

## **Department of Electrical and Electronics Engineering Laboratories**

### **AC Machines Laboratory**

#### **List of Equipment**

S.No Description of the Equipment

- 1 Three Phase Squirrel Cage Induction motor with Loading Arrangement
- 2 Single Phase Induction Motor with Loading Arrangement
- 3 Three Phase Slip Ring Induction Motor with Loading Arrangement
- 4 Three Phase Alternator coupled with DC shunt motor
- 5 Single Phase Alternator coupled with DC shunt motor
- 6 Three Phase Synchronous Motor
- 7 Single Phase Transformer
- 8 Single Phase Auto Transformer
- 9 Three Phase Transformer
- 10 Three Phase Auto Transformer
- 11 Three Phase Inductive Load
- 12 Three Phase Resistive Load
- 13 Single Phase Loading Rheostat
- 14 12 Way AC Panel
- 15 8 Way DC Panel

#### **Capabilities:**

- Conduct of experiments on motors, transformers and generators in order to identify their performance.
- Experiments are carried out to test various AC Machines used in industries
- Identification and study of various types of starters used for industrial and commercial purposes.

#### **Target Users:**

UG students/Research Scholars/Faculty.

#### **Faculty Associated:**

Mr.D.Sathish Kumar, AP (Sr.G)/EEE

## **DC Machines Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 DC Shunt Motor with loading arrangement
- 2 DC Series Motor with loading arrangement
- 3 DC Compound Motor with loading arrangement
- 4 DC Compound generator coupled with DC shunt motor
- 5 DC Shunt generator coupled with DC shunt motor
- 6 DC Series generator coupled with DC shunt motor
- 7 12 Way DC Panel
- 8 DC Servo Controlled Rectifier Unit

#### **Capabilities:**

- Conduct of experiments on DC motors and DC generators to test their performance and efficiency
- Experiments are conducted to vary the speed of motors used for various industrial applications

#### **Target Users:**

- UG students/Research Scholars/Faculty.

#### **Faculty Associated:**

- Mr.D.Sathish Kumar, AP(Sr.G)/EEE

## **Control and Instrumentation Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 P, PI, PID Controller Kit
- 2 DC Motor Kit
- 3 DC Generator Kit
- 4 Lead Lag Network Trainer Kit
- 5 AC Position Control System Kit
- 6 DC Position Control System Kit
- 7 Synchro's Kit
- 8 Stepper Motor Control System Kit
- 9 AC Servomotor Kit
- 10 DC Servomotor Kit
- 11 Linear System Simulator using Op Amp
- 12 Analog Simulation Type 0 and Type 1 System
- 13 Temperature Control Kit
- 14 MATLAB Simulation Software
- 15 LVDT Trainer Kit
- 16 Maxwell's Inductance Bridge Kit
- 17 Anderson Bridge Kit
- 18 Hay's Bridge Kit
- 19 Desauty's Bridge Kit
- 20 Schering Bridge Kit
- 21 Wheatstone Bridge Kit
- 22 Kelvin Double Bridge Kit
- 23 Instrumentation Amplifier Trainer Kit
- 24 Analog to Digital Converter Kit
- 25 Digital to Analog Converter Kit
- 26 Ring Specimen using Maxwell's Bridge Kit
- 27 RLC based AC&DC Circuit Trainer Kit
- 28 Measurement of 3 $\phi$  Power and Power Factor Measurement Setup
- 29 Bourdon Pressure Transducer Kit with Foot Pump
- 30 Single Phase Energy Meter Calibration Setup
- 31 Strain Gauge Kit with Handy Lever Beam
- 32 Flow Measurement Trainer Kit

**Capabilities:**

- Experiments related to various control systems and Instrumentation are performed
- Different types of controllers can be studied by calculating their gain
- Calculation of R, L,C are carried out by AC and DC bridges
- Measurement of different physical parameters are done using transducers

**Target Users:**

- UG students/Research Scholars/Faculty.

