

## Solarizer Workshop

Techfest is the annual science and technology festival of IIT Bombay. Following is the basic outline of the workshop that would be happening at **Techfest, IIT Bombay**.

**Solar PV System Designing course using SketchUp Software's (2-Days) program which will cover the following topics:**

### Day 1-Basics of Solar, Study Cell, Module & System Designing with Electricity Bill Reading

Sessions	(Hrs.)	Topics
Session 1(Theory)	45 Min	<ul style="list-style-type: none"> <li>Solar Energy Scenario in India &amp; Job Opportunities</li> <li>Basics of Solar Photo Voltaic Technology (PV)</li> </ul>
Quiz	10 min	<b>Quiz from the Previous session</b>
Session 2 (Theory)	60 min	<p><b>Study of Solar PV Components &amp; Types of Solar Cell</b></p> <ul style="list-style-type: none"> <li>What is Solar cell, Module and how it is made?</li> <li>Study of different components of off-grid and Grid connected solar PV system</li> <li>Study of different types of Solar PV System</li> </ul>
Quiz	10 min	<b>Quiz from the Previous session</b>
Session 3 (Theory)	60 min	<p><b>System Designing</b></p> <ul style="list-style-type: none"> <li>System designing of Off-Grid and Grid-Connected Solar PV System using Excel sheet</li> <li>Understanding of Off-Grid &amp; Grid-connected solar PV system</li> </ul>
Quiz	10 min	<b>Quiz from the Previous session</b>
Session 4 (Theory)	45 min	<p><b>Electricity Bill Analysis &amp; Calculation</b></p> <ul style="list-style-type: none"> <li>Electricity Bill analysis, Load calculation &amp; solar array formation</li> <li>Advantage and disadvantages of Grid Connected Plant</li> <li>Study of factors to decide solar module and inverter</li> </ul>

## Day 2- SketchUp Hands-On Software Practical Session

Sessions	(Hrs.)	Topics
Session 1(Theory)	30 Min	<ul style="list-style-type: none"> <li>Importance of Simulations and Designing Software in Solar PV System Designing</li> </ul>
Quiz	10 min	Quiz from the Previous session
Session 2 (Theory)	60 min	<p><b>Making of PV Plant Layout and performing shadow analysis using SketchUp</b></p> <ul style="list-style-type: none"> <li>Site Survey/Site Assessment using SketchUp software</li> <li>Post site survey Electricity Bill analysis, calculating PSH from NASA power website</li> <li>PV DC Capacity calculation, Site Selection from Google map, building 3D version of selected site using SketchUp</li> </ul>
Quiz	10 min	Quiz from the Previous session
Session 3 (Theory)	60 min	<p><b>Study of Basic Tools and Understanding</b></p> <ul style="list-style-type: none"> <li>Study of basic tools available in SketchUp software</li> <li>Study of basic tools available in Skelion plugin</li> <li>How to place solar module on the rooftop</li> <li>How to calculate inter row spacing (pitch) using SketchUp Software</li> </ul>
Quiz	10 min	Quiz from the Previous session
Session 4 (Theory)	60 min	<p><b>Shadow analysis and generation of final report</b></p> <ul style="list-style-type: none"> <li>Shadow analysis, how to avoid shadowed area?</li> <li>Optimization of the plant, analyzing the final generated report</li> </ul>