Course Outline Lecturer

Delete Resource (/SENG4920/20T3/resources/59194/delete)
Edit Resource (/SENG4920/20T3/resources/59194/edit)

Contents

- Course Details
- Course Summary
- Assumed Knowledge
- Student Learning Outcomes
- Teaching Strategies
- Teaching Rationale
- Student Conduct
- Assessment
- Course Schedule
- Resources for Students
- Course Evaluation and Development

Course Details

Course Code	SENG4920
Course Title	Ethics and Management
Convenor	Wayne Wobcke (/users/z9601422)
Admin	Wayne Wobcke (/users/z9601422)

Classes	<table><tr><th>Seminar</th><th>Room</th><th>Facilitator</th><th>Meeting</th><th>Room</th><th>Mentor</th></tr><tr><td>Tue 4.00-6.00</td><td>Online</td><td>Jingying Gao</td><td>Thu 1.00-2.00</td><td>Online</td><td>Armin Chitizadeh</td></tr><tr><td>Wed 10.00-12.00</td><td>Online</td><td>Anchit Verma</td><td>Thu 2.00-3.00</td><td>Online</td><td>Armin Chitizadeh</td></tr><tr><td>Wed 12.00-2.00</td><td>Online</td><td>Anchit Verma</td><td>Fri 11.00-12.00</td><td>Online</td><td>Wayne Wobcke</td></tr><tr><td>Wed 2.00-4.00</td><td>Online</td><td>Levi Chayboub</td><td>Fri 12.00-1.00</td><td>Online</td><td>Wayne Wobcke</td></tr><tr><td>Wed 4.00-6.00</td><td>Online</td><td>Levi Chayboub</td><td>Fri 1.00-2.00</td><td>Online</td><td>Wayne Wobcke</td></tr></table>
Consultations	TBA
Units of Credit	6
Course Website	https://www.cse.unsw.edu.au/~se4920/ (https://www.cse.unsw.edu.au/~se4920/)
Handbook Entry	http://www.handbook.unsw.edu.au/undergraduate/courses/2020/SENG4920.html (http://www.handbook.unsw.edu.au/undergraduate/courses/2020/SENG4920.html)

Course Summary

SENG4920 covers practical aspects of software project management and professional issues and ethics, and as such is critical preparation for the workforce, in addition to being essential for accreditation of the Software Engineering, Computer Engineering and Bioinformatics degree programmes. **Students enrolling should be in the final year of study or nearing completion of their computing degree.**

There are two specific themes and objectives.

- *Software Project Management.* To gain practical experience in all phases of the planning and execution of a software project, including requirements scoping, software process methodology, project planning and scheduling, teamwork and communication, and risk and change management.

- *Professional Issues and Ethics.* To appreciate the responsibilities of a professional software engineer and understand the ethical dimensions of the IT industry as applied to specificissues such as software quality, privacy and security, intellectual property and legal obligations of IT practitioners.

Assumed Knowledge

Students are assumed to be in the final year of study (or nearing graduation) of a computing degree **and** completed some of their Stage 3 or 4 courses, so are assumed to have reasonable knowledge and maturity in Software Engineering, Computer Engineering or Bioinformatics.

Students are assumed to be competent software developers with knowledge of agile software processes and experience of working in agile teams based on the Scrum methodology. The level of experience is assumed to be sufficient to undertake (from conception and planning to completion) a moderately large software development project, guided by mentors. **Note that mentors play the roles of managers and clients, and cannot provide technical advice on programming languages or platforms.**

Course Learning Outcomes

After completing this course, students will:

1. Compare, critically evaluate and apply ethical frameworks to make professional judgements
2. Demonstrate understanding of several topical professional issues at the level of a starting professional engineer or computer scientist, such as software quality, intellectual property, data privacy, legal frameworks
3. Demonstrate the communication skills needed to present reasoned arguments
4. Be able to plan and successfully execute a team-based software project

This course contributes to the development of the following graduate capabilities:

Graduate Capability	Acquired in

Scholars capable of independent and collaborative enquiry, rigorous in their analysis, critique and reflection, and able to innovate by applying their knowledge and skills to the solution of novel as well as routine problems	1–4
Entrepreneurial leaders capable of initiating and embracing innovation and change, as well as engaging and enabling others to contribute to change	1–4
Professionals capable of ethical, self-directed practice and independent lifelong learning	1–4
Global citizens who are culturally adept and capable of respecting diversity and acting in a socially just and responsible way	1–4

Teaching Strategies

The course has a mixture of guest lectures on topics of interest and seminars focusing on particular professional issues, case studies and the software project.

Lectures provide an overview of one particular aspect of software project management or professional and ethical issues. Guest lecturers are able to provide expertise in a variety of areas and the lectures provide an essential foundation to apply in seminars and the company case study. **Guest lecturers generally give permission for lectures to be recorded. However, due to the commercially sensitive nature of some of the material, this permission may not always extend to the whole lecture.**

Seminars provide students an opportunity for more in-depth discussion on particular topics and, in student seminars, enable students to develop skills in expression, critical analysis and presentation.

