

# 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



MITS

## Centre for Artificial Intelligence

### B. Tech. in Artificial Intelligence and Data Science (AI&DS) Admitted Batch-2025

#### COURSE STRUCTURE

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Foundations of Data Science	Modern Computer Architectures	Probability & Random process	Calculus & Optimization techniques	Data Mining & Warehousing	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	Big Data Analytics	Departmental Elective (DE-4)	Open Category Course (OC-3)
Digital Logic Design	Discrete Structures	Computer Networks	Network & Web Security	Soft Computing Techniques	Departmental Elective (DE-2)	Open Category Course (OC-2)	Departmental Elective* (DE-4)
Problem Solving & Programming	Data Structures	Database Management System	Data Science	Departmental Elective (DE-1)	Open Category Course (OC-1)	Skill Enhancement Program/Research Internship	Specialization Course # (SPC-3)
Linear Algebra	Basic Electrical & Electronics Engineering	Operating System	Software Engineering	Semester Proficiency \$	Exploratory Data Analytic	Creative Problem Solving	Skill Enhancement Program/ Research Internship/ On Job
Problem Solving & Programming	Data Structures Lab	Design Analysis and Algorithm Lab	Data Science Lab	Data Mining & Warehousing Lab	Deep Learning Lab	Honours or Minor Degree (Optional)	Training Professional Development
Internet & Web Technologies Lab	Object Oriented Programming Lab	Problem Solving through Python Programming	Java programming Lab	Cloud Computing & Virtualization Lab	Data handling & Visualization Lab		
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	Professional Skills & Competencies - I	Professional Certification & Professional Skills & Competencies - II		
Semester Proficiency	Skill Internship Program	Semester Proficiency	Honours or Minor Degree (Optional)	Semester Proficiency	Semester Proficiency		
Mandatory Workshop on Report Writing & ICCV	Mandatory Workshop on IKS & Career Planning	Mandatory Workshop on Mastering Competitive Success	Mandatory Workshop on Research & IPR	Mandatory Workshop on Internships & Excel	Mandatory Workshop on Placements & Interview		

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

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**Departmental Elective Courses**

**B. Tech.in Artificial Intelligence and Data Science (AI & DS)**

<i>Principles of Compiler Design</i>	<i>Software Conceptual Design</i>
<i>Generative AI</i>	<i>Responsible and Safe AI System</i>
<i>Pattern Recognition</i>	<i>Deep Learning for Computer Vision</i>
<i>Ethics in Engineering Practice</i>	<i>System Analysis &amp; Design</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>Applied Artificial Intelligence</i>
<i>Microprocessors &amp; Microcontrollers</i>	<i>Computational Complexity</i>
<i>Embedded Systems</i>	<i>Artificial Intelligence for Economics</i>
<i>Advanced Computer Architecture</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>
<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>Complex Systems and Network Theory</i>	<i>Creative Writing and Communication</i>
<i>Intellectual Property Rights and Cyber Law</i>	<i>Game Theory and Strategic Decision Making</i>

