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## **ELECTRICAL AND ELECTRONICS ENGINEERING**

### **II Year-I Sem**

#### **ELECTRICAL CIRCUIT ANALYSIS**

##### **( EE302PC)**

#### **Course Outcomes:**

At the end of this course, students will demonstrate the ability to

- 1) Apply network theorems for the analysis of electrical circuits.
- 2) Analyze two port circuit behavior
- 3) Obtain the transient and steady-state response of electrical circuits.
- 4) Analyze circuits in the sinusoidal steady-state (single-phase and three-phase).
- 5) Analyze two port circuit behavior.

#### **ENGINEERING MECHANICS**

##### **(EE301ES)**

#### **Course Outcomes:**

At the end of the course, students will be able to

- 1) Determine resultant of forces acting on a body and analyse equilibrium of a body subjected to a system of forces.
- 2) Solve problem of bodies subjected to friction.
- 3) Find the location of centroid and calculate moment of inertia of a given section.
- 4) Understand the kinetics and kinematics of a body undergoing rectilinear, curvilinear, rotatory motion and rigid body motion.
- 5) Solve problems using work energy equations for translation, fixed axis rotation and plane motion and solve problems of vibration.



## **ANALOG ELECTRONICS**

### **(EE303PC)**

#### **Course Outcomes:**

At the end of this course, students will demonstrate the ability to

- 1) Know the characteristics, utilization of various components.
- 2) Understand the biasing techniques
- 3) Design and analyze various rectifiers, small signal amplifier circuits.
- 4) Design sinusoidal and non-sinusoidal oscillators.
- 5) A thorough understanding, functioning of OP-AMP, design OP-AMP based circuits with linear integrated circuits.

## **ELECTRICAL MACHINES – I**

#### **Course Outcomes:**

At the end of this course, students will demonstrate the ability to

- 1) Identify different parts of a DC machine & understand its operation
- 2) Carry out different testing methods to predetermine the efficiency of DC machines
- 3) Understand different excitation and starting methods of DC machines
- 4) Control the voltage and speed of a DC machines
- 5) Analyze single phase and three phase transformers circuits.

## **ELECTROMAGNETIC FIELDS**

### **(EE305PC)**

#### **Course Outcomes:**

At the end of the course, students will demonstrate the ability

- 1) To understand the basic laws of electromagnetism.
- 2) To obtain the electric and magnetic fields for simple configurations under static conditions.
- 3) To analyze time varying electric and magnetic fields.
- 4) To understand Maxwell's equation in different forms and different media.
- 5) To understand the propagation of EM waves



## **ELECTRICAL CIRCUITS LAB**

**(EE308PC)**

### **Course Outcomes:**

After Completion of this lab the student is able to

- 1) Analyze complex DC and AC linear circuits
- 2) Apply concepts of electrical circuits across engineering
- 3) Evaluate response in a given network by using theorems

## **ANALOG ELECTRONICS LAB**

**(EE307PC0)**

### **Course Outcomes:**

At the end of this course, students will demonstrate the ability to

- 1) Know the characteristics, utilization of various components.
- 2) Understand the biasing techniques
- 3) Design and analyze various rectifiers, small signal amplifier circuits.
- 4) Design sinusoidal and non-sinusoidal oscillators.
- 5) A thorough understanding, functioning of OP-AMP, design OP-AMP based circuits with linear integrated circuits.

## **ELECTRICAL MACHINES LAB – I**

**(EE304PC)**

### **Course Outcomes:**

After completion of this lab the student is able to

- 1) Start and control the Different DC Machines.
- 2) Assess the performance of different machines using different testing methods
- 3) Identify different conditions required to be satisfied for self - excitation of DC Generators.
- 4) Separate iron losses of DC machines into different components



## **GENDER SENSITIZATION LAB**

**( \*MC409/\*MC309)**

### **Course Outcomes:**

- 1) Students will have developed a better understanding of important issues related to gender in contemporary India.
- 2) Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
- 3) Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
- 4) Students will acquire insight into the gendered division of labour and its relation to politics and economics.
- 5) Men and women students and professionals will be better equipped to work and live together as equals.
- 6) Students will develop a sense of appreciation of women in all walks of life.
- 7) Through providing accounts of studies and movements as well as the new laws that provide
- 8) protection and relief to women, the textbook will empower students to understand and respond to gender violence.

