B.TECH

ELECTRICAL AND ELECTRONICS ENGINEERING

ACADEMIC YEAR 2026-27

POWER THE FUTURE:

BE THE CHARGE BEHIND THE CHANGE

IARE

INSTITUTE OF AERONAUTICAL ENGINEERING

NAAC ACCREDITATION A++ GRADE

NBA NATIONAL BOARD OF ACCREDITATION

nirf INDIA RANKINGS 2024 TOP 200 ENGINEERING RANK 151-200 TOP 50 INNOVATION RANK 11-50

26 YEARS

VISION AND MISSION OF THE INSTITUTE

VISION

To bring forth students, professionally competent and socially progressive, capable of working across cultures meeting the global standards ethically.

MISSION

To provide students with an extensive and exceptional education that prepares them to excel in their profession, guided by dynamic intellectual community and be able to face the technically complex world with creative leadership qualities.

Further, be instrumental in emanating new knowledge through innovative research that emboldens entrepreneurship and economic development for the benefit of wide spread community.

VISION AND MISSION OF THE DEPARTMENT

VISION

To produce comprehensively trained, socially responsible, innovative electrical engineers and researchers of high quality who can contribute for the nations and global development.

MISSION

The mission of Electrical and Electronics Engineering is to provide academic environment with a strong theoretical foundation, practical engineering skills, experience in interpersonal communication and teamwork along with emphasis on ethics, professional conduct and critical thinking. Further, the graduates will be trained to have successful engagement in research and development and entrepreneurship.

B.Tech

Program Educational Objectives (PEOs)

PEO-I

To provide students with the knowledge of Basic Sciences in general and Electrical and electronics Engineering in particular so as to acquire the necessary skills for analysis and synthesis of problems in generation, transmission and distribution.

PEO-II

To provide technical knowledge and skills to identify, comprehend and solve complex tasks in industry and research and inspire the students to become future researchers / scientists with innovative ideas.

PEO-III

To prepare the students for successful employment in various Industrial and Government organizations, both at the National and International level, with professional competence and ethical administrative acumen so as to handle critical situations and meet deadlines.

PEO-IV

To train the students in basic human and technical communication skills so that they may be both good team-members, leaders and responsible citizen.

Knowledge and Attitude Profile

WK1

A systematic, theory- based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.

WK2

Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling applicable to the discipline.

WK3

A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline.

WK4

Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.

WK5

Knowledge, including emcient resource use, environmental impacts, whole-life cost,reuse of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.

WK6

Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.

WK7

Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development.

WK8

Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.

WK9

Ethics, inclusive behavior and conduct. Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability etc. with mutual understanding and respect, and of inclusive attitudes.

B.Tech Program Outcomes (POs)

PO-1 Engineering Knowledge

Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO-2 Problem Analysis

Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO-3 Design/Development of Solutions

Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO-4 Conduct Investigations of Complex Problems

Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO-5 Engineering Tool Usage

Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems.

(WK2 and WK6)

PO-6 The Engineer and The World

Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO-7 Ethics

Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO-8 Individual and Collaborative Team work

Function efectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO-9 Communication

Communicate efectively and inclusively within the engineering community and society at large, such as being able to comprehend and write efective reports and design documentation, make efective presentations considering cultural, language, and learning diferences

PO-10 Project Management & Finance

Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multi disciplinary environments.

PO-11 Life-Long Learning

Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

B.Tech Program Specific Outcomes (PSOs)

PSO-I

Design, Develop, Fabricate and Commission the Electrical Systems involved in Power generation, Transmission, Distribution and Utilization

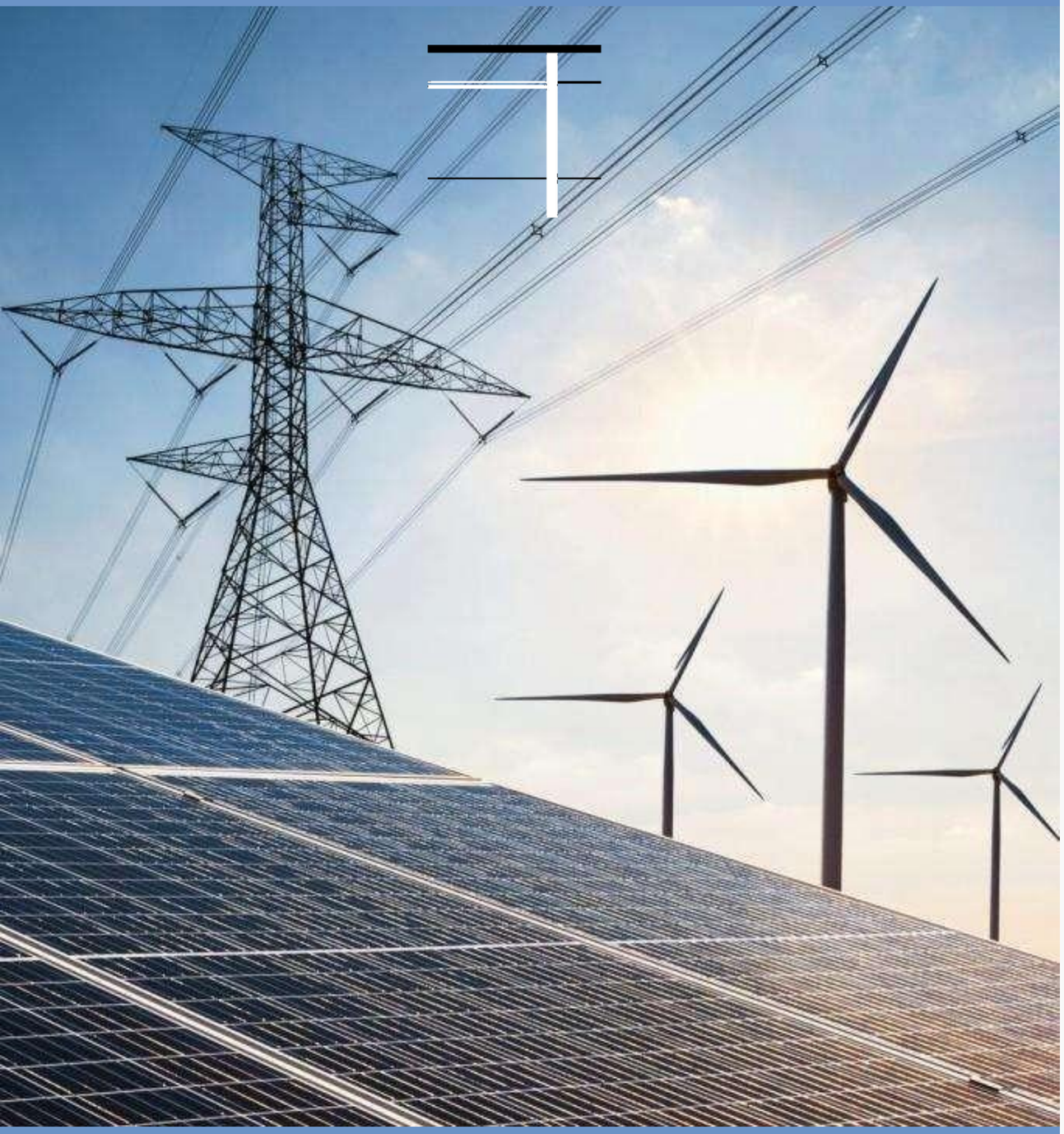
PSO-II

Focus on the Components of Electrical Drives with its Converter Topologies for Energy Conversion, Management and Auditing in Specific applications of Industry and Sustainable Rural Development.

