Meerut Institute of Engineering and Technology, Meerut

List of Subjects and Concerned Course teachers # B Tech - ECE (Batch 2019-23)

S. No.	Year (session) of Study	Sem	Subject Code	Subject Name	Subject Short Name	Theory / Lab	Course Teacher Name
1	2019-20	I	KAS101	Physics	Phy	Theory	
2	2019-20	I	KAS102	Chemistry	Chem	Theory	
3	2019-20	I	KAS103	Mathematics I	M 1	Theory	
4	2019-20	II	KAS203	Mathematics II	M 2	Theory	
5	2019-20	I	KEE101	Basic Electrical Engineering	BEE	Theory	
6	2019-20	I	KCS101	Programming for Problem Solving	PPS	Theory	
7	2019-20	I	KAS151	Physics Lab	Phy Lab	Lab	
8	2019-20	I	KAS152	Chemistry Lab	Chem Lab	Lab	
9	2019-20	I	KEE151	Basic Electrical Engineering Lab	BEE Lab	Lab	
10	2019-20	I	KCS151	Programming for Problem Solving Lab	PPS Lab	Lab	
11	2019-20	I	KCE101	Engg. Graphics and Design	GD	Theory	
12	2019-20	I	KWS101	Workshop Practices	Workshop	Theory	
13	2019-20	II	KAS204	Professional English	PE	Theory	
14	2019-20	II	KAS254	Professional English Lab	PE Lab	Lab	
21	2020-21	III	KAS302	MATHS IV	M-IV	Theory	Priyanka Arora/ Shivam Chaudhary
22	2020-21		KVE 301	UNIVERSAL HUMAN VALUE	UHVPE	Theory	DR. NIYATI GARG
23	2020-21		KEC 301	ELECTRONIC DEVICES	ED	Theory	MR. NEERAJ JOSHI
24	2020-21		KEC 302	DIGITAL SYSTEM DESIGN	DSD	Theory	MS. ABHILASHA JAIN
25	2020-21		KEC 303	NETWORK ANALYSIS ANS SYNTHESIS	NAS	Theory	MR. PRAVEEN CHAKRAVARTI/ DR. PRAMOD SINGH
26	2020-21		KEC 351	ELECTRONIC DEVICES LAB	ED LAB	Lab	MR. NEERAJ JOSHI/ DR. PRAMOD SINGH
27	2020-21		KEC 352	DIGITAL SYSTEM DESIGN LAB	DSD LAB	Lab	Dr. Chandan
28	2020-21		KEC 353	NETWORK ANALYSIS ANS SYNTHESIS LAB	NAS LAB	Lab	MR. PRAVEEN CHAKRAVARTI
29	2020-21		KEC 354	MINI PROJECT	Mini Project	Lab	MR. NEERAJ JOSHI
	2020-21		KNC 302	PYTHON PROGRAMMING	Python	Theory	MR. PUNIT MITTAL
31	2020-21	IV	KOE045	BASICS DATA STRUCTURE & ALGORITHMS	BDSA	Theory	Ms. Priyanka Dhanraj
32	2020-21		KAS401	TECHNICAL COMMUNICATION	TC	Theory	Ms. Monika Duggal
33	2020-21		KEC401	COMMUNICATION ENGINEERING	CE	Theory	Shivam Chaudhary
34	2020-21		KEC402	ANALOG CIRCUIT	AC	Theory	Dr. Tanmay Dubey
35	2020-21		KEC403	SIGNAL SYSTEM	SS	Theory	DR. NEHA MITTAL
36	2020-21		KEC 451	COMMUNICATION ENGINEERING LAB	CE LAB	Lab	Shivam Chaudhary
37	2020-21		KEC 452	ANALOG CIRCUIT LAB	AC LAB	Lab	Dr. Ankur Kumar

Meerut Institute of Engineering and Technology, Meerut

List of Subjects and Concerned Course teachers # B Tech - ECE (Batch 2019-23)

