VISION OF ELECTRICAL ENGINEERING DEPARTMENT

To be the coveted Electrical Engineering Department for imparting state of the art technical education and skills to budding Engineers for transforming them into globally-competent technocrats, researchers, consultants and entrepreneurs having high professional ethics.

MISSION OF ELECTRICAL ENGINEERING DEPARTMENT

M1: To produce Electrical Engineers having strong fundamental knowledge, high technical expertise, exposure to research with modern tools of design and high end technology.

M2: To inculcate the capability of applying the acquire knowledge for developing cutting edge technologies.

M3: To create a conducive environment for learning and innovative research in which continuing education can flourish.

M4: To provide a platform for interface between industry and academia for disseminating state of art technology for sustainable socio-economic progress.

PSO1: Graduates of EE department will be competent enough to use advanced computational tools &techniques for designing, simulating & analyzing problems related to EE.

PSO2: Graduates will have sufficient practical skills & industrial exposure to make them compatible with industrial needs.

Course Name: EE 203 A – Electrical Circuit Theory – I Year of study 2017-18

Students will be able to:

EE 203 A.1: Differentiate between various types of network parameters such as active and passive, linear and nonlinear, unilateral and bilateral, lumped and distributed, time variant and time invariant parameters and to apply concept of duality and perform source conversion.

EE 203 A.2: Apply Network Theorems for simplification and solution of network problem.

EE 203 A.3: Employ graph theory for identification of tree, co-tree and designing of cut set, tie set and incidence matrix.

EE 203 A.4: Determine the quality factor, bandwidth and selectivity from frequency response in resonating series and parallel circuit and to examine the effect of L/C ratio.

EE 203 A.5: Perform energy calculation and analyse inductively coupled circuits under sinusoidal excitation and explore the effect of loose, tight and critically coupling in single and doubled tuned circuit.

Course Name: EE 222B – Electrical Circuits Lab – I Year of study: 2017-18

Students will be able to:

EE 222B.1: Understand Kirchhoff's Voltage Law and Kirchhoff's Current Law in DC Network.

EE 222B.2: Determine the parameter of choke coil and find out resistance, inductance, impedance, power, power factor and to understand the concept of Active and Reactive Power and phasor diagram.

EE 222B.3: Apply various Network Theorems such as Superposition, Thevenin's, Norton's, Reciprocity, Millman's, Tellegen's, Maximum Power Transfer, Compensation& Substitution Theorems for simplification and solution of network problems.

Course Name: EE 252A – Microprocessor & Numerical Methods Year of study: 2017-18

Students will be able to:

EE 252A.1: Explain different components of Assembly Language Programming and use them to create Assembly Language Programs for 8085 microprocessor.

EE 252A.2: Illustrate 8085 microprocessor architecture and its operations.

EE 252A.3: Classify different types of 8085 instructions and examine the use of each of the categories for any given problem.

EE 252A.4: Recognize the different Control & Status signals in 8085 microprocessor and analyse their usage for different types of machine cycles.

EE 252A.5: Distinguish between the different types of numerical methods used for interpolation, solution of differential equations, matrix inversion, etc.

Course Name: EE 306 A – Alternating Current Machines – I Year of study: 2017-18

Students will be able to:

EE 306 A.1: Familiarize with the constructional and operational features of a Transformer in detail.

EE 306 A.2: Learn about the different connections and type of transformers.

EE 306 A.3: Familiarize with the constructional and operational features of Three Phase induction motor and induction generators.

EE 306 A.4: Acquainted with the constructional and operational features of Single phase Induction Motor.

Course Name: EE 323 B – A.C. Machines Lab – I Year of study: 2017-18

Students will be able to:

EE 323 B.1: Operate two transformers in parallel.

EE 323 B.2: Evaluate efficiency and analyze the different losses takes in the transformer.

EE 323 B.3: Convert 3-phase supply to 2-phase supply using Scott connection.

EE 323 B.4: Control speed of induction machine.

EE 323 B.5: Analyze the induction motor by performing various tests.

Course Name: EE 353 A – Modern Control Systems Year of study: 2017-18

Students will be able to:

EE 353 A.1: Apply the state space system representation which provides an internal description of the system including possible internal oscillations or instabilities.

EE 353 A.2: Apply Laplace transform and state space techniques to model dynamic systems, and convert between these formulations.

EE 353 A.3: Analyse systems stability using Lyapunov's function and design Lyapunov's function for stable systems.

EE 353 A.4: Model the sample data systems and can Mathematical analyze sampling process in frequency domain.

EE 353 A.5: Construct sampled signals using Hold circuits.

EE 353 A.6: Derive discrete-time mathematical models in both time domain (difference equations, state equations) and z-domain (transfer function using z-transform).

EE 353 A.7: Predict and analyze transient and steady-state responses and stability and sensitivity of open-loop and closed-loop linear, time-invariant, discrete-time control systems.

Course Name: EE 372 B – Control Systems Lab – II Year of study: 2017-18

Students will be able to:

EE 372 B.1: Analyze the response of the closed and open loop systems.

EE 372 B.2: Understand the principles of closed-loop control, transfer function models, stability, time response analysis & different types of state trajectories of system.

EE 372 B.3: Interpret practical performance specifications of a control system and convert specifications from one format to another.

EE 372 B.4: Design controllers, access the design through the constraint specifications, and decide whether the initial design is acceptable or can be improved by iterating.

EE 372 B.5: Implement and evaluate different compensator strategies on laboratory equipment.

EE 372 B.6: Use the techniques for relaxing constraints or redesign the controller for achieving closed-loop specifications either in the time-domain or the frequency domain, and also know how constraints in the time domain affect the frequency response of the system and vice versa and how to apply these concepts to design.

Course Name: EE 402 A – Power Electronics – II Year of study: 2017-18

Students will be able to:

EE 402 A.1: Develop dynamic model of electrical drives.

EE 402 A.2: Understand the application of power electronics in electric drives.

EE 402 A.3: Analyze various control techniques to evaluate the performance of various drives.

EE 402 A.4: Design a suitable control system to drive electric motors.

Course Name: EE 421 B – Power Electronics Lab – II Year of study: 2017-18

Students will be able to:

EE 421 B.1: Make use of AC voltage controller to achieve speed control of universal motor.

EE 421 B.2: Understand class D chopper for speed control of DC series motor and can develop new control techniques for speed control.

EE 421 B.3: Make use of rectifier to achieve speed control of separately excited motor and compare the performance of all the three motors.

EE 421 B.4: Understand frequency control of induction motor drives.

Course Name: EE 451 A – Power Systems Operation & Control Year of study: 2017-18

Students will be able to:

EE 451 A.1: Understand the control of current and power in interconnected power system.

EE 451 A.2: Define automatic generation control scheme on a power system and analyze generation control on a power system.

EE 451 A.3: Explore power system stability and apply equal area criteria method for obtaining critical stability margins.

EE 451 A.4: Analyze and design economic generation in single and multi- fed power system.

EE 451 A.5: Study of HVDC systems, voltage surges, over voltage protection, insulation coordination.

Course Name: EE 473 B – Power System Design Lab – III Year of study: 2017-18

Students will be able to:

EE 473 B.1: Develop computer programs to perform power flow analysis using N-R method on a power system.

EE 473 B.2: Analyze single area control on a power system using MATLAB simulation.

EE 473 B.3: Design controllers for two control area system using flat frequency, flat tie line and tie line bias controls.

EE 473 B.4: Design power system stabilizer using phase compensation technique.

EE 473 B.5: Study and understand the use of PSCAD Software in power systems.