Reports enable students to study a range of professional issues in a specific context and promotes the development of critical thinking, analytical reasoning and written communication skills.

Software projects are the means through which students develop an understanding of software project management and the ability to apply software processes in all phases of planning and executing a software project.

Teaching Rationale

SENG4920 is an important course to ensure students are "job ready". The course covers both software project management from a practical point of view, and professional issues and ethics as related to the IT industry. Students benefit by having the opportunity to interact with industry experts, hence **attendance at lectures is very important** , especially as the course focuses on "soft skills".

For *software project management* , the teaching philosophy is that much of this knowledge cannot be "taught" but rather is gained through experience and reflection. Hence the approach taken in this course is that students learn about software project management through working in and managing a team-based software project, encompassing all phases of the project from requirements scoping, application of a software process methodology, project planning and scheduling, teamwork and communication, risk management and change management. **Students form into project teams from their own meeting group.** Each team develops a project plan in the first three weeks of term **and will be held to that plan for the remainder of term** (subject to modifications resulting from following an agile process). Meetings after Week 3 consist of sprint reviews where each team both presents their progress and can participate in other teams' sprint reviews.

For *professional issues and ethics* , teaching is based on seminar-style discussion groups, encouraging students to express their ideas and form their own judgements on specific issues relating to the IT industry on the basis of rational arguments. Seminars also promote team organization and presentation skills through team-based student seminar(s). Critical thinking is developed through researching and writing a case study in the form of an in-depth analytical report covering a range of professional and ethical issues of relevance to the industry.

Time management is an important aspect of this course. It is expected that each student attends **all** lectures, seminars and meetings, prepares for each seminar by reading the relevant material **in advance** , contributes actively to discussion in seminars and meetings, and spends roughly 20 hours on seminars, 20 hours on the

lecture summaries (including attendance), 10 hours on the student seminar, and 10 hours on the company case study. The software project is a major component of the course and should take 50–60 hours **per person** for planning and execution, including meeting attendance. Note that the workload of a standard 6 UoC UNSW course is expected to be 150 hours (https://student.unsw.edu.au/glossary#W") .

Student Conduct

The **Student Code of Conduct** (Information (https://student.unsw.edu.au/conduct) , Policy (https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf)) sets out what the University expects from students as members of the UNSW community. As well as the learning, teaching and research environment, the University aims to provide an environment that enables students to achieve their full potential and to provide an experience consistent with the University's values and guiding principles. A condition of enrolment is that students *inform themselves* of the University's rules and policies affecting them, and conduct themselves accordingly.

In particular, students have the responsibility to observe standards of equity and respect in dealing with every member of the University community. This applies to all activities on UNSW premises and all external activities related to study and research. This includes behaviour in person as well as behaviour on social media, for example Facebook groups set up for the purpose of discussing UNSW courses or course work. Behaviour that is considered in breach of the Student Code Policy as discriminatory, sexually inappropriate, bullying, harassing, invading another's privacy or causing any person to fear for their personal safety is serious misconduct and can lead to severe penalties, including suspension or exclusion from UNSW.

If you have any concerns, you may raise them with your lecturer, or approach the School Ethics Officer (mailto:ethics-officer@cse.unsw.edu.au) , Grievance Officer (mailto:grievance-officer@cse.unsw.edu.au) , or one of the student representatives.

Plagiarism is defined as (https://student.unsw.edu.au/plagiarism) using the words or ideas of others and presenting them as your own. UNSW and CSE treat plagiarism as academic misconduct, which means that it carries penalties as severe as being excluded from further study at UNSW. There are several on-line sources to help you understand what plagiarism is and how it is dealt with at UNSW:

- Plagiarism and Academic Integrity (https://student.unsw.edu.au/plagiarism)

- Plagiarism Management Procedure (https://www.gs.unsw.edu.au/policy/documents/plagiarismprocedure.pdf)

Make sure that you read and understand these. Ignorance is not accepted as an excuse for plagiarism. In particular, you are also responsible that your assignment files are not accessible by anyone but you by setting the correct permissions in your CSE directory and code repository, if using. Note also that plagiarism includes paying or asking another person to do a piece of work for you and then submitting it as your own work.

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.

