



THUNDERBIRD 2.0



NEWSLETTER

Department of
Electrical Engineering

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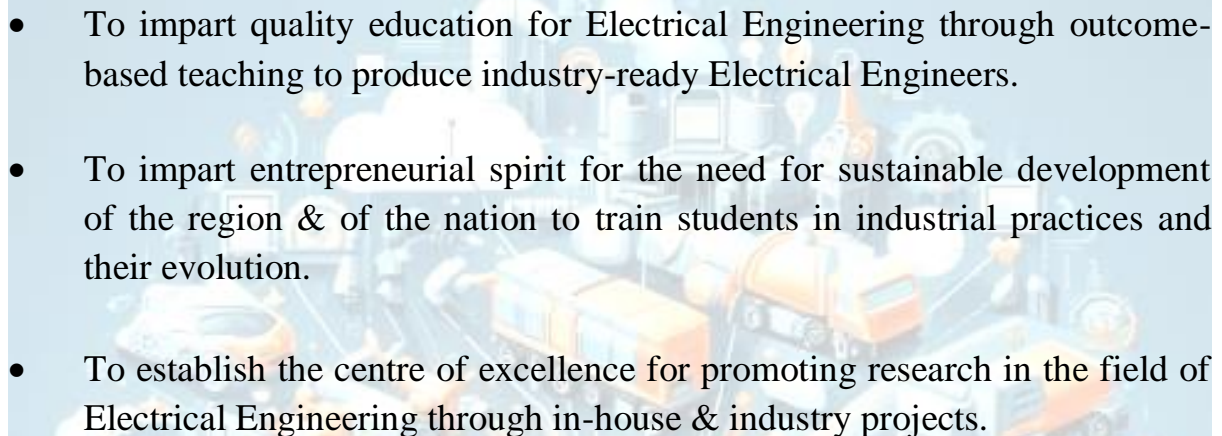
About The Department:



The Electrical Engineering course at SWAMI VIVEKANANDA UNIVERSITY is designed with an endeavour to create globally competitive and employable engineers. SWAMI VIVEKANANDA UNIVERSITY offers the students a conducive and rewarding environment by contributing to seminars, live projects, and case studies to pursue ideas, cultivate the spirit of curiosity and sustain a passion for excellence. The perfect blend of Industry-Academia environment develops students with practical hands-on sessions offering a dynamic teaching program for creating a vibrant and successful community of professionals who can develop both concepts and skills essential for the design, analysis, manufacturing, and maintenance of various kinds of Electrical systems and machinery.



Mission:

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- To impart quality education for Electrical Engineering through outcome-based teaching to produce industry-ready Electrical Engineers.
 - To impart entrepreneurial spirit for the need for sustainable development of the region & of the nation to train students in industrial practices and their evolution.
 - To establish the centre of excellence for promoting research in the field of Electrical Engineering through in-house & industry projects.

Vision:

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- To create competent Electrical Engineers through outcome-based teaching and promoting innovative research to serve society with the knowledge and skills earned.
 - To make the Institute excellent in technological education and research by imparting equitable, inclusive, ethical, flexible and multidisciplinary knowledge to budding technologists to serve the society.

Objectives:

- To impart knowledge, develop skills and prepare graduates in achieving global excellence in Electrical Engineering education, industry and research.

Desk of HOD



Dr. Rituparna Mitra
Assistant Professor & HoD
Department of Electrical Engineering

Welcome to the Department of Electrical Engineering, Swami Vivekananda University. As a well-known fact, we cannot imagine the world without electricity, and nowadays, the electrical and electronic devices have become an essential and inevitable part of our daily lives. The Department focus is to train our students to get strong academic knowledge in the frontier areas of both electrical and electronics engineering and also to make the students ready to face real-world challenges. The Department has a rich blend of young

and highly-experienced regular and visiting faculty members from reputed institutes. The faculty members display a high level of dedication and enthusiasm towards both teaching and state-of-the-art research.

