



Manipal University Jaipur

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

M. Tech. (VLSI and Embedded System Design) (AY 2023-24 onwards)

Program Outcomes and Program Specific Outcomes

Program Outcomes (POs)

- [PO1.] Scholarship of Knowledge: Ability to acquire in-depth knowledge of specific discipline or professional area, including a wider and global perspective, with the capacity to discriminate, evaluate, analyze and synthesize existing and new knowledge.
- [PO2.] Critical Thinking: Analyze complex engineering problems critically, apply independent judgement for synthesizing information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.
- [PO3.] Problem Solving: Thinking laterally and originally, conceptualize and solve engineering problems, evaluate a wider range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal and environmental factors, in the core areas of expertise.
- [PO4.] Research Skills : Extract information pertinent to unfamiliar problems through researching the literature, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyse and interpret data, demonstrate higher order skill and a broader perspective, contribute individually/in group (s) to be development of scientific/technological knowledge in one or more domains of engineering.
- [PO5.] Usage of Modern Tools: Create, select, learn 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.
- [PO6.] Collaborative and Multidisciplinary Work: Possess knowledge and understanding of group dynamics, recognize opportunities and contribute positively on multi-disciplinary scientific research; demonstrate a capacity for self-management, team work and decision making, based on open mindedness, objectivity and rational analysis, in order to achieve common goals and further knowledge as well as self-knowledge.
- [PO7.] Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply the same to one's own work, as a member and leader of a team; manage projects efficiently in respective discipline multidisciplinary environments, after consideration of economics and financial factors.
- [PO8.] Communication Skills : Communicate with the engineering community, and with society at large, on complex engineering activities, confidently and effectively-including being able to comprehend and write effective reports and design documentation by adhering to appropriate standards, make effective presentation, and give and receive clear instructions.
- [PO9.] Life Long Learning : Recognize the need for, and have the preparedness and ability to engage in life-long learning independently, with a high level of enthusiasm and commitment to improve knowledge and competence continuously.
- [PO10.] Ethical Practice and Social Responsibility: Acquire professional and intellectual integrity. Conform to a professional code of conduct, ethics of research and scholarship, consideration of the impact of research outcomes on professional practices and an understanding of responsibility to contribute to the community for sustainable development of society.
- [PO11.] Independent and Reflective Learning : Observe and examine critically the outcomes of one's own action and take corrective measures. Learn from mistakes without depending on external feedback.

Program Specific Outcomes (PSOs)

- [PSO1.] An ability to learn and apply the advanced concepts of VLSI and Embedded System Design, IC design, testing, verification, fabrication, MEMS, flexible electronics and nano-electronics.



Manipal University Jaipur

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

[PSO2.] An ability to solve complex VLSI and embedded system related problems, using latest hardware and software tools, along with analytical skills to arrive at cost effective and efficient solutions.

[PSO3.] Capability to integrate skill sets of technical knowledge with social, environmental and ethical responsibility to pursue a successful global career.

Program Educational Objectives (PEOs)

[PEO 1]. Engage in design of systems, tools and applications in the field of electronics & communication engineering and allied engineering domains.

[PEO 2]. Apply the knowledge of electronics & communication engineering to solve problems of social relevance, and research.

[PEO 3]. Work effectively in a team, carry out multidisciplinary projects, and demonstrate leadership qualities.

[PEO 4]. Proactive in lifelong learning, career enhancement, and adapt to changing professional and societal needs.