

DIPLOMA IN ELECTRICAL ENGINEERING LAB FACILITIES

The Department of Electrical Engineering is credited with state-of-the-art laboratories, i.e., basic electrical engineering, electrical machines, power electronics, installation, maintenance & repair of electrical machines, electrical design, drawing and estimation, electrical measurements, control and instrumentation, and the electrical and electronics workshop. The department is also well equipped with a number of PCs and workstations hosting several software packages and linked through a local area network. Internet services are available to all students and faculty.

BASIC ELECTRICAL ENGINEERING LAB

1. Brief Description of the Lab

This lab is common for Diploma 1st year students of Electrical Engineering and Electronics Commutation engineering discipline. In this lab the students is expected to learn the critiques of basic knowledge about Electrical Engineering through demonstration and practice. After completion of this course, the students will be able practical understanding of ohms law ,kvl,kcl etc.

2. Equipment Used in the lab

Ohm's law training kit, series and parallel training kit, resistors, connectors, Kirchhoff's Current law training kit, Kirchhoff voltage law training kit.

3. Photograph





ELECTRICAL MACHINE LAB

1. Brief Description of the Lab

In this lab students are introduced to various types of machines and their characteristics through practical experience. All types of DC Machines, single-phase and three-phase squirrel cage and slip ring induction motors, single-phase and three-phase transformers, suitable starters and loading arrangements for machines, Kirloskar made DC motor- 3 phase Alternator set and measuring instruments of all types needed for laboratory experiments are available.

Each machine is provided with a workbench having well-designed movable connecting panels made from thick phylum sheets (with attractive printing on it). Other major equipment includes general-purpose rotating electrical machines & test benches, a variety of single phase & 3 phase transformers, synchronous / DC machine sets, and variable-frequency inverters.

Equipment Used in the Lab

AC machine, DC machine,

2. Photograph





This lab is in the curriculum of the Third semester and Fifth semester of Polytechnic (Diploma). 2nd year and #rd year students of Electrical engineering discipline. In this lab, the students is expected to learn the critiques of basic of electrical machine. In this lab students know about the significance of DC and AC Machines. Understand the applications of Faraday's laws and Operate Ac Machines to conduct experiments on it to find their characteristics. Judge to Test the speed of electrical machines by different methods

ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS LAB

1. Brief Description of the Lab

This lab is in the curriculum of Third semester of Polytechnic (Diploma). 2nd year students of Electrical engineering discipline. In this lab the students is expected to learn the critiques of basic of Electrical Measurements and Measuring Instruments. In this lab students know about the significance of Electrical Measurements and Measuring Instruments. Understand the applications of different AC & DC bridges in the measurement systems. The transformer for high current & voltage measurement.

2. Equipment Used in the Lab

CT & PT, AC & DC bridges, Kelvin Bridge, Maxwell's Bridge, Wien's Bridge. etc

3. Photograph



INSTALLATION, MAINTENANCE AND REPAIR OF ELECTRICAL MACHINES

1. Brief Description of the Lab

This Lab Is In the Curriculum of the Fifth Semester of the Polytechnic (Diploma). 3rd-Year Students of Electrical Engineering Discipline. In This Lab The Students Is Expected To Learn The Basic Of **Installation, Maintenance And Repair Of Electrical Machines**. In This Lab Students Know About Significance of the **Installation, Maintenance and Repair of Electrical Machines**. Understand The Applications Of **Installation, Maintenance And Repair Of Electrical Machines**.

2. Equipment Used in the lab

AC machine, DC machines, electrical machines e.g. electric iron, washing machines geyser, submersible, pumps, coolers etc

3. Photograph



ELECTRICAL DESIGN, DRAWING AND ESTIMATION LAB

1. Brief Description of the

This lab is in the curriculum of fifth semester of polytechnic (diploma). 3rd year students of electrical engineering discipline. In this lab the students is expected to learn the basic of **electrical design, drawing and estimation**. In this lab students know about significance of **electrical design, drawing and estimation**. Understand the applications of **electrical design, drawing and estimation**.

