

Repairing and Maintenance of Solar panels

Class: B.Sc.III

Skill level: 8

Name of Co-ordinator: Mr. A. S. Chaudhari

Department of Physics

1. Title: **Repairing and Maintenance of Solar panels**
2. Year of implementation: 2020-21

Structure

Skill level	Theory Hours	Practical Hours	Total Hours	Credits	No. of students in batch
8	20	30	50	03	30

Syllabus

Learning Objectives:

1. To Provide information to the learner in order to understand the concept of solar panel repairing.
2. To Provide information to carry monthly & yearly maintenance of solar panels.
3. To enable the learner for trouble shooting of solar panels & lightning.

Theory Syllabus (20 Hrs)

UNIT I: UNDERSTANDING THE COMPONENTS

(10)

Common components for all systems
 Solar panels
 Solar panel mountings
 Solar array cables
 Solar array connectors
 Fuses and isolation switches

The importance of using the correct cables, connectors and isolation switches
Ground fault protection

Unit II: TROUBLESHOOTING (10)

Safety Precautions
Common faults
Excessive power usage
Insufficient power generation
Damaged wiring/ poor connections
Weak battery
Inverter issues
System maintenance

Practical Syllabus (24 Hrs)

1. Solar panel mountings
2. General maintenance (monthly, winter, yearly)
3. Testing of fuses and isolation switches
4. Rectifying excessive power usage
5. Causes of insufficient power generation and its remedy
6. Identifying damaged wiring/ poor connections
7. Testing of battery
8. Inverter related issues and solutions

Field Visits 06hr

Learning Outcomes: After completion of the course, students are able to:

- 1 understand the Solar panel mountings
- 2 know the General maintenance
- 3 understand the issues and solutions of battery & Inverter.

.Recommended Books:

1. Solar Power Hand Book :- Dr. H. Naganagouda (2014)
2. Solar Energy, Fundamentals Design, modeling and Application: Tiwari GN.-2015
3. Solar Electricity Handbook; Michale Boxwell; 2017 edition
4. Dawn of the Solar Age: An End to Global Warming and to Fear; Prem Shankar JHA; PHI publication - 2015

BOS Sub Committee:

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1. Mr. A. S. Chaudhari -Chairman
2. Mr. S. S. Patil
3. Dr. P. K. Pagare

Experts

- Dr. Adinath Funde
Mr. S. B. Yadav (Solar industrialist)

