

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
1	#REF!	III	CO-1	Apply the concept of partial differentiation to solve partial differential equations.	K3	3																
			CO-2	Apply the method of separation of variables to solve wave, heat, and Laplace equation with transmission lines.	K3			3														
			CO-3	Apply the concept of statistics in moments, skewness, kurtosis and curve fitting, correlation, regression and their properties.	K3	3																
			CO-4	Apply the concept of probability and random variables to evaluate probability distributions	K3				3													
			CO-5	Apply the concept of hypothesis testing and statistical quality control to create control charts.	K3	3					2											
			BAS 303		K3	3.00		3.00	3.00	2.00												
2	#REF!	III	CO-1	To Illustrate the basic concepts, principles and working of semiconductor physics and Devices.	K2	2																
			CO-2	To apply the phenomenon of Charge carriers, Energy bands in semiconductors, solid state devices and its related parameters.	K3	2														3		
			CO-3	To Use the characteristics of the p-n junction diode and Optoelectronic devices to find their related parameters.	K3	3		2												3	2	2
			CO-4	To explain the concept of BJT and it's applications.	K4	3		2												3	2	2
			CO-5	To analyze the structure and characteristics of MOSFETs.	K3	3		2												3	2	2
			BEC 301			2.60		2.00										3.00	2.00	2.00		
3	#REF!	III	CO-1	To apply the concept of Boolean algebra for realizing digital circuits using logic gates.	K3	2	2												3			
			CO-2	Design and analyze modular combinational circuits with MUX / DEMUX, Decoder & Encoder	K3	2	3	2												3		
			CO-3	Design & analyze synchronous sequential logic circuits	K3	3	3	2												3		
			CO-4	Explain the concept of various logic families.	K3	2															3	
			CO-5	Exaplain various ADC and DAC and application in amplifier, integrator etc.	K3	3	2														3	
			#REF!		K3	2.40	2.50	2.00										3.00				
4	#REF!	III	CO-1	To Illustrate the concepts of network analysis and synthesis.	K3															2		
			CO-2	To calculate different parameters for networks using basic laws (Ohm's law, KVL and KCL)	K3	3														2	2	
			CO-3	To apply fourier series for representing a periodic functions and to solve the networks	K3	3														3		
			CO-4	To apply the concept of transformation tool for continuous time signals and Networks.	K3	3														3		
			CO-5	To determine different network functions for the analysis of two port devices.	K3		3													3		3
			#REF!		K3	3.00	3.00											2.75	2.00	2.50		

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
5	#REF!	III	CO-1	UNDERSTAND about the need of value education and harmony in self, family, society and nature.	K2						1	3	3	1			1					
			CO-2	APPLY the understanding of value education to ensure harmony at all the four levels of living.	K3									3	1							
			CO-3	ANALYZE about self, feelings in relationship, society and relevance of nature.	K4								3	2					1			
			CO-4	EVALUATE their participation (Thought, Behaviour, Work, Realization) at all the four levels of living.	K5									3	3	3			1			
			CO-5	DEVELOP their emotional, social and professional competence.	K4								3	1	2	1						
			#REF!					K3						2.33	2.25	2.75	1.50			1.00		
6	#REF!	IV	CO-1	Explain the software bugs that pose cyber security threats and how to fix the bugs to mitigate such threats.	K4			3											2.00			
			CO-2	Explain the attack scenarios to web browsers, web servers and how to mitigate such threats.	K4			3													2.00	
			CO-3	Explain the cyber security holes in standard networking protocols such as TCP/IP, ARP, DNS, Ethernet, BGP etc and how to mitigate such security hole.	K4			3													2.00	
			CO-4	To analyze the difference between System Security, Network Security and Cryptography, Crypto-Protocol etc.	K4		3														2.00	
			CO-5	To illustrate the effect of cyber threats on Critical Infrastructures.	K3				3												2.00	
			#REF!					K3		3.00	3.00	3.00									2.00	
7	#REF!	III	CO-1	Student will be able to display signals on Cathode Ray Oscilloscope with proper measurement of related parameters.	K3				2													
			CO-2	Student will be able to sketch V-I characteristics of various diodes for calculation of related variables.	K3	2																
			CO-3	Student will be able to design rectifiers of given specification using P-N junction Diode.	K3			3													1.00	
			CO-4	Student will be able to demonstrate the concept of voltage regulation using Zener Diode of given specification.	K3			3													1.00	
			CO-5	Student will be able to perform AC analysis of transistor amplifiers using suitable components and Simulator.	K4		3				2										2.00	2.00
			#REF!					K3	2.00	3.00	3.00	2.00	2.00								1.33	2.00
8	#REF!	III	CO-1	To examine various digital ICs and their datasheet.	K2				2													
			CO-2	To implement Boolean functions and combinational circuits using logic gates on bread Board.	K3	3																
			CO-3	To verify of truth tables of various flip-flops using NAND & NOR gates.	K3	2																
			CO-4	To design the 4-bit synchronous counter & asynchronous counter.	K6		3	3														
			CO-5	To develop mini project using digital ICs and other components.	K6		3	3								3		2			3.00	
			#REF!					K3	2.50	3.00	3.00	2.00					3.00		2.00			3.00

