

University of Delaware
Department of Electrical and Computer Engineering
ELEG620 Solar Electric Systems

Dr Stephen Bremner and Dr Allen Barnett

Lecture Times: Tuesday 3.30-4.45
Thursday 3.30-4.45

Syllabus (subject to alteration)

Introduction to renewable energy, Solar Radiation, Review of Semiconductors, *pn* junctions, *pn* junction under illumination, design of solar cells, *pn* junction of finite width, top surface design, recombination losses, solar cell technologies, efficiency limits, solar cell connections, modules, stand alone system components; batteries, regulators, inverters, system applications, economics of systems, policy and its role in solar energy

Texts

Applied Photovoltaics, by Wenham, Green, Watt (and Corkish) (The blue book)

Solar Cells, by Green (The red book)

PVCDROM: Photovoltaics: devices, systems and applications (recommended)

<http://pvcdrrom.pveducation.org/> link can be found on subject webpage

Assessment

Homeworks (x5)	20%
Quiz	20%
Project	25%
Exam	35%

There may be additional tasks where bonus marks can be earned.

Consultation Times

Immediately following lectures is the best time for questions or advice. Alternatively a meeting can be arranged by visiting Room 201 Evans Hall and organizing a time through Gretchen Taylor.

Advice

A common question is what material is examinable in the final exam. All of the material we have covered in the course is examinable but it is strongly advised that you complete all of the homework problems as some of these will either be in the final exam or be very close to what will appear in the final exam.