



Photovoltaic and Renewable Energy Engineering

# Course Outline

Term 2 2021

SOLA9103

RE System Modelling and Analysis

# Contents

1. Staff contact details .....	2
Contact details and consultation times for course convenor .....	2
Contact details and consultation times for lecturers/demonstrators .....	2
2. Important links .....	2
3. Course details .....	2
Credit points.....	2
Pre-requisites and Assumed Knowledge .....	3
Relationship to Other Courses .....	3
Contact hours.....	3
Summary and Aims of the course .....	3
Student learning outcomes.....	4
4. Teaching strategies .....	5
5. Course schedule .....	5
Indicative Online Lecture Schedule .....	5
Indicative Online Tutorial Schedule .....	6
6. Assessment.....	7
Assessment overview.....	7
Assignment 1 (Total 10%) .....	8
Assignment 2 (Total 30%) .....	8
Assignment 3 (Total 20%) .....	8
Final Exam (Total 40%).....	8
Presentation .....	9
Submission.....	9
Marking .....	9
Examinations .....	9
Special consideration and supplementary assessment .....	10
7. Expected resources for students .....	10
8. Course evaluation and development .....	11
9. Academic honesty and plagiarism .....	11
10. Administrative matters and links .....	12
Appendix A: Engineers Australia (EA) Competencies .....	13

# 1. Staff contact details

Contact details and consultation times for course convenor

Name: Dr Merlinde Kay  
Office location: Room 215, TETB  
Email: [m.kay@unsw.edu.au](mailto:m.kay@unsw.edu.au)

Contact details and consultation times for lecturers/demonstrators

Name: Kanyawee Keeratimahat  
Email: [k.keeratimahat@unsw.edu.au](mailto:k.keeratimahat@unsw.edu.au)

Name: Abhnil Prasad  
Email: [abhnil.prasad@unsw.edu.au](mailto:abhnil.prasad@unsw.edu.au)

Moodle: <https://moodle.telt.unsw.edu.au/>

Online Consultations: Please see the course [Moodle](#).

For general enquiries about the course please contact the course convener. For all other questions or enquiries related to the course content, you are encouraged to ask the lecturers/demonstrator10.6 (r)-6 ( al)other



*the uncertainty of predicting long term PV system performance? How are models used to assess performance guarantees?*

This course will try to answer these and many more questions by providing students with fundamental knowledge and relevant skills for renewable energy system performance analysis, modelling and monitoring. Students taking this course will develop a competency in



10	7.1: Forecasting
----	------------------

Indicative Online Tutorial Schedule

Week	Tutorial Topic & Activity Description
1	Excel or Python Basics
2	Data Quality Assessment
3	Statistical Metrics
4	Creation of an Hourly Synthetic Weather File in PVsyst
5	Modelling PV Systems in PVsyst – I
6	Modelling Module Temperature
7	Catchup Week – Complete Assignment 2
8	Modelling PV Systems in PVsyst – II
9	Handling Real World Problems
10	Catchup Week – Complete Assignment 3 or Analysis of Wind Data ( <i>optional</i> )

# 6. Assessment

## Assessment overview

The assessment scheme in this course reflects the intention to assess your learning progress throughout the term.

Assessment	Group Project?	Length	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Deadline for absolute fail	Marks returned
Assignment 1	No	4 pages	1k[0.	7&D 36	7 &	D	3 6	







You must be available for all quizzes, tests and examinations.

Final examinations for each course are held during the University examination periods: February for Summer Term, May for T1, August for T2, and November/December for T3.

Please visit myUNSW for Provisional Examination timetable publish dates.

For further information on exams, please see the [Exams](#) webpage.

### 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

### Software

- PVsyst – Photovoltaic modelling software: <https://www.pvsyst.com/>
- Microsoft Excel – Students can download Microsoft Excel as part of Microsoft Office 365 available via UNSW IT: <https://www.myit.unsw.edu.au/services/students>

- EnergyPlus Weather Data: <https://energyplus.net/weather>
- The Australian Renewable Energy Mapping Infrastructure (AREMI): <https://nationalmap.gov.au/renewables/>
- The World Bank Group Global Solar Atlas: <https://globalsolaratlas.info/map>
- The World Bank Group Global Wind Atlas: <https://globalwindatlas.info/>
- PV Education by C.B. Honsberg and S. Bowden <https://www.pveducation.org/>

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](http://www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf)

## 10. Administrativemattersand 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](#)

