



# 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. in Artificial Intelligence (AI)

## COURSE STRUCTURE

Admitted Batch: 2025

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Foundations of Artificial Intelligence	Modern Computer Architectures	Probability & Random process	Calculus & Optimization techniques	Machine Learning and Data Science	Cognitive Computing and Deep Learning	Departmental Elective (DE-3)	Departmental Elective (DE-5)
Internet & Web Technologies	Object Oriented Programming	Design and Analysis of Algorithms	Theory of Computation	Cloud Computing & Virtualization	Image Processing	Departmental Elective (DE-4)	Open Category Course (OC-3)
Digital Logic Design	Discrete Structures	Computer Networks	Network & Web Security	Evolutionary Algorithms and Optimization	Departmental Elective (DE-2)	Open Category Course (OC-2)	Industry Internship/ Research Internship/ Innovation & Start-up
Problem Solving & Programming	Data Structures	Knowledge Representation and Reasoning	Database Management System	Departmental Elective (DE-1)	Open Category Course (OC-1)	Specialization Course (SPC-3)	Professional Development
Linear Algebra	Basic Electrical & Electronics Engineering	Operating System	Software Engineering	Specialization Course (SPC-1)	Specialization Course (SPC-2)	Creative Problem Solving	Honours or Minor Degree (Optional)
Problem Solving & Programming Lab	Data Structures Lab	Design Analysis and Algorithm Lab	Database Management System Lab	Machine Learning & Data Science Lab	Cognitive Computing and Deep Learning Lab	Honours or Minor Degree (Optional)	
Internet & Web Technologies Lab	Object Oriented Programming Lab	Problem Solving through Python Programming	Java programming Lab	Cloud Computing & Virtualization Lab	Image Processing Lab	Skill Enhancement Program/ Research Internship/ On Job Training	
Novel Engaging Course	Basic Electrical & Electronics Engineering Lab	Novel Engaging Course	Competitive Programming lab	Cornerstone Project	Capstone Project		
Language Lab	Novel Engaging Course	Macro Project-I	Novel Engaging Course	Supply Chain Management	Disaster Management		
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	Semester Proficiency	Semester Proficiency		
Semester Proficiency	Skill Internship Program	Semester Proficiency	Honours or Minor Degree (Optional)	Mandatory Workshop on Blockchain	Mandatory Workshop on Placements &		
Mandatory Workshop on Report Writing & ICCV	Mandatory Workshop on IKS & Career Planning	Mandatory Workshop on IoT	Mandatory Workshop on CV & Life Skills				

	Departmental Core
	Basic Science Courses
	Engineering Science Courses
	Mandatory Audit Courses

Semester Proficiency

Professional Certification  
& Skill Internship Program

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**Departmental Elective Courses**

**B. Tech.in Artificial Intelligence(AI)**

<i>Compiler Design</i>	<i>Software Conceptual Design</i>
<i>Generative AI</i>	<i>Responsible and Safe AI System</i>
<i>Pattern Recognition</i>	<i>Introduction to Computer and Network Performance Analysis using Queuing Systems</i>
<i>Ethics in Engineering Practice</i>	<i>Social Network Analysis</i>
<i>Introduction to Quantum Computing</i>	<i>Applied Accelerated AI</i>
<i>Cryptography and Network Security</i>	<i>Big Data Computing</i>
<i>Augmented and Virtual Reality</i>	<i>Multi-Core Computer Architecture</i>
<i>Distributed Optimization and Machine Learning</i>	<i>Introduction to Computer Vision</i>
<i>Data Mining &amp; Pattern Warehousing</i>	<i>Computational Complexity</i>
<i>Embedded Systems</i>	<i>Artificial Intelligence for Economics</i>
<i>Big Data Computing</i>	<i>Deep Learning for Computer Vision</i>
<i>Introduction to Internet of Things</i>	<i>Natural Language Processing</i>
<i>Introduction to Industry 4.0 and Industrial Internet of Things</i>	<i>Reinforcement Learning</i>
<i>Computer graphics</i>	<i>Combinatorics</i>
<b>Open Category Courses</b>	
<i>Ethics and Technology</i>	<i>Human-Computer Interaction (HCI)</i>
<i>Design Thinking and Innovation</i>	<i>Linguistics and Natural Language Processing</i>
<i>Software Testing</i>	<i>Entrepreneurship and Innovation</i>
<i>AI in Economics and Finance</i>	<i>Quantum Computing and AI</i>
<i>Intellectual Property Rights and Cyber Law</i>	<i>Game Theory and Strategic Decision Making</i>