PSO-III

Gain the Hands-On Competency Skills in PLC Automation, Process Controllers, HMI and other Computing Tools necessary for entry level position to meet the Requirements of the Employe.

"Discover the limitless possibilities of Electrical and Electronic Engineering, where innovation sparks the future of technology and sustainable solutions."



ABOUT **Electrical And Electronics Engineering**

Electrical and electronics engineering, one of the core courses of engineering discipline deals with the study of design, development, and maintenance of electrical systems and their components, ensuring quality, safety, reliability, and sustainability. The course focuses on the manufacturing of electrical equipment used in several sectors including construction and building and the production and distribution of power.

Why Study EEE@IARE

Quality Education: The department offers structured curriculum designed to provide comprehensive theoretical knowledge and practical skills.

Expert Faculty: The department is staffed by experienced faculty members who are often active researchers or professionals in their respective fields.

State-of-the-art Facilities: The department has well-equipped laboratories, workshops, and research facilities.

Industry Connections: The department has partnerships with industry leaders, which can provide opportunities for internships, projects, and even employment after graduation.

Specialization Options: The department offers opportunities for specialization within EEE, allowing students to focus on areas like power systems, power electronics, renewable energy, or automation based on their interests and career goals.

Career Counseling and Advising: The department facilitate the career counselors in advising the students on career paths, industry trends, and job market opportunities. They provide personalized guidance based on individual career goals, strengths, and interests, helping students make informed decisions about their professional development.

Career Opportunities: The department of EEE is training the students into diverse sectors such as power & energy, telecommunications, automotive, aerospace, healthcare, renewable energy, and more.

Department **Specific Laboratories**

The research center aims to identify and initiate foundational multi-disciplinary research and applied research projects, create and combine patentable Intellectual Property (IP) components, design and develop prototypes, manage and market products and solutions (through know-how transferred incubated companies), and work to deliver funded research projects. The department is equipped with sophisticated, leading-edge hardware and software facilities of superior quality.

The primary functions of the research center are to

- **Provide excellent research culture and infrastructure.**
- **Serve as a platform for strong interdisciplinary collaborations and knowledge sharing.**
- **Publish papers in high quality journals of international repute.**
- **Create quality human resources for scientific research.**
- **Promote industrial collaborations involving active and mutually beneficial R & D projects**

High Voltage Insulation Testing Facilities

A high-Voltage laboratory needs to be established to carry out fundamental studies on insulating materials, to carry out the performance evaluation of proto types and also to assess the condition of High-Voltage power apparatus before their erection and installation.

Benefits

Diagnostic Capability: High voltage testing can reveal insulation degradation trends over time.

Identifying Potential Failures: High voltage Insulation testing helps detect weaknesses or defects in insulation that may lead to electrical breakdowns or faults.

Fault Location: In cases where insulation breakdown has occurred, high voltage testing can help pinpoint the location of the fault. high voltage insulation testing is a critical tool forensuring the reliability, safety, and longevity of electrical equipment and systems across various industries.

Solar PV Training and Research system

The Solar PV Training and Research system is a mini-Solar PV plant prototype which enables students and faculty to understand in-depth concepts about stand-alone PV systems.
The product also provides research orientation on several concepts such as MPPT, inverter control etc. The system consists of individual plug-in units each with components for different experimental arrangements.

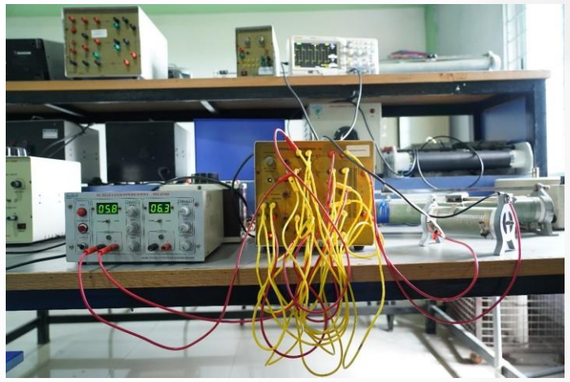
Benefits

Skill Development : Training programs equip individuals with the skills and knowledge needed to design, install, and maintain solar PV systems.

Technological Advancement : Research in solar PV technology drives innovation, leading to improvements in emciency, durability, and cost-effectiveness of solar panels and related equipment.

Rural Electrification : Solar PV can be deployed in remote or off-grid areas, providing access to electricity where traditional grid infrastructure is impractical or unavailable.

Environmental Benefits : Solar PV systems generate electricity without producing greenhouse gas emissions or other pollutants associated with fossil fuels.



MATLAB

A high-performance language for technical computing. It integrates computation, visualization, and programming in an easy-to-use environment where problems and solutions are expressed in familiar mathematical notation.

Programmable Logic Controller Automation

Industrial PLC programming knowledge has become a fundamental requirement for engineer to be successful in industries. This laboratory facility provides a comprehensive training on hands on skill of programming and management of PLC's and HMI systems. This laboratory facilitates to make aspiring engineers acquainted with conceptual as well as practical knowledge of industrial automation and latest technologies being used to achieve industrial automation and to inculcate fundamentals of automation in students and provide them platform to work on near future.

Benefits

Hands-on Experience: Laboratories allow students to gain practical, hands-on experience in programming PLCs.

Skill Development: Students can develop essential skills in PLC programming, troubleshooting, and maintenance.

Understanding Complex Systems: Working in a PLC programming lab helps students understand the complexities of industrial automation systems.

SCADA

Taking Electrical Engineering to the Next Level! ... It also offers an exhaustive scope of the multi-disciplinary computerization with the help of electrical devices with a focus on Supervisory Control and Data Acquisition (SCADA) systems along with Programmable Logic Controller (PLC).

scada

Lab VIEW

Lab VIEW is the Software that uses graphical programming interfaces for Data Acquisition, Data Analysis, and presentation of results and instrument control. LabVIEW interfaces support the wide variety of hardware applications.
It scales across di erent targets and operating systems. This tool provides the built-in libraries and packages

LabVIEW

Advanced Power Engineering Research

It is a leading center to develop and promote research related to the reliable and emcient management of the electric power, including modeling and analysis techniques for transmission and distribution. Here the faculties of the department develop and demonstrates power station modernization technologies and enhance the educational experience of students and help to meet the operational and expansion needs under uncertainties with an increased penetration of distributed renewable generation.

Benefits

Emciency Improvements: Research in advanced power engineering often focuses on improving the emciency of power generation, transmission, and distribution systems.

Grid Stability and Reliability: Advanced research helps in developing technologies and strategies to enhance the stability and reliability of power grids.

Renewable Energy Integration: Research in this field often explores better ways to integrate renewable energy sources like solar, wind, and hydroelectric power into existing grids.

Power Systems Computer Aided Design

Power Systems Computer Aided Design (PSCAD) is time domain simulation software for analyzing transients in electrical networks. Together they provide a fast, flexible and accurate solution for the emcient time-domain program for simulating a variety of electrical power system transients and control networks.