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
9	#REF!	III	CO-1	To analyze Networks according to basic laws KVL and KCL	K4		3												3			
			CO-2	To analyze Networks according to different Theorems.	K4		3													3		
			CO-3	To analyze RLC circuits.	K4		3													3		
			CO-4	To design network filters.	K5				3												3	
			CO-5	To draw basic signals and transformation of signals in other domain using MATLAB.	K3						3								2		3	
			#REF!		K3		3.00	3.00		3.00							2.00		3.00			
10	#REF!	III	CO1	To conduct investigations and determine technical / social problem	K2		3				3			2								
			CO2	Develop technical knowledge and state-of-the art practice related to the chosen topic	K6	3	3								3					3		
			CO3	Develop confidence to take up a project activity independently.	K6											3	2	3	3			
			CO4	Develop understanding of technical dissertation presentation and writing.	K6											3	3				3	
			CO5	To write & Present mini project report on Proposed development.	K6											3	3		3	3		
			#REF!		K3	3.00	3.00				3.00			2.80	2.67	3.00	3.00	3.00	3.00			
11	#REF!	IV	CO-1	To use basic concepts and terminologies of communication systems	K3	3																
			CO-2	To analyze different modulation techniques and noise characteristics for analog communication systems	K4		3													3	3.00	
			CO-3	To analyze different digital modulation schemes	K4		3													3	3.00	
			CO-4	To investigate the different multiplexing techniques	K4		3													3	3.00	
			CO-5	To evaluate bit error rate (BER) performance of digital communication systems	K5				3													
			#REF!		K3	3.00	3.00		3.00									3.00	3.00			
12	#REF!	IV	CO-1	To design various types of OpAmp-based circuits for linear and non-linear applications.	K6	3		2											3.00	3.00		
			CO-2	To apply the diode-based circuits, various schemes, configurations, and small-signal models of transistors for communication and computer systems.	K3	2			2											3.00	3.00	
			CO-3	To examine the concept of power amplifiers for consumer electronic devices and low/high-frequency models of single and multistage amplifiers for stability analysis.	K4		3														3.00	3.00
			CO-4	To articulate each feedback topology and oscillator for regulated power supply and communication system design, respectively.	K3	3															3.00	3.00
			CO-5	To analyze various current mirror circuits for bias current generation and differential amplifiers to immune external noise.	K4		3														3	3
			#REF!		K3	3.00	3.00											3.00	3.00			

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
17	#REF!	IV	CO-1	Analyze different analog modulation schemes as per modulation factor and power.	k4		3															
			CO-2	To calculate different parameters of pulse amplitude modulation.	k3			3														
			CO-3	Analyze different digital modulation schemes as per bit error performance.	k4		3														3.00	
			CO-4	To calculate different parameters of Phase shift keying.	k3				3													
			CO-5	Design a front end BPSK modulator and demodulator	k3			3													3.00	
			#REF!		K3		3.00	3.00	3.00										3.00			
18	#REF!	IV	CO-1	To Analyze characteristics of transistors.	K4		3															
			CO-2	Design and analyze various configurations of amplifier circuits.	k4		3	3													3.00	
			CO-3	Design sinusoidal and non-sinusoidal oscillators.	K3			3													3.00	
			CO-4	To design OP-AMP based circuits.	k3			3													3.00	
			CO-5	To simulate ADC and DAC	k3		3														3.00	
			#REF!		K3		3.00	3.00											3.00	3.00		
19	#REF!	IV	CO-1	TO use basic operations of MATLAB.	k3					3												
			CO-2	Analysis the time domain and frequency domain signals.	k4		3				3										3.00	
			CO-3	Implement the concept of Fourier series and Fourier transforms.	k3				3			3									3.00	
			CO-4	Find the stability of system using pole-zero diagrams and bode diagram.	k4	3						3									3.00	
			CO-5	Design frequency response of the system.	k3				3			3									3	
			#REF!		K3	3.00	3.00	3.00		3.00									3.00			
20	#REF!	V	CO-1	To Illustrate the basic concepts of analog, digital Integrated Circuits and application specific ICs	k3	2																
			CO-2	To apply the concept of OP-AMP based analog linear and non-linear integrated circuits.	k3	3															3.00	3.00
			CO-3	To design OP-AMP based analog linear and non-linear integrated circuits.	k3	3			3												3.00	3.00
			CO-4	To design CMOS based digital integrated circuits.	k3	3			2												3.00	3.00
			CO-5	To apply the concepts of Integrated Circuits for applications like 555 timer, VCO IC 566 and PLL.	k3	3			3												3.00	3.00
			#REF!		K3	2.80		2.67											3.00	3.00		

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3				
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.				
21	#REF!	V	CO-1	To illustrate the architecture terminology related to Microprocessor.	K3		2																	
			CO-2	To illustrate the architecture terminology related to Microcontroller.	k3		2																	
			CO-3	To illustrate the architecture terminologies related to Various Peripheral Devices.	k3		2																	
			CO-4	To apply the fundamental of Assembly Language programming to solve problem related to Microprocessor and Microcontroller	k3	3															3.00	3.00		
			CO-5	To analyze the process functionalities and Application related to Microprocessor and Microcontroller.	k4		3															3.00	3.00	
			#REF!		K3	3.00	2.25													3.00	3.00			
22	#REF!	V	CO-1	To design different filter structures on the basic of different realization methods.	K2	2		3												2				
			CO-2	To analyse different transformation tools for the analysis of discrete time signals and systems.	K2		2																	
			CO-3	To apply basic concepts & terminologies of DSP for FIR filter design.	K3	3		2														2		
			CO-4	To design IIR filter using different techniques.	k4	3		2															2	
			CO-5	To interpret the basic concepts & terminologies of MDSP.	k3					3													2	
			#REF!		K3	2.67	2.00	2.33		3.00										2.00				
23	#REF!	V	CO-1	To illustrate different integrated circuits, crystal growth, wafer preparation, wafer cleaning, epitaxy and oxidation	k3	3																		
			CO-2	To illustrate the concept of lithography, deposition and doping process.	k3	3																		
			CO-3	To illustrate the process/steps involved in metallization, device fabrication and packaging.	k3	3																		
			CO-4	Determine the analytical models involved in crystal growth, oxidation, lithography and doping techniques.	k3	3																	2.00	
			CO-5	Analyse the process of oxidation, thin layer growing, and defects involved during epitaxy and wafer preparation.	k4		3																2.00	
			#REF!		K3	3.00	3.00													2.00				
#REF!	V	CO1	Illustrate the fundamentals of optical fiber communication system and related terminologies.	k3	2																			
		CO2	Illustrate the optical fibers structures and modes in optical fiber communication.	k3	2																			
		CO3	Illustrate the various sources and detectors of optical fiber communication.	k3	2																			
		CO4	Apply concepts related to optical communication system	k3	3																3	3		
		CO5	Analyze the optical fiber communication system.	k4		3															3	3		
			#REF!		K3	2.25	3.00													3.00	3.00			

