P.G Diploma in Solar Renewable Energy

PGDRE-103: Applications and Technology in Solar Energy (52 Hours)

Sub Code: PGDRE-103	No. of Lecture Hours Per week : 04
Total Ctedit:04	Internal Marks : 30 and Exam Marks: 70=100

Objectives of the paper :

- To understand the solar technology
- To understand Earthling and lighting in power system
- To understand the Thermal Energy conversion

Module- I

Introduction: 10 Hours

Introduction – solar potential in India, application of solar photovoltaic system , Solar thermal system technologies & application water heating system, solar cooking, solar water pumping system.

Module- II 10 Hours

Batteries

History – basics of batteries – classification of batteries – battery cell types, technologies and most commonly used batteries in P V systems. Comparison of batteries - Battery safety and maintenance – charging issues.

Module- III 10 Hours

Inverter

Introduction – evolution of the Inverter- inverter technical specifications and selection – types of Inverter – feature of Inverter, importance of Inverter, compression of inverters, solar inverters.

Module- IV 12 Hours

Planning & design

Design and objectives - Solar power plant installation, guidelines – safety, stages of solar power plant installation, commissioning operation & maintenance.

Module- V **10 Hours**

Earthling or grounding and lighting in power system

Objectives of earthling need for earthling, design of earthling, types of earthling, types of earth tester, standards / regulation on earthling, lightning protection in SPV plants, methods of lightning protection, effects of lightning.

References :

- Chetan Singh Solanki, (2008) Renewable energy Technologies; A Practical Guide for Beginners, PHI School Books
- D.Mukherjee (2011) Fundamentals of Renewable Energy Systems Paperback – , New Age International Publisher; First edition
- Dr. H. Naganagouda (2014), Solar Power Hand Book, Director, NTC for solar technology , Banagluru.
- Solar energy storage By Bent Sarensen