If you haven't done so yet, please take the time to read the full text of

- UNSW's policy regarding academic honesty and plagiarism (https://student.unsw.edu.au/plagiarism)

The pages below describe the policies and procedures in more detail:

- Student Code Policy (https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf)
- Student Misconduct Procedure (https://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)
- Plagiarism Policy Statement (https://www.gs.unsw.edu.au/policy/documents/plagiarismpolicy.pdf)
- Plagiarism Management Procedure (https://www.gs.unsw.edu.au/policy/documents/plagiarismprocedure.pdf)

You should also read the following page which describes your rights and responsibilities in the CSE context:

- Essential Advice for CSE Students (https://www.engineering.unsw.edu.au/computer-science-engineering/about-us/organisational-structure/student-services/policies/essential-advice-for-cse-students)

As applied to SENG4920, copying or sharing material from the Internet such as slides, text or program code (that is, without proper citation) counts as plagiarism and is unacceptable. In the student seminar and company case study, all material must be in the student's own words (except quotations, which should be kept to a minimum and must be clearly identified as such). References must be from primary sources (i.e. do not cite *Wikipedia* articles or the like). Reports will be run through *turnitin* for plagiarism detection. In the software project, sharing code *amongst team members* is acceptable, but sharing code between (members of) different teams is unacceptable. **Students are required to use github for their project, however must ensure that all repositories are private, to prevent the possibility of plagiarism. This applies even after the course has finished.**

Assessment

Item	Topics	Due	Marks	Contributes to
Seminar Participation	Ethics	Weeks 1–7	10%	1–3
Lecture Summaries	Ethics	Weeks 4,7	10%	1–3
Student Seminar	Ethics	Weeks 4–7	15%	1–3
Company Case Study	Ethics	Week 8	15%	1–3
Software Project Plan	Management	Week 3	10%	4
Software Product	Management	Week 9	40%	4

Assessment of the software project is based on a project pitch and *software project plan* , and a presentation/demonstration of the final *software product* . The project plan is assessed on sophistication of the proposed product and completeness/feasibility of the plan, based on the plan as entered into a project management tool. The software product is assessed on both the quality of the final product and the effectiveness of project management and teamwork (weighted equally), including the appropriate use of project management tools for the planning and execution of the project. The project mark is based on a presentation/demonstration of the final system (held in Week 10). Each member of a team *generally* receives the same mark for the project, however, where individual

contributions to software development are highly unequal, this mark will be adjusted to reflect the level of contribution using peer assessments entered on the Moodle Team Evaluation tool.

The component marks for the ethics part of the course are added together according to the above weightings to give an *ethics* mark out of 50. Similarly, the component marks for the management part of the course are added together according to the above weightings to give a *management* mark out of 50.

Important: Ethics and management are both essential components of this course. A student must receive a pass mark (at least 50) for **both** the *ethics* and *management* marks in order to receive a passing grade in SENG4920 (otherwise a grade of UF is returned). **There is also a hurdle of 50% on the company case study (otherwise a grade of UF is returned).** The final mark for the course is determined by taking the geometric mean (https://en.wikipedia.org/wiki/Geometric_mean) of the *ethics* and *management* marks out of 100. The geometric mean favours consistency of results for the two essential components of the course.

Late submission policy for assignments: There is no provision for a late penalty; assessment items submitted late receive a 0 mark. The reason for this is to minimize delays in providing feedback.

Course Schedule

Week	Lectures	Seminars	Meetings	Assignments
1	Introduction to Project Management and Ethics	Engineering as a Profession	Project Scoping	
2	Theoretical Underpinnings of Ethics	Killer Robot	Agile Methods	
3	Agile at Atlassian	Ethical Reasoning	Project Pitches	Project Taskboard
4	Moral Reasoning and Professional Ethics	Student Seminars	Sprint Reviews	Lecture Summaries

5	Legal Perspectives on the Software Industry in a Surveillance Economy	Student Seminars	Sprint Reviews	
6	–	–	–	
7	Intellectual Property and Software Patents	Student Seminars	Sprint Reviews	Lecture Summaries
8	–	–	Sprint Reviews	Company Case Study
9	–	–	Sprint Reviews	Project
10	–	–	–	

Resources for Students

Texts and recommended readings:

- Sommerville, I. *Software Engineering.* (http://iansommerville.com/software-engineering-book/) Tenth Edition. Pearson Education, Upper Saddle River, NJ, 2015.

Other resources:

- Mountain Goat Software (https://www.mountaingoatsoftware.com/)
- Pivotal Tracker (https://www.pivotaltracker.com/)
- Jira (https://www.atlassian.com/software/jira)

Course Evaluation and Development

Computer Science and Engineering courses are evaluated by student survey each time they are taught. The survey includes standard questions asked of all comparable courses so that it is possible to compare a course with other relevant UNSW courses, and also includes space for free-form comments. Survey responses are anonymous.

The completed survey forms are analysed statistically by someone independent of the course staff, and the results, including free-form comments, are made available to the lecturer in charge *after* grades have been reported and released.

The 2019 course offering under the new 10-week term structure highlighted a major issue with the course being the number of assessment items, with due dates around the same time as a consequence of there being fewer weeks to spread the load. For 2020, the assessment load has been reduced by removing meeting participation and the project plan document, and further reducing the length of the company case study, reweighting assessment items accordingly, thus also reducing contact hours. This is on top of previously reducing the number of lectures (from 12 to 8 and now 6) and reducing the length of the report (from 2000 to 1000 to now 500–750 words).

Resource created 7 months ago (Friday 12 March 2021, 01:32:06 PM), last modified 5 months ago (Friday 30 April 2021, 02:20:44 PM).

Comments

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