computer**
   http://www.cl.cam.ac.uk/teaching/1415/ML/usingml.html