ENGN8260/COMP8260

Professional Practice 2

Mode of Delivery	On campus
Workload	130 hours of total student learning time made up from: a) 44 hours of contact over 12 weeks: 12 hours of lectures, 10 hours of Industry Expert lectures, and 22 hours of tutorial and tutorial like activities; and b) 86 hours of independent student research, reading and writing.
Prerequisites and incompatibility	To enrol in this course you must be studying Master of Engineering, Master of Computing or Graduate Diploma or Computing
Program Conveners	*Master of Engineering* Associate Prof Yuerui (Larry) Lu, yuerui.lu@anu.edu.au *Master of Computing* Dr Priscilla Kan Jon, priscilla.kanjon@anu.edu.au
Course Convener	Professor Joan Leach, joan.leach@anu.edu.au
Administrator	Bea Hogan, bea.hogan@anu.edu.au
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Office hours for student consultation	By appointment
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SEMESTER S2

2018

COURSE OVERVIEW

This is the second in a series of two courses for engineering and computing graduate students that focus on developing professional and communication skills for the 21st century workplace. The course builds upon individual capacity, and further develops students' professional skills, values, and attributes in a way that directly complement their technical expertise. These skills will enable students to perform effectively in the complex context in which engineering and computer professionals operate. In particular, the course will provide students with the skills to interpret, critically evaluate, and justify their own and others' decisions with reference to ethical and professional standards and expectations. The practical focus on these skills and their integration into the engineering and computing curriculum reflects the contemporary expectations of professional organisations (e.g. Engineers Australia and the Australian Computer Society) and enhances the employment opportunities of graduates.

Learning Outcomes

On successful completion of this course, students should be able to:

1. Demonstrate understanding of the responsibilities of membership in a professional community through engagement in ethical reflective practice, critical self-review and peer evaluation.
2. Justify, interpret and communicate professional propositions and decisions to technical and non-technical audiences.
3. Identify, analyse and synthesise information from multiple sources when developing solutions to complex problems.
4. Apply creativity, sensitivity, and initiative to decision-making and leadership of diverse team activities, especially where these involve negotiation of disparate stakeholder requirements.

Assessment Summary

Assessment Task	**Value (%)**	**Due Date**	**Date for Return of Assessment**	***Linked Learning Outcomes***
1. Becoming a professional A. Communication Tasks B. Hosting	 10 5	 Week 2, 4, 6, 9, 12 Ongoing	*Ongoing*	*1, 2, 3, 4*
2. Critical reviews	20	Week 3, 5, 7, 9, 11	*Week 4, 6, 8, 10, 12*	*1, 2, 3, 4*
3. Professional Project A: Online Repository B: Pitch Presentation C: Project Report	 10 5 10	 Week 11 Week 11 Week 12	*Exam Period*	*1, 2, 3, 4*
4. Final Examination	40	Exam period	*n/a*	*1, 2*

Research-Led Teaching

This course allows students to develop preliminary research skills (such as qualitative and quantitative research skills, academic integrity and using sources) and professional skills using a research based analytical framework. The course introduces students to scholarly research and case studies that exemplify professional practice, and demonstrates ways in which evidence-based strategies can be developed to improve independent research and professional skills in line with industry requirements.

This semester, students will be invited to participate in two research projects: the first aims to help students develop professional skills and facilitate innovative solutions through the identification and application of creative problem solving approaches (e.g. Design Thinking, Business Model Canvas, Lego Serious Play); the second aims to develop computational tools for university students (in particular, those with English as a second language) to help them read and understand academic content. Participation in the research projects is entirely voluntary. More information about the projects is available on the course Wattle site.

Student Assessment Moderation

The moderation of marks occurs in this course. The assessment tasks and the judgements made of student learning in a course are reviewed before the final mark or grade is approved to ensure that the judgements of student performance are appropriate, consistent, transparent, reliable and valid (see Policy: Student assessment (coursework), https://policies.anu.edu.au/ppl/document/ANUP_004603)

Feedback

Staff Feedback

Assignments submitted by the deadline will be marked and returned, together with constructive feedback on their performance on assessment tasks, normally within three weeks of the deadline. Students will be given feedback in the following forms:

- Written comments.
- Verbal comments.
- Feedback to the whole class, to groups, to individuals.

Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement. 3)For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to

http://unistats.anu.edu.au/surveys/selt/students/ and
http://unistats.anu.edu.au/surveys/selt/results/learning/

Students should also raise with the Course Convener any of the following concerns:

- feedback received from the course examiner;
- their progress in all coursework assessment in the course, ie how they have or have not satisfied the assessment criteria in an assessment task;
- any oversight, omission of marking, or mathematical discrepancies in the marking of assessment tasks.

