University of Strathclyde Science

CS 408 Individual Project

Poster Day Presentations and Report Writing

Interim Dates and **The Deadline**!!!

- **Week 0: Friday 12th January at 9:00**
  - Poster Presentations
- **Week 11: Monday 26th March at 12:00**
  - Submission deadline (electronic) for Project Report and code
- Week 11: Wednesday 28th March, Project Demo Day

Poster Presentations

- You need to submit your poster by 9am, 12th January 2017
  - Title of project, names of supervisor and second marker
  - Overall aims and objectives
  - Details of your progress to date, for example
    - Extent of your background study
    - Requirements specification
    - Design
    - Discussion of prototypes being delivered
    - Evaluation plan (you might need ethical approval for this)
    - Overall project plan

Poster Day

- You will be required to present your project to your second marker either during the morning or the afternoon
- Purpose: for you and your second marker to review the design and your progress
  - Appropriateness of the proposed design with respect to your aims and objectives
  - Your technical understanding, e.g. main challenges and risks
  - Your progress and project plan

Advice

- Not submitting a project is the most common reason for not being awarded an Honours degree
- You have 17 weeks until the project deadline and this includes the Christmas break so use this wisely
- Use the period before and after Christmas to work on your project!
  - Making progress on the project is the priority
  - You should **not** spend much time on the poster!

Advice

- Arrange weekly meetings with your supervisor
  - Don’t cancel/postpone them even if you feel you haven’t done much work!
- Working full-time is **not** a good idea!
- Be strategic! Look at the marking scheme and assessment criteria – this will help you to make effective use of your time
  - It’s a good idea to design and build something asap, e.g. a small prototype
  - It’s a good idea to record your ideas, designs, problems, etc.
  - It’s a very bad idea to spend too long on your research
- Set goals and intermediate deadlines and monitor whether or not you stick to them

Writing Your Report

- The report is the main evidence of the work you have completed for your project
  - good work can be seriously undermined by a poor report
  - a poor system cannot be turned into a good one by producing a good report, but a good report for a poor system will gain you extra marks
- Purpose of report
  - to present your work in the best light
  - to disseminate your ideas and results to others
  - to obtain the best mark you can achieve for your project

Advice on Writing Your Report

- Try to identify the structure of your report early on
  - identify chapters, sub-sections and their headings
    - you can then start writing individual sections/sub-sections in any order
- Use the project marking scheme to decide on a suitable length for each chapter/section
  - there is no point in allowing your literature survey to take up 60% of the overall report if the total mark you can obtain for the literature survey is only 30%!

Report Structure Guidelines

- Introductory pages: e.g. Title page, Abstract, Acknowledgements, Table of contents
- Main body of the report (this should be around 55 pages)
  - Introduction
  - Related work
  - Problem description and specification
  - System design
  - Detailed design and implementation
  - Verification and validation
  - Results and evaluation
  - Summary and Conclusions
- References/Bibliography
- Appendices (see next slide)

Appendices

- Appendix A – Detailed specification and design
- Appendix B – Detailed test strategy and test cases
- Appendix C – User Guide
- Appendix D – Program listing

- Make sure that you insert any references to material in the Appendices in the main body of the report

University of Strathclyde Science

Assessment Criteria

- Student performance (10%)
- Project product (35%, 15%, 25%)
  - Software (25%, 10%, 20%)
  - Documentation (10%, 5%, 5%)
- Project process (30%)
  - Background study, requirements analysis, design (20%, 25%, 25%)
  - Testing (10%, 5%, 5%)
- Project results and evaluation (15%, 35%, 25%)
- Report presentation (10%)

University of Strathclyde Science

Title, Abstract, Acknowledgements, Table of Contents, Table of Figures

- Writing abstracts (no more than 300 words)
  - describe the issues that your project is going to explore
  - then describe the contribution or content of the report
- Try not to make your abstract read like a table of contents
- Some students manage to avoid describing the subject area explored by their project!

