

**Simtel Interactive Technology Learning Platform** has been made to strengthen students technical knowledge and develop a deep understanding of technology. Its two dimensional and three dimensional (2D and 3D) graphical approach will help learner to grasp subjects in a very short period of time with great clarity. Simtel modules focus on fundamental to latest topics specifically designed for students, teachers, and training institutes. Teachers can also use Simtel modules in their classroom and make their lecture more interactive and effective using interactive Graphical User Interface (GUI), user friendly and easy navigation, detailed theory, explanation of complex topics with animations and user interactive simulations.

## Topics:

### Renewable Energy

- Water Energy
- Wind Energy
- Sun's Energy
- Biomass Energy
- Geo Energy

### Basic Electrical & Electronics

- Fundamentals of Semiconductors
- Charge Carriers and Their Motion in Semiconductor
- P-N Junction Diode
- Ohm's Law

### Solar Energy

- Solar Thermal Energy
- Solar Photovoltaic Energy

### Solar Radiation

- Solar Spectrum at the Earth's Surface
- The Sun and Earth Movement
- Angle of Sunrays on Solar Collector
- Sun Tracking
- Measurement of Solar Radiation

### Photovoltaic

- Design of Solar Cells
- Solar PV Modules from Solar Cells
- Mismatch in Series Connection
- Mismatching in parallel Connection
- Design and Structure of PV Modules
- PV Module Power Output

### Solar PV System

- Batteries for PV System
- DC to DC Converters
- Charge Controllers
- DC to AC Converters (Inverter)
- Maximum Power Point Tracking (MPPT)

### PV System Design

- Introduction to Solar PV Systems
- Stand-alone PV System Configurations
- Design Methodology of PV Systems

### Solar PV Application

- Hybrid PV System
- Grid-Connected PV System
- Life Cycle Costing (LCC)

## Software program windows

