The Computer Science Registration Lecture

for

All Computer Scientists
NST students taking the CS option
PBS Students taking the CS option

Useful People To Know

Professor Andy Hopper CBE FRS FREng FIET
Head of the Computer Laboratory

Professor Ann Copestake
Deputy Head for Teaching
Ann.Copestake@cl.cam.ac.uk

Dr David Greaves
Chair of the Tripos Management Committee
David.Greaves@cl.cam.ac.uk

Dr Robert Harle (me!)
Part IA Co-ordinator
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  - Paper 1 – taken by everyone here
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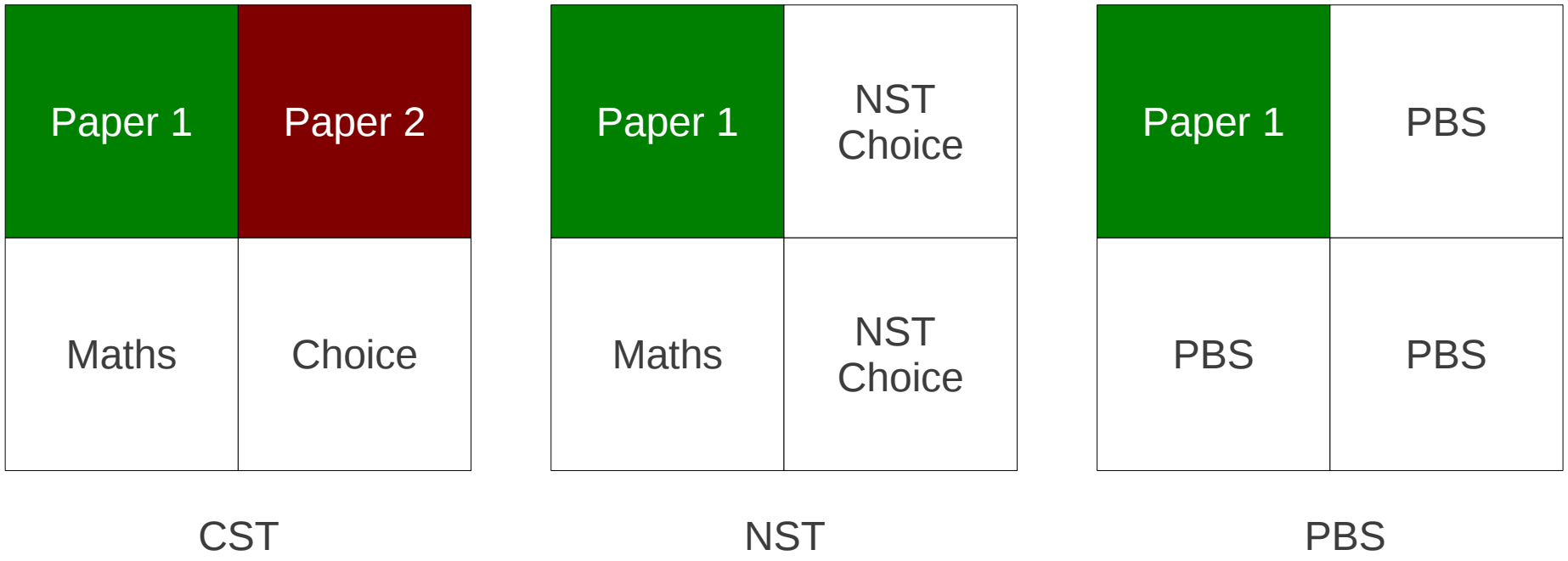

Lectures

Paper 1

- MWF 10-11
- Arts School Room A
- Foundations of CS
  Object-Oriented Programming
  Algorithms
  Numerical Methods

Paper 2

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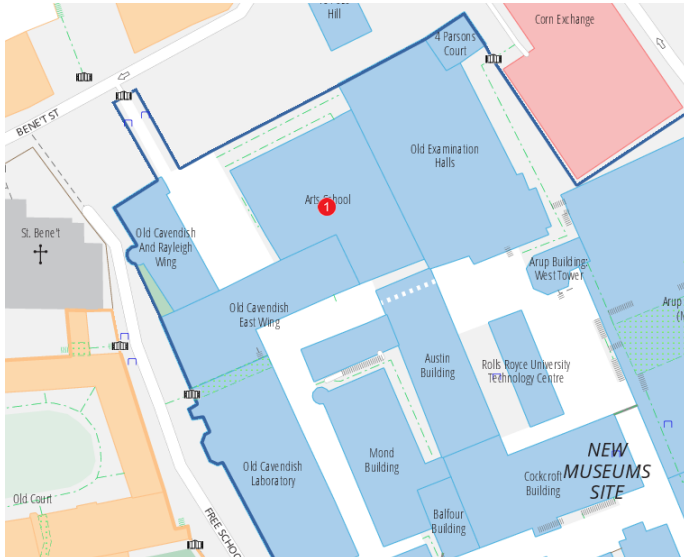

