MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.)

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Electronics Engineering

CO Attainment for the session January - June 2022

Semester	Course	CO	CO Statement	Direct CO Attainment	Indirect CO Attainment	Total CO Attainment	Target Attainment	Gap	Action Taken
Semester - II	140211 Electronics Devices	CO1	**Analyze** the properties of semiconductor materials.	2.2	2.30	**2.22**	2.0	-0.22	More assignments should be given and solutions should be discussed
		CO2	**Understand** construction and working of different diodes.	1.8	2.63	**1.97**	2.0	+0.03	Level of Quiz. Assignment, midsem and endsem should be improved
		CO3	**Analyze** the operation of Bi-polar junction transistors.	2.7	2.63	**2.69**	2.0	-0.69	More numericals can be added in assignments
		CO4	**Examine** the working of Field EffectTransistors.	2.9	2.75	**2.87**	2.0	-0.87	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Analyze** the working of power electronics devices.	2.3	2.81	**2.40**	2.0	-0.40	More tutorials can be given
	140212 Engineering Materials	CO1	**Classify** engineering materials.	2.2	2.30	**2.22**	2.0	-0.22	More assignments should be given and solutions should be discussed
		CO2	**Analyze** the characteristics of conducting, dielectric and insulating materials.	1.8	2.63	**1.97**	2.0	+0.03	More tutorials can be given
		CO3	**Analyze** the characteristics of semi-conducting materials.	2.7	2.63	**2.69**	2.0	-0.69	More numericals can be added in assignments
		CO4	**Describe** the energy level for semiconductor materials.	2.9	2.75	**2.87**	2.0	-0.87	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Describe** nano-materials with their applications.	2.3	2.81	**2.40**	2.0	-0.40	More tutorials can be given
	140015 EEES	CO1	**Describe** various energy resources, their conversion to electrical power and role in technological & economic development.	3	2.63	**2.93**	2.0	-0.93	Level of Quiz. Assignment, midsem and endsem should be improved

		CO2	**Understand** the basic concepts of sustainable engineering practices.	3	2.75	**2.95**	2.0	-0.95	More HOT problems can be added in assignments
		CO3	**Recognize** the impact of pollution on the ecosystem and control policies adopted at national/international levels.	2.6	2.63	**2.61**	2.0	-0.61	Level of Quiz. Assignment, midsem and endsem should be improved
		CO4	**Illustrate** the concepts of ecosystems and their conservation.	3	2.75	**2.95**	2.0	-0.95	More HOT problems can be added in assignments
		CO5	**Solve** practical problems of society in a sustainable and ethical manner.	3	2.63	**2.93**	2.0	-0.93	Level of Quiz. Assignment, midsem and endsem should be improved
		CO6	**Fulfill** professional duties keeping in mind the environmental safety, health, and welfare of public.	2.3	2.75	**2.39**	2.0	-0.39	More tutorials can be given
Semester - IV	140411 Digital Circuits & Systems	CO1	**Implement** the Boolean expression using basic and universal logic gates	2.4	2.5	**2.40**	2.0	-0.40	Higher order thinking questions can be included in the assignments
		CO2	**Design** different combinational logic circuits	2.4	2.4	**2.40**	2.0	-0.40	Higher order thinking questions can be included in the assignments
		CO3	**Design** various latches and flip-flops	2.8	2.2	**2.70**	2.0	-0.70	Higher order thinking questions can be included in the assignments
		CO4	**Design** various shift registers and counters using flip-flops	1.4	2.0	**1.50**	2.0	+0.50	More tutorials can be given
		CO5	**Analyze** different types of logic families, semiconductor memories, & multivibrators.	1.4	2.3	**1.60**	2.0	+0.40	Level of Quiz. Assignment, midsem and endsem should be improved
	140412 Analog Integrated Circuits	CO1	**Compare** the efficiency of various power amplifiers.	2.25	2.0	**2.20**	2.0	-0.20	More numericals can be added in assignments
		CO2	**Analyze** the parameters of multistage amplifiers.	2.45	1.7	**2.30**	2.0	-0.30	Level of Quiz. Assignment, midsem and endsem should be improved
		CO3	**Design** Multivibrator circuits using IC 555.	2.25	2.0	**2.20**	2.0	-0.20	More tutorials can be given
		CO4	**Design** the electronic circuits using Operational amplifier.	2.45	2.2	**2.40**	2.0	-0.40	More assignments should be given and solutions should be discussed
		CO5	**Implement** the active filters based on given specifications.	2.5	2.0	**2.40**	2.0	-0.40	Level of Quiz. Assignment, midsem and endsem should be improved
	140413	CO1	**Analyze** the amplitude modulation, their generation & detection methods.	2.5	2.9	**2.58**	2.0	-0.58	More numericals can be added in assignments

