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 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)	Industry Internship/ Research Internship/ Innovation & Start-up
Problem Solving & Programming	Data Structures	Database Management System	Data Science	Departmental Elective (DE-1)	Open Category Course (OC-1)	Skill Enhancement Program/Research Internship	Professional Development
Linear Algebra	Basic Electrical & Electronics Engineering	Operating System	Software Engineering	Machine Learning & Optimization	Exploratory Data Analytic	Creative Problem Solving	Honours or Minor Degree (Optional)
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)	
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 Proficeincy	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

Centre for Artificial Intelligence

Departmental Elective Courses	
B. Tech. in Artificial Intelligence and Data Science (AI & DS)	
Principles of Compiler Design	*Software Conceptual Design*
Generative AI	*Responsible and Safe AI System*
Pattern Recognition	*Deep Learning for Computer Vision*
Ethics in Engineering Practice	*System Analysis & Design*
Introduction to Quantum Computing	*Applied Accelerated AI*
Cryptography and Network Security	*Big Data Computing*
Augmented and Virtual Reality	*Multi-Core Computer Architecture*
Distributed Optimization and Machine Learning	*Applied Artificial Intelligence*
Microprocessors & Microcontrollers	*Computational Complexity*
Embedded Systems	*Artificial Intelligence for Economics*
Advanced Computer Architecture	*Ethics in Engineering Practice*
Natural Language Processing	*Big Data Computing*
Reinforcement Learning	*Introduction to Internet of Things*
Open Category Courses	
Ethics and Technology	*Human-Computer Interaction (HCI)*
Design Thinking and Innovation	*Linguistics and Natural Language Processing*
Software Testing	*Entrepreneurship and Innovation*
Complex Systems and Network Theory	*Creative Writing and Communication*
Intellectual Property Rights and Cyber Law	*Game Theory and Strategic Decision Making*