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3				
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.				
26	#REF!	V	CO-1	To Illustrate the basic features and modalities of the Indian Constitution	K3						3		3				3							
			CO-2	Differentiate and relate the functioning of the Indian Parliament system at the national and state levels.	k4							3		3					3					
			CO-3	Differentiate different aspects of the Indian Legal System and its related bodies	k4							3		3						3				
			CO-4	Apply different Law and regulations related to engineering practices	K3							3		3						3				
			CO-5	To examine the role of engineers in different organizations and e-governance	K4							3		3						3				
			#REF!					K3					3.00		3.00				3.00					
30	#REF!	VI	CO-1	To apply fundamentals of probability theory and random process in solving different problems related to digital Communication.	k2	3												3						
			CO-2	To interpret basic concepts and terminologies of digital communication systems.	k3	2														3				
			CO-3	To apply concepts of digital modulation schemes to find corresponding performances of signals.	K3	3															3			
			CO-4	To apply concepts of Spread Spectrum Technology and determine various parameters.	K3	3	2														3			
			CO-5	To apply Information theory, source coding and channel coding to determine different parameters.	k3	3	2														3			
			#REF!					K3	2.80	2.00											3			
31	#REF!	VI	LO-1	To formulate basic concepts of pulse shaping in digital communication.	k2	3																		
			LO-2	To demonstrate and identify the concepts of different line coding techniques.	k3	3														3	3			
			LO-3	To design equipments related to digital modulation and demodulation schemes.	k3	3															3	3		
			LO-4	To analyze the performance of various digital communication systems and evaluate the key parameters.	k4		3														3	3		
			LO-5	To conceptualize error detection & correction using different coding schemes in digital communication.	k4		3														3	3		
			#REF!					K3	3.00	3.00											3.00	3.00		
32	#REF!	VI	CO-1	To illustrate the concept of control system and determine Transfer function and sensitivity of a complex physical system using block diagram reduction and signal flow graph method	K2	3													2					
			CO-2	To carry out the state variable analysis of control systems.	K3		3													3				
			CO-3	To carry out the time domain analysis of first and second order systems.	k4	3	3														3			
			CO-4	To evaluate the stability of linear control systems using Routh Hurwitz Criteria and Root Locus Technique.	k4	3	3														2			
			CO-5	To evaluate the stability of linear control systems using different frequency domain techniques like Nyquist criteria and Bode plots.	k4	3	2														3			
			#REF!					K3	3.00	2.75											2.60			

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
33	#REF!	VI	LO-1	To apply different syntax of control Tool box along with the basic matrix operations used in MATLAB	K2	3				3								3				
			LO-2	To evaluate the poles and zeros on s-plane along with transfer function of a given system	K3		3				3									3		
			LO-3	To determine steady state error of a given transfer function.	k4		3				3									3		
			LO-4	To analyse a system in time domain using MATLAB.	k4		3				3									3		
			LO-5	To analyse a system in frequency domain using MATLAB	k3		3				3									3		
			#REF!		K3	3.00	3.00			3.00								3.00				
34	#REF!	VI	CO-1	To illustrate the concepts of electromagnetic waves theory and antennas	k3	3												2	2.00			
			CO-2	To illustrate the different laws of electrostatic fields and magneto static fields.	k3	3													2	2.00		
			CO-3	To evaluate different types of antenna and their parameters.	k3	3														2	2.00	
			CO-4	To analyze performance of antennas.	k4		3													3	3.00	3.00
			CO-5	To illustrate the concepts of wave propagations.	k3	3														3	3.00	3.00
			#REF!		K3	3.00	3.00											2.40	2.40	3.00		
	#REF!	VI	CO-1	To understand the fundamentals of various Satellite systems terminologies, types, generation and launching vehicle of satellite communication	k2																	
			CO-2	To relate the various equations and orbital parameters related to link design .	k3	3														3		
			CO-3	To analyze different parameters of Satellite communication systems.	k4		3													3		
			CO-4	To evaluate various satellite system, sub-systems and Advance Launching vehicle	K3	3															3	
			CO-5	To analyze satellite navigation and GPS	k4		3														3	
			#REF!		K3	3.00	3.00												3.00			
36	#REF!	VI	CO-1	To demonstrate the issues and challenges in the architecture of a network	k3	3																
			CO-2	Analyze the services and features of various protocol layers in data layer	k4		3													3		
			CO-3	Demonstrate the knowledge of multiple access to design a access technique for a particular application.	k3	3															3	
			CO-4	Apply various protocols at different layers of a network hierarchy.	K3	3															3	
			CO-5	To Examin the security issues in a network and various application of application layer.	k4		3														3	
			#REF!		K3	3.00	3.00												3.00			
37	#REF!	VI	LO-1	Design and analysis of Bipolar junction transistor based inverters	k3	3		2		2								3	2			
			LO-2	Design & simulation with analysis of MOS inverters	K3	3		2			2								3	2		
			LO-3	Design & simulation of gate circuits and functional verification	K3	3		2			2									3	2	
			LO-4	To design and simulate the basic operational amplifier circuits	K3	3		2			2									3	2	
			LO-5	Write Verilog and VHDL codes for different circuits and understand design styles	K3	3		2			2									3	2	
			KEC 653B		K3	3.00		2.00		2.00								3.00	2.00			

Meerut Institute of Engineering and Technology, Meerut

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24

(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3			
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.			
38	#REF!	VI	CO-1	To enhance creative knowledge of students regarding selection of a business idea and it's implementation process.	K2	1					1			1	1		1	2		2			
			CO-2	To acquire knowledge on entrepreneurship development, its Pro's and con's.	K2	1						1				2	1		1	2		2	
			CO-3	To acquire basic knowledge on how to become an entrepreneur.	K2	1							1				2	1		1	2		2
			CO-4	To develop knowledge on Production systems and it's sustainability through production, planning and control (PPC)	K2	1							1				2	1		1	2		2
			CO-5	To develop appropriate business model and apply in a better way.	K2	1							1				2	3		1	2		2
			#REF!			1					1			1.8	1		1	2		2			
39	#REF!	VI	CO-1	The course aims at imparting basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	k2						2		2										
			CO-2	To enable the students to understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	k2							2		2									
			CO-3	To sensitize students towards issues related to 'Indian' culture, tradition and its composite character.	k3								3		3								
			CO-4	To illustrate the Indian tradition knowledge, important in modern society with rapid technological advancements and societal disruptions.	k3								2		2								
			CO-5	To acquaint students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of yoga and holistic health care system	k2								2		2								
			#REF!		K3						2.20		2.20										
43	KHU 701	VII	CO-1	Students can Discover the definitions, concepts and components of rural development.	k3						3												
			CO-2	Students will have a clear idea about the area development programmes and its impact.	k3							3											
			CO-3	Students will know the importance, structure, significance, resources of Indian rural economy.	k3								3										
			CO-4	Students will be able to understand about the using of different methods for human resource planning.	k2								2					2					
			CO-5	Students will be able to acquire knowledge about rural entrepreneurship.	k2								2					2					
			KHU 701		K3						2.60				2.00								
KEC 071	VII	CO-1	To interpret the basic concepts of digital image processing and related terminologies	k2	3																		
		CO-2	To apply the various transforms and image enhancement techniques for digital images	k3	3					2								3	3				
		CO-3	To apply image restoration techniques for digital images	k3	3					2								3	3				
		CO-4	To apply image compression techniques for digital images	k3	3					2								3	3				
		CO-5	To apply image segmentation techniques for digital images	k3	3					2								3	3				
			KEC 071		K3	3.00					2.00						3.00	3.00					