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Computer Fundamentals
Optional 4-lecture course
Wednesdays, 4.15-5.15pm
In Lecture Theatre 1 - **HERE**

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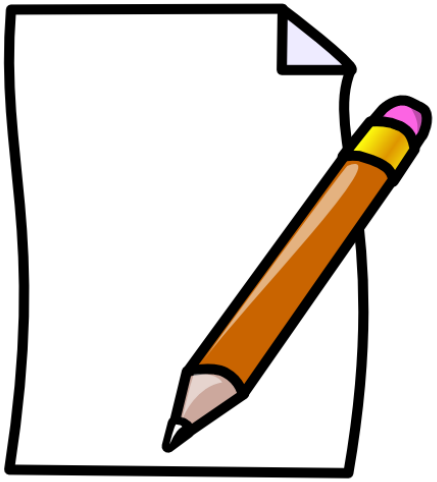

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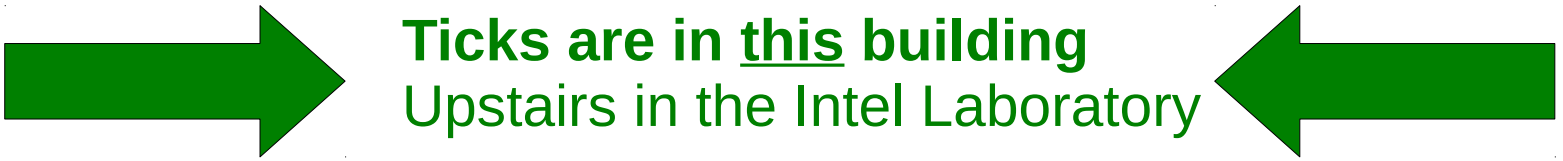

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Practical Allocations

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4pm-6pm ML/Java

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[CST Only]

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- The group assignments are now available at http://www.cl.cam.ac.uk/teaching/1314/Registratn/
- That link will also be emailed to you
- If you want to swap into another session, this is OK but you need to find someone to swap with

CHECK YOUR @CAM EMAIL REGULARLY

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- For the first time we have asked that all CST students keep Wednesday afternoons free too.
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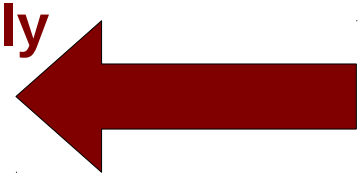