S. No.	Year (session) of Study	Sem	Subject Code	Subject Name	Subject Short Name	Theory / Lab	Course Teacher Name
38	2020-21		KEC 453	SIGNAL SYSTEM LAB	SS LAB	Lab	DR. NEHA MITTAL
39	2020-21		KNC 401	COMPUTER SYSTEM SECURITY	CSS	Theory	Mr. Vishal
41	2021-22	V	KEC 501	INTEGRATED CIRCUITS	IC	Theory	Ms Himani Varolia
	2021-22		KEC 502	MICROPROCESSOR & MICROCONTROLLER	MPMC	Theory	Kavita Choudhary
	2021-22		KEC 503	DIGITAL SIGNAL PROCESSING	DSP	Theory	Dr. Deepak Agarwal
42	2021-22		KEC-053	VLSI TECHNOLOGY	VLSI	Theory	Dr Vikrant Varshney
	2021-22		KEC-058	OPTICAL COMMUNICATION	OC	Theory	Dr Subodh Kumar Tripathi
47	2021-22		KEC 551	INTEGRATED CIRCUITS LAB	IC LAB	Lab	Mr Rajkumar, Ms Himani Varolia
48	2021-22		KEC 552	MICROPROCESSOR & MICROCONTROLLER LAB	MPMC LAB	Lab	Dr Hari Shankar, Dr Ajay Kumar
49	2021-22		KEC 553	DIGITAL SIGNAL PROCESSING LAB	DSP LAB	Lab	Dr Ratneshwar K Ratnesh
50	2021-22		KEC 554	MINI PROJECT/INTERNSHIP	MINI PROJECT	Lab	Mr Amit Kumar, Dr Priyanka Garg
	2021-22		KNC501	CONSTITUTION OF INDIA, LAW AND ENGINEERING	CIE	Theory	Dr Sacin Kashyap
51	2021-22	VI	KEC-601	DIGITAL COMMUNICATION	DC	Theory	Dr. Ajay Kumar
52	2021-22		KEC-602	CONTROL SYSTEM	CS	Theory	Dr. Mohd Haris
53	2021-22		KEC-603	ANTENNA AND WAVE PROPAGATION	AWP	Theory	Dr. Subodh Kumar Tripathi
54	2021-22		KOE-062	SATELLITE COMMUNICATION	SC	Theory	Dr. Ratneshwar Kumar Ratnesh
55	2021-22		KEC 063	DATA COMMUNICATION NETWORK	DCN	Theory	Dr. Abhinav Adarsh
56	2021-22		KOE069	UNDERSTANDING THE HUMAN BEING COMPREHENSIVELYHUMAN ASPIRATIONS AND ITS FULFILLMENT	UHBNEC	Theory	Mr Anupan Ratan
57	2021-22		KNC 602	INDIAN TRADITION, CULTURE AND SOCIE	ITC	Theory	Ms Rashpal Kaur
58	2021-22		KEC-651	DIGITAL COMMUNICATION LAB	DC LAB	Lab	Dr. Ajay Kumar
59	2021-22		KEC-652	CONTROL SYSTEM LAB	CS LAB	Lab	Mr. Praveen Kumar Chakravarti (PKC
60	2021-22		KEC-653B	CAD FOR ELECTRONICS LAB	CAD LAB	Lab	DR. VIKRANT VARSHNEY (VKT)
61	2022-23	VII	KHU 701	RURAL DEVELOPMENT : ADMINISTRATION & PLANNING	RD	Theory	Mr. Sushant Kamal
62	2022-23		KEC 071	DIGITAL IMAGE PROCESSING	DIP	Theory	Dr Neha Mittal / Dr. Manoj Yadav
63	2022-23		KEC 076	WIRELESS & MOBILE COMMUNICATION	WMC	Theory	Mr. Arun Kumar Shukla
64	2022-23		KOE 074	RENEWABLE ENERGY RESOURCES	RER	Theory	Ms. Chitra Sahu
65	2022-23		KEC 751A	DIGITAL IMAGE PROCESSING LAB	DIP LAB	Lab	Dr. Manoj Yadav
66	2022-23		KEC 752	MINI PROJECT OR INTERNSHIP ASSESSMENT	MINI PROJECT	Lab	Ms. Abhilasha Jain / Dr. Surendra Singh
67	2022-23		KEC 753	PROJECT-I	PROJECT I	Lab	Dr. Gajendra Singh