The Department faculty have sound knowledge in emerging research areas like Adaptive & Robust control schemes for power electronic applications, High voltage pulse power system, Electrical machines and drives, Control of electric vehicle and energy management, Power system optimization and Active distribution networks, Home energy management and Smart grid technologies. Our faculty members are continuing their respective research projects and publishing their research articles in reputed national and international journals. The department is active in organizing the various workshops and seminars for the growth and development of faculty and students' research knowledge further. Our department students are also highly encouraged to implement their innovative research ideas with the help of the expert faculty members and the available standard research lab facilities in the department. At present, the department offers a three year diploma course (Electrical Engineering), four-year

undergraduate programme, B Tech (Electrical Engineering), two year post graduate program (Power System and Power Electronics) and PhD programme in core Electrical Engineering specializations. The focus of this curriculum is keeping in view with the current and upcoming industry requirements in future.

The Electrical Engineering graduate has a wide range of career opportunities in Power industries, Government PSUs, R&D Units, IT industries, Electricity Boards/Utility companies, Telecommunications industries, Manufacturing industries, Private industrial firms and Startup companies.

Desk of Academic Coordinator

Mr. Abhishek Dhar
Assistant Professor and Coordinator
Department of Electrical Engineering



Welcome to the Electrical Engineering Department of Swami Vivekananda University, Barrackpore, West Bengal, India. We are truly a pulsating university where ambitious students prepare themselves to be accountable leaders and enduring learners through rigorous engineering tutoring. With students in India looking for more inter-disciplinary programs and flexibility in course curriculum, SVU shifted the focus on to the manner the programs are offered, and the curriculum is designed. The programme and curriculum of Electrical Engineering Department is designed in such a manner that the student has the freedom to decide the pathway to career progression. Our strengths are the top-class faculty members who take up scientific challenges through their research work and transfer their knowledge gained through research experience to the students. I am honoured to be part of a team of people who are committed, compassionate and team leaders, and keep SVU flag flying high.

Student's Strength

Courses	1 st year	2 nd Year	3 rd Year	4 th Year
Diploma	112	147	149	
B.Tech	41	356	312	177
M.Tech	16	19		
PhD	7			



Student's Achievement

Our students actively participate in internships and industry-sponsored projects with leading tech companies, gaining practical experience and solving real-world challenges. Teams from our department have won prestigious hackathons, robotics contests, and circuit design challenges, bringing accolades to the college. Our students frequently receive merit-based scholarships and fellowships from national organizations for their outstanding academic and extracurricular achievements. Our graduates are employed in top global companies, research institutions, and universities, making significant contributions to the field of electrical engineering worldwide.

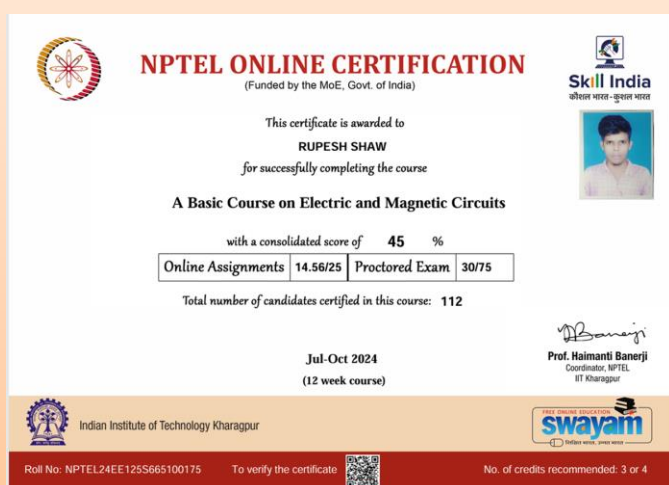


Fig. Certificate of a B. Tech III semester student



Fig. Certificate of a B. Tech V semester student

ACTIVE RECRUITING PARTNERS



Teleperformance
each interaction matters



arodekTM
Adding Value



TOWARDS EXCELLENCE



WINDMÖLLER & HÖLSCHER



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INDIA PVT. LTD

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Touching you with Special Technology!