Policies

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and implement them. You can find the University's education policies and an explanatory glossary at: http://policies.anu.edu.au/.

Students are expected to have read the Academic Misconduct Rule before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

COURSE SCHEDULE *

Week	Week beginning	Summary of Activities	Assessment
1	23 July	Introduction to ENGN8260/COMP8260	
2	30 July	Design Thinking	Communication Task 1
3	6 Aug	Ethics	Critical Review 1 Hosting starts
4	13 Aug	Research Methods	Communication Task 2
5	20 Aug	Interpreting Data	Critical Review 2
6	27 Aug	Decision Making	
3-14 Sept Teaching Break			Communication Task 3
7	17 Sept	Diversity and Teams	Critical Review 3
8	24 Sept	Conflict Management Skills	
9	1 Oct	Negotiating and Justifying Decisions	Communication Task 4 Critical Review 4
10	8 Oct	Developing your Pitch	Hosting ends
11	15 Oct	Entrepreneurial Skills	Critical Review 5 Professional Project (A, B)
12	22 Oct	Course Review	Communication Task 5 Professional Project (C)
1 -17 November Exam Period			Final Examination

* Please note that this schedule may be subject to change without prior notice.

ASSESSMENT REQUIREMENTS

The ANU is using Turnitin to enhance student citation and referencing techniques, and to assess assignment submissions as a component of the University's approach to managing Academic Integrity. For additional information regarding Turnitin please visit the ANU Online website. Students may choose not to submit assessment items through Turnitin. In this instance, you will be required to submit, alongside the assessment item itself, copies of all references included in the assessment item.

ASSESSMENT TASKS

Assessment Task 1: Becoming a professional (15%)

Assessment Task 1 comprises two (2) parts:

A: Communication Tasks
B: Hosting

A: Communication Tasks (10%)

All students will be expected to complete five (5) communication tasks during Weeks 1-12 following the tutorials. Each communication task will repeat four (4) key questions which ask you to critically reflect on the development of your professional skills and competencies over the semester (~100 words each). Refer to referenced work and examples from research, experience and content covered in the lectures, readings, tutorials, and the Industry Experts sessions in your responses to demonstrate achievement of learning and professional skills.

B: Hosting (5%)

During the semester, tutorial groups will host at least one (1) Industry Expert session. Industry Expert sessions run from Week 1-10. Attendance at these sessions is strongly recommended. Week 1 will be an introduction to these sessions, including a review of the hosting tasks and session activities. Hosting tutorial groups and leaders will be assigned during Week 2 Tutorial. Student hosting will start in Week 3.

Hosting the Industry Expert session offers Masters students the opportunity to communicate effectively with industry professionals, develop networking skills and leadership capability, and participate in a conference type activity. Students will also be asked to engage in critical self-review and peer evaluation of their role as leaders and team members hosting the industry expert session with the aim to improve performance. Following the hosting of the Industry Expert sessions, each individual will be asked to critique the session and their hosting performance (~500 words +/-10%). Use the following prompts below and the information on Wattle to guide your reflection.

- Introduction of speaker, session topic and aims (~50 words)
- Critical review of the Industry Expert session content and connection to PP2 course content, readings and industry expectations (~200 words)
- Critical reflection of your host role and hosting performance (~200 words)
- Conclusion (~50 words)

Please note: During the semester, all students will be offered the opportunity to host more than one session and submit more than one reflection with the opportunity to improve performance. The highest grade for the critical reflection will then be recorded for assessment purposes. Participation in more than one hosting is optional. More information about this opportunity will be presented in Week 1.

Due date: Monday 9:00am Week 2, 4, 6 (3 Sept), 9, 12 (Communication Tasks)
Monday 9:00am following the hosting session (Hosting)
Assessment Rubrics: see page 8 (Communication Tasks); see page 9 (Hosting).
Value: 2% each for a total of 10% (Communication Tasks); 5% (Hosting)
Estimated return date: Two weeks after submission
Hurdle Assessment requirements: None

Assessment Task 2: Critical Reviews (20%)

Readings will be assigned weekly. Reading material will be reviewed during the lectures and will form the basis for discussions during the tutorials. Students will be expected to submit five (5) researched critical reviews on the weekly readings during Weeks 3-10 (500 words each, not including the reference list). For each review, students will need to evaluate the resource and relate it to industry expectations of competence and conduct in engineering and computing professions. Use the following prompts to guide your critical writing each week. Further information about this task will also be provided on Wattle.