2. Equipment Used in the lab

Different types of wires, pipes, switches, socket etc

IOT APPLICATION LAB

This lab has been set up to fulfil the objectives of skilling the students in IoT and embedded system design utilising state-of-the-art hardware boards and software as per industry standards. And also enhance research activities in different areas of IoT, like smart homes, smart villages, smart grids, smart agriculture, and industry 4.0. And wearable IoT devices, etc.



CONTROL & AUTOMATION LAB

Students do experiments on Torque Measurement Kit, Dead Weight Pressure Gauge, Level Control Unit and Temperature Measurement Kit. The Lab also contains PC based experiments like Speed Control of Stepper Motor, Speed Control of DC motor and Flow Loop Control. This lab equips students with knowledge on various transducers and their applications, PC based control applications (PID method). Plans are in the making to expand the lab by adding programmable logic controllers.



ELECTRICAL WORKSHOP

The workshop provides basic practical knowledge about Electrical and Electronics on.

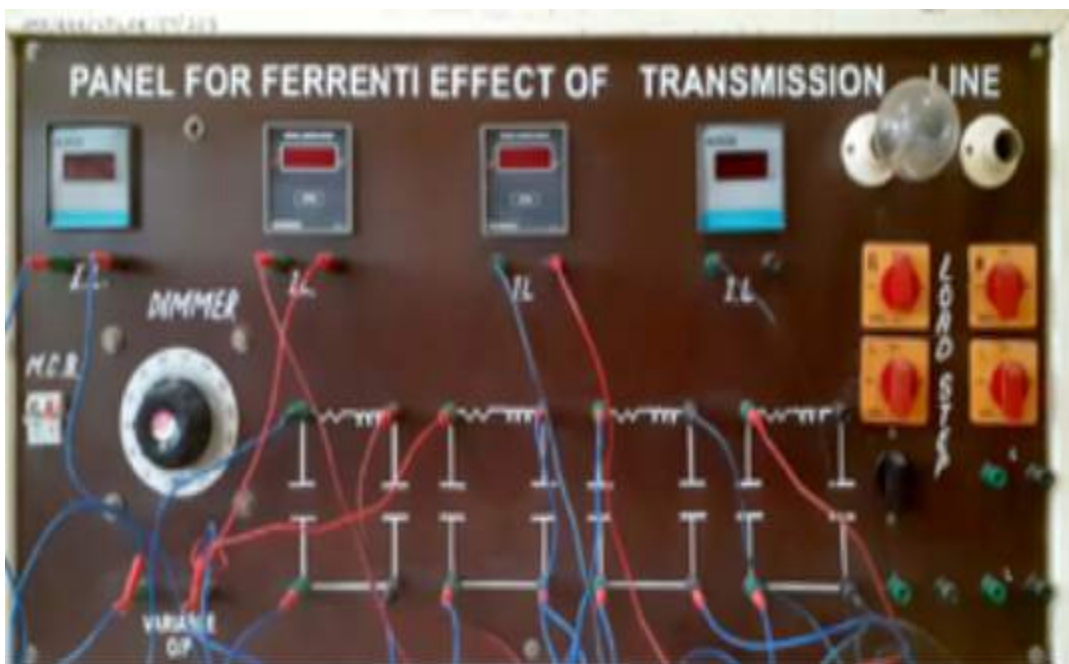
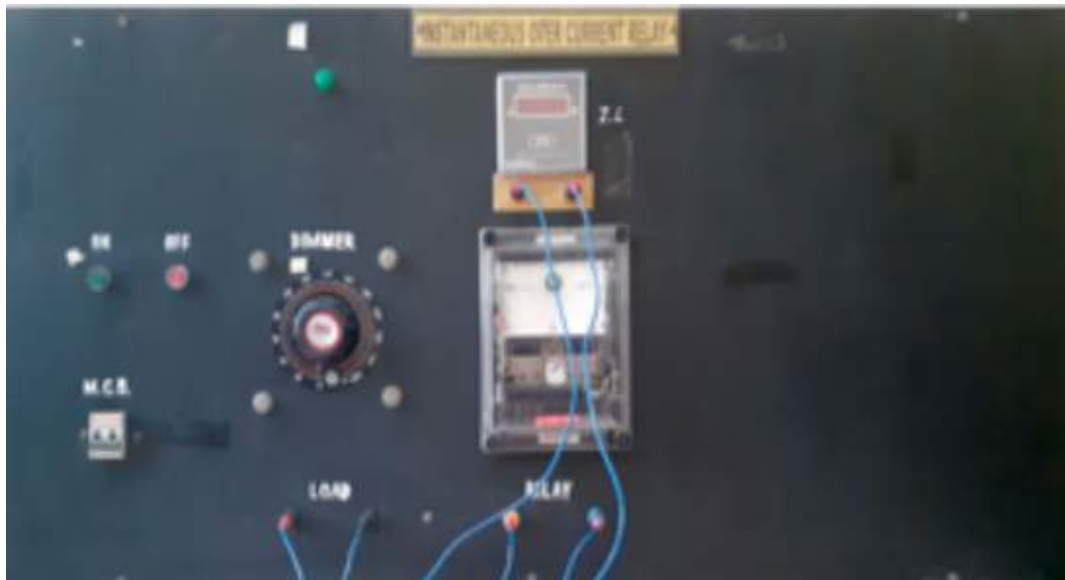
1. Familiarization of different types electronic components and measuring instruments
2. PCB fabrication and soldering.
3. Identification of PC hardware parts and familiarization of microprocessor trainer kits
4. House wiring practice and working of electrical protective devices
5. Functioning of some commonly used home appliances and different types of electric lamps.

