IB CATAM Introduction

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- CATAM manual: http://www.maths.cam.ac.uk/undergrad/catam/IB
- Find these slides (PDF with links) at the CATAM webpage http://www.maths.cam.ac.uk/undergrad/catam
- Helpline: catam@maths.cam.ac.uk
Why CATAM?

Computer-Aided Teaching in All Mathematics

- Another way to teach and learn mathematics
- Increasingly, academic and industrial maths relies on computing
- Significant number of Tripos marks available for CATAM

see Schedule and CATAM manual for more detail
Marks available — Part IB

- Maximum of 160 Tripos marks
- For the average student, CATAM contributes ~20%
- Credit added directly to marks total: no $\alpha$ or $\beta$’s

See Schedule and CATAM manual for more detail
Deadlines — Part IB

- **Tuesday, 22 January 2019, 10am — 4pm**
- **Tuesday, 30 April 2019, 10am — 4pm**

There are many reasons to work diligently and finish well ahead of deadline
- to deal with unforeseen problems including graphs, tables, program listings
- to *proofread* your submission
- to have ample time to print/turn in report

see [CATAM manual](#) for more detail
MATLAB

- MATLAB makes computational maths easier
- You don’t have to learn to be an ace programmer.
- You *can* learn to be an ace programmer!

  ‣ The University Information Services (UIS) offers short courses in C++, python, R, and MATLAB: http://www.ucs.cam.ac.uk/training

  ‣ Another option: Julia - Matlab-like ease with C speed

- You can use these languages and others for CATAM*

  *Ask helpline if an in-built function makes question/task trivial

see CATAM manual for more detail
Openendedness

• Unlike tripos questions, CATAM projects often have open-ended questions, e.g. invitations to comment

• This is deliberate

• Figuring things out for yourself is a “transferable skill”

• Frustration might actually be *productive discomfort* (think: yoga, strength/athletic training, music practice, essay writing)

see CATAM manual for more detail
Communicating mathematics

- Communicating by writing is a “transferable skill”
- Proofread for typos & mistakes
- Re-read, imagining you are not the author:
  - Would you like to read your write-up?
  - Would you learn any mathematics from it?
Academic integrity

• All of you work very hard studying mathematics
• You have earned an examination procedure which respects your efforts
• Achievement of tripos marks by unfair means is an insult to all of you
• We promise to protect the academic integrity of CATAM
Unfair means

**Unacceptable** collaboration includes (but is not limited to):

- Copying any person’s program
- Using someone else’s program or any part of it as a model, or working from a jointly produced detailed program outline
- Copying or paraphrasing someone else’s report in whole or in part
- Posting questions on the internet, e.g. StackExchange
- Sharing your work with other students

see CATAM manual for more detail
Plagiarism detection

- Unfortunately, upholding Academic Integrity means we all have to undertake some administrative tasks

- Submit **code/programs** *electronically*
  - Comparison with projects submitted this year *and previous years*

- Produce & submit **write-up** *electronically*
  - Checked against Turnitin UK database

- Student declaration form (e-mail to be sent soon)

see [CATAM manual](#) for more detail
Consequences of plagiarising

From the manual:

“If it is concluded that you have used unfair means for the whole or any part of the Computational Projects the likely outcome is that you will receive a mark of **zero** for the Computational Projects *in their entirety*.”

If you “donate” computer code to someone else you may also lose marks.

see [CATAM manual](#) for more detail
Electronic submission

• Submit your code and write-up electronically
• Free to produce your write-up using
  – LaTeX — Introductory lecture by Dr Stephen Eglen
    6 Nov 2018, 1-2pm CMS
  – Microsoft Word
  – LibreOffice/OpenOffice
  – most any word processor (see CATAM manual)
• *Not permitted*: anything scanned
Resources — Part IB

- [MATLAB classes]
- CATAM manual
- LaTeX manual & Lecture: 6 Nov 2018, 1-2pm, CMS (see email)
- Helpline: catam@maths.cam.ac.uk
- Ask your DoS to arrange a supervision on introductory project, or on core projects after you receive the marks back
- Lecture on introductory project:
  watch e-mail & CATAM page http://www.maths.cam.ac.uk/undergrad/catam
- Library
- Computer room: GL.04 (Basement of Pav. G in CMS)
Have a great year!