



**VIT**<sup>®</sup>  
**Vellore Institute of Technology**  
(Deemed to be University under section 3 of UGC Act, 1956)

**SCHOOL OF ELECTRONICS  
ENGINEERING**

**M. Tech Embedded Systems**

Curriculum

*(2025-26 admitted students)*

## **VISION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY**

- Transforming life through excellence in education and research.

## **MISSION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY**

- **World class Education:** Excellence in education, grounded in ethics and critical thinking, for improvement of life.
- **Cutting edge Research:** An innovation ecosystem to extend knowledge and solve critical problems.
- **Impactful People:** Happy, accountable, caring and effective workforce and students.
- **Rewarding Co-creations:** Active collaboration with national & international industries & universities for productivity and economic development.
- **Service to Society:** Service to the region and world through knowledge and compassion.

## **VISION STATEMENT OF THE SCHOOL OF ELECTRONICS ENGINEERING**

- To be a leader in imparting in-depth and futuristic knowledge of electronics engineering and allied domains that cater to the needs of industry, research, and society.

## **MISSION STATEMENT OF THE SCHOOL OF ELECTRONICS ENGINEERING**

- To create and maintain an environment of excellence in teaching, learning and applied research in the fields of electronics, communication engineering and allied disciplines.
- To collaborate with industries and universities in associated disciplines to pioneer in innovations and technology transfer.
- To equip students with the necessary knowledge and research skills enabling them to be lifelong learners in solving real-life problems, thereby improving the quality of human life and values.



## **M. Tech Embedded Systems**

### **PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)**

**The engineering graduates of the programme will**

**PEO1.** Establish successful careers in industry, research, and academia, leveraging their expertise in advanced Embedded Systems.

**PEO2.** Identify and analyse societal challenges in Embedded Systems, carry out independent research, and articulate technological solutions effectively.

**PEO3.** Effectively collaborate, manage, and execute projects using relevant tools and technologies, upholding professionalism and best practices.

## **M. Tech Embedded Systems**

### **PROGRAMME OUTCOMES (POs)**

**PO1:** An ability to independently carry out research /investigation and development work to solve practical problems.

**PO2:** An ability to write and present a substantial technical report/document.

**PO3:** Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program.

**PO4:** Apply advanced concepts in Embedded System design, addressing real-time constraints using Microcontrollers and FPGA-based platforms.

**PO5:** Utilize cutting-edge hardware and software technologies to design and develop Embedded System applications in compliance with industry standards.

**PO6:** Identify and address research gaps using Embedded Systems to develop solutions for socio-economic, environmental, and multidisciplinary challenges.

## Master of Technology in Embedded Systems

### School of Electronics Engineering

Programme Credit Structure	Credits	Open Elective Courses	03
<b>University Core Courses</b>	39	Engineering   Sciences   Humanities   Social Sciences   Liberal Arts   Economics   Finance   Management	
<b>Professional Core Courses</b>	24		
<b>Professional Elective Courses</b>	14		
<b>Open Elective Courses</b>	03		
<b>Total Graded Credit Requirement</b>	80		
<b>University Core Courses</b>	<b>39</b>		
	<b>L T P C</b>		
MAENG501 Technical Report Writing	1 0 4 3		
MASTS501 Qualitative and Quantitative Skills Practice I	3 0 0 3		
MASTS502 Qualitative and Quantitative Skills Practice II	3 0 0 3		
MASET697 Project Work	0 0 20 10		
MAEDS698 Internship I/ Dissertation I	0 0 20 10		
MAEDS699 Internship II/ Dissertation II	0 0 20 10		
<b>Professional Core Courses</b>	<b>24</b>		
MAEDS501 Embedded System Design	3 1 0 4		
MAEDS502 Microcontroller Architecture and Organization	3 0 2 4		
MAEDS503 Embedded Programming	3 0 2 4		
MAEDS504 In-Vehicle Networking	3 1 0 4		
MAEDS505 Real Time Operating System	3 0 2 4		
MAEDS506 System Design using FPGA	3 0 2 4		
<b>Professional Elective Courses</b>	<b>14</b>		
MAEDS601 Electromagnetic Interference and Compatibility	3 0 0 3		
MAEDS602 Advanced Digital Image Processing	3 1 0 4		
MAEDS603 Design and Analysis of Algorithms	3 1 0 4		
MAEDS604 Hardware Software Codesign	3 0 0 3		
MAEDS605 Modern Automotive Electronic Systems	3 0 0 3		
MAEDS606 Intelligent IoT System Design and Architecture	3 1 0 4		
MAEDS607 Fault Tolerance and Dependable Systems	3 0 0 3		
MAEDS608 Parallel Processing and Computing	3 1 0 4		
MAEDS609 Edge and Cloud Computing	3 0 0 3		
MAEDS610 Cyber Physical Systems	3 1 0 4		
MAEDS611 5G and Next Generation Wireless Systems for Embedded Applications	3 0 0 3		
MAEDS612 Machine Learning and Deep Learning	3 1 0 4		
MAEDS613 Wireless and Mobile Communication for Embedded Applications	3 0 0 3		
MAVLD605 System-On-Chip Design	3 1 0 4		
MAVLD608 Advanced Computer Architecture	3 0 0 3		