



Late Shri. Vishnu Waman Thakur Charitable Trust's
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Department of Electrical Engineering



Report on AICTE-ISTE Approved One Week Short Term Training Programme on “Emerging Technologies in Electrical Engineering” organized by Department of Electrical Engineering

Emerging technologies are those technical innovations which represent progressive developments within a field for competitive advantage. This course aimed at providing the understanding of the basic trends and challenges of Electrical energy sector and working with different tools that facilitate the implementation of renewable energy sources. The workshop was organized by the Department of Electrical Engineering, VIVA Institute of Technology. All the speakers were provided by the State government sector and reputed private energy sector.

The objective of the AICTE-ISTE Approved Workshop was

- To introduce the recent trends in renewable energy sources.
- To help the participants in implementation of Renewable energy sources.
- To familiarize with the basic concepts and challenges in electrical distribution network.
- To help the participants to understand the energy audit, electrical testing and UPS.
- To help the participants in implementation of conventional energy sources in commercial area.

Topic: Load Management

Speaker: Mr.Vijay Sonwane

LM: Strategy of adjusting & optimizing energy, using systems & procedures, so as to reduce energy requirements per unit of output, while holding constant or reducing total costs of producing the output from these systems

Objectives of LM:

- To achieve & maintain optimum energy procurement & utilization, throughout the organization and:
- To minimize energy costs & waste without affecting production & quality
- To minimize environmental effects

Lowering overall cost of operation.

Topic: HVAC and Fire Fighting

Speaker: Mr. Pramod Bambulkar

HVAC is an important part of residential structures such as single family homes, apartment buildings, hotels and senior living facilities, medium to large industrial and office buildings such as hospitals, on ships and submarines, and in marine environments, where safe and healthy building conditions are regulated with respect to temperature and humidity, using fresh air from outdoors.

Firefighting is the act of attempting to prevent the spread of and extinguish significant unwanted **fires** in buildings, vehicles, woodlands, etc. A firefighter suppresses **fires** and performs rescues to protect lives, property and the environment.

Topic: Internet of Things (IOT)

Speaker: Mr. Shreyash Patil

The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. **IoT** is short for Internet of Things. The Internet of Things refers to the ever-growing network of physical objects that feature an IP address for internet connectivity, and the communication that occurs between these objects and other Internet-enabled devices and systems.

Topic: Distribution Networks

Speaker: Mr. Sanjay Sonune

Electricity distribution networks carry electricity from the high voltage transmission grid to industrial, commercial and domestic users. Electricity is delivered to consumers through a complex network. Electricity is generated at power plants and moves through a complex system, sometimes called the grid, of electricity substations, transformers, and power lines that connect electricity producers and consumers. Distribution feeder circuits are the connections between the output terminals of a distribution substation and the input terminals of primary circuits. The distribution feeder circuit conductors leave the substation from a circuit breaker or circuit recloser via underground cables, called substation exit cables.

Topic: Electrical testing, UPS & DG

Speaker: Mr. Manoj Mawle

In this session speaker explain on different sizes of diesel generator sets ranging between 2 kVA to 7,000 kVA are used in the country; 15 kVA to 2,000 kVA being the most commonly used. Usage of diesel generator sets of up to 75 kVA is more widespread (more than 95%). The diesel generator sets market in India has both organized (large reputed domestic brands and unorganized (small local) manufacturers. Discussion with stakeholders suggests that 30-40% of the total market is unorganized. The presence of unorganized small-

scale manufacturers is higher in case of diesel generator sets up to 25 kVA category apparently due to the use of simple technology which is easier to manufacture.

Topic: Solar PV System

Speaker: Mr. Anish Bhurke

A photovoltaic system, also PV system or solar power system is a power system designed to supply usable solar power by means of photovoltaics. Nowadays, most PV systems are grid-connected, while off-grid or stand-alone systems only account for a small portion of the market. Very day, light hits your roof's solar panels with photons (particles of sunlight). The solar panel converts those photons into electrons of direct current ("DC") electricity. The inverter converts that "DC" power (commonly used in batteries) into alternating current or "AC" power. Solar cells, also called photovoltaic (PV) cells by scientists, convert sunlight directly into electricity. PV gets its name from the process of converting light (photons) to electricity (voltage), which is called the PV effect.

It was felt necessary that the teaching faculty also become competent in the new and recent technologies. With keeping this as an intension the AICTE-ISTE approved Short Term Training Programme was conducted from 29th May, to 4th June, 2018 in VIVA Institute of Technology, Department of Electrical Engineering.

Details of the speakers are as follows:

Sr. No.	Name of the Speaker	Details of the Speaker	Topics Covered	Date
1	Mr. Vijay Sonavane	Advisor MERC	Load Management & Audit	TUE 29/05/2018
2	Mr. Pramod Bambulkar	Asst. General Manager, TCS, Mumbai	HVAC & Fire Fighting	WED 30/05/2018
3	Mr. Shreyash Patil	Network Lead Accenture, Pune	IOT	THU 31/05/2018
4	Mr. Sanjay Sonune	Maintenance Engineer, Reliance Energy, Chembur	Distribution Network	FRI 1/06/2018
5	Mr. Manoj Mawle	MEP Manager, Shapoorji & Pallonji Real Estaste, Mumbai	Electrical testing, UPS & DG	SAT 2/06/2018
6	Mr. Anish Bhurke	Asst. General Manager, TCS, Mumbai	Solar energy harvesting	MON 4/06/2018

All the speakers were well received by the attendees. The attendees gave very good feedback for to all the speakers. A total of 12 participants participated in the One week workshop.