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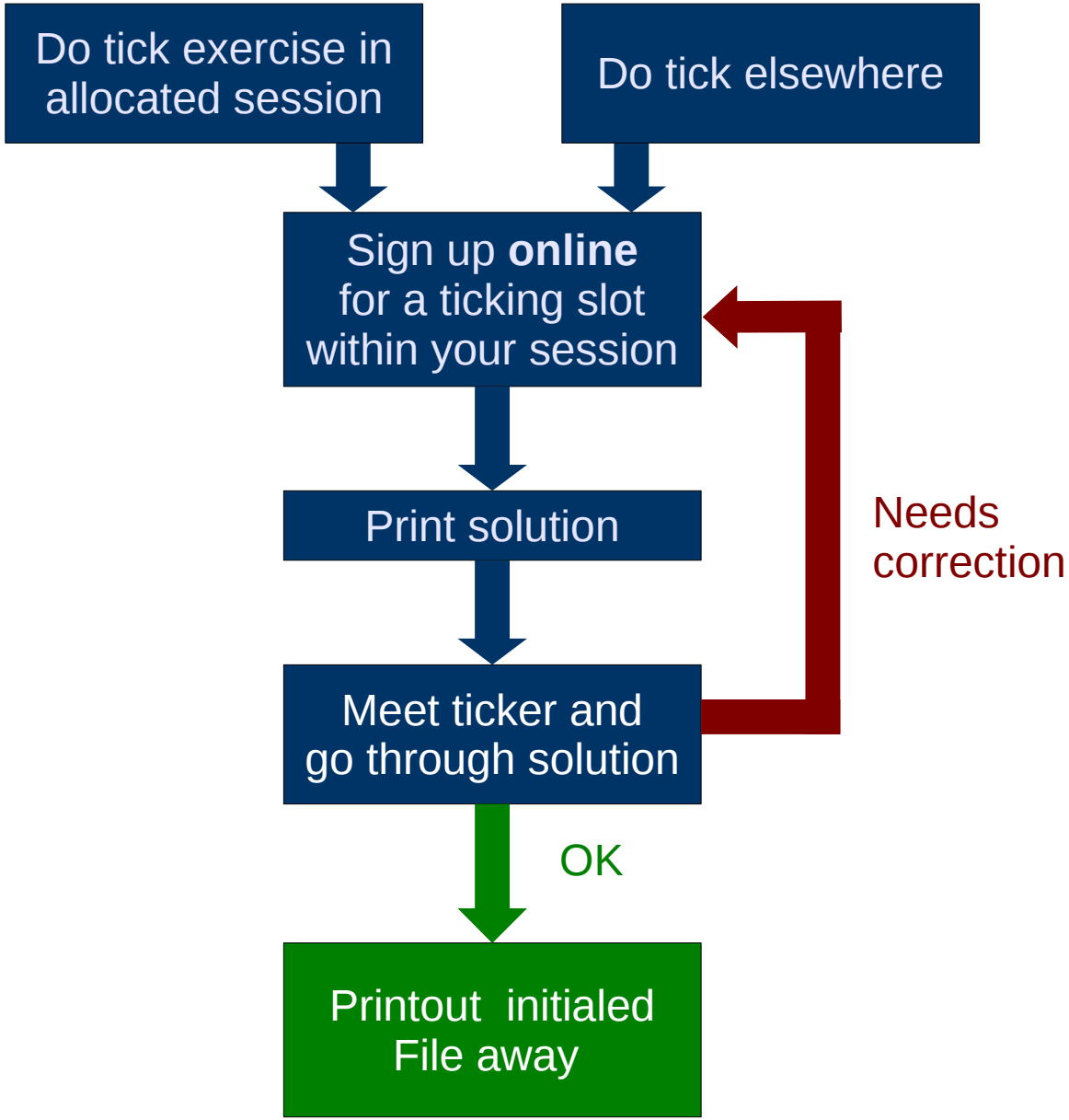
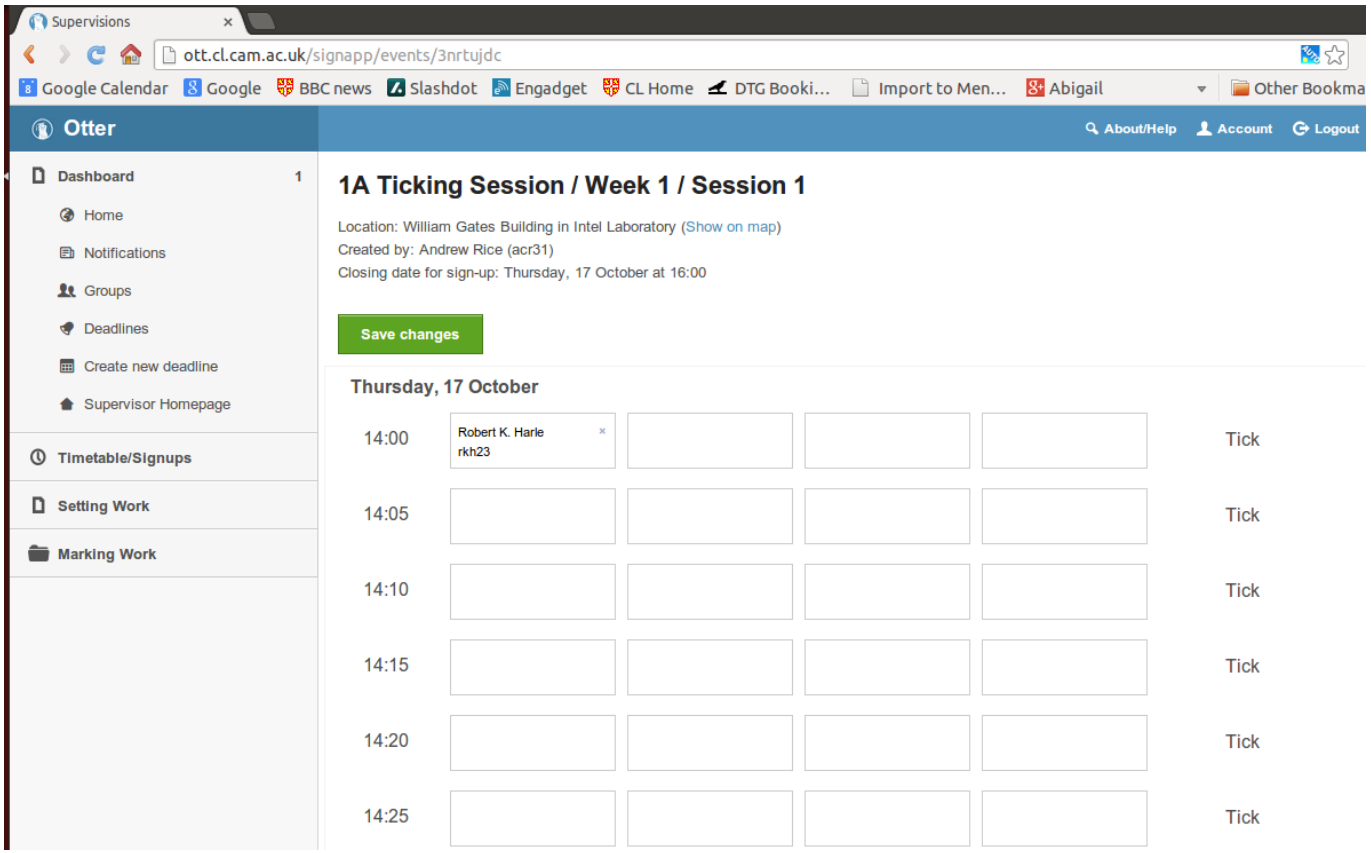