**Principal**



## **EEE**

### **ELECTRICAL AND ELECTRONICS ENGINEERING**

#### **II Year-II Sem**

#### **POWER SYSTEM – I**

#### **EE405PC**

#### **Course Outcomes**

At the end of this course, students will demonstrate the ability to

- 1) Understand the concepts of power systems.
- 2) Understand the operation of conventional generating stations and renewable sources of electrical power.
- 3) Evaluate the power tariff methods.
- 4) Determine the electrical circuit parameters of transmission lines
- 5) Understand the layout of substation and underground cables and corona.

### **LAPLACE TRANSFORMS, NUMERICAL METHODS AND COMPLEX VARIABLES**

#### **(MA401BS)**

#### **Course Outcomes**

After learning the contents of this paper the student must be able to

- 1) Use the Laplace transforms techniques for solving ODE's Find the root of a given equation.
- 2) Estimate the value for the given data using interpolation. Find the numerical solutions for a given ODE's
- 3) Analyze the complex function with reference to their analyticity, integration using Cauchy's
- 4) integral and residue theorems
- 5) Taylor's and Laurent's series expansions of complex function



## **ELECTRICAL MACHINES – II**

**(EE402PC)**

### **Course Outcomes**

At the end of this course, students will demonstrate the ability to

- 1) Understand the concepts of rotating magnetic fields.
- 2) Understand the operation of ac machines.
- 3) Analyze performance characteristics of ac machines.

## **DIGITAL ELECTRONICS**

**(EE403PC)**

### **Course Outcomes**

At the end of this course, students will demonstrate the ability to

- 1) Understand working of logic families and logic gates.
- 2) Design and implement Combinational and Sequential logic circuits.
- 3) Understand the process of Analog to Digital conversion.
- 4) Understand the process of Digital to Analog conversion.
- 5) Be able to use PLDs to implement the given logical problem.

## **CONTROL SYSTEMS**

**(EE408PC)**

### **Course Outcomes**

At the end of this course, students will demonstrate the ability to

- 1) Understand the modeling of linear-time-invariant systems using state space representations.
- 2) Understand the modeling of linear-time-invariant systems using transfer function
- 3) Understand the concept of stability and its assessment for linear-time invariant systems.
- 4) Design simple feedback controllers.



## **DIGITAL ELECTRONICS LAB**

**(EE406PC)**

### **Course Outcomes**

At the end of this course, students will demonstrate the ability to

- 1) Understand working of logic families and logic gates.
- 2) Design and implement Combinational and Sequential logic circuits.
- 3) Understand the process of Analog to Digital conversion.
- 4) Understand the process of Digital to Analog conversion.
- 5) Be able to use PLDs to implement the given logical problem.

## **ELECTRICAL MACHINES LAB – II**

**(EE407PC)**

### **Course Outcomes**

After the completion of this laboratory course, the student will be able

- 1) Assess the performance of different machines using different testing methods
- 2) To convert the Phase from three phase to two phase and vice versa
- 3) Compensate the changes in terminal voltages of synchronous generator after estimating the change by different methods
- 4) Control the active and reactive power flows in synchronous machines
- 5) Start different machines and control the speed and power factor



## **CONTROL SYSTEMS LAB**

**(EE408PC)**

### **Course Outcomes**

After completion of this lab the student is able to

- 1) How to improve the system performance by selecting a suitable controller and/or a compensator for a specific application
- 2) Apply various time domain and frequency domain techniques to assess the system performance
- 3) Apply various control strategies to different applications (example: Power systems, electrical drives etc)
- 4) Test system controllability and observability using state space representation
- 5) applications of state space representation to various systems

## **CONSTITUTION OF INDIA**

**( \*MC309/\*MC409)**

### **Course Outcomes:**

Students will be able to:

- 1) Discuss the growth of the demand for civil rights in India for the bulk of Indians before the
- 2) Arrival of Gandhi in Indian politics.
- 3) Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.
- 4) Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution
- 5) Discuss the passage of the Hindu Code Bill of 1956.

**Principal**