Photovoltaic and Renewable Energy Engineering

Course Outline

Term 3 2020

SOLA9120

Advanced Photovoltaic Manufacturing

Contents

1. Staff contact details

Course staff:

Course Convener:	Prof Gavin Conibeer, TETB 245 (K-H6-132), g.conibeer@unsw.edu.au
Lecturers:	Prof G Conibeer, Dr Ran Chen – ran.chen@unsw.edu.au Dr Adrian Shi – lei.shi@unsw.edu.au
Course tutor:	Dr Adrian Shi
Guest lecturers:	Dr Rhett Evans – Rhett.evans@unsw.edu.au Dr Nathan2uh4wiaen

Contact hours

	Day	Time	Location
Lectures	Wednesday	10am	

3. Be able to analyse samples of normal distributed populations to extract (1) an estimate of the mean, (2) an estimate of the standard deviation and (3) confidence intervals on the mean when the standard deviation is either known or estimated.
4. Be able to compute a statistical comparison of means and draw appropriate conclusions for several cases of the Z (standard deviation known) and T (standard deviation unknown) and for one (test of mean) or two samples (difference of means).
5. Have a good understanding of basic product cost accounting methods and be able to construct cost behaviour models, transactions/conversions, T-accounts, COGM/COGS computations, and financial summary statements.
6. Understand basic manufacturing process-cost modelling and be able to construct a process

Assignments

All submissions are expected to be neat and clearly set out. Your results are the pinnacle of all your hard work

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 information on UNSW's Special Consideration page.

7. Expected resources for students

7.1 Texts and Reference Materials. The main text for this course is:

- Introduction to Photovoltaics Manufacturing Science and Technology by Jeffrey Cotter (2015)

7.2 Hardware and Software Applications. The tutorials of this course use the following hardware/software:

- Windows PC (laptop suggested) or Apple Mac with a Windows shell
- "Virtual Manufacturing Execution System (VMES)" software: Download link will be posted on Moodle.
- Microsoft Excel or equivalent
- Minitab: Download link and instructions will be posted on Moodle.

7.3 In addition, the following reference materials may be helpful:

- PV-Manufacturing.org: A free online resource about photovoltaic manufacturing
- PVEducation.org: A free online resource about solar cell basics.
- Applied Photovoltaics by Stuart R Wenham

8. [illegible]

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.

9. [illegible]

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 words or ideas of others and passing them off as your own.*

10. Administrative matters and links

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

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 engineering practice