माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed to be University
(Declared under Distinct Category by Ministry of Education, Goverment of India)
NAAC ACCREDITED WITH A++ GRADE
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DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE STRUCTURE

(Tentative)

I SEMESTER	II SEMESTER	III SEMESTER	IV SEMESTER	V SEMESTER	VI SEMESTER	VII SEMESTER	VIII SEMESTER
Electrical Engineering Materials	Network Analysis	Fourier Series, Matrices and Differential Equations	Electrical Machines-II	Switchgear & Protection	Control Systems	Departmental Elective (DE-3)	Departmental Elective* (DE-5)
Computer Programming	Electrical & Electronics Measurement	Data Structures	Power System –II	Energy Auditing	Artificial Intelligence & Machine Learning	Departmental Elective* (DE-4)	Open Category Course* (OC-3)
Basic Civil Engineering & Mechanics	Analog & Digital Electronics	Electromagnetic Field Theory	Power Electronics	Data Science	Departmental Elective* (DE-2)	Open Category Course (OC-2)	Industry Internship/ Research Internship/ Innovation & Start-up
Basic Mechanical Engineering	Calculus and Laplace Transforms	Electrical Machines-I	Signal & Systems	Departmental Elective* (DE-1)	Open Category Course (OC-1)	Specialization Course (SPC-3)	Professional Development
Basic Electrical & Electronics Engineering	Engineering drawing	Power System–I	Microprocessor & Microcontroller	Specialization Course (SPC-1)	Specialization Course (SPC-2)	Creative Problem Solving	**Honours or Minor Degree (Optional)**
Computer Programming Lab	Electrical & Electronics Measurement Lab	Electrical Machines-I Lab	Electrical Machines-II Lab	Switchgear & Protection Lab	Control System Lab	**Honours or Minor Degree (Optional)**	
Electrical & Electronics Engineering Lab	Problem Solving through Python Programming	Power System –I Lab	Power System –II Lab	Data Science Lab	Artificial Intelligence & Machine Learning Lab		
Engineering Physics Lab	Workshop Practice for Electrical Engineering	Self-learning/ Presentation (SWAYAM/NPTEL/MOOC)	Power Electronics & Drives Lab	Cornerstone Project	Capstone Project		
Novel Engaging Course	Novel Engaging Course	Novel Engaging Course	Novel Engaging Course	Supply Chain Management	Disaster Management		
Micro Project-I	Micro Project-II	Macro Project-I	Macro Project-II	**Honours or Minor Degree (Optional)**	**Honours or Minor Degree (Optional)**		
Universal Human Values & Professional Ethics (UHVPE)	Sustainability & Environmental Science	Cyber Security	Project Management, Economics & Financing				
Skill Internship Program-I		Skill Internship Program-II	**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) from I to VII Semester***

Departmental Elective Courses	***Open Category Courses***
Special Machines & Drives	*Electrical Technology*
Energy Storage Systems and Applications	*Energy Auditing*
HVDC & FACTS	*Electric Vehicles*
Electric Vehicles	*Biomedical Instrumentation*
Design of Electrical Systems	*Energy Conservation & Management*
Switched Mode Power Conversion	*Applications of Electrical Equipment& Motors*
Restructured Power Systems	*Bio-Inspired Algorithms and Applications*
Utilization of Electrical Energy	*Basic Electric Machines*
Power System Harmonics	*Electrical and Electronics Measuring Instruments & Techniques*
Energy Auditing	*Robotics & Automation*
Operation and control of Power Systems	*Elements of Smart Grid System*
Power Electronics Applications to Power	
Digital Control	
Bio-Inspired Algorithms and Applications	
Industrial Instrumentation and Automation	
Multivariable Control	
Specialization Courses Tracks	
Specialization in Smart Grid Technologies	***Specialization in Power System & Energy***
Elements of Smart Grid System	*Sustainable and Renewable Energy Technology*
Wide Area Monitoring and Control	*Distributed Generation & Micro Grids*
Smart Grid Protection	*Power System Planning, Operation & Control*
Smart Grid Communications and Protocols	*Energy Storage Technologies*