- Introduce the article, source, title and aims (~75 words)
- Brief summary of article (150 words)
- Critical review of the content in relation to industry expectations of competence and conduct in engineering and computing professions (~200 words)
- Conclusion (~75 words)

Due date: Monday 9:00am Week 3, 5, 7, 11; Tuesday 9:00am Week 9
Assessment Rubrics: see page 9
Value: 4% each for a total of 20%
Estimated return date: Week 4, 6, 8, 10, 12
Hurdle Assessment requirements: None

Assessment Task 3: Professional Project (25%)

This assessment is a group task that will allow you to communicate effectively to transfer complex knowledge and ideas to technical and nontechnical audiences. Students need to form multicultural and cross-disciplinary groups consisting of 4 students for this assignment. Masters students will be provided with real life opportunities to work in diverse groups with an industry partner to tackle real world problems. The professional project aims to help students develop their professional skills, and facilitate innovative solutions to industry challenges in engineering/ computing through the identification and application of creative problem solving approaches (e.g. Design Thinking, Business Model Canvas, Lego Serious Play). The project allows students to consolidate and apply theories and methods for grasping business and customer needs, problem identification, iterative ideation, prototyping and evaluation using evidence gathered using both qualitative and quantitative methods. The goal is for students to track their project progress over the semester, pitch their solution to their industry partner and deliver a feasible and viable concept report of value to businesses and academia.

This assessment task includes three (3) parts:

A. Online Repository (10%)
B. Pitch Presentation (5%)
C. Project Report (10%)

A. Online Repository (10%)

Your group will need to prepare an online repository that tracks your group project over the semester. The online repository needs to include a minimum of the following sections. References used to support research and design decisions are to be included wherever possible.

- Company name, logo, business vision, organisation structure, team composition (including roles and responsibilities)
- Project Overview and problem statement (1 paragraph)
- Customer market segment (1 paragraph)
- Engineering/computing solution (including requirements analysis) (~2 paragraphs)
- Solution justification (including how you meet client needs and standards, and legal and ethical considerations)
- Proposed budget
- Project progress and planning

- Documentation
    - Meeting minutes (x3 minimum)
    - Change orders (x2 minimum)
    - Value proposition canvas

B. Pitch Presentation (5%)
During the Week 11 lecture Monday 15 October 5-6pm, your group will be required to pitch your solution to your industry partner in no than 1 minute. You may use PPT slides to support your pitch presentation. All group members are required to attend this session. Students will also be asked to engage in critical self-review and peer evaluation while working within a professional community.

C. Project Report (10%)
In Week 12, groups will be required to submit a project report for assessment and to their prospective client/industry partner (2 pages maximum, not including title page, reference list, appendices). The project report needs to include the following components:

- Company name, logo
- Project Overview and problem statement
- Team composition (including roles and responsibilities)
- Customer market segment
- Engineering/computing solution (including requirements analysis)
- Solution justification (including how you meet client needs and standards, and legal and ethical considerations)
- Proposed budget
- Proposed timeline/work plan

Due date: Monday 9:00am Week 11 (Online Repository); Monday 5-6pm Week 11 (during lecture) (Pitch Presentation); Monday 9:00am Week 12 (Project Report)
Assessment Rubrics: see page 9
Value: 10% (Online Repository) 5% (Pitch Presentation) 10% (Project Report)
Estimated return date: Exam period
Hurdle Assessment requirements: None

Assessment Task 4: Final Examination (40%)
The final examination will be held during the examination period (31 May-16 June 2018). The examination will cover content from the course, including lectures, tutorials, communication tasks, industry experts and readings. Further information regarding the final examination will be posted on the Wattle course site in advance.

Assessment Rubrics Written paragraphs will be assessed using the rubrics on page 9
Value: 40%
Estimated return date: n/a
Hurdle Assessment requirements: None

Assignment submission
Assignments are submitted using Turnitin in the course Wattle site. You will be required to electronically sign a declaration as part of the submission of your assignment. Please keep a copy of the assignment for your records.

Extensions and penalties
Extensions and late submission of assessment pieces are covered by the Student Assessment (Coursework) Policy and Procedure.

The Course Convener may grant extensions for assessment pieces that are not examinations or take-home examinations. If you need an extension, you must request it in writing on or before the

due date. If you have documented and appropriate medical evidence that demonstrates you were not able to request an extension on or before the due date, you may be able to request it after the due date.

No submission of assessment tasks without an extension after the due date will be permitted. If an assessment task is not submitted by the due date, a mark of 0 will be awarded.

Returning assignments

Annotated and graded submissions will be returned via Wattle.

Resubmission of assignments

Resubmission of assignments is not permitted in this course.

Referencing requirements

The IEEE citation style or the author-date system is acceptable for referencing academic assignments in the Professional Practice courses. Links to documentation on proper referencing methods are available on the Professional Practice Wattle site or from the Academic Skills and Learning Centre website.

