M. Tech I Year I Semester

18EPSP202   RENEWABLE ENERGY LABORATORY

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Course Prerequisite: 18EPSP404

Course Objectives:

1. To learn the basic modeling of a wind generator using MATLAB software.
2. To understand the operation of a wind generator/wind farm.
3. To understand the basic modeling and operation of a Solar PV System using MATLAB.
4. To test the capabilities of Solar Panels and Wind Turbines under different operating conditions.

List of experiments

1. Modeling of a wind generator system using MATLAB software.

2. Obtain the Power Vs Wind Velocity Curve of a Wind Turbine.

3. Build a Wind Farm using wind generators MATLAB software.

4. The Effect of load onWind Turbine Output.

5. Modeling of a Solar PV System using MATLAB software.

6. Effect of Temperature on Solar Panel Output.

7. Variables Affecting Solar Panel Output.

8. Effect of Load on Solar Panel Output.

9. Test the Capabilities of Solar Panels and Wind Turbines under different operating conditions (irradiation; wind velocity, grid distortions etc.).

10. Test the Capabilities of the Hydrogen Fuel Cells and Capacitors.

Course Outcome:

At the end of the course, students will able to

1. Model a Wind Generator using MATLAB software.
2. Model a Solar PV System using MATLAB software.
3. Testing of Wind Generator and Solar PV System under various operating conditions.

Mode of Evaluation: Practical, Written Examination