The Tick Signup for ML/Java

- Online system for 5 min ticking slots
- First come, first served
- Sign up in advance or on the day



Running Ahead

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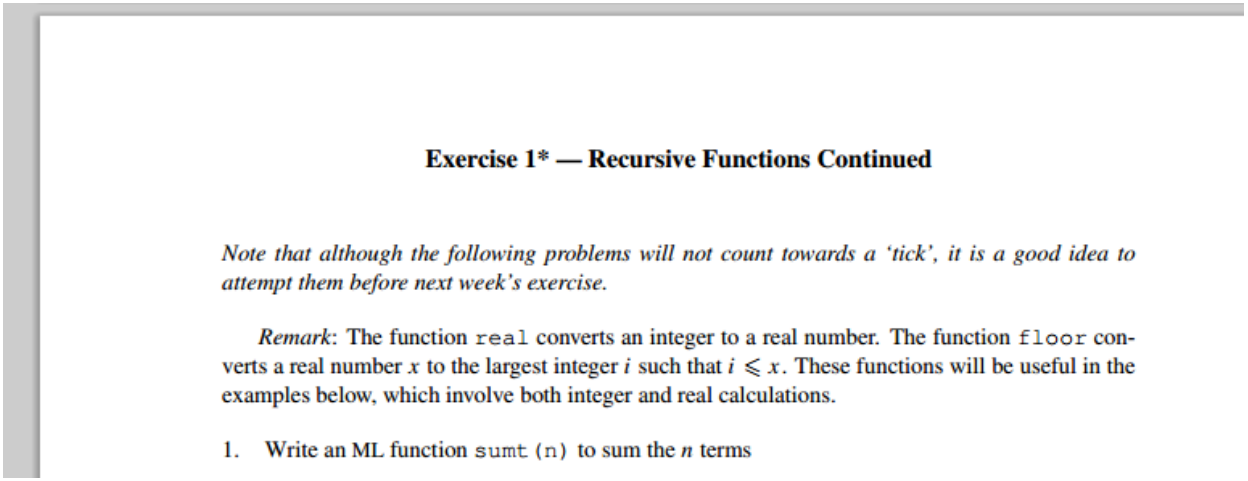
- But we give you all the ticks at once so you can race ahead if you like
- Beware: you might not learn as much this way. Ticks can be solved in different ways and you might miss the clever subtleties...

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..?



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 $i \leqslant x$. 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

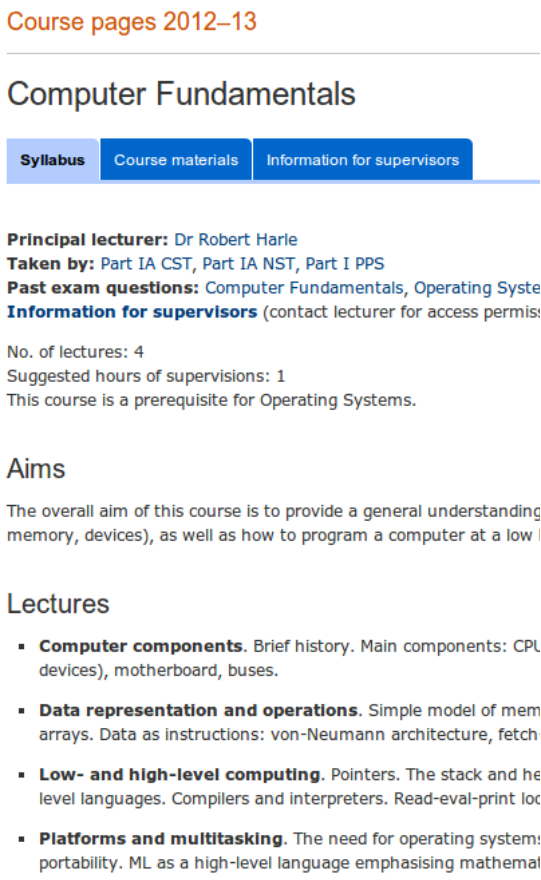
The Tick Portfolio

- Each tick ends in a signed printout which you show a Ticker. He/she will ask you some questions on it and, if satisfied, will sign your printout
- You keep your tick in a tick portfolio to be submitted to the examiners at the end of the year

KEEP YOUR TICKED PRINTOUTS YOU NEED THEM AT THE END OF THE YEAR!