	Analog Communication	CO2	**Explain** the generation and detection techniques for angle modulated signal.	1.8	2.3	**1.90**	2.0	+0.10	Level of Quiz. Assignment, midsem and endsem should be improved
		CO3	**Explain** the working of transmitter and receiver	2.0	2.0	**2.00**	2.0	-0.00	Higher order thinking questions can be included in the assignments
		CO4	**Evaluate** the statistical parameters for general PDF/CDF	1.6	2.6	**1.80**	2.0	+0.20	Higher order thinking questions can be included in the assignments
		CO5	**Evaluate** the effects of noise on modulation techniques.	2.1	2.5	**2.18**	2.0	-0.18	More tutorials can be given
	140414 Communication Networks	CO1	**Design** the symmetrical and asymmetrical attenuators.	2.3	1.8	**2.20**	2.0	-0.20	Higher order thinking questions can be included in the assignments
		CO2	**Synthesize** the network for a given positive and minimum positive real function.	2.3	1.6	**2.16**	2.0	-0.16	Level of Quiz. Assignment, midsem and endsem should be improved
		CO3	**Design** passive filters for the given specifications.	2.2	1.7	**2.10**	2.0	-0.10	Higher order thinking questions can be included in the assignments
		CO4	**Analyze** the characteristics of various transmission lines.	2.0	1.5	**1.90**	2.0	+0.10	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Calculate** the impedance and SWR graphically /analytically.	1.9	1.5	**1.82**	2.0	+0.18	Level of Quiz. Assignment, midsem and endsem should be improved
Semester - VI	140601 Microprocessor Interfacing	CO1	**Explain** the architecture and organization of 8085 microprocessors.	2.9	2.45	**2.81**	2.0	-0.81	Higher order thinking questions can be included in the assignments
		CO2	**Develop** assembly language programming skill for 8085.	3	2.44	**2.89**	2.0	-0.89	Higher order thinking questions can be included in the assignments
		CO3	**Design** memory and I/O interfacing circuits using 8255, 8253/8254, 8257/8237 and 8259A with 8085 microprocessor	3	2.38	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
		CO4	**Illustrate** 8086 microprocessor architecture and programming skills.	3	2.41	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
		CO5	**Discuss** 8051 microcontroller architecture and its application in Embedded systems.	3	2.41	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
	140602 Digital Signal Processing	CO1	**Analyze** discrete time system using transform methods	3	2.18	**2.84**	2.0	-0.84	Level of Quiz. Assignment, midsem and endsem should be improved
		CO2	**Compute** DFT using FFT algorithms.	3	2.14	**2.83**	2.0	-0.83	Higher order thinking questions can be included in the assignments
		CO3	To **Design** IIR Filters	3	2.36	**2.87**	2.0	-0.87	Higher order thinking questions can be included in the assignments