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3		
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.		
	KEC 072	VII	CO-1	Express the concept of VLSI design and CMOS circuits and delay study.		2	2	1	1								2	3	2	1		
			CO-2	Analyze mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits.		3	2	1	3									2	3	2	1	
			CO-3	Design and analyze various combinational & sequential circuits based on CMOS technology.		2	2	1	2										2	3	2	1
			CO-4	Examine power logic circuits and different semiconductor memories used in present day technology.		2	2	1	3										2	3	2	1
			CO-5	Interpret faults in digital circuits, Fault Models and various Testing Methodologies		3	2	2	3										2	3	2	1
			KEC 072					2.40	2.00	1.20	2.40								2.00	3.00	2.00	1.00
	KEC 076	VII	CO-1	Express the basic knowledge of Mobile radio & cellular communication fundamentals.	k2	3	3										2	3				
			CO-2	Express the performance of various voice coding and diversity techniques.	k2	3	3												2	3		
			CO-3	Apply the knowledge of wireless transmission to interpret the concepts of equalization and multiple access techniques.	k3	3	3												2	3		
			CO-4	To apply the different concepts of WMC systems for solving related problems.	k3	3	3												2	3		
			CO-5	Express the basic knowledge of Mobile Ad hoc networks and the existing and upcoming data communication networks.	k2	3	2												3	2		
			KEC 076				K3	3	2.8										2.2	2.8		
	KOE 074	VII	CO-1	To analyze various type of non-conventional energy resource			2					3					2			3		
			CO-2	To apply the field application of solar thermal energy.		2							3						2			3
			CO-3	To illustrate the geothermal energy and apply its concepts for production of electricity										3					2			3
			CO-4	To identify wind energy as alternative form of energy.										3					2			3
			CO-5	To identify the concepts of OTEC and its limitation.										3					2			3
			KOE 074					2	2					3					2			3
45	KEC 751A	VII	CO-1	Apply image processing technique using MATLAB tool.	k3	3				3												
			CO-2	Apply enhancement and image restoration technique in MATLAB tool	k3	3					3									3		
			CO-3	To apply techniques in spatial and frequency domain filters to obtain better quality image.	k3	3					3									3		
			CO-4	To apply the various inbuilt fuction to implement the Image Processing algorithms edge detection	k3	3					3										3	
			CO-5	To apply image transforms techniques such as DCT and wavelet in MATLAB tool.	k3	3					3										3	
			KEC 751A				K3	3.00					3.00									3.00

Meerut Institute of Engineering and Technology, Meerut

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ECE : 2020-24
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply, K4 – Analyze, K5 – Evaluate, K6 – Create**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3			
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	Engineering knowledge	Problem Analysis	Design/development of solutions	Conduct investigations of complex problems	Modern tool usage	The Engineer and Society	Environment & sustainability	Ethics	Individual and team work	Communications	Project management and finance	Life Long Learning	apply knowledge of mathematical tools	use understanding of different subjects	use the skills earned in Robotics, IoT and Automation fields.			
	KEC 751B	VII	CO-1	Designing of logic gates.		3	1	1	1	3					1		2	3	2	1			
			CO-2	Implementation of combinational and sequential circuits using CMOS logic.		2	2	1	2	3						1		2	3	2	1		
			CO-3	Analyze amplifier circuits.		3	3	1	2	3						1		2	3	2	1		
			CO-4	Design sequential circuits such as flip flop.		2	2	1	1	3						1		2	3	2	1		
			CO-5	Do the layout designing for physical analysis of the MOS transistor and MOS based circuits.		2	2	1	1	3						1		2	3	2	1		
			KEC 751B			2.40	2.00	1.00	1.40	3.00					1.00		2.00	3.00	2	1			
46	KEC 752	VII	CO-1	To assess Strengths, Weaknesses, Opportunities and Threats (SWOT) and apply emerging technologies in teaching and learning environments	K3	2	2								2		3	2	3	3.00			
			CO-2	To test the theoretical learning in practical situations and illustrate the skills in delivery of topic and report writing.	K3	3	2																
			CO-3	To analyze the company profile in order to explore career alternatives prior to graduation.	K4												2		2				
			CO-4	To determine the challenges and future potential thus develop work habits and attitude necessary for job success.	K3										3	3							
			CO-5	To apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization.	K3			2		2					2	2	2						
			KEC 752		K3	2.50	2.00	2.00		2.00			2.50	2.50	2.00		2.50	2.00	3.00				
44	KEC 753	VII	CO-1	To conduct investigations of available related literature and identify/ formulate problems.	K4		3		3	3								3	3	3			
			CO-2	To develop a system that can be helpful in social welfare and environment while maintaining ethical principles and professional ethics	K4	3	3	3		3	3	3	3			3		3	3	3	3		
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-disciplinary areas	K3	3		3		3						3		3	3	3	3		
			CO-4	To work in a group and lead a group to solve problem	K3											3	3		3	3	3	3	
			CO-5	To write and present report on proposed problem and its development	K5						3					3	3		3	3	3	3	
			KEC 753		K3	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00			
48	KHU 802	VIII	CO-1	Illustrate the key concepts and attributes that make a successful Entrepreneur.	K3						2			2			3		3				
			CO-2	Illustrate the function of an entrepreneur in a successful, commercial application of innovation.	K3							2			2			3		3			
			CO-3	Integrating the learning techniques for project planning and execution control.	K3							2			2		3	3		3			
			CO-4	Identify the financing process of the entrepreneurial business.	K3							2			2		3	3		3			
			CO-5	Identify areas of our economy/society where social entrepreneurs work.	K3							2			2		3	3		3			
			KHU 802		K3						2		2		3	3		3					

