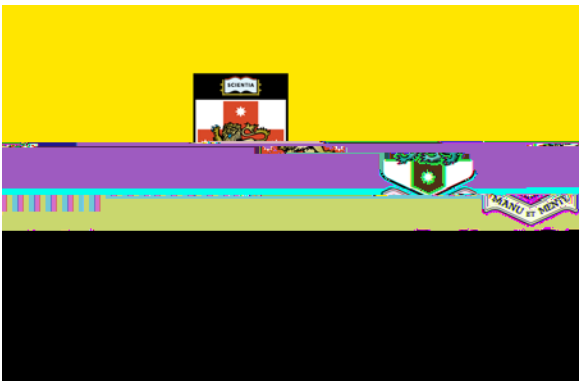

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Seme te 2 2017

GSOE9340

LIFE CYCLE ENGINEERING

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learning activities, preparation and time spent on all assessable work. Thus, for a full-time enrolled student, the normal workload, averaged across the 16 weeks of teaching, study and examination periods, is about 37.5 hours per week."

This means that you should aim to spend about 9 h/w on this course. The additional time should be spent in making sure that you understand the lecture material, completing the set assignments, further reading, and revising for any examinations.

Contact hours

	Day	**Time**	**Location**
Lectures	Wednesday	6 - 8pm	Central Lecture Block 8 (K-E19-105)
Demonstrations	Wednesday	8 – 9pm	Central Lecture Block 8 (K-E19-105)

Please refer to your class timetable for the learning activities you are enrolled in and attend only those classes.

Summary and Aims of the course

Manufacturing has always been by far the largest contributor to waste generation in our society and therefore provides a huge potential for waste reduction. This is due to the fact that current manufacturing systems are considered to be of an open loop style, whereby manufacturers' main interests are focused in the areas of design, development, sales and distribution. A shift to a closed loop manufacturing system is proposed to enable manufacturers to take into account the whole product life cycle and move away from open loop manufacturing. This will require engineering of the whole product life cycle of a product from raw material selection, production, usage to disposal in order to reduce the environmental impact of industrial society.

The aim this course is to introduce the tools and techniques associated with engineering of a product life cycle to postgraduate students from technical backgrounds so that they can have an in-depth understanding of how to engineer and manage the entire life of a product from material selection to disposal.

This course is designed to provide postgraduate students with high level knowledge of Life Cycle Engineering principles and practices. The course will follow a typical product life cycle and the associated tools and techniques available. It starts with defining the concept of life

principles, product monitoring and testing, materials recycling techniques. The course finally finishes with economics and future trends such as Economic models, Life Cycle Costing (LCC) and Product Service Systems (PSS).

Student learning outcomes

This course is designed to address the learning outcomes below and the corresponding Engineers Australia Stage 1 Competency Standards for Professional Engineers as shown. The full list of Stage 1 Competency Standards may be found in Appendix A.

After successfully completing this course, you should be able to:

Learning Outcome		**EA Stage 1 Competencies**
1.	Have gained knowledge in the inter-disciplinary field of Life Cycle Engineering	PE1.3, PE1.5, PE1.6
2.	Develop in-depth understanding of various tools and techniques associated with engineering and managing the whole life cycle of a product	PE2.2
3.	Develop an appreciation of the future trends in the area of triple bottom line of sustainability (economic, ecological and social)	PE1.4

4. Teachi g Oa Qegie

This course is included to give you the skills to appreciate the engineering of product life cycles in order to reduce environmental impact and ultimately to achieve the three pillars of sustainability; namely economic, environmental and social sustainability. The content reflects my experience as a lecturer as well as my practical experience in the manufacturing environment, and practical examples drawn from that experience are used throughout the lectures and demonstrations. Effective learning is supported when you are actively engaged in the learning process and by a climate of enquiry, and these are both achieved in the lectures and demonstrations by way of practical case studies. You become more engaged in the learning process if you can see the relevance of your studies to professional, disciplinary and/or personal contexts, and the relevance is shown in all parts of the lectures and assignments by way of examples drawn from industry.

Dialogue is encouraged between you, others in the class and the lecturerhe rdemi used throughougo/oe 2 it

6.

Assignments

Presentation

All non-electric submissions should have a standard School cover sheet which is available from this course's Moodle page.

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work and should be treated with due respect. Presenting results clearly gives edaIDP/TT-11rk e tiv0 x 0.pen4.9(k)]exn/SpanocTw ( ) orJc 0.k

It is your responsibility to ensure that your calculator is of an approved make and model, and to obtain an “Approved” sticker for it from the School Office or the Engineering Student Centre prior to the examination. Calculators not bearing an “Approved” sticker will not be allowed into the examination room.

Special consideration and supplementary assessment

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School intranet, and the information on UNSW’s Special Consideration page.

7. Attendance

You are required to attend a minimum of 80% of all classes, including lectures, labs and seminars. It is possible to fail the course if your total absences equal to more than 20% of the required attendance. Please see the School intranet and the UNSW attendance page for more information.

8. Recommended resources

A list of reference books will be provided during the course delivery, some of which can be found in the UNSW Library: https://www.library.unsw.edu.au/

Additional readings will be handed out during each class.

The course will be administered using Moodle. Therefore course administration and some lecture materials may be uploaded to Moodle. Students are advised to use Moodle for class communications.

Moodle: https://moodle.telt.unsw.edu.au/login/index.php

9. Course evaluation and development

Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, informal discussion in the final class for the course, and the School’s Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

In this course, recent improvements resulting from student feedback include changing the guest lecturers, more demonstrations and taking into account diverse student backgrounds through different demonstrations.

10. Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW 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

- Assessment Matters (including guidelines for assignments, exams and special consideration)
- Academic Honesty and Plagiarism
- Student Equity and Disabilities Unit
- Health and Safety
- Student Support Services

Appendix A: Engineers Australia (EA) Competencies

Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable