

माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.), INDIA



Deemed University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ GRADE

Centre for Artificial Intelligence

B. Tech. Information Technology (Artificial Intelligence and Robotics) Admitted Batch: 2025

COURSE STRUCTURE

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Foundations of Artificial Intelligence & Robotics	Modern Computer Architectures	Probability & Random process	Calculus & Optimization techniques	Theory of Computation	AI for Robotics	Departmental Elective (DE-3)	Departmental Elective (DE-5)
Electronic Systems	Object Oriented Programming	Design and Analysis of Algorithms	Robot Kinematics	Cloud Computing & Virtualization	Image Processing & Computer Vision	Departmental Elective (DE-4)	Open Category Course (OC-3)
Digital Logic Design	Discrete Structures	Computer Networks	Network & Web Security	Robot Operating System	Departmental Elective (DE-2)	Open Category Course (OC-2)	Industry Internship/ Research Internship/ Innovation & Start-up
Problem Solving & Programming	Data Structures	Control System	Database Management System	Departmental Elective (DE-1)	Open Category Course (OC-1)	Skill Enhancement Program/Research Internship	Professional Development
Linear Algebra	Sensors & Actuators	Operating System	Software Engineering	Data Science	Machine Learning & Optimization	Creative Problem Solving	Honours or Minor Degree (Optional)
Problem Solving & Programming Lab	Data Structures Lab	Design Analysis and Algorithm Lab	Competitive Programming Lab	Robot Operating System Lab	AI for Robotics Lab	Honours or Minor Degree (Optional)	Specialization Course # (SPC-3)
Electronics Systems Lab	Object Oriented Programming Lab	Problem Solving through Python Programming	Robot Kinematics Lab	Cloud Computing & Virtualization Lab	Image Processing & Computer Vision Lab		
Novel Engaging Course	Sensors & Actuators Lab	Novel Engaging Course	Database Management System lab	Cornerstone Project	Capstone Project		
Language Lab	Novel Engaging Course	Macro Project-I	Novel Engaging Course	Supply Chain Management	Disaster Management		
Semester Proficiency	Semester Proficiency	Semester Proficiency	Semester Proficiency	Semester Proficiency	Semester Proficiency		
Micro Project-I	Micro Project-II	Cyber Security	Macro Project-II	Honours or Minor Degree (Optional)	Honours or Minor Degree (Optional)		
Universal Human Values & Professional Ethics (UHVPE)	Sustainability & Environmental Science	Self Learning/Presentation	Project Management, Economics & Financing	Professional Skills & Competencies - I	Professional Certification & Professional Skills & Competencies - II		
	Skill Internship Program (Soft Skill)		Honours or Minor Degree (Optional)		Skill Enhancement Program/Research Internship		
Mandatory Workshop on ICT	Mandatory Workshop on IKS & Career Planning	Mandatory Workshop on IOT	Mandatory Workshop on Life Skills & CV	Mandatory Workshop on Blockchain	Mandatory Workshop on IPR		

	Departmental Core Courses
	Basic Science Courses
	Engineering Science Courses
	Mandatory Audit Courses/Workshops

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<i>Departmental Elective Courses</i>	
B. Tech. Information Technology (Artificial Intelligence and Robotics)	
<i>Microprocessor & Microcontrollers</i>	<i>Software Conceptual Design</i>
<i>Linear Systems Theory</i>	<i>Electronic System Design Hands on Circuits and PCB Design</i>
<i>Foundation of Cognitive Robotics</i>	<i>Modern Control Engineering</i>
<i>Ethics in Engineering Practice</i>	<i>Mechanics and Control of Robotic Manipulators</i>
<i>Introduction to Quantum Computing</i>	<i>Information Theory & Coding</i>
<i>Cryptography and Network Security</i>	<i>Sensor Technology: Physics, Fabrication and Circuits</i>
<i>Biology for Engineers</i>	<i>Multi-Core Computer Architecture</i>
<i>Distributed Optimization and Machine Learning</i>	<i>Industrial Robotics: Theories for Implementation</i>
<i>Data Mining & Pattern Warehousing</i>	<i>Computational Complexity</i>
<i>Embedded Systems</i>	<i>Mechatronics and Manufacturing Automation</i>
<i>Deep Learning for Computer Vision</i>	<i>Ethics in Engineering Practice</i>
<i>Natural Language Processing</i>	<i>Big Data Computing</i>
<i>Reinforcement Learning</i>	<i>Introduction to Internet of Things</i>
<i>Open Category Courses</i>	
<i>AI in Economics and Finance</i>	<i>Renewable Energy Systems</i>
<i>Cognitive Science</i>	<i>Materials Science</i>
<i>Software Testing</i>	<i>Entrepreneurship and Innovation</i>
<i>Biomechanics</i>	<i>Environmental Sustainability</i>
<i>Computational Neuroscience</i>	<i>Bioinformatics</i>