

## Computational Projects

### Lecture 8 part 1 : Project Information

Dr Rob Jack, DAMTP

<http://www.maths.cam.ac.uk/undergrad/catam/part-ia-lectures>

## Report: marks

- Marks are awarded based on your report (write-up)
- 40% marks for “computing”, 50% for “mathematics”, 10% for “excellence”
- All marks contingent on submission of **both** report and corresponding computer code
- No  $\alpha$ 's or  $\beta$ 's are awarded, but marks are scaled to take care of this
- Many students will find that CATAM contributes ~20% to their total mark

## Report: maths

- Mathematical content is most important ingredient
- You do not usually need to write-up details of algorithm implementation
- You should usually comment on checks done to verify code is correct
- Communicate your observations & conclusions through mathematical writing
- Be sure to answer/comment on **everything** asked

## Think about...

- Does your algorithm work? How do you know?
- What is the complexity of your algorithm?  
[Usually we want to know how it scales with some large/small quantity.]
- What is the accuracy of your method?  
[Discuss step-sizes, truncations, etc.]
- How do results compare to theoretical expectations?
- What can be concluded from your results?  
Mathematical or physical consequences?

# Report: technicalities

- Must be submitted in PDF format (scans not usually acceptable) in addition to hard copy
- Use most any word processor: LaTeX, Microsoft Word, OpenOffice, ...
- MATLAB can produce PDF plots, which can be included/imported using any word processor

# Unfair means

- MATLAB exercises and introductory projects:  
Feel free to collaborate & have supervisions...
- Core projects (Lent submission) and additional projects (Easter submission) are *examinable*:  
These must be **your own work**, no collaboration
- If you break these rules then you risk getting zero marks for CATAM

# Acceptable

- *Occasional, general* discussion of the approach to a project
- *Small* hints on debugging
- If in doubt e-mail the CATAM helpline  
[catam@maths.cam.ac.uk](mailto:catam@maths.cam.ac.uk)

# Unacceptable

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

# Citations

- Please do use reference books, journals, online references, lecture notes
- Acknowledge all sources with a footnote or endnote (WWW pages should be cited with the full URL)
- Unless otherwise instructed, there is usually no need to quote long derivations/proofs in full, but provide your own brief summary

# Programs

- You are expected to write your own programs
- You may “recycle” or “re-use” **your own code**, for example between different projects
- Using copied code, e.g. from internet, **which you are instructed to write yourself**, is generally considered plagiarism, even if cited
- Earn your marks with your own work

# Plagiarism detection

- Checks will be made to ensure the Academic Integrity of the Computational Projects is upheld
- Your programs will be compared (automatically) with other programs from this year and from previous years
- Similarly your reports will be compared with a database of reports (and other sources)
- You will fill in student declaration forms, on-line and at submission.
- If plagiarism is suspected, you may be interviewed. You need to be available for this in the last week of Easter full term.

# Resources: CATAM help

- CATAM webpage (with links to all of the below)  
[www.maths.cam.ac.uk/undergrad/catam](http://www.maths.cam.ac.uk/undergrad/catam)
- MATLAB sessions (earlier) & booklet
- “Introduction to LaTeX” lecture & lab in autumn
- Part IB and Part II manuals (new one published each summer)
- CATAM News — updates/corrections/FAQ's
- CATAM helpline: [catam@maths.cam.ac.uk](mailto:catam@maths.cam.ac.uk)

# Resources: general help

- Courses in programming (and LaTeX typesetting) at University Information Services <http://www.ucs.cam.ac.uk/training>
- For mathematics involved in projects
  - Lecture notes
  - Textbooks
  - Webpages
- Cite any sources which contributed to your report <http://www.maths.cam.ac.uk/facultyboard/plagiarism/>

# Submission

- You will receive detailed e-mails ahead of submission deadlines
- See also the Project Manuals

# After submission

- Work cannot be returned to you (we need to retain them in case of queries)
- Make sure that you keep your own version...
- Manuals will be taken offline in summer. You may wish to keep your own copy of the project statement before this is done
- All your work is kept, in anonymised form, to check against future submissions

# After IA exams...

- ... recover
- complete the exercises in the MATLAB booklet
- do the Introductory project (root-finding)
- feel free to get a head start on core projects (in Aug/Sept)
- come back prepared for a CATAM supervision on the introductory project (talk to your DoS)

# Your opinion

- Web-based questionnaire to help us improve teaching of Computational Projects for Part IA students  
We'll **e-mail** you in **June**.