Course Information

- We do **not** use camTools for lecture material. Instead you will find everything on our website, 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


Course pages 2012–13

Computer Fundamentals

Syllabus | Course materials | Information for supervisors

Principal lecturer: Dr Robert Harle
Taken by: Part IA CST, Part IA NST, Part I PPS
Past exam questions: Computer Fundamentals, Operating Syste
Information for supervisors (contact lecturer for access permiss

No. of lectures: 4
Suggested hours of supervisions: 1
This course is a prerequisite for Operating Systems.

Aims

The overall aim of this course is to provide a general understanding
memory, devices), as well as how to program a computer at a low

Lectures

- **Computer components**. Brief history. Main components: CPU
devices), motherboard, buses.
- **Data representation and operations**. Simple model of mem
arrays. Data as instructions: von-Neumann architecture, fetch
- **Low- and high-level computing**. Pointers. The stack and he
level languages. Compilers and interpreters. Read-eval-print loo
- **Platforms and multitasking**. The need for operating systems
portability. ML as a high-level language emphasising mathemat

Syllabus Booklets (Errata!)

- If you have a hard copy of the syllabus booklet please note that some course syllabuses (OOP especially) have been updated on the web
- Changes are predominantly grouping and ordering of content
- But you should use the online versions as the reference ones

http://www.cl.cam.ac.uk/teaching/

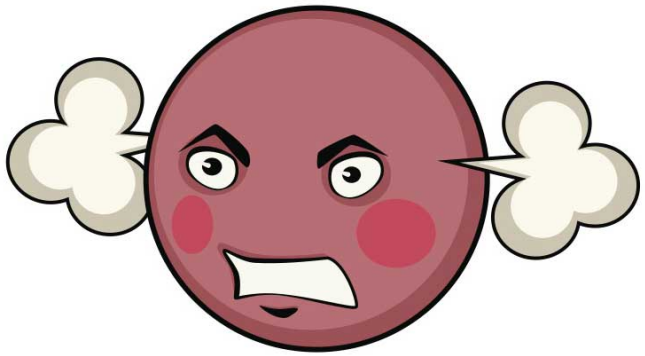
Scientific Computing Course

- 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

If you do NST Maths you need to do the Scientific Computing course as well as this option

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.

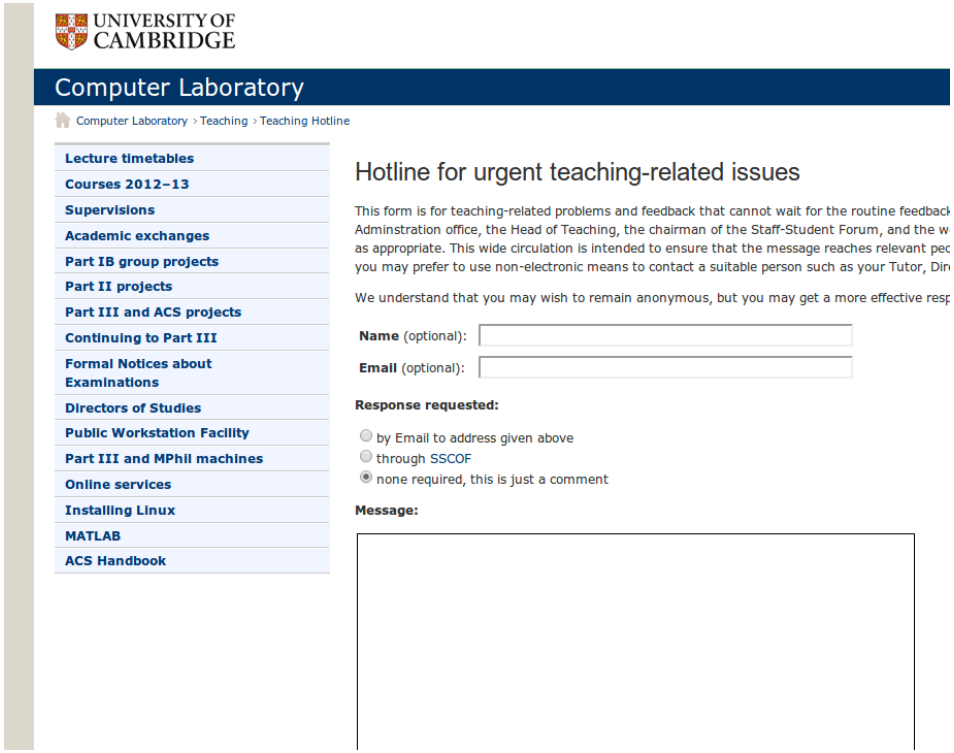


Feedback 2: Course Feedback

- 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**
- 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 you should do ASAP

