Vision

To be in the forefront in advanced research in emerging areas of Electrical & Electronics Engineering, be proactive with industry in technology development and mould the department
into a centre of academic excellence.

Mission

- To produce high quality Electrical and Electronics Engineering graduates with the requisite theoretical and practical knowledge.
- To undertake research & development and extension activities in the field of Electrical and Electronics Engineering in the area of relevance for immediate application as well as for establishing and strengthening the fundamental knowledge.
- To create social awareness and ethical values in the graduates so as to contribute in the progress of the society.

PROGRAM EDUCATIONAL OBJECTIVES

PEO1	To enable the students to learn primarily the concepts of high voltage engineerin working principles, planning, operation, testing and maintenance of the high voltage equipment and systems..
PEO2	To undertake research in high voltage engineering with emphasis on power systems to strengthen the abilities of the students for employability, to pursue higher learning and to become leaders of academia.
PEO3	To inculcate leadership and entrepreneurial skills in students to work in collaborative and interdisciplinary environment..
PEO4	To make students socially and ethically responsible citizens and to promote life-long learning.

PROGRAM OUTCOMES: At the end of the program the student will be able to:

PO1 The graduate will be able to acquire in depth knowledge in the area of high voltage engineering with emphasis on power system.

PO2 The graduate will attain the lateral thinking and problem solving capabilities in the area of high voltage engineering with emphasis on power system.

PO3 The graduate will obtain the capabilities of critical thinking, analyzing real world problems and handling the complexities to arrive feasible and optimal solutions considering societal and environmental factors.

PO4 The graduate will be able to extract information through literature survey and apply appropriate research methodologies, techniques and tools to solve problems in high voltage engineering with emphasis on power system.

PO5 The graduate will be able to use the state-of-the-art tools for modelling, simulation and analysis of problems related to high voltage engineering.

PO6

The graduate will be trained to assess social, health, safety, legal, cultural issues and She/he will also be trained on the consequent responsibilities relevant to the professional engineering practices.

PO7

To sensitize the graduate about the impact of professional engineering solutions in social and environmental contents and demonstrates the knowledge of, and need for sustainable developments.

PO8

The graduate will become socially responsible and follow ethical practices to contribute to the community for sustainable development of society.

PO9

The graduate will be able to independently observe and examine critically the outcomes of his actions and reflect on to make corrective measures subsequently and move forward positively by learning through mistakes.

PO10

The graduate will be able to communicate confidently, make effective presentations and write good reports to engineering community and society.

PO11 The graduate will demonstrate knowledge and understanding of high voltage engineering with emphasis on power system and management principles and apply the same for efficiently carrying out projects with due consideration to economical and financial factors.

PO12 The graduate will recognize the need for life-long learning and have the ability to do it independently.

PROGRAMME SPECIFIC OUTCOMES (PSOS):

PSO1 Able to apply the knowledge during the course of the program from basic computing and social science in general and all electrical courses in particular to identify, formulate and solve real life problems faced in industries and/or during research work..

PSO2 Development of environment-conscious, new technologies to enhance the quality of human life.

Course Code	Generation and Measurement of High Voltages
R19PC1101	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Understand numerical computation of electrostatic problems.
CO2 Understand the techniques of generation of high AC, DC and transient voltages.
CO3 Measure high AC, DC and transient voltages.
CO4 Measure high AC, DC and transient currents.

Course Code	Dielectrics and Insulation Engineering
R19PC1102	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Distinguish between dielectrics and insulating materials.
CO2 Understand the Properties of insulating materials.
CO3 Analyze Electrical breakdown in gas and vacuum insulation.
CO4 Analyze Electrical breakdown in liquid and solid insulation.
CO5 Understand the insulation design in electrical power apparatus.

Course Code	Artificial Intelligence Techniques (Elective-I)
R19PE1103A	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Differentiate between Algorithmic based methods and knowledge based methods.
CO2 Use the soft computing techniques for power system problems.
CO3 Understand the control of HVDC systems.
CO4 Understand the interaction between HVAC and HVDC system.
CO5 Understand the various protection schemes of HVDC engineering.
CO6 Understand the various schemes of HVDC transmission.

Course Code	HVDC Transmission (Elective-I)
R19PE1103B	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Understand the various schemes of HVDC transmission.
CO2 Understand the basic HVDC transmission equipment.
CO3 Understand thematic concepts of Glacial/Aeolian landforms
CO4 Analyse the structure and behaviour of Atmosphere
CO5 Understand the various schemes of HVDC transmission.

Course Code	Breakdown Phenomenon in Electrical Insulation (Elective-I)
R19PE1103C	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Understand the fundamental process of conduction in gases.
- CO2 Understand ionization and breakdown phenomena in gases.
- CO3 Understand breakdown phenomena in liquid and solid dielectrics.
- CO4 Understand breakdown phenomena in vacuum.

