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)

COURSE STRUCTURE *(Tentative)*

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Foundations of Artificial Intelligence & Robotics	Modern Computer Architecture	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)	Specialization Course (SPC-3)	Professional Development
Linear Algebra	Sensors & Actuators	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	Competitive Programming Lab	Robot Operating System Lab	AI for Robotics Lab	Honours or Minor Degree (Optional)	
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		
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)				

Legend:

Color	Category
Green	Departmental Core Courses
Cyan	Basic Science Courses
Magenta	Engineering Science Courses
Dark Green	Mandatory Audit Courses

Note:

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

Centre for Artificial Intelligence

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