Late Shri. Vishnu Waman Thakur Charitable Trust's

VIVA INSTITUTE OF TECHNOLOGY

Shirgaon, Virar (E), Taluka-Vasai, District-Palghar, 401305, Maharashtra
Telephone: 7770002544   website- www.viva-technology.org

Department of Electrical Engineering

Report on AICTE-ISTE Approved One Week Short Term Training Programme on "Integration of Modern Technologies in Electrical Engineering" organized by Department of Electrical Engineering

New trends in power-electronic technology for the integration of renewable energy sources like wind/photovoltaic and energy storage systems are presented along with the current technology and future trends in variable speed wind turbines. Also, the research trends in energy storage systems used for the grid integration of intermittent renewable energy sources have been discussed.

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 Industry 4.0 for understanding the automation in real world..
- To familiarize with the basic knowledge of MATLAB.
- To familiarize with the basic concepts and challenges in Low Voltage and High Voltage Panel design
- To understand the basic and electrical design of building
- To familiarize with the basic concepts and challenges in Electric Traction.

Topic: Industry 4.0

Speaker: Mr. Ram Prasad & Ms. Eshita Shikhare

Industry 4.0 is a name given to the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the fourth industrial revolution.

Industry 4.0 fosters what has been called a "smart factory". Within modular structured smart factories, cyber-physical systems monitor physical processes, create a virtual copy of the physical world and make decentralized decisions. Over the Internet of Things, cyber-physical systems communicate and cooperate with each other and with humans in real-time both internally and across organizational services offered and used by participants of the value chain.

Topic: Electric Traction

Speaker: Mr. P.N. Prabhu

A railway electrification system supplies electric power to railway trains and trams without an on-board prime mover or local fuel supply. Electric railways use electric locomotives to haul passengers or freight in separate cars or electric multiple units, passenger cars with their own motors. Electricity is typically generated in large and relatively efficient generating stations, transmitted to the railway network and distributed to the trains. Some electric railways have their own dedicated generating stations and transmission lines but most purchase power from an electric utility. The railway usually provides its own distribution lines, switches and transformers.

Power is supplied to moving trains with a (nearly) continuous conductor running along the track that usually takes one of two forms: overhead line, suspended from poles or towers along the track or from structure or tunnel ceilings; third rail mounted at track level and contacted by a sliding "pickup shoe". Both overhead wire and third-rail systems usually use the running rails as the return conductor but some systems use a separate fourth rail for this purpose.

Topic: Electrical Design of building

Speaker: Mr. A.V. Ravi Kiran

For the building electric design discipline, physical modeling takes a back seat to system modeling. Wires aren't actually routed in the model - that's left to the contractor on site. The only things physically modeled are electrical devices and equipment such as lighting fixtures, transformers, generators, and panel boxes, etc., whereas system modeling is of the upmost importance. Are there any devices not assigned to a circuit? What is the number and types of circuits? Is there adequate power and light for the space to be used as intended? These design considerations and calculations form the basis of the electrical engineer's challenge. The computable Revit MEP model is a perfect environment for this type of data-centric system modeling.

Topic: MATLAB

Speaker: Mr. Yadnesh Zagade

MATLAB (matrix laboratory) is a multi-paradigm numerical computing environment and proprietary programming language developed by Math Works. MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, creation of user interfaces, and interfacing with programs written in other languages, including C, C++, C#, Java, Fortran and Python.

Although MATLAB is intended primarily for numerical computing, an additional package, Simulink, adds graphical multi-domain simulation and model-based design for dynamic and embedded systems. It is a great simulation tool. If you design a circuit, filter, control system or power system, you want to know what will happen under given conditions.

Topic: Low Voltage and High Voltage Panel design

Speaker: Mr. Nikhil Dhage

In this session speaker explain on selecting a low voltage and high voltage main distribution system (MDS), sub distribution board (SDB) and ring main unit (RMU) the prerequisite for its efficient sizing is knowing about its use, availability and future options for extension. The requirements for power distribution are extremely diverse.

Normally, frequent switching operations need not be considered in the planning of power distribution for commercial, institutional and industrial building projects, and extensions are generally not to be expected. For these reasons, a performance-optimized technology with high component density can be used.

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 17th December to 24th December 2018 in VIVA Institute of Technology, Department of Electrical Engineering.

Details of the speakers are as follows:

Sr no	Name of the Speaker	Designation	Contact no
1	Mr. Ram Prasad & Ms. Eshita shikhare	CRG-Embedded Engineer at SMECLabs	MON 17/12/2018
2	Mr. P.N. Prabhu	Traction Distribution, Indian Railway	TUE 18/12/2018
3	Mr. A.V. Ravi Kiran	Centre Head and Electrical Trainer	WED 19/12/2018
4	Mr. Yadnesh Zagade	C.E.O. Senior Research & Development Engineer	THU 20/12/2018 & FRI 21/12/2018
5	Mr. Nikhil Dhage	Sr. Engineer (Design & Estimation)	MON 24/12/2018

All the speakers were well received by the attendees. The attendees gave very good feedback for to all the speakers. A total of 11 participants participated in the One week (6 days) training program.