PSCAD

Areas of **Electrical and Electronics Engineering Expertise**

Electrical and Electronics Engineering offers a diverse range of career opportunities and specializations, allowing professionals to work on various projects related to power & energy, power electronics, control engineering, renewable energy systems.

Power Systems

It involves generation, transmission, distribution, and utilization of electrical power. Experts in this area work on power generation methods (such as renewable energy sources), grid integration, stability analysis, and smart grid technologies.

Control Systems

It focuses on designing systems to manage and regulate processes or devices. This includes feedback control systems, automation, robotics, and applications in industries like manufacturing, aerospace, and automotive.

Renewable Energy

It focuses on sustainable energy sources like solar, wind, hydro, and geothermal power. Engineers in this area work on energy conversion, storage, grid integration, and energy emciency.

Electric vehicles

Electric vehicles (EVs) are a promising technology for achieving a sustainable transport sector in the future, due to their very low to zero carbon emissions, low noise, high emciency, and flexibility in grid operation and integration.

Electric Drives

Electrical drives deals with the systems that control the motion of electrical machines and especially these will be employed in all the industry applications.

Measurements & Instrumentation

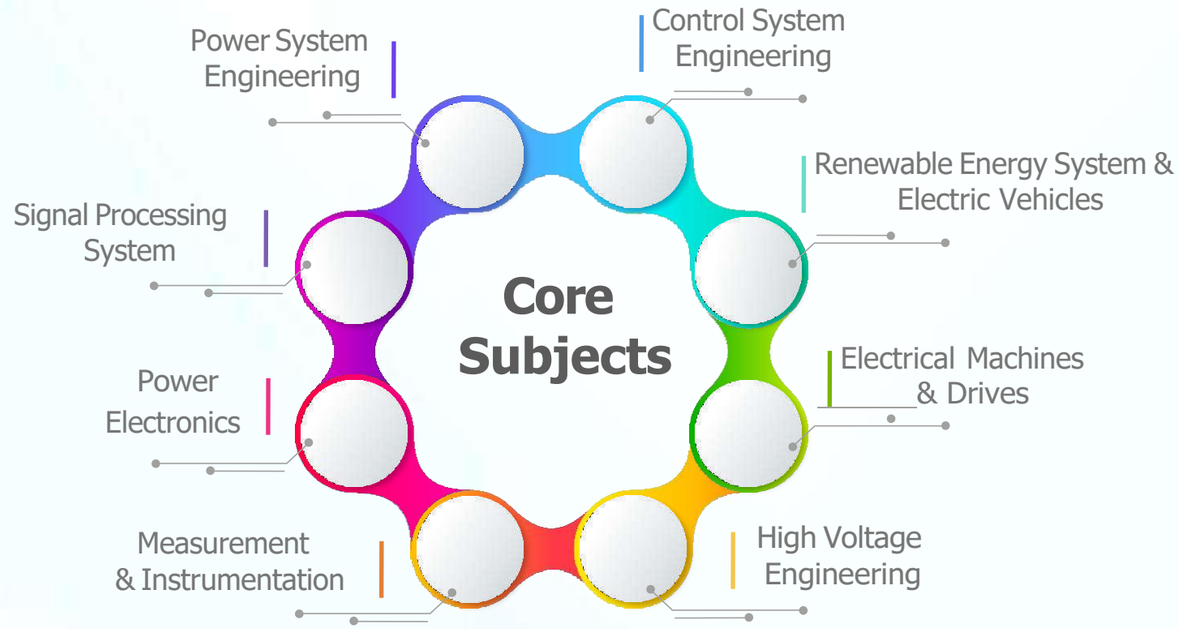
It deals with the design, installation and maintenance of devices used to measure and control physical quantities such as flow, temperature, level, pressure, and chemical composition etc. Instrumentation automation system used are PLC, DCS, RTU, SCADA.

Power Electronics

Focuses on the technology associated with the emcient conversion, control and conditioning of electric power by static means from its available input form into the desired electrical output form.

Signal Processing

It involves analyzing, modifying, and synthesizing signals (such as sound, images, and data) for various applications. This includes digital signal processing (DSP), image processing, and pattern recognition.



Our Students get excellent knowledge about the core subjects of electrical engineering through methodical classroom teaching and hands on experience in the electrical laboratories.

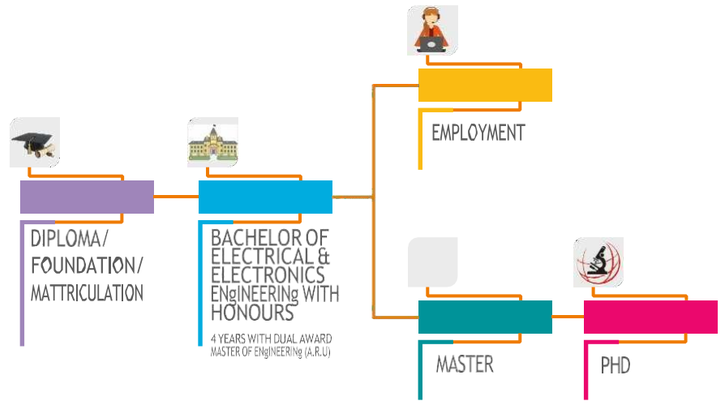
SKILLS OF A SUCCESSFUL ELECTRICAL ENGINEERS POSSES

Successful electrical engineers possess a diverse range of skills that enable them to excel in their profession. Here are some key skills,

1. Critical Thinking
2. Technological Knowledge
3. Mathematics & Physics Skills
4. Innovative Thinking
5. Active Learning
6. Communication Skills
7. Organizational Skills
8. Complex Problem Solving

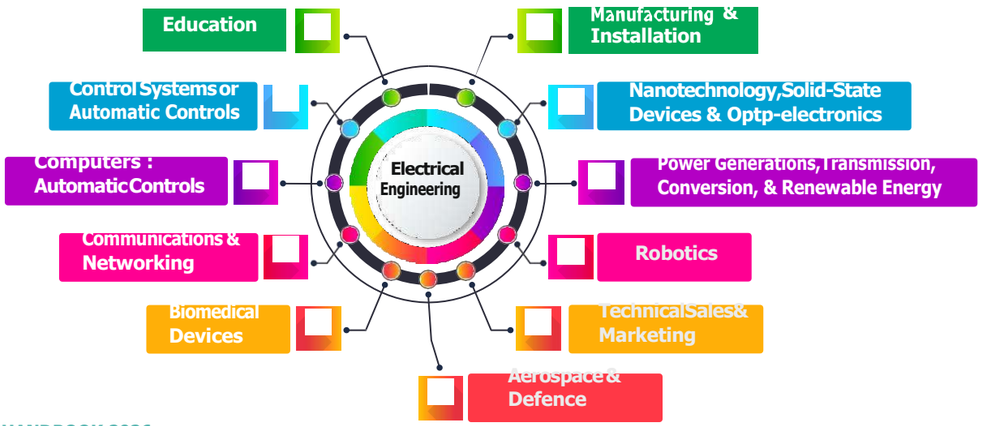
CAREER PATH

Embark on a dynamic career path in Electrical and Electronic Engineering, where innovation, sustainability, and technology converge to shape the future of global industries.