In addition to regular experiments, students take on mini-projects as a part of their workshop practice. During this process, students gain confidence in executing electrical and electronic projects irrespective of their branch of engineering. At the end of the semester, a project exhibition is presented, and this, in turn, motivates students to create more complex projects and to attempt competition in future project exhibitions.



POWER SYSTEM & SIMULATION LAB

Students do experiments on Torque Measurement Kit, Dead Weight Pressure Gauge, Level Control Unit and Temperature Measurement Kit. The Lab also contains PC based experiments like Speed Control of Stepper Motor, Speed Control of DC The Department recently set up a Power System & Simulation Laboratory having 30 computers. The latest version of MATLAB software package will help students to simulate power systems and carry out load flow analysis, short circuit study, relay coordination and harmonic analysis and also provides proficient computing, simulation and analysis. The lab also has an electrical panel with relay fitted for experiments, which includes Three Phase IDMT Over Current Relay, Definite Time Over Current-under Voltage Relays, Motor Protection Relay, Transformer Differential Relay, Master Trip Relay, Conventional Test Kit and Numerical Test Kit. motor and Flow Loop Control. This lab equips students with knowledge on various transducers and their applications, PC based control applications (PID method). Plans are in the making to expand the lab by adding programmable logic controllers.



ANALOG AND DIGITAL ELECTRONICS LAB

The Analog Electronics Lab is an introductory lab that studies the design, development, and debugging of discrete component-based analog electronic circuits. This lab looks at the functional analog building blocks, such as single-stage amplifiers, op-amps, tiny audio amplifiers, filters, converters, and sensor circuits, as well as semiconductor devices (diodes, BJTs, and MOSFETs). The Digital Electronics Lab is designed to enhance skills in fundamental electronic digital system design and analysis. Students have been learning about digital integrated circuits (ICs) and how they work, as well as how to create and use sequential and combinatorial logic circuits.



POWER ELECTRONICS LAB

The Power Electronics lab is well-equipped with several kinds of experimental setups to help students comprehend the principles of rectifiers, choppers, inverters, AC voltage controllers, and cyclo converters. Along with SCR triggering and commutation circuit experimental kits, the lab has them. Applications for thyristors, TRIACs, etc. include power converter design and speed control of AC and DC motors.

MICROPROCESSOR AND EMBEDDED SYSTEM LAB



The Microprocessor and Embedded System Lab is equipped with tools and modules for developing and accessing assembly-language Programmes (ALP). This lab is used to understand the applications of

microprocessors and embedded systems through the execution of various hands-on experiments, such as interfacing and controlling a DC motor, interfacing a DAC and generating triangular and square waveforms, interfacing a 4x4 keyboard and displaying the key code on an LCD, demonstrate the use of an external interrupt to toggle an LED on/off, etc.