1) Check you know where your lectures are
2) Check you know when your lectures are
3) Check your Cambridge (hermes) email regularly for information
4) Make sure you can log onto a MCS (Managed Cluster Service) machine such as the ones here in the Intel Lab (where the practicals are): http://www.ucs.cam.ac.uk/desktop-services/mcs
5) Reread these slides, which are available at http://www.cl.cam.ac.uk/teaching/1314/Registratn/
6) Consider installing poly/ML on your own computer if you have one

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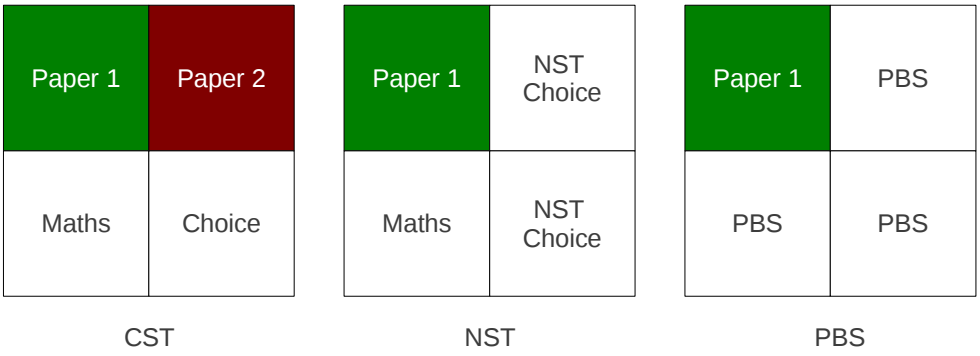

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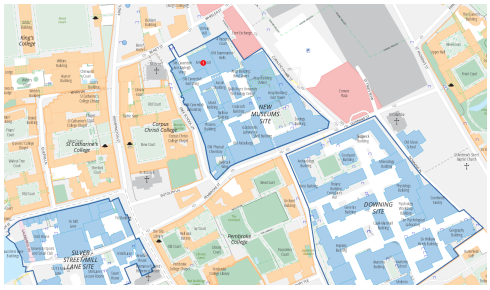

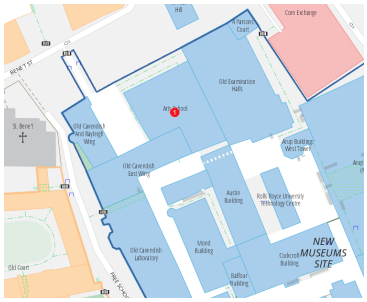

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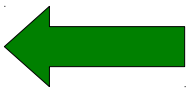

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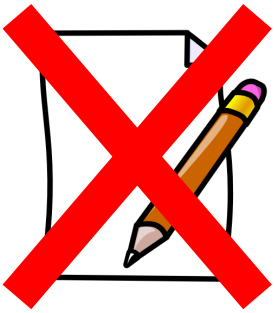

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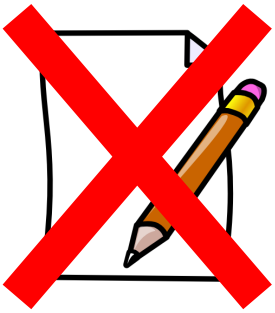

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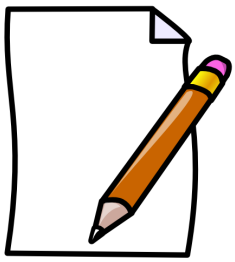

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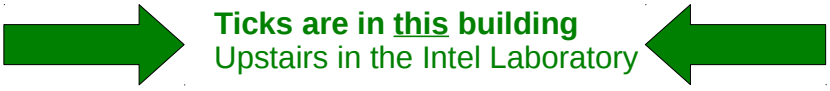