Meerut Institute of Engineering and Technology, Meerut

List of Subjects and Concerned Course teachers # B Tech - ECE (Batch 2019-23)

S. No.	Year (session) of Study	Sem	Subject Code	Subject Name	Subject Short Name	Theory / Lab	Course Teacher Name
71	2022-23	VIII	KHU 802	PROJECT MANAGEMENT AND ENTREPREN	PME	Theory	Dr. Gajendra Singh
72	2022-23		KOE 083	ENTREPRENEURSHIP DEVELOPMENT	ED	Theory	Dr. Ramesh Kumar
73	2022-23		KOE-091	AUTOMATION AND ROBOTICS	A&R	Theory	Ms. Abhilasha Jain
74	2022-23		KOE-094	DIGITAL AND SOCIAL MEDIA MARKETING	DSMM	Theory	Mr. Neeraj Joshi
75	2022-23		KEC-851	PROJECT II	Project II	Lab	Dr. Gajendra Singh

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 ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
1	KAS101/201		CO-1	Understand the concept of theory of relativity and their related concepts.	K2	3	2										3		
			CO-2	To solve the engineering problems based on Electromagnetic Field Theory.	K3	3	3	2									3		
			CO-3	To solve the limiting problems of Classical Physics using concepts of Quantum Mechanics.	K3	3	2										3		
			CO-4	Understand the concept of wave nature related phenomenon and resolving power of an optical instrument.	K2	3	3										3		
			CO-5	Understand basic concept of LASER and fiber optics.	K2	3	3	3									3		
				KAS101/201 (Engg. Physics)		**3.0**	**2.6**	**2.5**									**3.0**		
2	KAS151/251		CO-1	Make use of optical methods to determine the properties of light.	K2	3	2						2	3			2		
			CO-2	Assess the properties of semi conductor using electrical methods.	K3	2		2					2	3			2		
			CO-3	Determine specific resistance of material using Carey Foster's bridge method.	K3	3							2	3			2		
			CO-4	Examine the Stefan's law using electrical method.	K2	2	2						2						
			CO-5	Intrepret variation of magnetic field for a current carrying circular coil and ferro magnetic materials.	K3	3		2					2						
				KAS151/251 (Engg. Physics Lab)		**2.60**	**2.00**	**2.00**					**2.00**	**3.00**			**2.00**		
3	KAS102/202		CO-1	Understanding atomic and molecular structure from nanoscale to macromolecules.	K2	3											2		
			CO-2	Apply the concept of spectroscopy for compound identification and structural analysis.	K3	3	2												
			CO-3	Apply the concepts of electrochemistry to corrosion, batteries and phase rule .	K3	3	2										2		
			CO-4	Analyse the water sample and coal samples for their hardness and calorific values respectively.	K3	3	2				2	2					2		
			CO-5	Attain the chemical knowledge on the concept of polymers and polymerization.	K2	3					2	2					2		
				KAS102/202 (Engg. Chemistry)		**3.00**	**2.00**				**2.00**	**2.00**					**2.00**		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
4	KAS152/252		CO-1	Perform experiments with different analytical instruments for chemical properties.	K3	2					2	2		2			2		
			CO-2	Compare molecular / system properties such as surface tension, viscosity with water.	K3	2													
			CO-3	Measure alkalinity, hardness and chloride content of water.	K2	3	2				2	2		2			2		
			CO-4	Determine the iron content and available chlorine in given sample.	K3	2						2							
			CO-5	Know the fundamental concepts of the preparation of phenol formaldehyde & urea formaldehyde resin	K2	2	2				2	2					2		
				KAS152/252 (Engg. Chemistry Lab)		**2.20**	**2.00**				**2.00**	**2.00**		**2.00**			**2.00**		
5	KAS103		CO-1	Apply the concept of matrices for solving the linear simultaneous equations.	K3	3	3	3	3								2		
			CO-2	Apply the concept of limit, continuity and differentiability in the study of Rolle's, Lagrange's, Cauchy Mean Value theorem and Leibnitz theorems .	K3	3	3	3	3								2		
			CO-3	Apply the concept of partial differentiation in finding extreme value, expansion of functions and Jacobians.	K3	3	3	3	3								2		
			CO-4	Apply multiple integrals for finding area, volume, centre of mass and centre of gravity.	K3	3	3	3	3								2		
