

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
SYLLABUS OF B.E VI- SEMESTER
SOLAR POWER AND APPLICATIONS (Open Elective – VI)

Instruction: 1 Hr /week	SEE Marks :50	Course Code :OE610EE
Credits : 1	CIE Marks: 30	Duration of SEE : 2 Hrs

Course objective:	Course Outcomes:
To impart the basics of solar energy harnessing and solar panel and array.	A student will be able to <ol style="list-style-type: none">1. Identify and choose proper type of meter for solar radiation measurement.2. Use proper solar PV system according to the load requirements.3. Categorize and compare photovoltaic cells.4. Apply the knowledge of solar energy.

Unit – I

Solar Energy Basics: Sun as a source of energy, the Earth, Radiation Spectrums, Extraterrestrial and Terrestrial Radiations, Depletion of solar Radiation, Pyranometer, Pyrheliometer, Sunshine Recorder, Solar Collectors, Solar Water Heater, Solar Cookers and Solar Thermo-Mechanical Systems.

Unit – II

Solar Photovoltaic Systems: Solar Cell fundamentals, Cell characteristics, Cell classification, Module, Panel and Array, Maximizing the Solar PV output and load matching, MPPT, Stand-Alone Solar PV system, Grid-Interactive Solar PV system, Water Pumping and lighting.

Suggested Reading:

1. B H Khan, Non-Conventional Energy Resources, 2nd Edition, Tata McGraw Hill.
2. G. D. Rai, Non-Conventional Energy Sources, 13th Reprint 2014, Khanna Publications.

Online Resource:

1. <https://drive.google.com/file/d/>
2. www.pdfdrive.net
3. www.edx.org