

Project Management and Ethics

Discussion subgroup as part of the SE degree revision 2021

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Background

A major change to the SE programme is the introduction by the Faculty of Engineering of DESN2000 and DESN3000, which will both be core courses for the SE degree. The plan for DESN2000 is to cover software requirements and the early stages of product conceptualization and design. The plan for DESN3000 is to focus on business innovation and design, including ethical and sustainable design.

Thus, with the caveat that DESN3000 has not yet been trialled, let alone run across schools in the faculty, there is potential for considerable duplication, first between DESN2000, project-based courses and SE workshops, and second, between DESN3000 and SENG4920 Ethics and Management. Our recommendations primarily address the duplication of ethics in DESN3000 and SENG4920. Project management is considered as part of the review of early SE lifecycle by another subgroup.

DESN3000 Strategic Design Innovation

DESN3000 is coordinated by DesignNext and includes lectures and seminars from the UNSW Business School. The major assessment item is a business plan (50%) along with a business proposal (10%) and project pitch (20%). There is no software development in DESN3000. The business plan incorporates ethical (amongst other) design considerations. A revised version of MMAN3000 run by DesignNext in Term 2, 2021, though not explicitly a trial of DESN3000, also included the assessment item of an essay on a topic in engineering ethics (20%). DESN3000 is expected to commence in 2023.

Course learning outcomes for DESN3000 are as follows (ethical content highlighted).

- CLO1 Employ strategic design skills to create design concepts in ambiguous business and social deployment contexts.
- CLO2 Analyse and identify **ethical**, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.
- CLO3 Employ strategies to identify and examine **ethical** problems in design and to engage in a respectful and inclusive dialogue to formulate a consistent, coherent response to these problems by applying **codes of ethical conduct** and **ethical decision models**.
- CLO4 Develop management techniques and leadership strategies for working within multidisciplinary teams with a variety of skills and objectives.
- CLO5 Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Recommendations

- **DESN3000 to replace SENG4920 as core to the SE programme.** This is on the understanding that we continue to work with DesignNext, as DESN3000 is developed, to ensure sufficient coverage of ethics in a Software Engineering context to meet accreditation requirements. The proposals listed below are recommended.
 1. Ethics assessment is ~50% and includes hurdles to ensure students complete all work; assessment could include seminar participation and an essay/report.
 2. Part of the ~50% ethics assessment can be in the business plan, but clearly assigned in the marking rubric as specifically assessing ethical design considerations, which should include IT-related issues (such as data privacy, algorithmic decision making bias, etc.), with design decisions supported by ethical argumentation.
 3. There should be sufficient room in the course for lectures and seminars on IT-specific professional issues and ethics, for example in a discipline-specific stream of work.
 4. There should be a number of lectures (currently there are 5 2-hour lectures) on ethical/legal issues in IT/Software Engineering.
 5. There should be a stream of around 5 2-hour seminars on ethical issues in IT.
 6. Students should be given very clear instructions on how to prepare a business plan.
- **Project management to be redistributed amongst the SE workshops and DESN2000.** DESN2000 adds project management into the SE programme, making the project management component of SENG4920 redundant. The recommendations of the subgroup on early SE lifecycle provide recommendations for how the redistribution of project management should proceed.