School of Informatics Teaching Course Proposal Form

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Proposal

Course Name: Informatics Large Practical
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Course Year: 3

Names of any courses that this new course replaces:
CSLP, SELP and AILP.

Course Outline

Course Level: 9
Course Points: 20
Subject area: Informatics
Programme Collections:

Teaching / Assessment

Number of Lectures: 8
Number of Tutorials or Lab Sessions: Optional lab sessions, as arranged
Identified Pre-requisite Courses: Inf2A OR Inf2B
Identified Co-requisite Courses: None.
Identified Prohibited Combinations: IRR, IPP

Assessment Weightings:

Written Examination: 0%
Assessed Coursework: 100%
Oral Presentations: 0%

Description of Nature of Assessment:

Coursework - 100%. One large design, implementation and evaluation project, done in two parts.
1. The first part consists of a project plan outlining the problem area, and proposing a solution technique and application design considering both functional and non-functional requirements on the project (25% of course total).
2. In the second part, students fully implement their application design, and submit both their implementation and a report that presents and analyses their specification, design, implementation and tests (75% of course total).

Course Details

Brief Course Description:

The Informatics Large Practical gives students experience in developing a non-trivial software system and reporting on the end product. In this way, the practical provides an introduction to the issues and
requirements of the more demanding fourth-year project. In particular, the student gains practical experience of:

- Reading technical material and identifying the important content
- Identifying and formalising project requirements
- Identifying computational problems and inventing algorithmic solutions
- Constructing a detailed design which does not over-commit to implementation detail
- Implementing and testing a software application which realises the design
- Experimenting with the implementation to explore the solutions to the computational problems
- Writing a report which documents the solutions and the implementation
- Managing a software project using a source-code repository.

Detailed list of Learning Objectives:

On completion of the Informatics Large Practical, the student will be able to:

1. Read technical material and extract relevant information
2. Present a convincing proposal for a software development project
3. Consider alternative algorithm designs and data structures for tackling a given problem
4. Show awareness of the difference between design and implementation in software development
5. Implement and debug a software system of medium to large size
6. Design and carry out experiments and tests, and explain the methodology involved
7. Demonstrate proficiency with modern software development platforms and frameworks
8. Write a well-structured report providing clear and concise documentation for a software project
9. Exhibit the ability to manage a medium- to large-scale software development project
10. Plan and manage their time and resources in completing a large project.

Syllabus Information:

- Introduction to the problem domain and the coursework specification. (1 lecture)
- Introduction to the software used on the course. (1 lecture)
- Project planning and management including source code control. (1 lecture)
- Introduction to software testing, and building dependable systems. (1 lecture)
- Problem-domain specific material as appropriate to the practical. (3 lectures)
- Documentation and report writing. (1 lecture)

Recommended Reading List:

None.

Any additional case for support information:

This is a proposal for a single unified large practical to replace the three separate large practicals which are currently offered in UG3. The three large practicals have a lot of academic goals in common and the present system of having three separate practicals has a number of disadvantages:

(i) student enrolment cannot be automatic since the practicals are not compulsory;
(ii) students are sometimes enrolled on the wrong practical by their personal tutors;
(iii) students sometimes take a long time to decide which of the practicals to do, and change late in the semester;
(iv) there is perceived to be a difference in the level of difficulty between the large practicals, whereas they should really all be at the same level.

Replacing the three practicals with a single one would address these problems and make student course administration simpler and more lightweight.