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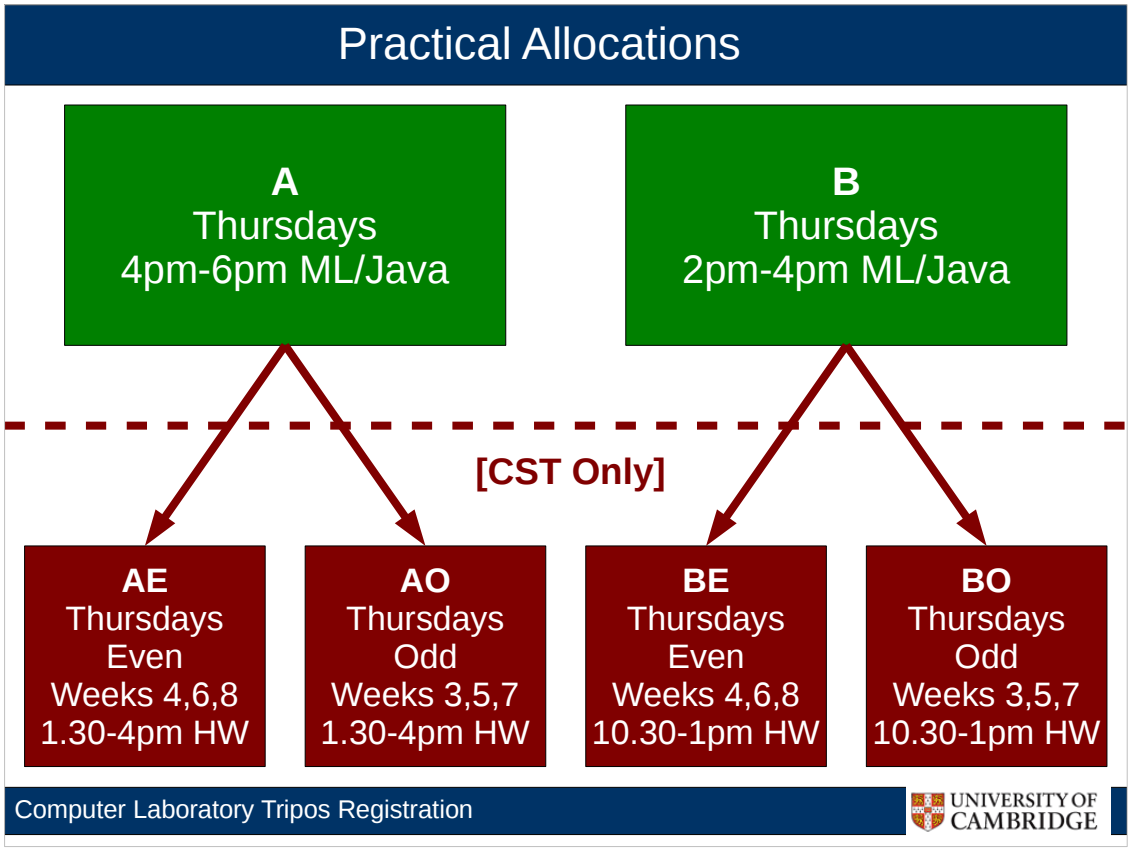
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UNIVERSITY OF CAMBRIDGE

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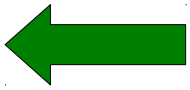

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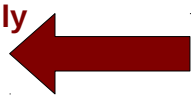

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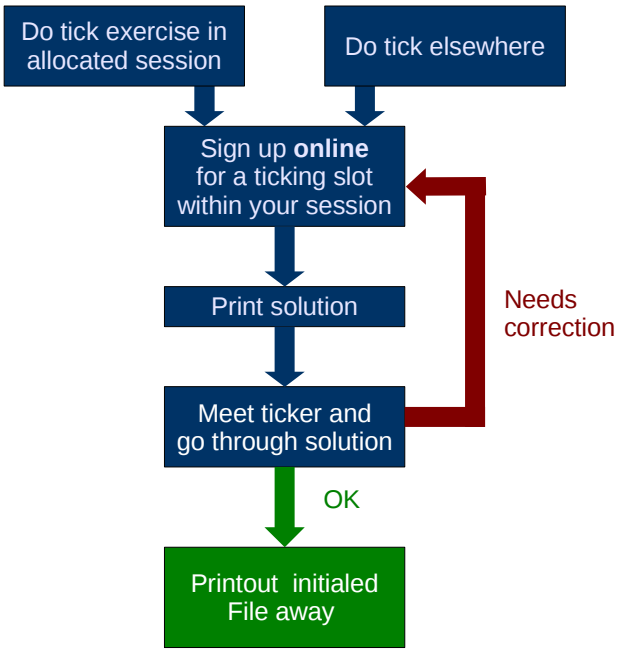

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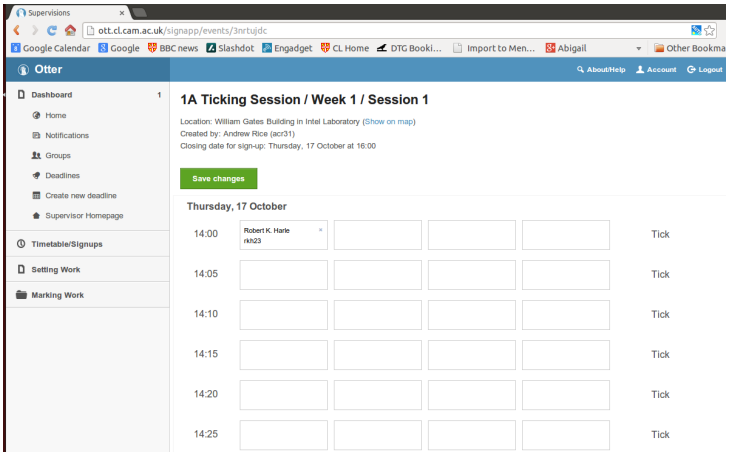