			CO-5	Applying the concept of vector differentiation and integration to determine line, surface and volume integrals.	K3	3	3	3	3								2		
				KAS103 (Engg. Maths I)		**3.00**	**3.00**	**3.00**	**3.00**								**2.00**		
6	KAS203		CO-1	Apply the concept of differentiation for solving differential equations.	K3	3	3	3	3								2		
			CO-2	Apply the concept of definite integral for evaluating surface areas and volumes.	K3	3	3	3	3								2		
			CO-3	Application of identifying the convergence of sequence and series and expension of Fourier series	K3	3	3	3	3								2		
			CO-4	Application of complex functions to determine analytic functions	K3	3	3	3	3								2		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	Apply the comlex functions for finding Taylor's series, Laurent's series and definite integrals.	K3	3	3	3	3								2		
			KAS203 (Engg. Maths II)			**3.00**	**3.00**	**3.00**	**3.00**								**2.00**		
7	**KAS104/204**		CO-1	Be acquainted with specific dimensions of communication skills.	K2	2		3						2	2				
			CO-2	Create substantial base by the formation of strong professional vocabulary.	K3	2											2		
			CO-3	Apply communication skills at their work place for writing purposes.	K3		2	3											
			CO-4	Cultivate relevant technical style of communication & presentation.	K3				2										
			CO-5	Apply techniques for developing interpersonal communication skills and positive attitude.	K3		2	3	2					3	3	3			
			KAS104/204 (Professional English)			**2.00**	**2.00**	**3.00**	**2.00**					**2.50**	**2.50**	**3.00**	**2.00**		
8	**KAS154/254**		CO-1	Make use of converstional skills for effective group talks and interviews.	K3									2	2		2		
			CO-2	Develop communication and presentation skills for technical papers/project reports/proposals in seminars/conferences/workshops/theme presentations.	K2										2		2		
			CO-3	Build conversational skills for public/individual speaking /conferencing/role play/JAM /arguementation.	K2										2		2		
			CO-4	Make use of comprehension skills based on reading and listening practical's on model audio.	K3										2		2		
			CO-5	Execution social skills for a given work station.	K3										2		2		
			KAS154/254 (Professional English Lab)											**2.00**	**2.00**		**2.00**		
9	**E101/201**		CO-1	Apply the concepts of KVL/KCL and network theorems in solving DC circuits.	K3	3	3	3									2		
			CO-2	Analyze the steady state behavior of single phase and three phase AC electrical circuits.	K2	3	3	3									2		
			CO-3	Identify the application areas of a single phase two winding transformer and calculate their efficiency.	K2	3	2	3									2		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
	KE		CO-4	Illustrate the working principles of induction motor, synchronous machine and DC machine.	K2	3	2										2		
			CO-5	Describe the components of low voltage electrical installations.	K2	3	2										3		
				KEE101/201 (Basic Electrical Engg.)		**3.00**	**2.40**	**3.00**									**2.20**		
10	KEE151/251		CO-1	Apply KVL/KCL and network theorums in DC circuits.	K3	2	2	2	2										
			CO-2	Demonstrate the behaviour of single phase and three phase AC circuits	K3	3	2	2	2		2						2		
			CO-3	Illustrate and study the parameters of single phase transformer.	K3	3	3	2	2		2						2		
			CO-4	Analysing speed control of AC and DC Motor	K3	3	3	2	2		2						2		
			CO-5	Determine energy consumption (kWH)using single phase induction type energy meter.	K3	3	2	2	2								2		
				KEE151/251 (Basic Electrical Engg. Lab)		**2.80**	**2.40**	**2.00**	**2.00**		**2.00**						**2.00**		
11	KCS101/201		CO-1	Translate the algorithms to programs & perform its execution in C language.	K3	3											3		
			CO-2	Implement conditional branching, instructions along with operators.	K3	3	3	3									3		
			CO-3	Use looping control instructions to decompose a problem into function.	K3	3	3	3									3		
			CO-4	Apply arrays and structures to develop programs.	K3	3	3	3									3		