POTENTIAL AREAS OF EMPLOYMENT

Potential areas of employment for Electrical and Electronic Engineering graduates include



Laboratory **Details**

1 Electrical Circuits Laboratory

The course is designed to provide students with hands-on experience and practical skills in the field of electrical engineering. The course serves as a complement to theoretical concepts learned in the concurrent electrical circuit's course. Through a series of structured experiments, students gain an in-depth understanding of fundamental electrical circuits, components, measurement techniques, and troubleshooting procedures.

Major Equipment

Regulated power supply (0-20V/2A): 5
Digital Voltmeters (0-20 V) MC: 5
Digital Ammeters (0-200 mA) MC: 5
Multi meters (1 kV/ 20 A): 1
Function generator (0-1MHz): 2
Cathode ray oscilloscope (0-20 MHz): 2

2 Electrical Networks And Simulation Laboratory

The Network Analysis and Scientific Computing Laboratory are designed to give hands-on experience on virtual instrumentation through digital simulation techniques. These techniques enable the students in examining characteristics of DC and AC circuits, filters, solution of differential equation, generation of three phase and complex wave forms using MATLAB.

Major Equipment

Hardware:
Desktop Computer Systems: 10
Application Software (Mat Lab): 5 Users
Application Software (Lab View): 5 Users

3 DC Machines Laboratory

This laboratory course is to meet the requirements of practical work meant for basic operation, analysis and design of electrical machines. It provides hands-on experience by examining the electrical and mechanical characteristics of various DC machines. Analyze the characteristics of DC machines and separate the various losses in electrical machines by conducting different tests.

Major Equipment

DCShuntmotor - DCShunt generator set
(3 kW, 220 V, 13.6 A, 1500 rpm): 2
DCShuntmotor - DCSeries generator set
(3 kW, 220 V, 13.6 A, 1500 rpm): 1
DCShuntmotor - DCCompound generatorset
(3 kW, 220V, 13.6A, 1500 rpm): 1
Identical DC Shunt machines
(3 kW, 220 V, 13.6 A, 1500 rpm): 1
Identical DC Series machines
(3 kW, 220 V, 13.6 A, 1500 rpm): 1
DC Shunt motor
(3 HP, 220V, 12A, 1500 rpm): 3
DC Compound motor
(3 HP, 220V, 17 A, 1500 rpm): 1

4 AC Machines Laboratory

This course is intended to train the students on alternating current machines. It provides hands-on experience by conducting various direct and indirect tests on transformers, synchronous and asynchronous machines to analyze the characteristics of ac machines and separate various losses. This course also enables to develop skills to select, install, operate, and maintain various types of ac machines and transformers.

Major Equipment

Single phase transformer
(2 kVA, 115 / 230V): 4
Three phase alternator set
(415V, 4.5A, 1500 rpm): 2
Three phase synchronous motor
(415V, 6.2A, 1500 rpm): 1
Three phase induction motor
(3.5kW, 415V, 7.5A, 1440 rpm): 2
Single phase induction motor
(1HP, 230V, 5.8A): 1
Single phase auto transformer
(230/ 0-270V, 10A): 3
Three phase auto transformer
(415/ 0-470V, 10A): 3

5 Control Systems Laboratory

The Control Systems laboratory course is indeed to train the students practically on the modeling, analysis and design of linear feedback control systems. This course deals with modeling of dynamical systems and the control components and designing the compensator. The hands on training in the laboratory enable students to apply and modeling control principles in various areas of industrial applications.

Major Equipment

Linear System Simulator Kit
(40-100 Hz, Sin Wave, Triangle Wave, ± 12v, 250 Ma): 1
Dc Motor Study Kit
(0.5 Hp, 220v, 2.1a, 1500 Rpm): 1
Ac Servo Motor
(60v, 1500 Rpm, Pmdc Coupled): 1
Pid Controller Trainer Kit
(p, I, D With Tunable Controller, Square And Triangle Wave): 1
Temperature Control System Study Kit
(90°c, 220v ± 10%): 1
Programmable Logic Controller Trainer Unit
(di-12, Do-6, Ai-6, Ao-12, Timers - 8, Counters - 8): 1

Opamp Based Pid Controller Setup: 1
Hardware: Desktop Computer Systems:2
Application Software: Delta Wpl Soft
(open Source) Software Installed: 2 Users
Application Software: Matlab: 2 Users

6 Power Electronics Laboratory

This course is intended for practical experience by conduction experiments on rectifiers, inverters, choppers, AC voltage controllers and cyclo converters. It provides hands-on experience by examining the electrical characteristics of various power converters. The power electronic converter applications have been analyzed with simulation tools.

Major Equipment

Single phase half and full controlled bridge converter Trainer kit: 1
Forced commutation study unit: 1
Single phase cyclo converter Trainer kit: 1
Single phase series and parallel inverter: 1
Operation of MOSFET based chopper Trainer kit: 1
APPLICATION SOFTWARE: MATLAB: 2
HARDWARE: Desktop computer systems:2

7 PLC And Industrial Automation Laboratory

The objective of this laboratory course is to measure the physical input variables and to analyze and control and output variables in an industrial automation process using programmable logic controllers (PLCs). The lab emphasizes on the software and hardware skills to design and realize an automation process. The lab is mainly intended to implement the software timers, counters and their usage in tramc signal control, sequential control, speed control of motors etc.

Major Equipment

Programmable logic controllers demo kits: 10
HARDWARE: Desktop computer systems: 5
APPLICATION SOFTWARE DELTA WPL Soft
(Open Source) software installed: 10
APPLICATION SOFTWARE: SCADA: 1

8 Electrical Measurements And Instrumentation Laboratory

The objective of this lab is to teach students to know the procedures for measuring Resistance, Inductance and Capacitance of different ranges. To perform experiments to measure three phase power and frequency. To design experiments for calibration of energy meter and power factor meter.

Major Equipment

Pressure Measurement Trainer Module: 1
Encoders Trainer Module: 1
LVDT Trainer Kit: 1
Single Phase Energy Meter
(230V, 10A, Disc type): 1
Transformer Turns Ratio Kit: 1
Kelvin's Double Bridge
(0.1 - 1 Ω range, 230V): 1

9 Electrical Power Systems Laboratory

The main objective of the course is to provide an overview of the principles of basic protection circuits such as miniature circuit breaker, High rupturing fuse and protection under thermal overload condition. It provides in depth analysis of Ferranti effect and surge impedance loading of a transmission line. It provides in depth knowledge on working principles of various types of relays. It also deals with earth fault protection and feeder protection schemes

Major Equipment

Transmission line simulation unit
(Single phase 230V AC, 50Hz)
embedded with impedance relay: 1
Radial feeder protection simulation
unit embedded with over current relay: 1
Alternator setup
(3kVA, 415V, 3.8A, 1500 rpm): 1
APPLICATION SOFTWARE: Power System
Computer Aided Design (PSCAD): 10
HARDWARE: Desktop computer systems: 10

FACULTY **INFORMATION**

Dr. K Lingaswamy

Assistant Professor & Head

Ph.D (2026), Sathyabama University, Chennai TN.