**Faculty Associated:**

- Mr.A.Mohamed Ibrahim, AP/EEE

## **Electric Circuits Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 Verification of Ohm's Law Trainer Kit
- 2 Verification of Kirchoff's Law Trainer Kit
- 3 Verification of Thevenin's and Norton's theorem Trainer Kit
- 4 Verification of Superposition Theorem Trainer Kit
- 5 Verification of Maximum Power Transfer Theorem Trainer Kit
- 6 Verification of Reciprocity Theorem Trainer Kit
- 7 Verification of Mesh and Nodal Analysis Trainer Kit
- 8 Transient Response of RL and RC circuits for DC Input Trainer Kit
- 9 Measurement of Self Inductance of a Coil Trainer Kit using LCRQ Bridge
- 10 Frequency Response of Series and Parallel Resonance Circuits Trainer Kit
- 11 Frequency Response of Single Tuned Coupled Circuits Trainer Kit
- 12 Scientific Make Cathode Ray Oscilloscope
- 13 Scientific Model PSD 3203, DC Regulated Dual Output Power Supply
- 14 Single Phase Energy Meter

#### **Capabilities:**

- Network theorems are verified using experimental approach
- Analysis of frequency response for RL, RC and RLC circuits
- Measurement of energy using single phase energy meter

#### **Target Users:**

UG students/Faculty.

#### **Faculty Associated:**

Ms.R.Revathi, AP (Sr.G)/EEE

## **Engineering Practices Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 Residential House Wiring
- 2 Fluorescent Lamp Wiring
- 3 Staircase Wiring
- 4 Energy Meter
- 5 Megger
- 6 Soldering Kit
- 7 Electrical Measuring Instruments
- 8 Study Purpose Items: Iron Box, Fan And Regulator, Emergency Lamp
- 9 Power Tools

#### **Capabilities:**

- Experiments related to basic electrical circuits
- Understanding of basic electronics using simple circuits

#### **Target Users:**

UG students/Faculty.

#### **Faculty Associated:**

Ms.R.Revathi, AP (Sr.G) /EEE

## **Power Electronics and Drives and Research Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 VI Characteristic of SCR, TRIAC, MOSFET & IGBT Kit  
Switching Characteristic of SCR, TRIAC,
- 2 MOSFET & IGBT Kit
- 3 Single Phase Half & Fully Controlled Rectifier Kit
- 4 Single Phase IGBT Kit
- 5 Resonant DC-DC Converter Kit
- 6 Voltage & Current Commutated Chopper Kit
- 7 Single Phase Cyclo Converter Kit

- 8 Series & Parallel Inverter Kit
- 9 Three Phase Half & Fully Controlled Rectifier Kit
- 10 Step up & Step down Chopper Kit
- 11 Three Phase IGBT Inverter Kit
- 12 Four Quadrant Chopper Kit
- 13 Three Phase AC Voltage Controller Kit
- 14 SCR Firing Circuit Kit
- 15 Digital Storage Oscilloscope
- 16 Digital LCR Meter

**Capabilities:**

- Understanding the characteristics of different semiconductor devices
- Analysis and applications of converters and Inverter
- Identification of proper controllers for different electrical drives

**Target Users:**

UG students/Research Scholars/Faculty.

**Faculty Associated:**

Mr.S.Vivekanandan, AP (Sr.G)/EEE

## **Power System Simulation and Research Laboratory**

### **List of Equipment**

#### **S.No Description of the Equipment**

- 1 Dell OptiPlex™ Desktop 360 (n-series), Core 2 Duo, 2.80 GHz Processor, 4GB RAM, 320 GB Hard disk, 17" Flat Panel Monitor.
- 2 Software: ETAP- Power System Simulation Software
- 3 Compilers: C, C++, VB, VC++

#### **Capabilities:**

- Power system studies are performed by using simulation software
- Different types of faults are studied using symmetrical and unsymmetrical analysis
- Generation and load demand analysis are discussed using economic load dispatch approach

#### **Target Users:**

UG students/Research Scholars/Faculty.

#### **Faculty Associated:**

Mr.P.Kamala Kannan, AP/EEE.