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
1	#REF!	III	CO-1	Apply the concept of partial differentiation to solve partial differential equations.	K3
			CO-2	Apply the method of separation of variables to solve wave, heat, and Laplace equation with transmission lines.	K3
			CO-3	Apply the concept of statistics in moments, skewness, kurtosis and curve fitting, correlation, regression and their properties.	K3
			CO-4	Apply the concept of probability and random variables to evaluate probability distributions	K3
			CO-5	Apply the concept of hypothesis testing and statistical quality control to create control charts.	K3
			BAS 303		
2	#REF!	III	CO-1	To Illustrate the basic concepts, principles and working of semiconductor physics and Devices.	K2
			CO-2	To apply the phenomenon of Charge carriers, Energy bands in semiconductors, solid state devices and its related parameters.	K3
			CO-3	To Use the characteristics of the p-n junction diode and Optoelectronic devices to find their related parameters.	K3
			CO-4	To explain the concept of BJT and it's applications.	K4
			CO-5	To analyze the structure and characteristics of MOSFETs.	K3
			BEC 301		
3	#REF!	III	CO-1	To apply the concept of Boolean algebra for realizing digital circuits using logic gates.	K3
			CO-2	Design and analyze modular combinational circuits with MUX / DEMUX, Decoder & Encoder	K3
			CO-3	Design & analyze synchronous sequential logic circuits	K3
			CO-4	Explain the concept of various logic families.	K3
			CO-5	Explain various ADC and DAC and application in amplifier, integrator etc.	K3
			#REF!		
4	#REF!	III	CO-1	To Illustrate the concepts of network analysis and synthesis.	K3
			CO-2	To calculate different parameters for networks using basic laws (Ohm's law, KVL and KCL)	K3
			CO-3	To apply fourier series for representing a periodic functions and to solve the networks	K3
			CO-4	To apply the concept of transformation tool for continuous time signals and Networks.	K3
			CO-5	To determine different network functions for the analysis of two port devices.	K3
			#REF!		

Meerut Institute of Engineering and Te

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Appl**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
5	#REF!	III	CO-1	UNDERSTAND about the need of value education and harmony in self, family, society and nature.	K2
			CO-2	APPLY the understanding of value education to ensure harmony at all the four levels of living.	K3
			CO-3	ANALYZE about self, feelings in relationship, society and relevance of nature.	K4
			CO-4	EVALUATE their participation (Thought, Behaviour, Work, Realization) at all the four levels of living.	K5
			CO-5	DEVELOP their emotional, social and professional competence.	K4
				#REF!	K3
6	#REF!	IV	CO-1	Explain the software bugs that pose cyber security threats and how to fix the bugs to mitigate such threats.	K4
			CO-2	Explain the attack scenarios to web browsers, web servers and how to mitigate such threats.	K4
			CO-3	Explain the cyber security holes in standard networking protocols such as TCP/IP, ARP, DNS, Ethernet, BGP etc and how to mitigate such security hole.	K4
			CO-4	To analyze the difference between System Security, Network Security and Cryptography, Crypto-Protocol etc.	K4
			CO-5	To illustrate the effect of cyber threats on Critical Infrastructures.	K3
				#REF!	K3
7	#REF!	III	CO-1	Student will be able to display signals on Cathode Ray Oscilloscope with proper measurement of related parameters.	K3
			CO-2	Student will be able to sketch V-I characteristics of various diodes for calculation of related variables.	K3
			CO-3	Student will be able to design rectifiers of given specification using P-N junction Diode.	K3
			CO-4	Student will be able to demonstrate the concept of voltage regulation using Zener Diode of given specification.	K3
			CO-5	Student will be able to perform AC analysis of transistor amplifiers using suitable components and Simulator.	K4
				#REF!	K3
8	#REF!	III	CO-1	To examine various digital ICs and their datasheet.	K2
			CO-2	To implement Boolean functions and combinational circuits using logic gates on bread Board.	K3
			CO-3	To verify of truth tables of various flip-flops using NAND & NOR gates.	K3
			CO-4	To design the 4-bit synchronous counter & asynchronous counter.	K6
			CO-5	To develop mini project using digital ICs and other components.	K6
				#REF!	K3

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
9	#REF!	III	CO-1	To analyze Networks according to basic laws KVL and KCL	K4
			CO-2	To analyze Networks according to different Theorems.	K4
			CO-3	To analyze RLC circuits.	K4
			CO-4	To design network filters.	K5
			CO-5	To draw basic signals and transformation of signals in other domain using MATLAB.	K3
				#REF!	K3
10	#REF!	III	CO1	To conduct investigations and determine technical / social problem	K2
			CO2	Develop technical knowledge and state-of-the art practice related to the chosen topic	K6
			CO3	Develop confidence to take up a project activity independently.	K6
			CO4	Develop understanding of technical dissertation presentation and writing.	K6
			CO5	To write & Present mini project report on Proposed development.	K6
				#REF!	K3
11	#REF!	IV	CO-1	To use basic concepts and terminologies of communication systems	K3
			CO-2	To analyze different modulation techniques and noise characteristics for analog communication systems	K4
			CO-3	To analyze different digital modulation schemes	K4
			CO-4	To investigate the different multiplexing techniques	K4
			CO-5	To evaluate bit error rate (BER) performance of digital communication systems	K5
				#REF!	K3
12	#REF!	IV	CO-1	To design various types of OpAmp-based circuits for linear and non-linear applications.	K6
			CO-2	To apply the diode-based circuits, various schemes, configurations, and small-signal models of transistors for communication and computer systems.	K3
			CO-3	To examine the concept of power amplifiers for consumer electronic devices and low/high-frequency models of single and multistage amplifiers for stability analysis.	K4
			CO-4	To articulate each feedback topology and oscillator for regulated power supply and communication system design, respectively.	K3
			CO-5	To analyze various current mirror circuits for bias current generation and differential amplifiers to immune external noise.	K4
				#REF!	K3

