

Course Outcomes of 1st and 2nd Year Courses

1. A8201-Electrical Circuits

- A8201.1 Apply network reduction techniques to calculate current, Voltage and Power for complex circuits.
- A8201.2 Analyze electrical circuits using nodal analysis, mesh analysis and Network Theorems.
- A8201.3 Analyze transient response of series RL, RC and RLC circuits.
- A8201.4 Evaluate two-port network parameters for electrical circuits.

2. A8202-Electrical Power Generation

- A8202.1 List the different components of an electric power system.
- A8202.2 Categorize the conventional methods of generating electrical power to meet the required load demand.
- A8202.3 Categorize the Non-conventional methods of generating electrical power to meet the required load demand.
- A8202.4 Model a power system to reduce economic losses.

3. A8203-Electrical Circuits Laboratory

- A8203.1 Apply network reduction techniques to calculate current, Voltage and Power for complex circuits.
- A8203.2 Analyze electrical circuits using nodal analysis, mesh analysis and Network Theorems.
- A8203.3 Analyze series resonance and transient response of series RL, RC and RLC circuits.
- A8203.4 Evaluate two-port network parameters and self and mutual inductances of magnetic circuits.

4. A8204-Basic Electrical Engineering (Common to ECE, CSE, IT, CSE (AIML), CSE(DS), AIML, AIDS)

- A8204.1 Apply network reduction techniques and knowledge of alternating quantities to calculate current, Voltage and Power for complex circuits.
- A8204.2 Analyze the electrical circuits using Nodal Analysis, Mesh Analysis and Network Theorems.
- A8204.3 Analyze the characteristics of DC machines, AC Machines and 1-Phase Transformers.
- A8204.4 Test the performance of DC Machines, 1-Phase Transformers and AC Machines.

5. A8205-Basic Electrical Engineering Laboratory (Common to ECE, CSE, IT, CSE (AIML), CSE(DS), AIML, AIDS)

- A8205.1 Apply network reduction techniques and knowledge of alternating quantities to calculate current, Voltage and Power for complex circuits.
- A8205.2 Analyze the electrical circuits using Nodal Analysis, Mesh Analysis and Network Theorems.
- A8205.3 Analyze the characteristics of DC machines, AC Machines and 1-Phase Transformers.
- A8205.4 Test the performance of DC Machines, 1-Phase Transformers and AC Machines.

6. A8206–Basic Electrical and Electronics Engineering (For Mechanical Engineering)

- A8206.1 Apply network reduction techniques and knowledge of alternating quantities to calculate current, Voltage and Power for complex circuits.
- A8206.2 Analyze the electrical circuits using Nodal Analysis, Mesh Analysis and Network Theorems.
- A8206.3 Test and analyze the characteristics of DC machines.
- A8206.4 Analyze the operation and characteristics of electronic devices.
- A8206.5 Apply theorems of Boolean algebra to simplify a digital circuit.

7. A8207-Control Systems

- A8207.1 Develop the transfer function and state space models of dynamic systems.
- A8207.2 Analyze performance indices of linear and nonlinear control systems.
- A8207.3 Apply Routh's and Nyquist stability criterion to analyze and design of feed-back control systems.
- A8207.4 Examine the performance of feedback control system by using graphical techniques.
- A8207.5 Design the various compensators and controllers for time invariant systems.

8. A8208-Electrical Machines – I

- A8208.1 Apply the basic laws of electrical circuits to study the operation of DC Machines and Single Phase Transformers.
- A8208.2 Apply speed control techniques and starting methods for DC motors.
- A8208.3 Select suitable test to determine the performance parameters of electrical machines.
- A8208.4 Analyze the characteristics of DC machines and Single Phase Transformers.

9. A8209–Control Systems Laboratory

- A8209.1 Develop the transfer function and state space models of dynamic systems.
- A8209.2 Analyze performance indices of linear and nonlinear control systems.

- A8209.3 Apply Routh's and Nyquist stability criterion to analyze and design of feedback control systems.
- A8209.4 Examine the performance of feedback control system by using graphical techniques.
- A8209.5 Design the various compensators and controllers for time in variant systems.

10. A8210–Electrical Machines – I Laboratory

- A8210.1 Apply the basic laws of electrical circuits to study the operation of DC machines and Single Phase Transformers.
- A8210.2 Apply speed control techniques and starting methods for DC motors.
- A8210.3 Select suitable test to determine the performance parameters of electrical machines.
- A8210.4 Analyze the characteristics of Dc machines and Single Phase Transformers.

11. A8211-Electrical Machines – II

- A8211.1 Apply the basic laws of electrical circuits to study the construction and operation of Induction motors and Alternators.
- A8211.2 Analyze the characteristics and performance of Induction motors and Alternators.
- A8211.3 Apply suitable test to determine the performance parameters of Synchronous machines and Induction motors.
- A8211.4 Compare various methods to find voltage regulation of Alternators.

12. A8212-Power System Transmission and Distribution

- A8212.1 Apply the knowledge of Electromagnetic fields to calculate the transmission line parameters.
- A8212.2 Analyze the voltage regulation and efficiency of different power transmission lines.
- A8212.3 Analyze the sag and corona in transmission lines.
- A8212.4 Categorize the types of insulators based on string efficiency and grade the underground cables based on application.
- A8212.5 Analyze the different topologies of AC and DC distribution system.

13. A8213-Electromagnetic Field Theory

- A8213.1 Apply the basic knowledge of electric circuits to understand the physical laws related to static electric fields.
- A8213.2 Apply the basic knowledge of magnetic circuits to understand the physical laws related to static magnetic fields.
- A8213.3 Analyze electric fields in static and time varying fields.
- A8213.4 Analyze magnetic fields in static and time varying fields.
- A8213.5 Examine Maxwell's equations for static and time varying fields.

14. A8214–Electrical Machines – II Laboratory

- A8214.1 Apply the basic laws of electrical circuits to study the construction and operation of Induction motors and Alternators.
- A8214.2 Analyze the characteristics and performance of Induction motors and

- Alternators.
- A8214.3 Apply suitable test to determine the performance parameters of Synchronous machines and Induction motors.
- A8214.4 Compare various methods to find voltage regulation of Alternators.

15. **A8215–Power System Transmission and Distribution Laboratory**

- A8215.1 Apply the knowledge of Electromagnetic fields to calculate the transmission line parameters.
- A8215.2 Analyze the voltage regulation and efficiency of different power transmission lines.
- A8215.3 Analyze the sag and corona in transmission lines.
- A8215.4 Categorize the types of insulators based on string efficiency and grade the Underground cables based on application
- A8215.5 Analyze the different topologies of AC and DC distribution system.