MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

Deemed University

Centre for IoT

Admitted Batch: 2025

Tentative Course Structure of B.Tech: Electrical and Computer Engineering (ECE)

S.No.	SEMESTER I	SEMESTER II	SEMESTER III	SEMESTER IV	SEMESTER V	SEMESTER VI	SEMESTER VII	SEMESTER VIII
	I Year		II Year		III Year		IV Year	
1.	Introduction to Electrical and Computer Engineering	Object-Oriented Programming	Probability, Statistics and Optimization	Data Science	Digital Control of Power Electronics	Control Systems	Departmental Elective# (DE-3)	Departmental Elective* (DE-5)
2.	Computer Programming	Sensors & Instrumentation	Electronic Devices and Circuits	Embedded System Design with ARM	Computer Aided Power System	Industrial Automation and Industry 4.0	Departmental Elective* (DE-4)	Open Category Course* (OC-3)
3.	Real-Time Embedded Programming	Computer Organization and Architecture	Data Structures	Design and Analysis of Algorithms	Artificial Intelligence & Machine Learning	Departmental Elective* (DE-2)	Open Category Course *(OC-2)	Industry Internship/ Research Internship/ Innovation & Start-up
4.	Digital Logic Design	Operating Systems	Computer Networks and IoT Communication Protocols	IoT Hardware Design	Departmental Elective* (DE-1)	Open Category Course (OC-1)	Skill Enhancement Program/Research Internship/ On Job Training	Professional Development
5.	Linear Algebra and Transform Techniques	Basic Electrical and Electronics Engineering	Electromechanical Energy Conversion	Embedded Control of Rotating Machines	Edge Computing using AI	Digital Twins for Electrical Systems	Creative Problem Solving	
6.	Computer Programming Lab	Object-Oriented Programming Lab	Problem Solving through Python Programming	Data Science Lab	Power System Engineering Lab	Smart Grid Technologies Lab		
7.	Embedded Programming Lab	Sensors & Instrumentation Lab	Data Structures Lab	Design and Analysis of Algorithms Lab	Artificial Intelligence & Machine Learning Lab	Creative Problem Solving		
8.	Semester Proficiency$	Electrical and Electronics Engineering Lab	Electromechanical Energy Conversion Lab	Power Electronics Lab	Semester Proficiency$	Semester Proficiency$		
9.	Micro Project-I#	Semester Proficiency$	Semester Proficiency	Semester Proficiency$	Cornerstone Project	Capstone Project		
10.	Language Lab	Micro Project-II#	Macro Project-I	Macro Project-II#	**MAC:** Supply Chain Management	**MAC:** Disaster Management		
11.	**MAC:** Universal Human Values & Professional Ethics	**NEC:** (Activity Based Learning)	**MAC:** Cyber Security	**MAC:** Project Management, Economics & Financing	Professional Skills &Competencies - I	Professional Certification		
12.	---	**MAC:** Sustainability & Environmental Science	Self-learning (SWAYAM/NPTEL/MOOC)	Competitive Programming Lab		Professional Skills & Competencies - II		
13.	---	Skill Internship Program(Soft Skill)	**NEC** (Activity Based Learning)	**NEC** (Activity Based Learning)				
14.	---	---	---	Skill Internship Program				
13.	**Mandatory Workshop:** Report Writing & ICCV	**Mandatory Workshop:** Indian Knowledge System and Career Planning	**Mandatory Workshop:** Mastering Competitive Success	**Mandatory Workshop:** Writing Research and IPR	**Mandatory Workshop:** Internships: Explore, Apply and Excel	**Mandatory Workshop:** Placement Readiness		
Credits	**20**	**22**	**22**	**24**	**20**	**20**	**14**	**18**