Meerut Institute of Engineering and Te

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Appl**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
13	#REF!	IV	CO-1	Illustrate the Continuous time and Discrete time signals & systems.	K3
			CO-2	Analyze the behavior of Continuous time and Discrete time signals & systems.	K4
			CO-3	Apply the transform tool for continuous time signals in communication system.	K3
			CO-4	Apply the transform tool for discrete time signals in Digital Signal Processing.	K3
			CO-5	Outline the sampling and reconstruction techniques of a signal in communication System.	K2
			#REF!		
14	#REF!	III	CO-1	To write simple Python programs.	K3
			CO-2	To develop Python programs with conditionals and loops.	K3
			CO-3	To use Python functions and Python data structures -- lists, tuples, dictionaries	K3
			CO-4	To use input/output with files in Python	K3
			CO-5	To do searching ,sorting and merging in Python	K3
			#REF!		
15	#REF!	IV	CO-1	To illustrate the fundamental of data structure	K2
			CO-2	To Explain the fundamentals of Algorithms.	K2
			CO-3	To Apply Linear Data Structures concepts and techniques.	K3
			CO-4	To Apply Non-Linear Data Structures concepts and techniques.	K3
			CO-5	To Distinguish various searching and sorting techniques.	K2
			#REF!		
16	#REF!	IV	CO-1	Students will be able to understand the nature and objective of Technical Communication relevant for the work place as Engineers	K3
			CO-2	Students will utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.	K2
			CO-3	Students would imbibe inputs by presentation skills to enhance confidence in face of diverse audience.	K2
			CO-4	Technical communication skills will create a vast know-how of the application of the learning to promote their technical competency	K3
			CO-5	It would enable them to evaluate their efficacy as fluent and efficient communications by learning the voice-dynamics.	K1
			#REF!		

Meerut Institute of Engineering and Technology

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	BLOOMS Knowledge Level
17	#REF!	IV	CO-1	Analyze different analog modulation schemes as per modulation factor and power.	k4
			CO-2	To calculate different parameters of pulse amplitude modulation.	k3
			CO-3	Analyze different digital modulation schemes as per bit error performance.	k4
			CO-4	To calculate different parameters of Phase shift keying.	k3
			CO-5	Design a front end BPSK modulator and demodulator	k3
				#REF!	K3
18	#REF!	IV	CO-1	To Analyze characteristics of transistors.	K4
			CO-2	Design and analyze various configurations of amplifier circuits.	k4
			CO-3	Design sinusoidal and non-sinusoidal oscillators.	K3
			CO-4	To design OP-AMP based circuits.	k3
			CO-5	To simulate ADC and DAC	k3
				#REF!	K3
19	#REF!	IV	CO-1	TO use basic operations of MATLAB.	k3
			CO-2	Analysis the time domain and frequency domain signals.	k4
			CO-3	Implement the concept of Fourier series and Fourier transforms.	k3
			CO-4	Find the stability of system using pole-zero diagrams and bode diagram.	k4
			CO-5	Design frequency response of the system.	k3
				#REF!	K3
20	#REF!	V	CO-1	To Illustrate the basic concepts of analog, digital Integrated Circuits and application specific ICs	k3
			CO-2	To apply the concept of OP-AMP based analog linear and non-linear integrated circuits.	k3
			CO-3	To design OP-AMP based analog linear and non-linear integrated circuits.	k3
			CO-4	To design CMOS based digital integrated circuits.	k3
			CO-5	To apply the concepts of Integrated Circuits for applications like 555 timer, VCO IC 566 and PLL.	k3
				#REF!	K3

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
21	#REF!	V	CO-1	To illustrate the architecture terminology related to Microprocessor.	K3
			CO-2	To illustrate the architecture terminology related to Microcontroller.	k3
			CO-3	To illustrate the architecture terminologies related to Various Peripheral Devices.	k3
			CO-4	To apply the fundamental of Assembly Language programming to solve problem related to Microprocessor and Microcontroller	k3
			CO-5	To analyze the process functionalities and Application related to Microprocessor and Microcontroller.	k4
			#REF!		
22	#REF!	V	CO-1	To design different filter structures on the basic of different realization methods.	K2
			CO-2	To analyse different transformation tools for the analysis of discrete time signals and systems.	K2
			CO-3	To apply basic concepts & terminologies of DSP for FIR filter design.	K3
			CO-4	To design IIR filter using different techniques.	k4
			CO-5	To interpret the basic concepts & terminologies of MDSP.	k3
			#REF!		
23	#REF!	V	CO-1	To illustrate different integrated circuits, crystal growth, wafer preparation, wafer cleaning, epitaxy and oxidation	k3
			CO-2	To illustrate the concept of lithography, deposition and doping process.	k3
			CO-3	To illustrate the process/steps involved in metallization, device fabrication and packaging.	k3
			CO-4	Determine the analytical models involved in crystal growth, oxidation, lithography and doping techniques.	k3
			CO-5	Analyse the process of oxidation, thin layer growing, and defects involved during epitaxy and wafer preparation.	k4
			#REF!		
	#REF!	V	CO1	Illustrate the fundamentals of optical fiber communication system and related terminologies.	k3
			CO2	Illustrate the optical fibers structures and modes in optical fiber communication.	k3
			CO3	Illustrate the various sources and detectors of optical fiber communication.	k3
			CO4	Apply concepts related to optical communication system	k3
			CO5	Analyze the optical fiber communication system.	k4
			#REF!		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Appl

