

Annexure 1**BUGS Meeting No. 04/2022 Dated April 18, 2022****Vision:**

To be at the forefront of electrical and electronic engineering education, research and innovation to address national and global challenges

Mission:

The mission of the Department of Electrical and Electronic Engineering is to pursue excellence in electrical and electronic engineering education, research and applications for the benefit and betterment of the society. We achieve our mission by:

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| M1 | Educating future graduates who can adapt to a fast-changing technological environment with engineering skills, ethics, and professionalism. |
| M2 | Performing impactful research that would enhance knowledge, develop technologies, and foster innovation for the benefit and betterment of humanity. |
| M3 | Providing creative, pragmatic, and sustainable engineering solutions to local and global challenges ensuring national interests. |

Program Educational Objectives (PEOs):

Within 3 to 5 years of graduation, graduates of the department will be able to:

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| PEO1 | Develop the technical proficiency required to pursue a diverse range of careers. |
| PEO2 | Apply innovative Electrical and Electronic Engineering solutions to meet specific needs of the society exercising high ethical and professional standards. |
| PEO3 | Be competent members and/or leaders of their teams, organizations, and communities. |
| PEO4 | Maintain and enhance professional and technical knowledge through continuous and life-long learning. |

PEO-Mission mapping:

| | PEO1 | PEO2 | PEO3 | PEO4 |
|----|------|------|------|------|
| M1 | ✓ | ✓ | ✓ | ✓ |
| M2 | ✓ | ✓ | ✓ | ✓ |
| M3 | ✓ | ✓ | ✓ | ✓ |

Program Outcomes:

Upon completion of the four years B.Sc. degree in Electrical and Electronic Engineering, a graduate will be able to:

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| PO1 | Engineering Knowledge: Apply knowledge of mathematics, science, and engineering to solve complex electrical and electronic engineering problems. (*K1 to K4). |
| PO2 | Problem Analysis: Identify, formulate, research literature, interpret data, and analyze complex electrical and electronic engineering problems using principles of mathematical, natural and engineering sciences. (K1 to K4). |
| PO3 | Design/development Solution: Design solutions to complex engineering problems and design systems, components, or processes that meet the needs relevant to electrical and electronic engineering with appropriate considerations to public health and safety, cultural, societal, and environmental considerations. (K5). |
| PO4 | Investigation: Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions. (K8). |
| PO5 | Modern tool usage: Use techniques, skills, and modern engineering tools to solve complex and practical engineering problems related to electrical and electronic engineering with understanding of the limitations. (K6). |
| PO6 | The Engineer and Society: Apply reasoning to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems. (K7). |
| PO7 | Environment and sustainability: Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts. (K7). |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice. (K7). |
| PO9 | Individual work and team work: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. |
| PO10 | Communication: Communicate effectively on complex engineering activities with the electrical and electronic engineering and other inter-disciplinary communities 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. |
| PO11 | Project management and finance: Demonstrate 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, to manage projects and in multidisciplinary environments. |
| PO12 | Life-long Learning: Recognize the need for, and ability to engage in life-long learning |

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| | and know contemporary aspects related to the field of electrical and electronic engineering. |
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*Table: Knowledge Profile

| Attribute | |
|------------------|--|
| K1 | A systematic, theory-based understanding of the natural sciences applicable to the discipline |
| K2 | Conceptually based mathematics, numerical analysis, statistics and the formal aspects of computer and information science to support analysis and modeling applicable to the discipline |
| K3 | A systematic, theory-based formulation of engineering fundamentals required in the engineering discipline |
| K4 | 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 |
| K5 | Knowledge that supports engineering design in a practice area |
| K6 | Knowledge of engineering practice (technology) in the practice areas in the engineering discipline |
| K7 | Comprehension of the role of engineering in society and identified issues in engineering practice in the discipline: ethics and the engineer’s professional responsibility to public safety; the impacts of engineering activity; economic, social, cultural, environmental and sustainability |
| K8 | Engagement with selected knowledge in the research literature of the discipline |

PEO-PO mapping:

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|
| PEO1 | ✓ | ✓ | ✓ | | | | | | | | | |
| PEO2 | | | | | | ✓ | ✓ | ✓ | | | | |
| PEO3 | | | | | | | | | ✓ | ✓ | ✓ | |
| PEO4 | | | | ✓ | ✓ | | | | | | | ✓ |