CSW
Computer Science Writing
Lectures 1 and 2

Helen Petrie

with help from some friends

Aims

Immediate aims:

- To prepare for project work
  - Planning the writing up
  - Structuring the writing up
  - Prepare for project presentation

Longer terms aims:

being prepared to write reports, make presentations in your future work

Learning Outcomes

- To be able to make an informed choice of text preparation facilities, and use these to present written text clearly and accurately
- To be able to plan and execute an extended piece of writing – how to structure it, write it
- To be able to use literature effectively, including appropriate citation styles and constructing a critique
- to prepare and give a presentation on an academic subject, in a fixed time

Who's here, doing what?

- All 3Y0s (MEng) and MSc NCs:
  - Lectures, presentation (on aspect of lit review). assessment (lit review, due next term),
- All those taking PR3 (third year project):
  - Lectures, presentation (practice for project presentation, mark does not count, but good feedback will be given)

Comments please

- This module relatively new and this is the first year I have taught it
- Generally people liked it, so it's very similar this year, but I'm keen to have your thoughts on it
- If you don't like it
  - Or think it should be different
    - Say so… I may be able to modify later sessions!

Comments – on the assessment

- Last year, assessment guidelines were ignored or misinterpreted
- The guidelines are very precise
- Divergence is heavily penalised
- Read the guidance material and follow it

Lectures

10 lectures:

- Tuesday 09:15, V/123, Aut/2 to Aut/4
- Wednesday 09:15, P/L006 Aut/2 to Aut/4
- Thursday 17:15, V/123, Aut/2 to Aut/4
- Friday 15:15, ATB/057 Aut/2 to Aut/4

(Tuesday 17th lost, another lecture slot will be skipped - Thursday 26th October)

Whatever course you're on, you should (!) attend the lectures

“Guest” lectures

- Preparing a project using MS Word,
  - Alistair Edwards, 19th October, 1st November
- Preparing a project using Latex
  - Jeremy Jacob, 27th October
- Scientific method & basic statistics
  - Susan Stepney, 20th October, 31st October

Practicals I

Practical slots for practice presentations

- *Aut/5 only* (6 -10 November)

- Monday 10:15, Aut/5 P/T/005
- Tuesday 09:15, Aut/5 P/T/006
- Wednesday 09:15, Aut/5 P/T/005
- Friday 14:15, Aut/5 P/T/005
- Friday 15:15, Aut/5 ATB/057

Practicals II

- Group of 5 or 6 students; 5 minutes each
  - Timing strictly enforced
- Powerpoint (or equivalent) presentation - to be submitted 24 hours in advance, so I can load them all on a computer, check they run
- Feedback from demonstrators and me

Practicals III

Topics for presentations (more details later):

- For PR3 students - one or two key papers from your project literature review, a critical analysis of this paper
- For all other students - a set of interesting papers will be provided next week

A silly interlude

If you are an MEng third year

- Stand on the right

If you are doing a PR3 project

- Stand on the left

If you are an MSc NC student

- Come to the front

AND THEN….

- Find one or two people from your side
- Sit down together (so you can talk)

There will be mini-discussions from time to time

- For now,
  - Discuss projects and what they might mean

WHAT IS A PROJECT?

Discuss what might determine the nature of projects in the Department

2-3 minutes: timer

What do you think….?

Project definitions: rationale I

- Most degrees accredited by IEE/BCS
- Projects must conform to the Engineering Council definitions
- Ours are a lot bigger than the minimum!
  - http://www.bcs.org/server.php?show=nav.7066

  (section 2.3)

Project definitions: rationale II

- The National “Honours” and “Masters” level degree designations also affect project definitions:
  - http://www.qaa.ac.uk/academicinfrastructure/FHEQ/EWNI/default.asp (see Annex 1)

Project definitions

- Project definitions can be accessed from Projects web pages:
  - http://www.cs.york.ac.uk/projects/
- Check the definition … your supervisor may not have done so!