M.Tech (2013), JNTU, Hyderabad, TS.

B.Tech (2009), JNTU, Hyderabad, TS.

AREA OF SPECIALIZATION

Electrical Power Engineering

Dr. B Navothna

Assistant Professor & Deputy Head

Ph.D (2025), Gitam, Vishakapatnam
M.Tech (2016), JNTU, Hyderabad
B.Tech (2014), JNTU, Hyderabad, 2014

AREAS OFSPECIALIZATION

Electrical Power Engineering

Dr. D Shobha Rani

Professor

Ph.D (2018), SVU, Tirupathi, AP
M.Tech (1999), JNTU, Hyderabad, TS
B.Tech (1991), JNTU, Hyderabad, TS

AREAS OF SPECIALIZATION

Electrical Power System

Dr. Damodhar Reddy

Professor

Ph.D (2019), VIT, Vellore, TN
M.Tech (2013), JNTU, Hyderabad, TS
B.Tech (2009), JNTU, Hyderabad, TS

AREAS OF SPECIALIZATION

Power Electronics

Dr. L Rajasekhar Goud

Associate Professor

Ph.D (2017), RU, Pasupula, AP
M.Tech (1988), JNTU, Hyderabad, TS
B.Tech (1983), OU, Hyderabad, TS

AREAS OF SPECIALIZATION

Power Systems
High Voltage Engineering

Dr. SK Abdul Pasha

Assistant Professor

Ph.D (2022), AU, Visakhapatnam, AP
M.Tech (2011), JNTU, Hyderabad, TS
B.Tech (2008), JNTU, Hyderabad, TS

AREAS OF SPECIALIZATION

Power Systems,
Power Electronics

Dr. Shaik Ruksana Begam

Assistant Professor

Ph.D (2024), Koneru Lakshmaiah, Guntur, AP
M.Tech (2020), JNTU, Hyderabad, TS
B.Tech (2018), OU, Hyderabad, TS

AREAS OF SPECIALIZATION

Electrical Power Systems

Assistant **Professors**

Ms. T Saritha Kumari

Mr. T Ravi Babu

Mr. G Viswanath

Ms. M Varalakshmi

Mr. Kumbha Venkata Siva Rao

Mr. K V Ramana Rao

Mrs. Yamani Ujwala

COURSE **MENU**

The structured curriculum ensures that students receive a balanced education covering foundational concepts, specialized knowledge, practical skills through labs and projects, and exposure to industry standards and professional development. It aims to prepare students for both higher studies and careers in various sectors of Electrical and Electronic Engineering, meeting the requirements set by AICTE, preparing them for GATE examinations, and integrating best practices from IEEE.

I SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AHSE01	Matrices and Calculus	4	Basic Principles of Algebra & Calculus
AHSE02	Engineering Physics	3	Basic principles of physics
AHSE04	English for Skill Enhancement	3	English
AEEE02	Electrical Circuits	3	Mathematics
ACSE01	Object Oriented Programming	3	--
PRACTICAL			
AHSE07	English Language and Communication Skills Laboratory	1	English
ACSE03	Object Oriented Programming Laboratory	1	--
AHSE05	Engineering Physics Laboratory	1	Basic principles of physics
AMEE02	Engineering workshop	1	--
	TOTAL CREDITS	20	
	CUMULATIVE CREDITS	20	

II SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AHSE03	Engineering Chemistry	3	Basic principles of chemistry
AHSE08	Ordinary Differential Equations and Vector Calculus	3	Basic Principles of Matrices and Calculus
AEEE04	Network Analysis and Synthesis	3	Matrices and Calculus & Electrical Circuits
ACSE02	Essentials of Problem Solving	3	
ACSE05	Data Structures	3	
PRACTICAL			
AHSE06	Engineering Chemistry Laboratory	1	Basic Principles of Chemistry
AEEE05	Network Analysis and Synthesis Laboratory	1	Matrices & Calculus and Electrical Circuits
ACSE07	Programming for Problem Solving Laboratory	1	--
AMEE03	Computer Aided Engineering Graphics	2	--
ACSE08	Data Structures Laboratory	1	--
	TOTAL CREDITS	21	
	CUMULATIVE CREDITS	41	

III SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AHSE09	Probability and Statistics Methods	3	Mathematics
AEEE06	DC Machines and Transformers	3	Electrical Circuits
AEED07	Electrical Power Generation	3	--
AECE02	Electronic Devices and Circuits	3	Basic principles of Electronics
AECE03	Digital Logic Design	3	Basic principles of Electronics
PRACTICAL			
AEEE08	DC Machines Laboratory	1	--
AECE05	Electrical Drives And Circuits Laboratory	1	--
AECE06	Digital Logic Design Laboratory	1	--
Skill Enhancement Project			
ACSD12	Design of Electrical System Using Auto Cad	1	--
AECE07	PCB Design	1	
MANDATORY COURSE			
AMCE01	Environment And Sustainable Development	1	
	TOTAL CREDITS	21	
	CUMULATIVE CREDITS	62	

IV SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AEEE10	AC Machines	3	Linear Algebra Calculus, DC Machines and Transformers
AEEE11	Power System Transmission and Distribution	3	Power Systems
AEEE12	Electromagnetic fields	2	Electrical Circuits
AEED12	Control Systems	3	Linear Algebra Calculus, Electrical Circuits
AECE12	Linear and Digital IC Applications	3	Electronics
PRACTICAL			
AEEE14	AC Machines Laboratory	1	--
AEEE15	Control Systems Laboratory	1	--
AECE15	Linear and Digital IC Applications Laboratory	1	--
EEXPERIENTIAL ENGINEERING EDUCATION (ExEED)			
ASDE01	Prototype and Design Building	1	
Skill Enhancement Project			
ACSE45	Application Development using Java Full Stack	1	
ASDE02	Engineering Entrepreneurship and Skill Development	1	
	TOTAL CREDITS	20	
	CUMULATIVE CREDITS	82	

V SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AEEE16	Power Electronics	3	Network Analysis, Digital Electronics
AEEE17	Signals and Systems	3	Mathematics
AECE29	RISC and Microcontroller Architecture	3	--
	Professional Elective-I	3	--
	Open Elective-I	2	--
PRACTICAL			
AEEE25	Power Electronics Laboratory	1	--
AECE39	RISC and Microcontroller Architecture Laboratory	1	--
AEEE26	PLC and Automation Laboratory	1	--
EEXPERIENTIAL ENGINEERING EDUCATION (ExEED)			
ASDE03	Engineering and Design Building	1	
Skill Enhancement Project			
ACSE28	Dev Ops Engineering	1	
MANDATORY COURSE			
AMCE02	Indian Knowledge System	1	
	TOTAL CREDITS	21	
	CUMULATIVE CREDITS	103	

VI SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AEEE27	Electrical Measurements and Instrumentation	3	Electrical Circuits, DC Machines and Transformers
AEEE28	Power System Analysis	3	Power Systems
AHSE10	Business Economics and Financial Analysis	3	--
	Professional Elective-II	3	--
	Open Elective–II	2	--
PRACTICAL			
AEEE36	Electrical Measurements and Instrumentation Laboratory	1	
AEEE37	Power System Analysis Laboratory	1	
AHSE11	Professional Studies and Skill Development	2	
EEXPERIENTIAL ENGINEERING EDUCATION (ExEED)			
ASDE04	Engineering Development Project	1	
MANDATORY COURSE			
AMCE03	Gender Sensitization	1	
	TOTAL CREDITS	20	
	CUMULATIVE CREDITS	123	

