

Laboratory Facilities @ AII

Electrical Engineering (EE) Department

The Department of Electrical Engineering is enriched with well - developed laboratories, having variety of equipment useful to understand concepts and applications practically. The department emphasizes on hardware and software skills of an individual and accordingly lab development is shaped. The equipment and software tools are of best quality and as per the standards. The department has state-of-the art lab facilities in different areas and are listed as below:

1. Electrical Machines Lab:

The major facilities available are:

- DC Shunt and Series Machine
- DC Compound Machine
- Mechanical and Electrical Loads
- DC Series Identical Machine
- Single Phase Transformer
- Three Phase Transformer
- Vector group testing of three phase transformer
- VVVF control of three phase induction motor
- DC shunt, series and compound machines testing
- Synchronous machine testing
- Cut Section of DC Shunt and Series Motor
- Cut Section of DC Compound Motor
- Digital Multimeter
- Digital Tachometer.

2. Power Electronics & Electrical Drives Lab:

The major facilities available are:

- 4-Channel Isolated Power Digital Storage Oscilloscope (DSO)
- 2, 4-Channel Digital Storage Oscilloscope (DSO)
- DC power supplies 30 V, 3 A dual channel
- Digital Tachometer
- Power Semiconductor Characteristic Trainers (IGBT, MOSFET, UJT, etc.)
- Step up / step down / step up-down choppers
- Single-phase / three phase controlled and uncontrolled rectifiers
- Single-phase / three phase inverters
- Dual converter
- BLDC Motor drive
- Separately Excited DC motor drive
- Three-phase VVVF drive

3. Basic Electrical Lab:

The major facilities available are:

- DC Power Supply
- Digital LCR Meter
- Digital Tachometer
- Digital Clip on Meter, Insulation Tester, Digital Thermometer, Flux Meter, Hysteresis loop Tracer
- AC and DC ammeters and voltmeters, Dynamometer, Wattmeter, Digital Multimeter
- Lamp Loads, Rheostat load banks, Variable Inductance, Capacitor Bank, Resistance, Capacitance, Inductance decade box
- Kirchoff's Law testing equipment, Coulomb's Law Demonstrator, Transient Analysis of RC/RL Circuits testing equipment, Van De Graph Kit, Electrostatic Kit.

4. Microprocessor & Microcontroller Lab:

The major facilities available are:

- Kits for Microcontroller 8051
- μ VISION2/3/4 IDE
- Interfacing Stepper Motor
- Speed Control of DC motor using PWM Technique and Microcontroller
- Designing of SCR firing Circuit for D. C. Converter using Microcontroller
- Interfacing Relay and opto-isolators using Microcontroller

5. Analog & Digital Electronics Lab:

The major facilities available are:

- Digital Circuit & Digital IC Trainer
- SMPS
- Op-Amp Characteristic Trainer
- Active Filters Trainer
- Op-Amp testing for various mathematical, power modulator operations.

6. Basic Electronics & Circuit network Lab:

The major facilities available are:

- Network theorems Kit
- Two port ladder network trainer
- Testing of basic electrical components.

7. Electrical Measurement Lab:

The major facilities available are:

- Measurement of unknown electrical parameters: Resistance, Inductance, Capacitance
- Power measurement
- Measurement of non-electrical quantities: Temperature, Pressure, Strain, Weight, Flow.

8. Renewable Energy: 5.5 KW installed Capacity Solar park

The major specifications are:

- Solar based tracking system
- Wind sensor

9. Basic Electronics & Circuit network Lab:

The major facilities available are:

- Network theorems Kit
- Two port ladder network trainer
- Testing of basic electrical components.

10. Software available:

The major software available are:

- MATLAB 2017a
- Multisim