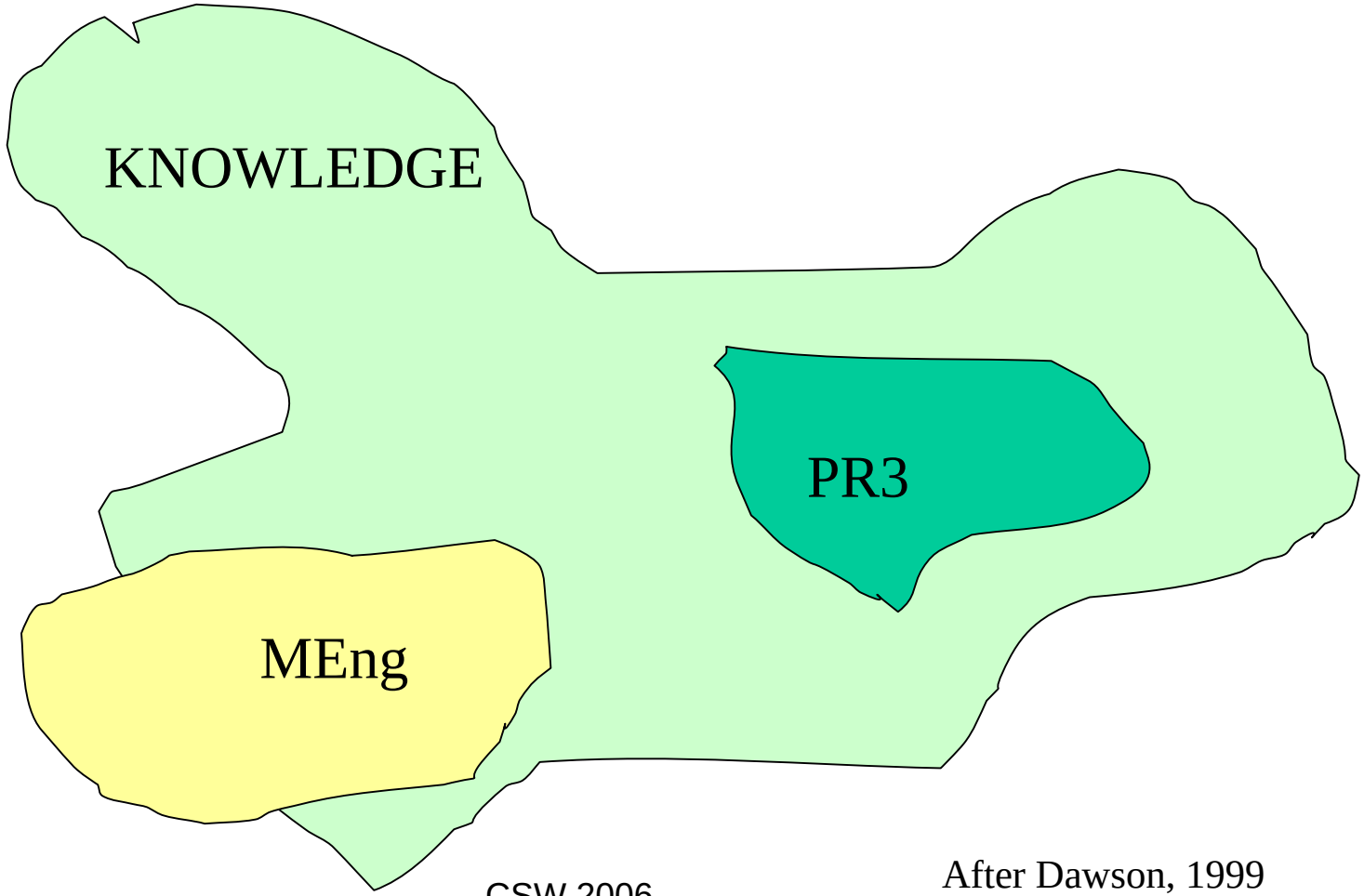
MEng Project Definition

- MEng projects (PR5) are Masters Level,
  - the degree qualifies for CEng exemptions
- A research or engineering project - the approach is similar
- There must be an element of originality

PR3 Project Definition

- Third year projects (PR3) are Honours Level
  - all treated as if they were part of IEng (Incorporated Engineer) accreditation
- They are engineering projects

Projects and Knowledge



After Dawson, 1999

“Engineering”

Discuss what Engineering means

2-3 minutes: timer

Definition I

The Engineering Council (SARTOR 1997), an engineer is:

"...one who has and uses scientific, technical and other skills to create, enhance, operate or maintain safe, efficient systems, structures, machine, plant, processes or devices of practical and economic value."

DEFINITON II

The Engineering Council is less exact these days:

- http://www.engc.org.uk/Registration/Register_Sections.aspx

defines CEng, IEng and all the other levels of engineer

What is an Engineering Project?

- An engineering-style project *report*
- Written as if the project,
  - Follows a lifecycle and a method
  - Aims to “build” something
- States and explains the method
- Evaluates the method and product
- Any project can be written up in this way

General Engineering Issues

Professional organisations require:

- Quality
- Reliability
- Timeliness
- Maintainability

Think what these might mean for your project, and strive to achieve them!

Engineering Lifecycle

Project & *write up* in terms of:

- Requirements: context, constraints
- Design: may be several stages
- Build: software, hardware, proof, experiment
- Evaluate: product, method, results
  - relate to requirements

These are good practice in all projects.

Method

Any method will do (if it's appropriate)

- Software Engineering methods - agile programming, RAD, unified process etc
- Hardware methods for specification/design
- Research method: problem-hypothesis-experiment
- Algorithm design/proof: problem-plan-do

STATE THE METHOD USED

Even if it was a retro-fit method

(if there's more than one method, state them all)

Fitting a Project to a Lifecycle

- Design-and-build projects should fit ok
- Other projects:
  - Explain the goals, constraints, givens, literature
  - Write up the method: hypothesis, experimental design, plan etc
  - Write up and evaluate the results
  - Consider what maintenance might mean!

And MEng Projects…

- All the above apply
- More thoughtful and advanced in approach and content….
  - Systematic, comprehensive understanding
  - Critical awareness and evaluation
  - Forefront of the field; original knowledge or application