VII SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
AEEE38	Power System Protection	3	Power Systems
AHSE12	Management Science and Psychology	3	--
	Professional Elective-III	3	--
	Professional Elective-IV	3	--
	Open Elective– III	2	--
PRACTICAL			
AEEE51	Power System Protection Laboratory	1	Power System Analysis
AEEE52	Design of Solar Power System	1	--
AEEE53	Electrical and Electronics Design Laboratory	1	
SKILL ENHANCEMENT PROJECT			
ASDE05	Student Learning Models-Projects/Products	4	--
	TOTAL CREDITS	21	
	CUMULATIVE CREDITS	144	

VIII SEMESTER			
Course Code	Course Name	Credits	Prerequisite
THEORY			
	Program Elective – V	3	--
	Program Elective – VI	3	--
Project Work			
AEEE64	Capstone Project	14	--
	TOTAL CREDITS	20	
	CUMULATIVE CREDITS	164	

ELECTIVE **COURSES**

PROFESSIONAL ELECTIVE COURSES (PEC) (PEC)

The below listed courses are Professional electives and the student has to study six courses as professional electives

Course Code	Name of the Course	Prerequisites	Preferred Semester	Credits
Professional Elective – I				
AEEE18	Utilization of Electrical Energy	Electrical Circuits	V	3
AEEE19	Energy Conservation and Audit	Electrical Power Generation	V	3
AEEE20	VLSI Design	Digital Logic Desin	V	3
AEEE21	Computer Aided Electrical Machine Design	DC Machines and AC Machines	V	3
AEEE22	IOT Architecture and Protocols	Electronic Devices and Circuits	V	3
Professional Elective – II				
AEEE29	Power Semiconductor Drives	Power Electronics	VI	3
AEEE30	High Voltage Engineering	Power System Transmission and Distribution	VI	3
AEEE31	Programmable Logic Controllers	Control Systems	VI	3
AEEE32	Electrical Safety and Sustainable Engineering Practices	Basic Electrical Engineering	VI	3
AEEE33	Digital Protection of Power System	Power System Transmission and Distribution	VI	3
Professional Elective – III				
AEEE39	Energy Storage Systems	Electrical Circuits	VII	3
AEEE40	Power Quality	Power Systems	VII	3
AEEE41	Digital Signal Processing	Signals and Systems	VII	3
AEEE42	EHVAC Transmission	Power System Transmission and Distribution	VII	3
AEEE43	Power System Stability	Power System Transmission and Distribution	VII	3
Professional Elective – IV				
AEEE44	Battery Management Systems	Power Electronics	VII	3
AEEE45	Smart Grid Technologies	Power System Transmission and Distribution	VII	3
AEEE46	AI and ML for Electrical Engineering Applications	Engineering Mathematics	VII	3
AEEE47	Power Quality and FACTS	Power Electronics	VII	3
AEEE48	Solar Photovoltaic Systems	Power Electronics	VII	3
Professional Elective – V				
AEEE54	EV Charging Infrastructure	Power Electronics	VIII	3
AEEE55	HVDC Transmission	Power System Transmission and Distribution	VIII	3
AEEE56	Embedded Systems	Microprocessors and Microcontrollers	VIII	3
AEEE57	Industrial IOT and Automation	Control Systems	VIII	3
AEEE58	Renewable Energy Systems	Power Electronics	VIII	3
Professional Elective – VI				
AEEE59	Electrical Distribution and Automation	Electrical Power Generation	VIII	3
AEEE60	Smart Metering and Communication Protocols	Electrical Power Generation	VIII	3
AEEE61	Hybrid Electric Vehicles	Power Electronics	VIII	3
AEEE62	Power System Operation Control	Power System Transmission and Distribution	VIII	3
AEEE63	Modelling, Dynamics and control of EVs	Control Systems	VIII	3

Open Elective Courses (OEC)

The courses listed below are offered by the Department of Electrical and Electronics Engineering for students of other departments.

Course Code	Course Name	Credits
Open Elective - I		
AEEE23	Fundamentals of Electric Vehicles	2
AEEE24	Industrial Automation and Control	2
Open Elective - II		
AEEE34	Digital Energy	2
AEEE34	Energy Audit	2
Open Elective - III		
AEEE49	Sustainable Energy	2
AEEE50	Smart Grid Systems	2

VALUE ADDED COURSES

Objective

Value added courses are provided to equip the students with knowledge and skills outside of the curriculum or to meet any specific requirements of the industry. The following are the Value- Added Courses provided to students by various departments in our institution.

- **ANY FOUR FROM THE GIVEN BELOW THROUGH IARE ELRV – AKANKSHA / CERTIFICATE - SWAYAM, e-PG pathshala, NPTEL etc.**
- Data Scalability and Distribution (Amazon Web Services, Microsoft Azure, Google Cloud, Platform etc.)
- Software Developer (Restful webservices / Microservices, Rust programming, MEAN, MERN, MEVN)
- Data Science (Data visualization, Data wrangling, Bigdata Technologies, Business Intelligence, etc.)
- Operating Systems (IBM I, Mac OS, Linux, Haiku etc.) Debugging
- Testing (Selenium, TestNG)
- Cyber Security (Network Security, Threat Intelligence and Analysis / Risk Assessment and Management)
- Software Architect
- Blockchain Technology

- **VALUE ADDED COURSES FROM**
- **ELECTRICAL AND ELECTRONICS ENGINEERING**
- Training on Electrical-CAD
- Certificate Program on PLC And SCADA Training on Electric Vehicles
- Certificate Program on Solar Power Design and Installation Training on OrCAD – PSpice

COURSE **SYNOPSIS**

CORE **COURSES**

ELECTRICAL CIRCUITS

This course deals with the basic concepts of circuit analysis which is the foundation for all subjects of the electrical and electronics engineering. It includes the fundamental laws of electricity and magnetism with an emphasis on resistors, inductors, and capacitors (RLC) circuits applied to alternating current (AC) or direct current (DC) of electrical networks. Further This course provides network theorems with different excitations, two-port network, and network topology to solve for real-time applications.

NETWORKS ANALYSIS AND SYNTHASIS

This course deals with the fundamental principles of electrical network analysis and synthesis, which are essential for understanding and designing complex electrical and electronic systems. It includes systematic methods for analyzing electrical circuits using various techniques such as mesh analysis, nodal analysis, and network theorems. The course also emphasizes the behavior of circuits under different excitations in both time and frequency domains. Further, it introduces the concepts of network functions, two-port networks, and filter design. In synthesis, the focus is on developing networks from given specifications,

DC MACHINES AND TRANSFORMERS

This course deals with the basic theory, construction, operation, performance characteristics and application of electro-mechanical energy conversion devices such as DC generators and motors. It also gives an in-depth knowledge on the operation of single phase and three phase transformers and it's testing. It also focuses on the auto-transformers, on-load, off-load tap changers which are widely used in real time applications.