			CO-5	Utilize pointer, file handling, dynamic memory allocation to solve problems.	K3	3	3	3									3		
				KCS101/201		**3.00**	**3.00**	**3.00**									**3.00**		
12	KCS151/251		CO-1	Solve simple problems based on arithmetic expressions using operators.	K3	2	2	2											
			CO-2	Implement conditional branching instructions to develop programs.	K3	3	3	3											
			CO-3	Use looping control instructions and functions to solve complex problems.	K3	3	3	3									3		
			CO-4	Design solutions by using arrays and structures to develop programs.	K3	3	3	3									3		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	Utilize pointer, file handling, dynamic memory allocation to solve problems.	K3	3	3	3									3		
			KCS 151P/251P			**2.80**	**2.80**	**2.80**									**3.00**		
13	**KWS101/201**		CO-1	Use various engineering materials, tools, machines and measuring equipments.	K3	2					2		2	2			2		
			CO-2	Perform machine operations in lathe and CNC machine.	K3	3				2	2		2	3			2		
			CO-3	Perform manufacturing operations on components in fitting and carpentry shop.	K3	2					2		2	2			2		
			CO-4	Perform operations in welding, moulding and casting	K3	3					2	2	2	2			2		
			CO-5	Fabricate a job by 3D printing manufacturing technique.	K3	2				2	2		2	3			2		
			KWS101/201 (Workshop Practices)			**2.40**				**2.00**	**2.00**	**2.00**	**2.00**	**2.40**			**2.00**		
14	**KCE101/201**		CO-1	Use scales and draw projections of objects.	K2	3									2				
			CO-2	Explain views of solids and their sectional surfaces.	K2	3	2								2				
			CO-3	Analyze and draw isometric projections of objects.	K3	3									2				
			CO-4	Demonstrate orthographic representation of perspective views using modern tools.	K2	3		2		3				2	2				
			CO-5	Apply AutoCAD software for creation of engineering drawing and models.	K3	3		2		3				2	2		2		
			KCE101/201 (Engg. Graphics and Design)			**3.00**	**2.00**	**2.00**		**3.00**				**2.00**	**2.00**		**2.00**		
1	**KAS 301**	**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									
			KAS 301		**K3**	**3.00**		**3.00**	**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 ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
2	**KEC 301**	**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	
			CO-4	To explain the concept of BJT and it's applications.	K4	3		2										3	2
			CO-5	To analyze the structure and characteristics of MOSFETs.	K3	3		2										3	2
			KEC 301			**2.60**		**2.00**										**3.00**	**2.00**
3	**KEC 302**	**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	
			KEC 302		**K3**	**2.40**	**2.50**	**2.00**										**3.00**	
4	**KEC 303**	**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	
			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	
			KEC 303		**K3**	3.00	3.00											2.75	2.00
			CO-1	UNDERSTAND about the need of value education and harmony in self, family, society and nature.	K2						1	3	3	1			1		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
5	**KVE 301**	**III**	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 relevence 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					
			KVE 301		**K3**						**2.33**	**2.25**	**2.75**	**1.50**			**1.00**		
6	**KNC 302**	**III**	CO-1	To write simple Python programs.	K3	1				2									
			CO-2	To develop Python programs with conditionals and loops.	K3	2				2									
			CO-3	To use Python functions and Python data structures –- lists, tuples, dictionaries	K3	3				2									2.00
			CO-4	To use input/output with files in Python	K3					2									2.00
			CO-5	To do searching ,sorting and merging in Python	K3					2									
			KNC 302		**K3**	**2.00**				**2.00**									**2.00**
7	**KEC 351**	**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
			KEC 351		**K3**	**2.00**	**3.00**	**3.00**	**2.00**	**2.00**									**1.33**
			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													