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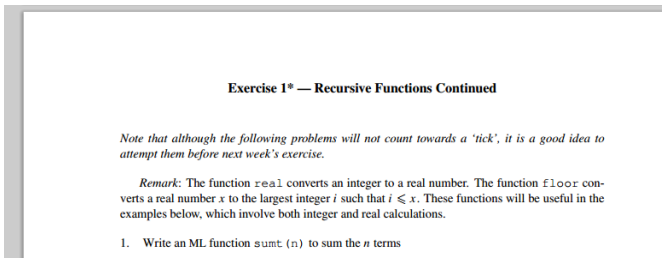

Exercise 1* — Recursive Functions Continued

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 $i \leqslant x$. These functions will be useful in the examples below, which involve both integer and real calculations.

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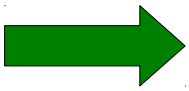

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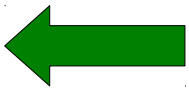

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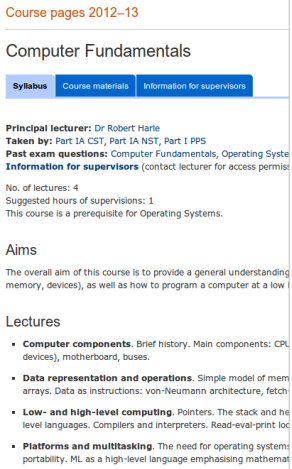
  - Books
  - Lecturer contact details
  - Electronic copies of notes
  - Electronic copies of examples sheets
  - Errata
  - Additional material from the lecturer


Course pages 2012–13

Computer Fundamentals

Syllabus | Course materials | Information for supervisors

Principal lecturer: Dr Robert Harle
Taken by: Part IA CST, Part IA NST, Part I PPS
Past exam questions: Computer Fundamentals, Operating Syste
Information for supervisors (contact lecturer for access permis

No. of lectures: 4
Suggested hours of supervisions: 1
This course is a prerequisite for Operating Systems.

Aims

The overall aim of this course is to provide a general understanding
memory, devices), as well as how to program a computer at a low

Lectures

- **Computer components**. Brief history. Main components: CPU
devices), motherboard, buses.
- **Data representation and operations**. Simple model of mem
arrays. Data as instructions: von-Neumann architecture, fetch
- **Low- and high-level computing**. Pointers. The stack and he
level languages. Compilers and interpreters. Read-eval-print loo
- **Platforms and multitasking**. The need for operating system
portability. ML as a high-level language emphasising mathemat

Syllabus Booklets (Errata!)

- If you have a hard copy of the syllabus booklet please note that some course syllabuses (OOP especially) have been updated on the web
- Changes are predominantly grouping and ordering of content
- But you should use the online versions as the reference ones

http://www.cl.cam.ac.uk/teaching/

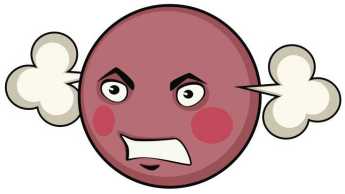
Scientific Computing Course

- 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

If you do NST Maths you need to do the Scientific Computing course as well as this option

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.

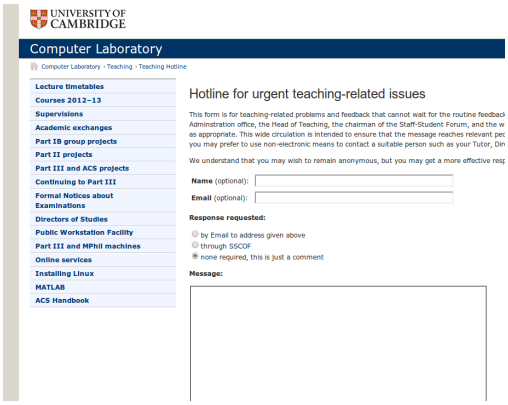


Feedback 2: Course Feedback

- 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**
- 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**

The Chartered Institute for IT
The Engineering an

What you should do ASAP

1) Check you know where your lectures are
2) Check you know when your lectures are
3) Check your Cambridge (hermes) email regularly for information
4) Make sure you can log onto a MCS (Managed Cluster Service) machine such as the ones here in the Intel Lab (where the practicals are): http://www.ucs.cam.ac.uk/desktop-services/mcs
5) Reread these slides, which are available at http://www.cl.cam.ac.uk/teaching/1314/Registratn/
6) Consider installing poly/ML on your own computer if you have one