ELECTROMAGNETIC FIELDS

This course deals with the students with good understanding of underlying principles and laws in electromagnetic fields and waves. The concepts of vector algebra, principles and basic laws of electro-statics, characteristics and properties of conductors and dielectrics, behavior of static magnetic field and application of Ampere's law, determination of force in magnetic field and magnetic potential, concept of time varying fields and propagation of electro-magnetic waves.

ELECTRONIC DEVICES AND CIRCUITS

This course deals with the fundamental concepts of electronic devices and their applications in circuit design, which form the basis for modern electronic systems. It includes the study of semiconductor devices such as diodes, transistors (BJT and FET), and their characteristics and operations. The course emphasizes the analysis of electronic circuits involving amplifiers, rectifiers, oscillators, and switching circuits. Further, it provides an understanding of biasing techniques, small-signal models, and frequency response of circuits.

AC MACHINES

This course deals with the basic theory, construction, operation, performance characteristics and application of electro-mechanical energy conversion devices such as synchronous and asynchronous machines. It also facilitates the study of the alternating machines which are the major part of industrial drives and agricultural pump sets.

ELECTRICAL POWER GENERATION

This course deals with the different elements in electric power generation systems. It deals with conventional energy systems like thermal and nuclear power stations. This course also introduces non-conventional energy systems like solar energy, Hydro and Wind energy. This course will also discuss some environmental impacts of power generation and also look at alternative and sustainable energy resources.

CONTROL SYSTEMS

This course deals with the basic concepts of block diagram reduction technique, time response analysis of first order and second order systems. It deals with various time and frequency domain analysis. It elaborates the concept of stability and its assessment for linear time invariant systems.

POWER SYSTEM TRANSMISSION AND DISTRIBUTION

This course deals with the fundamental concepts of electric power transmission and distribution, which are essential for delivering electrical energy from generating stations to consumers efficiently and reliably. It includes the study of transmission line parameters, performance, and different types of transmission systems such as overhead and underground lines. The course emphasizes the analysis of power flow, voltage regulation, and losses in transmission networks.

ELECTRICAL MEASUREMENTS AND INSTRUMENTATION

This course deals with the basic understanding of measurement principles and measuring instruments used in numerous electrical applications. The course provides the concept of measurement, analysis of errors and various specification parameters used to judge and compare measuring instruments. It provides an insight to develop advanced instruments in industries.

POWER ELECTRONICS

This course deals with the concepts of conversion, control and monitoring of electrical energy using power semiconductor devices. Methods for analyzing power electronic converters suitable for DC/AC, DC/DC, AC/AC and AC/DC electrical energy conversions including regulators are presented. Additionally, principles for designing power electronic converters, including their power semiconductors and passive elements are established.

POWER SYSTEM ANALYASIS

This course deals with the students to study the performance of interconnected power system under steady state and transient stability conditions. The course deals with formation of impedance and admittance matrices for various configurations, finding unknown electrical quantities at various buses, symmetrical and unsymmetrical fault analysis, power system using per unit representation.

ELECTRIC DRIVES AND STATIC CONTROL

This course deals with the operation of electric drives controlled from a power electronic converter. This also deals with design concepts of controllers for motor drives. The development of compact thyristor power converters has made this possible by smooth speed control of both AC and DC motors which are employed for several applications such as AC drives, DC drives, vehicles and renewable energy.

POWER SYSTEM PROTECTION

This course deals with the fundamental concepts of power system protection, which are essential for ensuring the safe and reliable operation of electrical power systems. It includes the study of various types of faults in power systems and the methods used to detect and isolate them. The course emphasizes protective devices such as relays and circuit breakers, along with their operating principles and characteristics. Further, it covers protection schemes for generators, transformers, transmission lines, and distribution systems.

POWER SYSTEM ANALYSIS

This course deals with the fundamental concepts of power system protection, which are essential for ensuring the safe and reliable operation of electrical power systems. It includes the study of various types of faults in power systems and the methods used to detect and isolate them. The course emphasizes protective devices such as relays and circuit breakers, along with their operating principles and characteristics. Further, it covers protection schemes for generators, transformers, transmission lines, and distribution systems.

POWER SYSTEM DESIGN

This course deals with the fundamental concepts of power system protection, which are essential for ensuring the safe and reliable operation of electrical power systems. It includes the study of various types of faults in power systems and the methods used to detect and isolate them. The course emphasizes protective devices such as relays and circuit breakers, along with their operating principles and characteristics.

PROFESSIONAL **ELECTIVES**

COMPUTER AIDED ELECTRICAL MACHINES DESIGN

This course deals with the design of electrical machines using an analytical and a computer-aided approach. The course covers the detailed design of various machines derived using fundamental electromechanical equations.

UTILIZATION OF ELECTRICAL ENGINEERING

This course deals with effective utilization of electrical power. It describes the basic principles and performance characteristics of drives, electric traction, and illumination, it also facilitates the use of electrical power for domestic and industrial consumers.

HIGH VOLTAGE ENGINEERING

This course deals with the planning, operation, and testing of High voltage Electrical devices. High voltage engineering deals with different mediums of insulation and break down Phenomenon, generation of high DC and AC voltage, measurement Techniques of high AC and DC voltages, testing of insulation under all types of conditions using generated high DC and AC voltages.

ENERGY CONSERVATION AND AUDITING

This course deals with the basic understanding of energy audit and management.The consumption of energy is increasing day by day. One way to cope up with the increase in energy demand is to increase the production of energy which demands more investment and the other way is to conserve the energy as energy conserved/saved is twice the energy generated. Energy conservation means reduction in energy consumption but not compromising with the quality or quantity of energy production.

IOT ARCHITECTURE AND PROTOCOLS

This course deals with various layers and protocols that facilitate the communication and interaction between devices and systems. The IoT architecture and protocols are designed to provide flexibility, scalability, and interoperability across various IoT ecosystems and applications.

VLSI DESIGN

This course deals with the design of integrated circuits using Very Large Scale Integration technology through analytical and computer-aided approaches. The course covers the principles of semiconductor devices, CMOS fabrication techniques, circuit design, layout methodologies.

HVDC TRANSMISSION

This course deals with the importance of HVDC transmission, analysis of HVDC Converters, Harmonics and Filters, Reactive power control and Power factor improvements of the system. It also deals with basic modeling and analysis of HVDC system power flow regulation.

POWER SYSTEM STABILITY

This course deals with the various problems encountered in power systems related to reliability, stability and quality power. The course involves assessment of stability of a power system, improvement in stability and prevention of the system becoming unstable.

DIGITAL PROTECTION OF POWER SYSTEMS

This course deals with the fundamental concepts to design various electronic circuits to implement various relaying functions. The relays such as Static Relays, Microprocessor based protective relays, Digital relay Travelling wave-based protection and adaptive relaying is comprehensively covered in this course.

POWER SEMICONDUCTOR DRIVES

This course deals with the analysis and design of power semiconductor-based drive systems used for controlling electrical machines. The course covers the characteristics and operation of power electronic devices, converter and inverter circuits, motor drive control techniques.

