Guidance on Projects

Monday, 23 November 2009

Oxford FHS in Mathematics and Joint Schools

- Introduction
- Structuring a thesis
- Referencing
- Style and presentation
- Timing
- Questions, discussion and a.o.b.

Introduction

Plan for this session: to offer general advice and suggestions, with time for questions, discussion, disagreement, as we go along and at the end.

Assumption 1: that you have found an interesting topic and an interested supervisor.

Assumption 2: that you have a reasonably clear idea of what you want to do on that topic.

Structuring a thesis

- Write with a reader in mind
  - yourself before you embarked on your research
  - a friend at a similar stage of development
  - perhaps an examiner (but then remember that the examiner could be an expert, but, equally, could be someone with more experience and background than yours but with less usable knowledge of your topic)
- give your work a beginning, a middle, an end
- give it a good send-off: title-page, preface, contents page.

Referencing, I

- List references with full bibliographical detail; the list is placed at the end of the thesis (but before index if any)
  [See next screen]

- refer to the references at the relevant points in your text
  - to help make your work self-contained
  - to give credit where credit is due

- avoid plagiarism like the plague

Referencing, II: your reference list

- Put items cited in alphabetical order of authors
- For books give author(s), title, publisher, place of publication, year of publication
- For articles give author(s), title, journal, volume number and year, page-range
- Give each item an identifier, e.g. number them serially
- Reference in the text should quote the identifier and indicate where to find the relevant bit of information—e.g. by Theorem number or Section or page number (especially important in the case of books and long articles).

Referencing, III: your reference list

Formatting references (European standard):

Authors' names in roman or small caps;

Article name in roman type;

Book titles and journal titles in italics;

Publication information in roman type.

Style and presentation, I

- Write grammatically (see, for example, London Math Soc advice to authors: see http://www.lms.ac.uk/publications/documents/writing.pdf)
- Don't use symbols (such as $\forall$, $\exists$, $\Rightarrow$) as mere abbreviations in text
- Avoid abbreviations generally (mathematical language is already very concentrated)
- Don't let formulae coalesce accidentally (for example, don't start a sentence with a symbol or formula when the preceding sentence ends with a symbol or formula)

Style and presentation, II

- use some dialect of TEX such as LATEX
- use the correct symbol: for example

  \langle, \rangle to get $\langle$, $\rangle$
  (not <, > — wrong symbols, give very bad spacing)

  \mid to get | in the construction $\{x \mid P(x)\}$
  (not | — it gives wrong spacing)

  notation such as Aut, Sym, Hom, ... is printed in roman type in formulae (like log, sin, cos, min, max, lim, ...).

Timing

- Aim to get a first draft finished by Week 6
- Give a presentation on it (to your supervisor and A N Other) in Week 6 or Week 7
- you MUST submit your final draft by 12 noon on Friday of Week 9—so remember that most printers suffer overload in Week 9.

Questions, discussion and a.o.b.

How often should I see my supervisor?

How much and in what form can my supervisor help me?

Does the mathematics all have to be at H-level or M-level?

How rigid is the length restriction?

AOB