Course Code	High Voltage Power Apparatus and Diagnostics (Elective-II)
R19PE1104A	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Learn power transformer, types of insulation material.
- CO2 Measurement of tan delta and capacitance of transformer oil.
- CO3 Know the concept of moisture in transformer oil and paper and partial discharges.
- CO4 Know degree of polymerization.
- CO5 Know concept of Fourier Transformer and frequency response analysis of transformer winding.

Course Code	Collision Phenomena in Plasma Science (Elective-II)
R19PE1104B	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Analyze the collision phenomena in different materials.
- CO2 Calculate the forces between ions and molecules.
- CO3 Evaluate the ‘α’
- CO4 Analyze transition from Streamer to Townsend mechanisms of breakdown.
- CO5 Electric glow discharge and plasma glow discharge.

Course Code	Advanced Electro Magnetic Fields (Elective-II)
R19PE1104C	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Know about analysis of electrostatic fields and properties of potential gradients.
- CO2 Know about the dielectric boundary conditions and electric stress control and optimization and time varying fields.
- CO3 Understand different Electric Fields.
- CO4 Distinguish between conductors and dielectrics.
- CO5 Understand the force in magnetic fields and time varying fields.

Course Code	Simulation Laboratory – I
R191106	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Distinguish between different load flow methods.
CO2 Analyze Y-bus & Z-bus algorithm.
CO3 Analyze symmetrical & unsymmetrical faults.
CO4 Understand importance of Load flow control
CO5 Understand importance of Economic load dispatch and transient stability analysis.

Course Code	High Voltage Laboratory
R191107	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Design the various testing procedures of various insulators.
CO2 Design the procedure for calibration of tong tester.
CO3 Compute the breakdown strength of dielectric coil.
CO4 Determine he leakage current of various insulators.

Course Code	High Voltage Testing Techniques
N3303	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Understand non-destructive testing techniques
CO2 Analyse HV testing of apparatus
CO3 Understand HVAC testing methods.
CO4 Analyse impulse testing electrical equipment's.
CO5 Learn partial discharge measurement techniques.

Course Code	Surge Phenomenon & Insulation Coordination
N3304	

COURSEOUTCOMES

After completion of course, students would be ableto:

CO1 Understand concepts of travelling waves and their behaviour in transmission systems.
CO2 Understand lighting phenomena and over voltages in power systems.
CO3 Understand the behaviour of the transformer due to surge voltages induced in the windings.
CO4 Understand insulation coordination in a substation.
CO5 Understand operations of over voltage protective devices.

Course Code	Partial Discharge in HV Equipment (Elective-III)
N3305	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Analyze the types of partial discharge that occurs in the insulation systems and in apparatus.
- CO2 Compute the partial discharges in solid dielectrics.
- CO3 Analyze the detection of discharges using different detection circuits.
- CO4 Location of partial discharge in electrical apparatus and systems..
- CO5 Detection of partial discharges in various instruments.

Course Code	Gas Insulated Systems and Substations (Elective-III)
N3306	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Know the Properties of SF 6
- CO2 Understand design and construction of G.I.S Substations
- CO3 Analyze transient Phenomenon and testing of G.I.S
- CO4 Analyze diagnostics of GIS
- CO5 Understand layout of GIS

Course Code	Pulse Power Engineering (Elective-III)
N3307	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Compute the static and dynamic breakdown in various dielectrics
- CO2 Various energy storage devices, repetitive generators and cumulative pulse lines.
- CO3 Analyze about various switching operations.
- CO4 Design about various pulse forming networks and their applications.
- CO5 Design the various Pulse power generators.

Course Code	Flexible AC Transmission Systems (Elective-IV)
N3308	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Know the performance improvement of transmission system with FACTS.
- CO2 Get the knowledge of effect of static shunt and series compensation.
- CO3 Know the principle of operation and various controls of UPFC
- CO4 Determine an appropriate FACTS device for different types of applications.

Course Code	EHVAC Transmission (Elective-IV)
N3309	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Calculate the transmission line parameters.
- CO2 Calculate the field effects on EHV and UHV AC lines.
- CO3 Determine the corona, RI and audible noise in EHV and UHV lines.
- CO4 Analyze voltage control and compensation problems in EHV and UHV transmission systems.
- CO5 Understand reactive power compensation using SVC and TCR

Course Code	Smart Grid Technologies(Elective-IV)
N3310	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Understand smart grids and analyze the smart grid policies and developments in smart grids.
- CO2 Develop concepts of smart grid technologies in hybrid electrical vehicles etc.
- CO3 Understand smart substations, feeder automation, GIS etc.
- CO4 Analyze micro grids and distributed generation systems.
- CO5 Analyze the effect of power quality in smart grid and to understand latest developments in ICT for smart grid.

Course Code	Power Systems Laboratory
P3303	

COURSEOUTCOMES

After completion of course, students would be ableto:

- CO1 Distinguish between sequence impedances of alternator and transformer.
- CO2 Understand the Ferranti effect.
- CO3 Analyze performance and importance of transmission line parameters.
- CO4 Understand the operation of various protection relays.