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				<p align="center">Statement of Course Outcomes (COs)</p> <p align="center">Upon completion of topic concerned, students will be able to :</p>	Blooms Knowledge Level
27	#REF!	V	LO-1	Analyze and design different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators.	k4
			LO-2	Analyze and design different linear applications of operational amplifiers such as filters	k4
			LO-3	Able to generate different types of waveforms using wave shaping circuits.	k3
			LO-4	Design multivibrators circuits using IC555.	K6
			LO-5	To test the performance of voltage to current and current to voltage conversion.	k3
				#REF!	K3
28	#REF!	V	LO-1	Use techniques, skills, modern engineering tools, instrumentation and software/hardware appropriately to list and demonstrate arithmetic and logical operations on 8 bit data using microprocessor 8085.	K3
			LO-2	Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	k4
			LO-3	Use various conversion techniques using 8085 & 8086 to generate waveforms.	K3
			LO-4	Implement programming concept of 8051 Microcontroller.	K3
			LO-5	Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	k6
				#REF!	K3
29	#REF!	V	LO-1	Create and visualize various discrete/digital signals using MATLAB/Scilab.	k6
			LO-2	Implement and test the basic operations of Signal processing.	K3
			LO-3	Examine and analyse the spectral parameters of window functions.	k4
			LO-4	Design IIR and FIR filters for band pass, band stop, low pass and high pass filters.	k3
			LO-5	Design the signal processing algorithms using MATLAB/Scilab.	k3
				#REF!	K3
#REF!	V	CO1	To conduct investigations and determine technical / social problem	K3	
		CO2	Develop technical knowledge and state-of-the art practice related to the chosen topic	k6	
		CO3	Develop confidence to take up a project activity independently.	k6	
		CO4	Develop understanding of technical dissertation presentation and writing.	k6	
		CO5	To write & Present mini project report on Proposed development.	k4	
			#REF!	K3	

Meerut Institute of Engineering and Technology

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Bloom's Knowledge Level
26	#REF!	V	CO-1	To Illustrate the basic features and modalities of the Indian Constitution	K3
			CO-2	Differentiate and relate the functioning of the Indian Parliament system at the national and state levels.	k4
			CO-3	Differentiate different aspects of the Indian Legal System and its related bodies	k4
			CO-4	Apply different Law and regulations related to engineering practices	K3
			CO-5	To examine the role of engineers in different organizations and e-governance	K4
				#REF!	K3
30	#REF!	VI	CO-1	To apply fundamentals of probability theory and random process in solving different problems related to digital Communication.	k2
			CO-2	To interpret basic concepts and terminologies of digital communication systems.	k3
			CO-3	To apply concepts of digital modulation schemes to find corresponding performances of signals.	K3
			CO-4	To apply concepts of Spread Spectrum Technology and determine various parameters.	K3
			CO-5	To apply Information theory, source coding and channel coding to determine different parameters.	k3
				#REF!	K3
31	#REF!	VI	LO-1	To formulate basic concepts of pulse shaping in digital communication.	k2
			LO-2	To demonstrate and identify the concepts of different line coding techniques.	k3
			LO-3	To design equipments related to digital modulation and demodulation schemes.	k3
			LO-4	To analyze the performance of various digital communication systems and evaluate the key parameters.	k4
			LO-5	To conceptualize error detection & correction using different coding schemes in digital communication.	k4
				#REF!	K3
32	#REF!	VI	CO-1	To illustrate the concept of control system and determine Transfer function and sensitivity of a complex physical system using block diagram reduction and signal flow graph method	K2
			CO-2	To carry out the state variable analysis of control systems.	K3
			CO-3	To carry out the time domain analysis of first and second order systems.	k4
			CO-4	To evaluate the stability of linear control systems using Routh Hurwitz Criteria and Root Locus Technique.	k4
			CO-5	To evaluate the stability of linear control systems using different frequency domain techniques like Nyquist criteria and Bode plots.	k4
				#REF!	K3

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
33	#REF!	VI	LO-1	To apply different syntax of control Tool box along with the basic matrix operations used in MATLAB	K2
			LO-2	To evaluate the poles and zeros on s-plane along with transfer function of a given system	K3
			LO-3	To determine steady state error of a given transfer function.	k4
			LO-4	To analyse a system in time domain using MATLAB.	k4
			LO-5	To analyse a system in frequency domain using MATLAB	k3
			#REF!		K3
34	#REF!	VI	CO-1	To illustrate the concepts of electromagnetic waves theory and antennas	k3
			CO-2	To illustrate the different laws of electrostatic fields and magneto static fields.	k3
			CO-3	To evaluate different types of antenna and their parameters.	k3
			CO-4	To analyze performance of antennas.	k4
			CO-5	To illustrate the concepts of wave propagations.	k3
			#REF!		K3
	#REF!	VI	CO-1	To understand the fundamentals of various Satellite systems terminologies, types, generation and launching vehicle of satellite communication	k2
			CO-2	To relate the various equations and orbital parameters related to link design .	k3
			CO-3	To analyze different parameters of Satellite communication systems.	k4
			CO-4	To evaluate various satellite system, sub-systems and Advance Launching vehicle	K3
			CO-5	To analyze satellite navigation and GPS	k4
			#REF!		K3
36	#REF!	VI	CO-1	To demonstrate the issues and challenges in the architecture of a network	k3
			CO-2	Analyze the services and features of various protocol layers in data layer	k4
			CO-3	Demonstrate the knowledge of multiple access to design a access technique for a particular application.	k3
			CO-4	Apply various protocols at different layers of a network hierarchy.	K3
			CO-5	To Examin the security issues in a network and various application of application layer.	k4
			#REF!		K3
37	#REF!	VI	LO-1	Design and analysis of Bipolar junction transistor based inverters	k3
			LO-2	Design & simulation with analysis of MOS inverters	K3
			LO-3	Design & simulation of gate circuits and functional verification	K3
			LO-4	To design and simulate the basic operational amplifier circuits	K3
			LO-5	Write Verilog and VHDL codes for different circuits and understand design styles	K3
			KEC 653B		K3