SigiloTech

Discover Advanced Solutions


ROIMA
INDIA



Our Precision, Your Advantage

ONLINE CERTIFICATION COURSES

Many students earn professional certifications in specialized areas like embedded systems, power electronics, and renewable energy, enhancing their employability. Students are continuously encouraged to attend Online Certification Courses on Swayam NPTEL. This will help them both in their career and skill improvement on their respective fields. Many students were enrolled to this and got their certificates, which are listed below.

B. Tech: Semester - III	B. Tech: Semester - V								
Enrolled: 34	Enrolled: 207								
Registered: 12	Registered: 118								
<div><div><div><div>NPTEL ONLINE CERTIFICATION</div><div>(Funded by the MoE, Govt. of India)</div></div><div><div>This certificate is awarded to</div><div>RUPESH SHAW</div><div>for successfully completing the course</div></div><div>A Basic Course on Electric and Magnetic Circuits</div><div>with a consolidated score of 45 %</div><table><tr><td>Online Assignments</td><td>14.56/25</td><td>Proctored Exam</td><td>30/75</td></tr></table><div>Total number of candidates certified in this course: 112</div><div><div>Jul-Oct 2024</div><div>(12 week course)</div></div><div><div></div><div>Prof. Haimanti Banerji Coordinator, NPTEL IIT Kharagpur</div></div><div><div><div>Indian Institute of Technology Kharagpur</div></div><div><div></div><div>swayam</div><div>सिखिए स्वच्छ, समकालेन, स्वयंसेवा</div></div></div></div></div>	Online Assignments	14.56/25	Proctored Exam	30/75	<div><div><div><div>NPTEL ONLINE CERTIFICATION</div><div>(Funded by the MoE, Govt. of India)</div></div><div><div>This certificate is awarded to</div><div>SUBHADIP DAS</div><div>for successfully completing the course</div></div><div>Modeling, Analysis and Estimation of Three Phase Unbalanced Power Network</div><div>with a consolidated score of 49 %</div><table><tr><td>Online Assignments</td><td>16.25/25</td><td>Proctored Exam</td><td>32.25/75</td></tr></table><div>Total number of candidates certified in this course: 21</div><div><div>Jul-Oct 2024</div><div>(12 week course)</div></div><div><div></div><div>Prof. Kaushik Ghosh Professor (Chemistry) Coordinator CEC</div></div><div><div><div>Indian Institute of Technology Roorkee</div></div><div><div></div><div>swayam</div><div>सिखिए स्वच्छ, समकालेन, स्वयंसेवा</div></div></div></div></div>	Online Assignments	16.25/25	Proctored Exam	32.25/75
Online Assignments	14.56/25	Proctored Exam	30/75						
Online Assignments	16.25/25	Proctored Exam	32.25/75						
Roll No: NPTEL24EE125S665100175 To verify the certificate 	Roll No: NPTEL24EE121S552300594 To verify the certificate 								
No. of credits recommended: 3 or 4	No. of credits recommended: 3 or 4								



Laboratory Establishment in Last Six Months

Programmable Logic Controller Laboratory:

- Almost 60% establishment of **Programmable Logic Controller Laboratory**.



Fig. PLC Laboratory

Table. Details of recently established PLC Laboratory Trainer Kits.

S.No.	Item description	Present Condition	Purpose
1	S7- 1200 PLC trainer kit	Working	<ul style="list-style-type: none"> • Ladder Logic (LAD) • Function Block Diagram (FBD) • Structured Text (ST) • Sequential Function Chart (SFC)
2	ET- 200 SP PLC/RIO Training kit	Working	<ul style="list-style-type: none"> • Industrial Automation Training • Demonstration of Remote I/O Concepts • Testing and Troubleshooting of distributed I/O systems
3	Human Machine Interface (HMI)	Working	<ul style="list-style-type: none"> • Manufacturing • Process Industries • Building Automation • Transportation
4	VFD CUM Starter Panel	Working	<ul style="list-style-type: none"> • Variable Speed Control of Motors • Motor Starting and Protection • Remote Monitoring and Control • Flexibility in Motor Operation Modes

Robotics and Automation Laboratory:

- Almost 30% establishment of **Robotics & Automation Laboratory**.



