



Manipal University Jaipur

Faculty of Science, Technology and Architecture Department Electronics & Communication Engineering

B.Tech. in Electronics Engineering (VLSI Design and Technology) (AY 2026-27 onwards)

Program Outcomes and Program Specific Outcomes

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 effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.
- [PO 9]. Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.
- [PO 10]. Project management and finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to multidisciplinary 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)

Program Specific Outcomes (PSOs)

- [PSO 1]. An ability to understand the fundamentals of Electronics Engineering and to implement them in various domains of VLSI, communications, Image & Signal Processing.
- [PSO 2]. An ability to use the core and multidisciplinary knowledge for technical breakthroughs in industry and research to address the challenges of real world.
- [PSO 3]. To succeed professionally, the ideal combination of attitude and technical knowledge to sustain passion which results in success stories either in employment or as an entrepreneur.

Program Educational Objectives (PEOs)

- [PEO 1]. Graduates will exhibit the skills necessary to use modern technology and software in the domain of VLSI to address complex, multi-disciplinary problems in the real world.
- [PEO 2]. Graduates will develop strong character with knowledge and understanding of their social duties.
- [PEO 3]. Graduates will take up higher studies to continue research work in the recent trends and technologies.