Meerut Institute of Engineering and Technology

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
38	#REF!	VI	CO-1	To enhance creative knowledge of students regarding selection of a business idea and it's implementation process.	K2
			CO-2	To acquire knowledge on entrepreneurship development, its Pro's and con's.	K2
			CO-3	To acquire basic knowledge on how to become an entrepreneur.	K2
			CO-4	To develop knowledge on Production systems and it's sustainability through production, planning and control (PPC)	K2
			CO-5	To develop appropriate business model and apply in a better way.	K2
			#REF!		
39	#REF!	VI	CO-1	The course aims at imparting basic principles of thought process, reasoning and inference to identify the roots and details of some of the contemporary issues faced by our nation and try to locate possible solutions to these challenges by digging deep into our past.	k2
			CO-2	To enable the students to understand the importance of our surroundings and encourage the students to contribute towards sustainable development.	k2
			CO-3	To sensitize students towards issues related to 'Indian' culture, tradition and its composite character.	k3
			CO-4	To illustrate the Indian tradition knowledge, important in modern society with rapid technological advancements and societal disruptions.	k3
			CO-5	To acquaint students with Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of yoga and holistic health care system	k2
			#REF!		
43	KHU 701	VII	CO-1	Students can Discover the definitions, concepts and components of rural development.	k3
			CO-2	Students will have a clear idea about the area development programmes and its impact.	k3
			CO-3	Students will know the importance, structure, significance, resources of Indian rural economy.	k3
			CO-4	Students will be able to understand about the using of different methods for human resource planning.	k2
			CO-5	Students will be able to acquire knowledge about rural entrepreneurship.	k2
			KHU 701		
	KEC 071	VII	CO-1	To interpret the basic concepts of digital image processing and related terminologies	k2
			CO-2	To apply the various transforms and image enhancement techniques for digital images	k3
			CO-3	To apply image restoration techniques for digital images	k3
			CO-4	To apply image compression techniques for digital images	k3
			CO-5	To apply image segmentation techniques for digital images	k3
			KEC 071		

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Biloms Knowledge Level
	KEC 072	VII	CO-1	Express the concept of VLSI design and CMOS circuits and delay study.	
			CO-2	Analyze mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits.	
			CO-3	Design and analyze various combinational & sequential circuits based on CMOS technology.	
			CO-4	Examine power logic circuits and different semiconductor memories used in present day technology.	
			CO-5	Interpret faults in digital circuits, Fault Models and various Testing Methodologies	
			KEC 072		
	KEC 076	VII	CO-1	Express the basic knowledge of Mobile radio & cellular communication fundamentals.	k2
			CO-2	Express the performance of various voice coding and diversity techniques.	k2
			CO-3	Apply the knowledge of wireless transmission to interpret the concepts of equalization and multiple access techniques.	k3
			CO-4	To apply the different concepts of WMC systems for solving related problems.	k3
			CO-5	Express the basic knowledge of Mobile Ad hoc networks and the existing and upcoming data communication networks.	k2
			KEC 076		
	KOE 074	VII	CO-1	To analyze various type of non-conventional energy resource	
			CO-2	To apply the field application of solar thermal energy.	
			CO-3	To illustrate the geothermal energy and apply its concepts for production of electricity	
			CO-4	To identify wind energy as alternative form of energy.	
			CO-5	To identify the concepts of OTEC and its limitation.	
			KOE 074		
45	KEC 751A	VII	CO-1	Apply image processing technique using MATLAB tool.	k3
			CO-2	Apply enhancement and image restoration technique in MATLAB tool	k3
			CO-3	To apply techniques in spatial and frequency domain filters to obtain better quality image.	k3
			CO-4	To apply the various inbuilt fuction to implement the Image Processing algorithms edge detection	k3
			CO-5	To apply image transforms techniques such as DCT and wavelet in MATLAB tool.	k3
			KEC 751A		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				<p align="center">Statement of Course Outcomes (COs)</p> <p align="center">Upon completion of topic concerned, students will be able to :</p>	BLOOMS Knowledge Level
	KEC 751B	VII	CO-1	Designing of logic gates.	
			CO-2	Implementation of combinational and sequential circuits using CMOS logic.	
			CO-3	Analyze amplifier circuits.	
			CO-4	Design sequential circuits such as flip flop.	
			CO-5	Do the layout designing for physical analysis of the MOS transistor and MOS based circuits.	
			KEC 751B		
46	KEC 752	VII	CO-1	To assess Strengths, Weaknesses, Opportunities and Threats (SWOT) and apply emerging technologies in teaching and learning environments	K3
			CO-2	To test the theoretical learning in practical situations and illustrate the skills in delivery of topic and report writing.	K3
			CO-3	To analyze the company profile in order to explore career alternatives prior to graduation.	K4
			CO-4	To determine the challenges and future potential thus develop work habits and attitude necessary for job success.	K3
			CO-5	To apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization.	K3
			KEC 752		K3
44	KEC 753	VII	CO-1	To conduct investigations of available related literature and identify/ formulate problems.	K4
			CO-2	To develop a system that can be helpful in social welfare and environment while maintaining ethical principles and professional ethics	K4
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-disciplinary areas	K3
			CO-4	To work in a group and lead a group to solve problem	K3
			CO-5	To write and present report on proposed problem and its development	K5
			KEC 753		K3
48	KHU 802	VIII	CO-1	Illustrate the key concepts and attributes that make a successful Entrepreneur.	K3
			CO-2	Illustrate the function of an entrepreneur in a successful, commercial application of innovation.	K3
			CO-3	Integrating the learning techniques for project planning and execution control.	K3
			CO-4	Identify the financing process of the entrepreneurial business.	K3
			CO-5	Identify areas of our economy/society where social entrepreneurs work.	K3
			KHU 802		K3

Meerut Institute of Engineering and Technology

**Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and
(2024-25 Session) BKL # K1 – Remember, K2 – Understand, K3 – Apply**

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level
49	KOE 083	VIII	CO-1	Illustrate the concept and essential qualities of entrepreneurship.	K3
			CO-2	Illustrate the key steps required to initiate and develop a business enterprise.	K3
			CO-3	Develop awareness about entrepreneurship with respect to Accountancy	K6
			CO-4	To apply the fundamentals of Project planning, controlling, administration, Costing and Budgeting and legal aspects.	K3
			CO-5	Evaluate role of Government in Promoting Entrepreneurship	K5
			KOE 083		
	KOE 094	VIII	CO-1	Explain the key concepts related to Digital Marketing and Consumer's behavior.	K4
			CO-2	Illustrate the role of Social Media Marketing in Digital Marketing.	K3
			CO-3	Illustrate various tools of Digital Marketing.	K3
			CO-4	Differentiate the role & relationship between organizational design & digital transformation.	K4
			CO-5	Illustrate the Digital Trends of Past & Future.	K3
			KOE 094		
50	KEC 851	VIII	CO-1	To conduct investigations of available related literature and identify/formulate problems.	K4
			CO-2	To develop a system that can be helpful in social welfare and environment while maintaining ethical principles and professional ethics	K4
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-disciplinary areas.	K3
			CO-4	To work in a group and lead a group to solve problem	K3
			CO-5	To write and present report on proposed problem and its development	K5
			KEC 851		