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 Machine Learning (AI & ML)

COURSE STRUCTURE

(Tentative)

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Foundations of Machine Learning	Modern Computer Architecture	Probability & Random process	Calculus & Optimization techniques	Optimization Techniques in Machine Learning	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 & Big Data	Image Processing & Computer Vision	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	Machine Learning	Departmental Elective (DE-1)	Open Category Course (OC-1)	Specialization Course (SPC-3)	Professional Development
Linear Algebra	Basic Electrical & Electronics Engineering	Operating Systems	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	Machine Learning Lab	Optimization Techniques in Machine Learning 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 & Big Data Lab	Image Processing & Computer Vision 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	Skill Internship Program-II	Project Management, Economics & Financing				
Skill Internship Program-I			Honours or Minor Degree (Optional)				

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

Note:

1. *Mandatory Workshops in each semester at Department Level (Duration: Two Days)*

Departmental Elective Courses	
B. Tech. in (Artificial Intelligence and Machine Learning)	
High Performance Computing	*Software Conceptual Design*
Generative AI	*Responsible and Safe AI System*
Pattern Recognition	*Deep Learning for Computer Vision*
Ethics in Engineering Practice	*Cyber Security and Privacy*
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	*Python for Data Science*
Data Mining & Pattern Warehousing	*Computational Complexity*
Embedded Systems	*Artificial Intelligence for Economics*
Advanced Computer Architecture	*Reinforcement Learning*
Natural Language Processing	*Ethics in Engineering Practice*
Introduction to Internet of Things	*Big Data Computing*
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*
Specialization Courses Tracks	
Specialization in Augmented and Virtual Reality	**Specialization in Cyber Security**
Foundations of AR-VR	*Blockchain*
3D Modelling	*Digital Forensics*
Game Design	*Biometric Security*
Animation Design Theory	*Ethical Hacking*