SUPPORT FOR STUDENTS

The University offers a number of support services for students. Information on these is available online from http://students.anu.edu.au/studentlife/

ASSESSMENT RUBRICS

Assessment Task 1 (Communication Tasks) will be assessed using the rubric below.

Level of Reflection	**Indicator**	**Mark**
	No submission, incomplete submission	**0**
1. Descriptive Writing	The student simply describes experience without significant attempts at analysis. Although essentially non-reflective, it can nevertheless serve as a foundation for later, more complex activity. Evidence and support is evident but may not be effective.	1
2. Descriptive Reflection	The student attempts to provide reasons for their learning experiences based upon quasi-reflective personal judgements. Evidence and support is evident but may be somewhat effective.	2
3. Dialogic Reflection	The student enters into a personal discourse to explore possible reasons for observed outcomes. Evidence and support is evident and effective.	3
4. Critical Reflection	In this context, critical reflection is demonstrated by the elaboration of reasons for personal learning decisions and experiences which takes into account a mature understanding of the range of factors affecting the learning process. Reflection is clearly supported by appropriate evidence using multiple sources.	4

Assessment Task 1 (Hosting) - 5 will be assessed using the assessment rubrics below and on the following page.

Meets all assignment requirements according to the specification and all questions have been answered	Yes	No	
Generally the submission would be well regarded by industry standards with regard to quality of presentation and content.	Emerging	Developing	Mastering
Demonstrates the ability to justify, interpret and communicate professional propositions and decisions to technical and non-technical audiences.	Emerging	Developing	Mastering

Review Criteria	High Distinction	Distinction	Credit	Pass	Fail
Overall, holistic evaluation of the submission 20%	Highly original and very interesting Critical, detailed and relevant discussion that develops and enhances understanding of the topic Very clear key message and associated conclusion	Interesting with some originality Relevant discussion of sufficient detail that allows a clear understanding of the topic Identifiable key message and related conclusion	Interesting but lacking originality Although relevant, discussion sometimes lacks sufficient detail to allow consistent understanding of the topic Apparent key message and associated conclusion	Not very interesting or original Discussion is not always relevant nor sufficiently detailed help to develop an understanding of the topic Difficult to be certain what the key message is and how the conclusion relates to it	Uninteresting and lacking originality Discussion lacks detail, is mostly descriptive or irrelevant and doesn't help to develop an understanding of the topic No discernible key message or conclusion
Relevance and logic of the supporting argument 30%	Highly relevant and focused Excellent, clear connection to the topic and industry and convincing support for the argument Very clear and logical development of the argument Argument is well supported by appropriate evidence drawn from the reference material	Relevant and focused Very good links to the topic and industry and mostly supporting the argument Develops a logical argument Argument is usually supported by appropriate evidence drawn from the reference material	Generally relevant and reasonably focused Good, providing a reasonably complete presentation of the topic and links to industry. Can discern the thread of the argument which is mostly logical Argument is sometimes supported by evidence drawn from the reference material	Somewhat relevant, but not focused Incomplete but useful references to the topic and industry and reasonably connected to the argument Attempts to develop an argument but its development is not logical Limited evidence used to support discussion and argument	Lacking relevancy and focus Incomplete and without connection to the topic, industry or argument No evidence of an argument Little, if any, evidentiary support
Information literacy 30%	Comprehensive and extensive use of appropriate reference materials All use of others' ideas and materials acknowledged. References are all included and are formatted consistently and appropriately throughout	Reference material used is always used well and is appropriate. All use of others' ideas and material is acknowledged. All references are included though some minor inconsistency of in-text citation or formatting	Adequate use of mostly appropriate reference materials All use of others' ideas and material is acknowledged. Some references are missing and occasional inconsistencies of in-text citation and formatting	Limited use of appropriate materials. Use of some inappropriate reference material All use of other's ideas and material is acknowledged, though sometimes inconsistently. Missing references and inconsistent in-text citation and formatting.	Almost no accurate use of any reference materials, appropriate or otherwise Missing in-text citations, text is copied and or includes inadequate paraphrasing and or does not accurately acknowledge the original source, i.e. plagiarism. References in the reference list not used in the text. Poorly and inconsistently formatted
Language, expression and structure 20%	Exemplary use of language enhancing the quality of the submission Very well ordered with logical and clear structure supported by strong links well organised sections	Very good use of language Well-ordered and logical. Cohesive and organised sections help to clarify text	Reasonable but needs some revision Mostly well-ordered and logical. Mostly cohesive sections showing evidence of text organisation.	Poor, needs significant revision Order is not always logical though there is some attempt to organise sections. Sections are largely those suggested by the assignment specification and the questions posed	Very difficult to understand Order is confusing and not always logical. Sections are not clearly organised and do little to help clarify the text