Introduction

- Tells the reader what the project is about without assuming special knowledge
  - aims or goals of the project
  - the scope of the project
  - brief overview of the outcomes
  - the approach used in carrying out the project
  - assumptions upon which the work is based
  - structure of the rest of the report

Related Work

- The aim of this section is to place your project work within the context of related work
- You should survey and critically evaluate other work you have read or considered in the general area of the project topic
  - other similar systems (if they exist)
  - any theory associated with the project
  - existing software or hardware that is relevant to the system – especially if your project makes use of such software/hardware
- Try to provide references to information which has been refereed (e.g. books, academic papers)

University of Strathclyde Science

Problem Description and Specification

- Describe the problem you are trying to solve, i.e. what the system is required to do
  - list functional and non-functional requirements
  - say how the specification was arrived at
- You could include diagrams, e.g. use case diagrams, entity-relationship diagrams, etc.
- This chapter can refer to your project plan (you could place this in the Appendix)
- (You could include a description of the software development methodology you've been adopting)

University of Strathclyde Science

System Design

- Describes how your system will meet the specification
- You should present a high-level description of the architecture, user interface, data management
  - You could include high-level class diagrams, entity-relationship diagrams, architectural diagrams, UI designs
- You could include a description of the software development methodology you've been adopting
- It is important that you justify your design, e.g. by discussing the implications of different design choices and giving reason for making the choices you did

University of Strathclyde Science

Detailed Design and Implementation

- Describe your design in more detail
  - e.g. data structures, selection of algorithms, detailed design decisions, implementation languages, tools to support implementation
- Again, you should include justifications for your detailed design and implementation decisions
- Diagrams are very useful
  - class diagrams, sequence diagrams
- Do not attempt to describe each line of code in detail and do not include large pieces of code in this section
  - refer to code that is critical to the operation of the system, or that is non-standard or innovative
- Describe any problems you encountered and how you overcame them

University of Strathclyde Science

Verification and Validation

- Describe any test procedures used to test your system
  - E.g. black-box, JUnit testing, software metrics
- You should aim for decent coverage – test cases and code written for testing can be included in the Appendix
- Testing is worth between 5-10% of the overall mark so make sure you incorporate it within your report

University of Strathclyde Science

Results and Evaluation

- Present how you evaluated your system and the results obtained
  - for user evaluation studies present questionnaires, describe how many users, and present results
  - for system performance evaluation, describe the evaluation process and present results
  - you can also reflect on your approach to software development – e.g. planning, organisation, and lessons learned
- The evaluation is intended to be either evidence-based or a formal analysis such as an analysis of the algorithms used

Conclusions

- How successful were you in achieving your aims?
- What problems arose which could not be solved in the time available?
- What would you do if you had more time – how could work be done in the future to enhance its utility?

University of Strathclyde Science

Documentation

- 10%, 5%, 5% is awarded for documentation
  - User guide (in the appendices)
  - Installation instructions
  - Maintenance documentation
  - If you use documentation generators (e.g. JavaDoc), say so!

Report Presentation

- Try to ensure that your report is nicely presented
- Please use a spell-checker and grammar-checker
  - common mistakes “their” vs “there”, “could of” vs “could have”
  - incorrect use of apostrophes, “CD’s were used …” or “during the 1980’s …”
- You should easily be able to fill 55 pages without waffling
  - a short report is often short because the student hasn’t had much to say or because they haven’t left enough time to make it longer

General Advice on Writing a Report

- Make sure you include all of the required information!
- Show off your knowledge of other relevant work in the field
- Do not include information which is not relevant
- Make sure you cite other people's work correctly (do not plagiarise)
  - you **must** acknowledge any code you use which you did not write yourself
  - a significant majority of the work should be your own

General Advice on Writing a Report

- Try to avoid using I, you, we, my
  - but don't end up writing elaborate sentences to avoid this
- One sentence per idea or per paragraph
- Short words, short sentences, short paragraphs, simple structure
- Avoid the use of slang
- If you use abbreviations or acronyms, make sure you explain these to the reader when they are first used
- Be specific
- Use examples for clarification
- Tense – use present or past

Problems

- If you encounter any personal difficulties (illness, trauma, stress, etc) that impede your ability to complete the report, please contact Sotirios, Rose or myself!
- You should record such difficulties via Pegasus

University of Strathclyde Science

References

- Myplace page for CS 408 – in particular see
  - the link to *CS408 Individual Project Information and Guidelines* as this contains links to the following
    - Project Report Writing Guidelines
    - Examples of past project reports
- Marc Roper's web page contains two links to information about writing project reports
  - http://personal.cis.strath.ac.uk/marc.roper/project-report.pdf
  - http://personal.cis.strath.ac.uk/marc.roper/ReportWriting.pdf