Fig. Robotics & Automation Laboratory

The Robotics and Automation Laboratory is a cornerstone of innovation and practical education at our university, playing a crucial role in shaping students' academic and professional journeys. Here's an in-depth look at its significance:

1. Hands-on Learning Opportunities

The lab bridges the gap between theory and practice, offering students a platform to apply classroom knowledge to real-world scenarios. It allows them to work directly with robotic systems, sensors, actuators, and automation software, fostering a deeper understanding of complex concepts.

2. Skill Development for Industry Readiness

Through project-based learning and experimentation, students gain expertise in programming, system design, and the integration of mechanical and electronic systems. These skills align closely with industry requirements, making graduates more employable and capable of handling advanced technologies in the workplace.

3. Encouragement of Innovation and Research

The lab serves as a hub for creativity, encouraging students and faculty to collaborate on cutting-edge projects. It supports research in areas such as artificial intelligence, machine learning, and industrial automation, contributing to advancements in these fields and fostering a culture of innovation.

4. Real-World Problem Solving

By simulating industrial environments and automating processes, the lab helps students tackle real-world challenges. They learn to design efficient, sustainable, and cost-

effective solutions, which are critical for addressing modern-day technological and societal issues.

5. Interdisciplinary Collaboration

The lab promotes collaboration among various disciplines, including mechanical, electrical, computer science, and industrial engineering. This interdisciplinary approach mirrors the collaborative nature of industry and enhances students' ability to work in diverse teams.

