CM50175
Research Project Preparation

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http://www.cs.bath.ac.uk/~jjb

➢teaching➢RPP

http://www.cs.bath.ac.uk/~jjb/here/CM50175/CM50175-top.html

Course Objectives – Academic

- Help you to learn about doing computer science projects.
  - How do you make a contribution?
  - How do you recognize contributions?
- Teach you about writing for peers.
  - Structuring your writing.
  - Choosing what to write.

Course Objectives – Practical

- Choose your adviser & project.

- Choose your dissertation style & analysis technique.

- Get 80 hours of literature research and writing in *before* June.

- Get 8,000 words written *before* June.

- Find tools, peer support networks.

Tentative February Schedule

- Lectures:
  - Introduction to CM50175 + What's in a Dissertation?
  - Using the Bath Library for Literature Research.
  - Choosing a Project + How to Cite Literature.
  - What do Dissertations Look Like?

More for Feb.

- Choose a supervisor by 23 Feb! (noon)
- Seminars from potential Supervisors.

Tentative Schedule For March

- Supervisor Assigned by 6th.

- Lectures:
  - Proving You've Done Something: Doing Statistics (er, maybe Feb.).
  - Testimonials from former MScs: What worked, what didn't.

- Mandatory seminars on your project & proposal.

April & May Schedules

- April:
  - Work on your project.
  - Write 8,000 words.
  - Last minute Q&A on April 17th or 22nd. Choose now!
- May:
  - Submit Project Proposal: 4th May (noon)

Course Marks

- 90% on 8,000 word project proposal.
  - Half (so 45% total) marked by your supervisor, concerns research.
  - Half by me, concerns structure & clarity.
  - Details (including mark sheet) will be handed out in early March.
- 10% for participation in seminars.
  - 3% each for 3 in March & April.

Can I Really Write 8,000 Words?

- Most project time in 8 weeks from 3 March to 2 May.

- ⇒ About 10 hours a week on project.
  - At least half of time will be reading & trying things out.
  - About half of writing time is really thinking.

- ⇒ About 8 words per minute.

What is the Project Proposal?

- Roughly a third of your dissertation.
  - Introduction & Motivation.
  - Literature review & related work sections.
  - Methodology.
- A proposal.
  - An introductory chapter explaining how you've met the course objectives.
  - A plan, including alternatives.

Expect to Learn!

- It wouldn't be a research project if the final outcome was known in advance.

- Some things will take longer or shorter than you expect.

- Plan for several scenarios: best case, worst case, expected case.

- Be able to recognize which case you are in.

How Will the Proposal be Marked?

- I will only read the Intro & References!
- We will want evidence that you have:
  - Thought about the analysis, structure & scope of your project.
  - Communicated effectively with your supervisor.
  - Did thorough background research.
- More details in March.

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  - What Dissertations Look Like + How to Cite Literature.
- Seminars from potential advisors.

Tentative February Schedule

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  - Using the Bath Library for Literature Research.

  - What Dissertations Look Like + How to Cite Literature.

- Seminars from potential advisors.

Outline:
What's in a Dissertation?

- What's in an essay?

- How is a dissertation different?

- Components of a dissertation.

- What to do the next few months.

What's in an essay?

- An argument! An essay is *not* a report.
- A thesis.
- Evidence for that thesis.
- Evidence against that thesis.
- Analysis of that evidence.
- A summary and conclusion.
- Nothing else! (the hard part)

Evidence and Analysis

- Evidence can include:
  - Demonstrations.
  - Rational arguments.
  - Experiments & arguments from others.
- Analysis includes:
  - Suggestions of how the evidence could be overturned, how likely that is, and how that could be recognized.

Are Dissertations Different?

- A dissertation also contains a thesis and evidence, and summaries of these.

- Dissertations include reports.

- A dissertation is written primarily for peers – expect it to be read by future research students.

- You are becoming a peer with your supervisor.

Components of a Dissertation

- Introduction
- Conclusion
- Motivation
- Background

Methods

Results

Implications

Future Work

These Aren't Necessarily Chapters!

- Introduction
- Conclusion
- Motivation
- Background

Methods

Results

Implications

Future Work

Some people will only read these:

- Introduction
- Conclusion
- Motivation
- Background

Methods

Results

Implications

Future Work

Some will only read one of these:

- Introduction
- Conclusion
- Motivation
- Background

Methods

Results

Implications

Future Work

These might not include references to other literature.

- Introduction
- Conclusion
- Motivation
- Background

Methods

Results

Implications

Future Work

What to Do for the Next Few Months

- Read!

- Hack!

- Write!

- Talk!

What to Do – Read!

- Web pages:
  - Potential supervisors & projects.
  - Products & Users.
- Magazines and Journals.
- Documentation.
- Dissertations.
- Papers.

What to Do – Hack!

- Try tools.

- Build prototypes.
  - How hard is the problem?
  - Find missing parts of the architecture.
  - Get more familiar with tools.
- Test other people's results & claims.

What to Do – Write!

- Notes become text; some will go in the dissertation.

- Non-notes become lost.

- Writing on a computer allows for search, cut & paste.

- Writing in notebooks allows time record & spatial structure.

What to Do – Talk!

- Find out about tools.

- Find out about papers.

- Find someone to proof-read & give feedback.

- Yes, it is part of your job to make friends with your coursemates (or at least to be colleagues with them.)

Summary:
What's in a Dissertation?

- *What's in an essay?* A thesis argument, evidence to support it, and analysis of that evidence.

- *How is a dissertation different?* It's longer and contains reports. But mostly, it's not different.

- *Components of a dissertation.*

- *What to do the next few months.*

Summary: What's in a Dissertation?

- *What's in an essay?*

- *How is a dissertation different?*

- *Components of a dissertation.* Introduction, Conclusion, Motivation, Background, Methods, Results, Implications, Future Work.

- *What to do the next few months.* Read, hack, write & talk.