	C.V. Raman GalSen **Centre of Excellence**	

DC MICRO- GRID INSTALLATION & MAINTENANCE

Overview:

The course deals with design and development of DC Micro- Grid Installation & Maintenance, study and operation of its components, hardware installation, Protection, control, storage and applications.

Participant Profile:

- B.Tech (EE/EEE)/ Diploma (EE)/ ITI Students (Electrician Trade)
- Industry Personnels/ Technicians/ Electrical and Allied Sciences

Contents:

Module: 1 : Solar panels

- Working principle
- Types of solar panels
- Series Parallel connection
- Factors affecting the performance of Solar Panels
- Maintenance

Module: 2 : Battery

- Types of Battery
- Solar battery technologies
- Selection of Battery for Solar installation
- Series Parallel connections
- Maintenance

Module: 3: Solar charge controllers

- Working principle
- Types of solar charge controllers
- Functions of Solar charge Controllers

Module: 4 : WECS- Wind Energy Conversion System

- Working principle
- Installation & operation

- Interconnection of Wind and PV system to common bus bar and Loads

Module: 5 : DC Appliances, AC Appliances, Safety and protection

- Electrical Safety and Care
- Electrical Fire Safety
- Protection

Learning Outcomes:

The participants will be able to:

- learn and identify the different configurations of the hybrid Wind, Solar DC microgrid system.
- Understand the power flow in the system at different conditions for each configuration.
- Perform installation of the different components such as charge controller, inverter, battery bank and distribution boxes at different configurations.
- Test the working of the system at different conditions and to know the behavior of the system at such conditions.
- Do the commissioning procedure for the hybrid solar microgrid system for different configurations.

Pre-requisites:

- Basic Knowledge on Electrical and Measurement Tools
- Basic Electrical Engineering
- Communcation Skills

Evaluation:

- Theory and Practical Examination
- Case Study
- Project work based on industrial application

Teaching learning Pedagogy:

- Both synchronous and asynchronous
- ICT based content delivery
- Hardware Practice sessions

Duration of the course: 36 Hours, 6 Hours/Day

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Fees And Other Details:

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