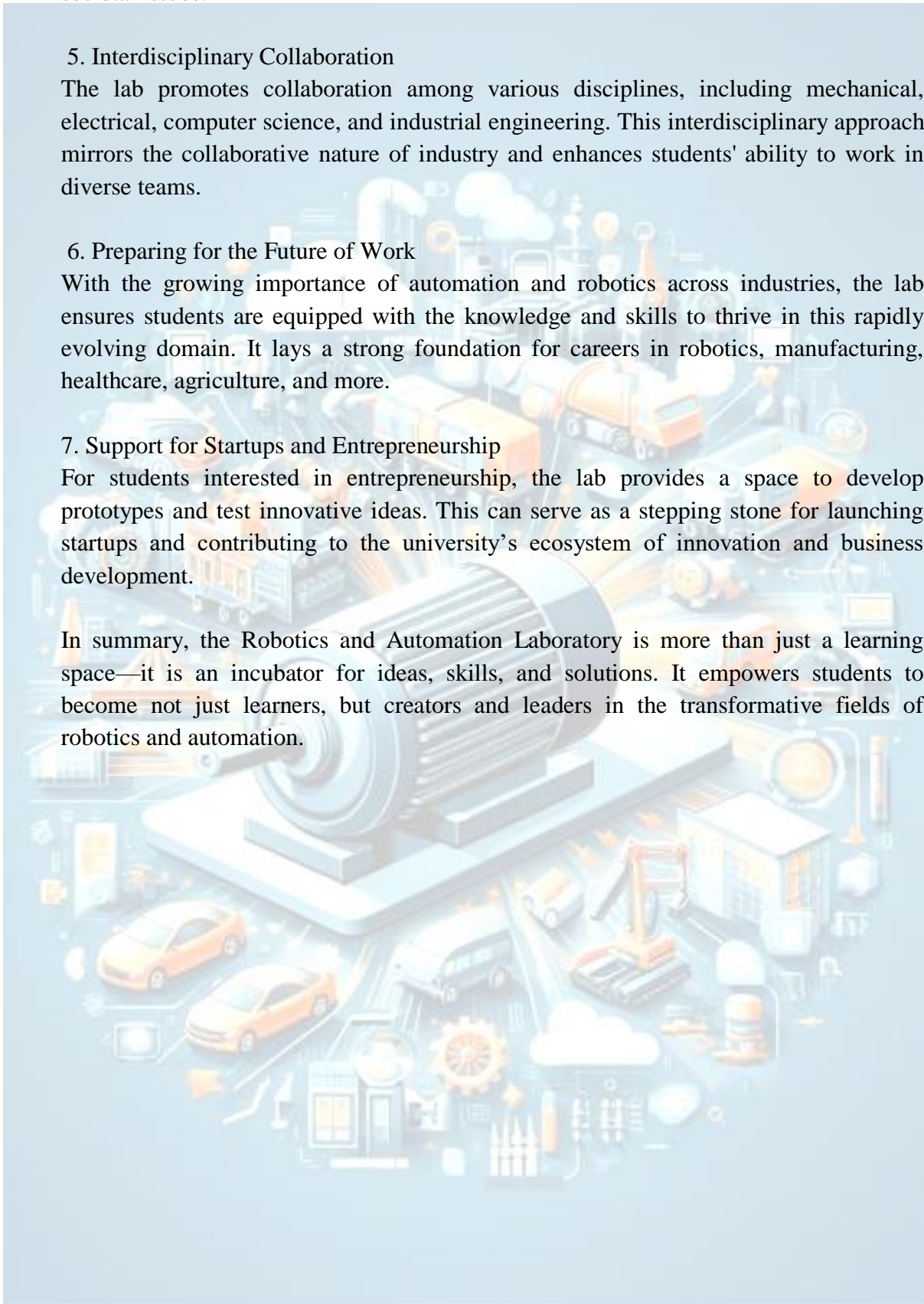
6. Preparing for the Future of Work

With the growing importance of automation and robotics across industries, the lab ensures students are equipped with the knowledge and skills to thrive in this rapidly evolving domain. It lays a strong foundation for careers in robotics, manufacturing, healthcare, agriculture, and more.

7. Support for Startups and Entrepreneurship

For students interested in entrepreneurship, the lab provides a space to develop prototypes and test innovative ideas. This can serve as a stepping stone for launching startups and contributing to the university's ecosystem of innovation and business development.

In summary, the Robotics and Automation Laboratory is more than just a learning space—it is an incubator for ideas, skills, and solutions. It empowers students to become not just learners, but creators and leaders in the transformative fields of robotics and automation.



Hands on Training for Diploma and UG courses

Hands on Training for Skill Development has been conducted for Diploma and UG students of Electrical Engineering Department on the following topics:

- Training on Programmable Logic Controller
- Training on Renewable Energy Resources
- Training on Robotics and Automation



Fig. Training session.

Training on PLC for Diploma and UG courses:



Fig. Training session on PLC Laboratory

Training on Renewable Energy Sources for Diploma and UG courses:



Fig. Training session on Renewable Energy Sources Laboratory

Training on Robotics and Automation for Diploma and UG courses:



Fig. Training session on Robotics and Automation Laboratory

Video Recordings **(Theories & Laboratories)**

1. Video lecture recordings by our faculty provide flexible learning opportunities, allowing students to revisit lessons anytime.
2. These recordings ensure access to high-quality content, fostering a better understanding of complex concepts.
3. They are ideal for revision, helping students prepare effectively for exams and assignments.
4. Faculty-led recordings bridge the gap for learners who may have missed live classes, ensuring continuity in education.

