

## ELECTRICAL ENGINEERING

### Program Outcomes of Electrical Engineering:

Students are expected to have developed the following outcomes at the end of the B.Tech (Electrical Engineering) program

1. **PO1:Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **PO2:Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **PO3:Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **PO4:Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **PO5:Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **PO6:The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **PO7:Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **PO8:Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **PO9:Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **PO10:Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **PO11:Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **PO12:Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### Programme Educational Objectives (PEOs)

The educational objectives of **Electrical Engineering** are:

- ❖ **PEO1:** To impart electrical engineering oriented knowledge in fundamentals of power

system, control systems, power electronics, electrical machines etc. in order to solve the electrical engineering problems.

- ❖ **PEO2:** To prepare graduates who will be employable in the diversified sections of industry, government organizations, public sector and multinational corporations and/or pursue higher education in electrical engineering or other fields of their interests.
- ❖ **PEO3:** To make graduates implement their attained knowledge into the practical applications of diverse domains in electrical engineering.
- ❖ **PEO4:** To develop among graduates the ability to create and analyze the solutions to real life problems with novel products.
- ❖ **PEO5:** To equip graduates with electrical in-depth education, so that they become responsible technologists.

**Program-specific Outcomes (PSOs):**

- ❖ **PSO 1:** Apply the fundamentals of mathematics, science and engineering knowledge to identify, formulate, design and investigate complex engineering problems of electric circuits, analog and digital electronics circuits, control systems, electrical machines and Power system.
- ❖ **PSO 2:** Apply the appropriate techniques and modern engineering hardware and software tools in electrical engineering to engage in life-long learning and to successfully adapt in multi-disciplinary environments.
- ❖ **PSO 3:** Aware of the impact of professional engineering solutions in societal, environmental context, professional ethics and be able to communicate effectively.
- ❖ **PSO 4:** Produce rich aspirants of electrical engineers by imparting them electrical engineering concepts and the practical implementation in the form of projects.
- ❖ **PSO 5:** Design and analyze the novel solutions to the real life problems related to power grids, renewable energy systems, microgrids, electric vehicles, electro-mechanical devices and electronic circuitry.