Photovoltaic and Renewable Energy Engineering

Course Outline

Term 2 2021

SOLA2051

Project in Photovoltaics and Renewable Energy

and your group effort. Peer assessment will determine how the group marks are distributed. You should make sure to devote a good amount of energy making your group become an actual team. Leverage particular skills of each member but be sure to split the work evenly from the beginning. Investing time developing good team dynamics will pay off at the end of the term; work will be more manageable, your project result will be of higher quality and your second term will be that much more fun.

One of the best ways to learn is based on necessity. You will be given the basic tools to undertake the labs and project but

to achieve great results. Therefore, a significant amount of self-learning is to be expected. A key engineering skill is to be able to identify what knowledge is needed for a particular task and to then be able to learn and apply concepts based on this need. One of the main obstacles

working in a team multiplies

basic skills and knowledge. The first four laboratory session will focus on guided or semi-guided laboratories to assist in the development of basic skills to tackle complex projects in the future. In the remaining laboratory sessions, the students will be given a groups project to be solved based on the skills and knowledge acquired thus far. The students will be responsible for further broadening their skills and knowledge by self-learning in order to successfully complete the laboratory projects. Group and individual work will be assessed based on online quizzes, laboratory reports and video presentations.

Wk	Lecture	Laboratory	Expected milestones in lab	Prelab	Lab	System Test	Final Report	Final Exam
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Assessment overview

Assessment	**Group Project?** (# Students per group)	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Design project (Demonstration and report).	Yes (3 to 4)*	2hr demonstration plus 7500 word report	45%	4 and 5	M*eeting design brief requirements: hardware, software and quality of data. Report will be marked according to marking criteria available in Moodle*	Practical: Wk 10 (Wed) Report: Wk 10 (Sunday)	1 *week after assessment is due.*	Two weeks after submission
Individual Prelabs (4)	No	V*aries*	20%	1 and 2	Lecture material from weeks 1-5	Week 2 -5 before the lab session	1 *week after assessment is due.*	Immediately upon completion
Individual Lab Reports (4)	No	V*aries*	20%	1, 2 and 3	Lecture material from weeks 1-5	Week 2 -5, *Sunday midnight after* the lab session	1 *week after assessment*	

Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to submitting an assessment or sitting an exam.

Please note that UNSW now has a Fit to Sit / Submit rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the Special Consideration page.

While there is no compulsory textbook for this course some useful reference materials includes:

¶ SOLA2051 Moodle on-line handbook.
¶ Report Writing, The Learning Centre UNSW: https://student.unsw.edu.au/report-writing-support
¶ Collins Cobuild English Language Dictionary. Collins Birmingham University (1991) (this is an excellent dictionary for non-native speakers of English, and includes grammar notes, thesaurus notes and real examples of the word in use).
¶ (http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Student_handouts.html
¶ Harvard Referencing for electronic sources: (http://www.lc.unsw.edu.au/onlib/ref.html)
¶ UNSW Library Skills: (http://www.library.unsw.edu.au/links/Research_and_Study_Skills)
¶ ESL Cafè (http://www.eslcafe.com)
¶ Writing Exercises for Engineers and Science students. (http://www.writing.engr.psu.edu/exercises/)
¶ *Engineering Design: A Project-*

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

¶ Attendance
¶ UNSW Email Address
¶ Special Consideration
¶ Exams
¶ Approved Calculators
¶ Academic Honesty and Plagiarism
¶ Equitable Learning Services

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 engineering practice
PE2: Engineering Application Ability	PE2.1 Application of established engineering methods to complex problem solving
	PE2.2 Fluent application of engineering techniques, tools and resources
	PE2.3 Application of systematic engineering synthesis and design processes
	PE2.4 Application of systematic approaches to the conduct and management of engineering projects
PE3: Professional and Personal Attributes	PE3.1 Ethical conduct and professional accountability
	PE3.2 Effective oral and written communication (professional and lay domains)
	PE3.3 Creative, innovative and pro-active demeanour
	PE3.4 Professional use and management of information
	PE3.5 Orderly management of self, and professional conduct
	PE3.6 Effective team membership and team leadership