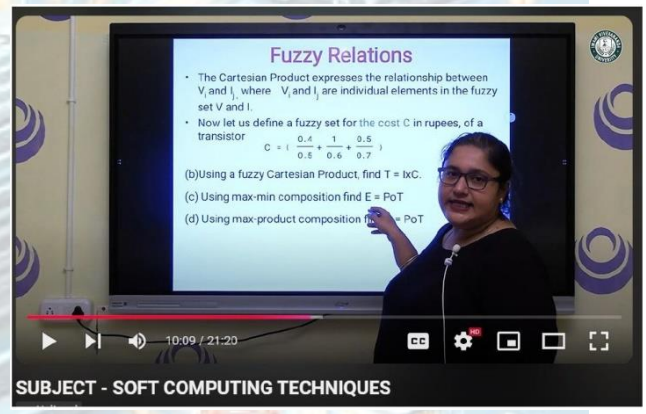
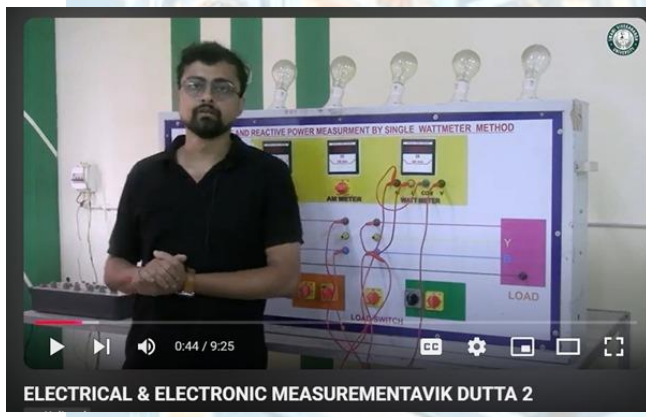


Fig. A glimpse of video lecture preparation.

Fututre Development Plan

1. Curriculum Enhancement

- Update and align the curriculum with industry trends, focusing on areas such as smart grid technology, renewable energy, artificial intelligence (AI), and electric vehicles (EVs).
- Introduce multidisciplinary programs combining electrical engineering with emerging fields like data science, robotics, and automation.

2. Infrastructure Development

- Establish advanced laboratories for power systems, renewable energy, robotics, and IoT applications.
- Equip classrooms and labs with modern software tools such as MATLAB, Simulink, PSCAD, and ANSYS for practical learning.
- Develop a Center of Excellence in Renewable Energy and Smart Grids to support research and innovation.

3. Research and Development

- Promote research in sustainable energy solutions, AI-driven control systems, and energy storage technologies.
- Seek national and international research collaborations to secure grants and funding for projects.
- Encourage faculty and students to publish in high-impact journals and present at global conferences.

4. Industry Collaboration

- Strengthen partnerships with leading companies for internships, industrial training, and collaborative projects.
- Host industry-focused workshops, seminars, and hackathons to enhance practical knowledge and skills.
- Develop MoUs with organizations for technology transfer and consultancy services.

5. Global Engagement

- Foster academic partnerships with international universities for exchange programs, joint research initiatives, and dual-degree options.

- Organize global technical conferences and webinars to bring diverse perspectives to the department.

6. Student Development Programs

- Launch certification courses on cutting-edge topics like PLC/SCADA programming, EV technology, and embedded systems.

- Introduce mentorship programs with industry experts and alumni to guide students in career planning.

- Provide financial support and resources for students to participate in competitions, internships, and startup incubators.

7. Sustainability Goals

- Focus on green campus initiatives, such as solar power installations and energy-efficient systems.

- Integrate sustainability concepts into the curriculum and encourage projects aligned with environmental conservation.

8. Entrepreneurship and Innovation

- Establish an Innovation Hub for students to develop and prototype entrepreneurial ideas.

- Offer training and workshops in business planning and project management for aspiring entrepreneurs.

- Collaborate with startups in the energy and automation sectors for exposure and guidance.

9. Digital Transformation

- Implement e-learning platforms and virtual labs for remote experimentation and simulations.

- Adopt AI-powered learning management systems to personalize education and track student progress.

10. Alumni and Community Engagement

- Leverage the alumni network to create opportunities for mentorship, funding, and knowledge-sharing.

- Organize community outreach programs to raise awareness about energy efficiency and renewable energy use.

By focusing on innovation, sustainability, and industry readiness, the department aims to prepare students for the rapidly evolving technological landscape and contribute meaningfully to society.