		CO4	To **Design** FIR Filters.	2.30	2.27	**2.29**	2.0	-0.29	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Apply** the concept of multi-rate signal processing in practical applications.	1.70	2.14	**1.79**	2.0	+0.21	Level of Quiz. Assignment, midsem and endsem should be improved
	140603 Data Communication	CO1	**Analyze** the error and flow control in communication network.	3.0	2.32	**2.86**	2.0	-0.86	Higher order thinking questions can be included in the assignments
		CO2	**Explain** the concepts of MAC layer.	3.0	2.45	**2.89**	2.0	-0.89	Higher order thinking questions can be included in the assignments
		CO3	**Identify** the different types of routing used in IP.	3.0	2.38	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
		CO4	**Classify** the transport mechanism in TCP/UDP.	3.0	2.32	**2.86**	2.0	-0.86	Higher order thinking questions can be included in the assignments
		CO5	**Explore** the different application protocol used in internetworking.	3.0	2.41	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
	DE-1 Optical Communication	CO1	**Explain** the basic elements of optical fiber transmission.	3.0	2.38	**2.88**	2.0	-0.88	Higher order thinking questions can be included in the assignments
		CO2	**Discuss** fiber fabrication, splicing and optical connectors.	3.0	2.34	**2.87**	2.0	-0.87	Higher order thinking questions can be included in the assignments
		CO3	**Describe** the working of optical sources and optical detectors.	1.60	2.41	**1.76**	2.0	+0.24	More assignments should be given and solutions should be discussed
		CO4	**Calculate** the channel impairments like losses and dispersion.	2.30	2.38	**2.32**	2.0	-0.32	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Discuss** Coherent optical transmission system and optical networks	1.70	2.21	**1.80**	2.0	+0.20	More numericals can be added in assignments
	DE-1 Antenna	CO1	**Evaluate** various parameters of the antenna.	1.8	2.75	**1.99**	2.0	+0.01	Level of Quiz. Assignment, midsem and endsem should be improved
		CO2	**Analyze** the design parameters and radiation mechanism of wire antennas.	3.0	2.63	**2.93**	2.0	-0.93	More tutorials can be given
		CO3	**Design** antenna array for the given radiation characteristics.	3.0	2.75	**2.95**	2.0	-0.95	More assignments should be given and solutions should be discussed
		CO4	**Analyze** the design parameters and radiation characteristics of Aperture and special antennas.	2.4	2.81	**2.48**	2.0	-0.48	Level of Quiz. Assignment, midsem and endsem should be improved

		CO5	**Describe** effects of earth and its atmosphere on radio wave propagation.	3	2.75	**2.95**	2.0	-0.95	More numericals can be added in assignments
	DE-1 Telecommunication Switching Network	CO1	**Describe** fundamentals of telecommunication systems and associated technologies	3.0	2.19	**2.84**	2.0	-0.84	Level of Quiz. Assignment, midsem and endsem should be improved
		CO2	**Design** multi stage switching structures involving time and space switching stages	1.8	2.19	**1.88**	2.0	+0.12	More tutorials can be given
		CO3	**Analyze** and evaluate the fundamental telecommunication traffic models.	1.8	2.15	**1.87**	2.0	+0.13	More assignments should be given and solutions should be discussed
		CO4	**Examine** the working of Telephone Networks.	1.8	2.15	**1.87**	2.0	+0.13	Level of Quiz. Assignment, midsem and endsem should be improved
		CO5	**Demonstrate** broad knowledge of fundamental principles and technical standards underlying Data Networks.	1.8	2.15	**1.87**	2.0	+0.13	More numerical can be added in assignments

Detailed sheets link:- https://drive.google.com/drive/folders/1XpBX4wv8lhhyMRKHz-ZgM2CNxIffV-qy?usp=sharing

Total No of courses	Total number of COs	Number of COs NOT attained target level	% of COs not attained	Action taken
13	**66**	**16**	**24.2%**	• More numerical can be added in assignments. Also more tutorials should be given & solutions should be discussed related to specific CO • Conduct additional Classes focused on specific CO. • Conduct Interaction session to bridge the gap.

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