Photovoltaic and Renewable Energy Engineering

Course Outline

Term 1 2021

SOLA2060

INTRODUCTION TO ELECTRONIC DEVICES

1. Staff contact details

Contact details and consultation times for course convenor

Name: A/Prof Stephen Bremner
Office location: Room 217 Tyree Energy Technologies Building
Tel: (02) 9385 7890 (this goes through MS Teams)
Email: spbremner@unsw.edu.au

Consultation hours will be decided by a poll conducted in the first week.
You are encouraged to ask questions after class or post your quest (hnol)13.5 (od)2.734d[s)-2iu(S)gu6 (o)g

Contact hours

	Day	Time	Location
Lectures	Monday	10-11 am	

SOLA2060 is a pre-requisite for SOLA3507 Solar Cells and SOLA5055 Semiconductor Devices.

Relationship to Other Courses

SOLA206

Student Responsibilities and Conduct. UNSW assumes that self-directed study of this kind is undertaken in addition to attending face-to-face classes throughout the course.

5. Course schedule

Week	Week starting	Lecture Topic	Tutorial/Lab
1	15 Feb	Introduction/Basic Electronics Concepts /Intro to semiconductors	
2	22 Feb	Transport/Generation Recombination in semiconductors	Tutorial
3	1 Mar	The pn junction	Laboratory (LG10)
4	8 Mar	Diodes and their applications	Tutorial
5	15 Mar	Optolectronic devices: LEDs, laser diodes, photodetectors, solar cells (Quiz 1)	Tutorial
6	22 Mar	Revision	Revision
7	29 Mar	Bipolar Junction Transistors: operation and circuits	Laboratory (LG10)
8	5 Apr	Op amps: operation and circuits	Tutorial
9	12 Apr	MOSFETs: operation and circuits	Laboratory (LG10)
10	19 Apr	DC-DC converters (Quiz 2)	Tutorial
11	26 Apr	Review	Extra Lab/Tutorial

6. Assessment

Assessment overview

Assessment	Group Project?	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Quizzes	No	50 minutes	25%	1,2, and 3	Topics assessed from weeks 1-4, weeks 6-9.	Exam	N/A	1 week at most
Lab Reports	No	About 5 pages	25%	1,2, and 3	Material covered in class relevant to laboratory exercise.	During week 4, 8 and 10	N/A	2 weeks at most
Final exam	No	2 hours	50%	1, 2 and 3	All course content from weeks 1-10 inclusive.	Exam period, date TBC	N/A	Upon release of final results

Assignments

Quizzes (Total 25%)
There will be two tests based on material covered in the lectures and tutorial questions from the previous topics. Given the constraints in place these will most likely be online in nature. You will be given details in class.

Lab Reports (Total 25%)
In weeks 3, 7, and 9, (see the schedule) you will either work in groups on the three lab projects

Calculators

You will need to provide your own calculator

or paying someone to do your work, may be investigated under the Student Misconduct Procedures.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis) even suspension from the university. The Student Misconduct Procedures are available here:
www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

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