PROGRAMMABLE LOGIC CONTROLLERS

This course deals with the design and application of Programmable Logic Controllers used for industrial automation and control systems. The course covers the architecture of PLCs, programming techniques, interfacing with input/output devices, communication protocols, and implementation of control strategies derived using fundamental automation and control engineering principles.

ELECTRICAL SAFETY AND SUSTAINABLE ENGINEERING PRACTICES

This course deals with the principles and practices required to ensure safety in electrical systems and promote sustainable engineering solutions. The course covers electrical hazards, safety standards and regulations, grounding and protection techniques, energy efficiency methods, renewable energy integration, and environmental impact assessment derived using fundamental electrical and sustainable engineering concepts

EHVAC TRANSMISSION

This course deals with the topics that are considered essential for understanding the operation and design of EHV ac overhead lines and underground cables. Theoretical analyses of all problems combined with practical application are dealt here.

ENERGY STORAGE SYSTEMS

This course deals with the principles and technologies used for storing electrical energy for various applications. The course covers different types of energy storage systems such as batteries, supercapacitors, and flywheels, their characteristics, modeling, control strategies.

DIGITAL SIGNAL PROCESSING

This course deals with the analysis and processing of discrete-time signals using digital techniques. The course covers signal representation, discrete-time systems, Z-transform, Fourier transform, digital filter design, and implementation methods derived using fundamental signal processing and mathematical concepts.

POWER QUALITY AND FACTS

This course deals with the basic concepts power quality problems in distribution system, mitigation techniques for compensating devices to improve power quality in distribution system. It deals with the principle, operation and applications in power systems with respect to active/ reactive power control. This course also concludes with applications of FACTS devices.

SMART GRID TECHNOLOGIES

This course deals with the modern techniques and technologies used in the development of smart electrical power systems. The course covers smart grid architecture, advanced metering infrastructure, communication technologies, integration of renewable energy sources, demand response, grid automation, and cybersecurity aspects derived using fundamental power system and communication engineering concepts

BATTERY MANAGEMENT SYSTEM

This course deals with the batteries and demonstrate Lithium-Ion Battery Fundamentals, measure different battery parameters and analyze battery performance to identify Battery Management System Functionality. Detail the need of Charge Balancing and state of charge estimation using various algorithms, Estimate the state of health of the battery and discuss battery fault detection.

AI AND ML FOR ELECTRICAL ENGINEERING APPLICATIONS

This course deals with the application of Artificial Intelligence (AI) and Machine Learning (ML) techniques in solving electrical engineering problems. The course covers fundamental AI/ML concepts, data preprocessing, supervised and unsupervised learning algorithms, neural networks.

SOLAR PHOTOVOLTAIC SYSTEMS

This course deals with the principles and design of solar photovoltaic (PV) systems used for generating electrical energy from solar radiation. The course covers solar cell fundamentals, PV module characteristics, system components, maximum power point tracking (MPPT) techniques,

INDUSTRIAL IOT AND AUTOMATION

This course deals with the transformation of industrial processes through the integration of modern technologies such as sensors, communication, and computational processing.
It deals with various an application of IOT in industries to modify the various existing industrial systems.

EV CHARGING INFRASTRUCTURE

This course deals with the design and implementation of infrastructure required for charging electric vehicles (EVs). The course covers types of EV chargers, charging standards, power electronic converters, grid integration, battery management considerations, communication protocols,

EMBEDDED SYSTEMS

This course deals with the design and development of embedded systems used for dedicated control and automation applications. The course covers microcontrollers and microprocessors, interfacing techniques, real-time operating systems (RTOS), embedded programming, communication protocols.

RENEWABLE ENERGY SYSTEMS

This course deals with the principles and technologies used for harnessing energy from renewable sources for sustainable power generation. The course covers various renewable energy sources such as solar, wind, hydro, and biomass, their conversion techniques, system design, grid integration,.

MODELLING, DYNAMICS AND CONTROL OF EV'S

This course deals with the areas that come under the umbrella of electric vehicles such as vehicle dynamics, Motors, Power Electronics, PWM, Control etc. The most important part of this course will be that each topic will be an analyzed and demonstrated through Matlab Simulink.

ELECTRICAL DISTRIBUTION AND AUTOMATION

This course deals with the design, operation, and automation of electrical distribution systems for efficient power delivery. The course covers distribution system components, load flow analysis, protection schemes, distribution automation techniques, smart distribution systems

SMART METERING AND COMMUNICATION PROTOCOLS

This course deals with the technologies and communication systems used in smart metering for modern power networks. The course covers smart meter architecture, data acquisition and management, advanced metering infrastructure (AMI), communication protocols such as PLC, ZigBee, and IoT-based systems, cybersecurity aspects.

HYBRID ELECTRIC VEHICLES

This course deals with the principles and technologies involved in hybrid electric vehicles (HEVs) that combine internal combustion engines with electric propulsion systems. The course covers vehicle architectures, energy management strategies, electric drives, battery technologies, power electronic converters,

POWER SYSTEM OPERATION CONTROL

This course deals with the principles and techniques used for the operation and control of electrical power systems to ensure stability, reliability, and economic performance. The course covers load forecasting, economic load dispatch, unit commitment, frequency and voltage control, power system stability

OPEN **ELECTIVES**

FUNDAMENTALS OF ELECTRIC VEHICLES

This course deals with the basic concepts and technologies involved in electric vehicles (EVs). The course covers types of electric vehicles, electric propulsion systems, battery technologies, charging methods, power electronic converters, and performance characteristics derived using fundamental electrical and automotive engineering principles.

INDUSTRIAL AUTOMATION AND CONTROL

This course deals with the principles and implementation of automation and control techniques used in industrial systems. The course covers sensors and actuators, control strategies, programmable logic controllers (PLCs), supervisory control and data acquisition (SCADA), industrial communication protocols.

DIGITAL ENERGY

This course deals with the integration of digital technologies in the generation, distribution, and management of electrical energy systems. The course covers smart energy systems, digital monitoring and control, data analytics in power systems, Internet of Things (IoT) applications, artificial intelligence in energy management

ENERGY AUDIT

This course deals with the systematic analysis and assessment of energy consumption in electrical systems to improve efficiency and reduce energy losses. The course covers energy audit methodologies, energy measurement and instrumentation, load analysis, energy conservation techniques, economic evaluation of energy-saving measures.

SUSTAINABLE ENERGY

This course deals with the principles and practices of utilizing energy resources in an environmentally responsible and sustainable manner. The course covers renewable energy sources, energy conservation techniques, environmental impact assessment, sustainable energy technologies, policy and regulatory frameworks, and efficient energy management strategies derived using fundamental energy engineering and sustainability concepts.

SMART GRID SYSTEMS

This course deals with the advanced concepts and technologies involved in modern smart grid systems for efficient and reliable power management. The course covers smart grid architecture, advanced metering infrastructure (AMI), integration of renewable energy sources, demand-side management, communication technologies, grid automation, and cybersecurity aspects derived using fundamental power system and communication engineering principles.

Find out more:
www.iare.ac.in

Institute of Aeronautical Engineering
(Autonomous)
Dundigal, Hyderabad - 500 043, Telangana, India
Ph - 040-29705852, 29705853, 29705854
Call +91 8886234501, 8886234502

Enquiries: support@iare.ac.in