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
8	**KEC 352**	**III**	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			
			KEC 352		**K3**	**2.50**	**3.00**	**3.00**	**2.00**					**3.00**		**2.00**			
9	**KEC 353**	**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
			KEC 353		**K3**		**3.00**	**3.00**		**3.00**							**2.00**		**3.00**
10	**KEC 354**	**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	
			KEC 354		**K3**	**3.00**	**3.00**				**3.00**			**2.80**	**2.67**	**3.00**	**3.00**	**3.00**	**3.00**
11	**KEC 401**	**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

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	To evaluate bit error rate (BER) performance of digital communication systems	K5				3										
			KEC 401		**K3**	**3.00**	**3.00**		**3.00**									**3.00**	**3.00**
12	**KEC 402**	**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
			KEC 402		**K3**	**3.00**	**3.00**											**3.00**	**3.00**
13	**KEC 403**	**IV**	CO-1	Illustrate the Continuous time and Discrete time signals & systems.	K3		2												
			CO-2	Analyze the behavior of Continuous time and Discrete time signals & systems.	K4		3											3	
			CO-3	Apply the transform tool for continuous time signals in communication system.	K3			3										3	
			CO-4	Apply the transform tool for discrete time signals in Digital Signal Processing.	K3			3										3	
			CO-5	Outline the sampling and reconstruction techniques of a signal in communication System.	K2		2											2	
			KEC 403		**K3**		**2.33**	**3.00**										**2.75**	
			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

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
14	**KNC 401**	**IV**	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
			KNC 401		**K3**		**3.00**	**3.00**	**3.00**										**2.00**
15	**KOE 045**	**IV**	CO-1	To illustrate the fundamental of data structure	K3	2													
			CO-2	To apply Algorithms for stack, Queue and Link list.	K3	2													
			CO-3	To Apply Linear Data Structures concepts and techniques.	K3	2													2.00
			CO-4	To Apply Non-Linear Data Structures concepts and techniques.	K3	2													2.00
			CO-5	To Distinguish various searching and sorting techniques.	K4		2												
			KOE 045		**K3**	**2.00**	**2.00**												**2.00**
16	**KAS 401**	**IV**	CO-1	Students will be able to understand the nature and objective of Technical Communication relevant for the work place as Engineers	K3	3													
			CO-2	Students will utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions.	K2	3	2												
			CO-3	Students would imbibe inputs by presentation skills to enhance confidence in face of diverse audience.	K2	3	2												
			CO-4	Technical communication skills will create a vast know-how of the application of the learning to promote their technical competancy	K3	3	2	2			2	2							
			CO-5	It would enable them to evaluate their efficacy as fluent and efficient communications by learning the voice-dynamics.	K1	3					2	2							
			KAS 401		**K3**	**3.00**	**2.00**	**2.00**			**2.00**	**2.00**							

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
17	KEC 451	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
				KEC 451	**K3**		**3.00**	**3.00**	**3.00**										**3.00**
18	KEC 452	IV	CO-1	To Analyze characteristics of transistors.	K4		3												
			CO-2	Design and analyze various configurations of amplifier circuits.	k4		3	3											
			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
				KEC 452	**K3**		**3.00**	**3.00**											**3.00**
19	KEC 453	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
				KEC 453	**K3**	**3.00**	**3.00**	**3.00**		**3.00**									**3.00**
20	KEC 501	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
			CO-3	To design OP-AMP based analog linear and non-linear integrated circuits.	k3	3		3											3.00
			CO-4	To design CMOS based digital integrated circuits.	k3	3		2											3.00

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	To apply the concepts of Integrated Circuits for applications like 555 timer, VCO IC 566 and PLL.	k3	3		3											3.00
			KEC 501		**K3**	**2.80**		**2.67**											**3.00**
21	**KEC 502**	**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
			CO-5	To analyze the process functionalities and Application related to Microprocessor and Microcontroller.	k4		3												3.00
			KEC 502		**K3**	**3.00**	**2.25**												**3.00**
22	**KEC 503**	**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 t	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 interprete the basic concepts & terminologies of MDSP.	k3					3									2
			KEC 503		**K3**	**2.67**	**2.00**	**2.33**		**3.00**									**2.00**
23	**KEC 053**	**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

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	Analyse the process of oxidation, thin layer growing, and defects involved during epitaxy and wafer preparation.	k4		3												2.00
			KEC 053		**K3**	**3.00**	**3.00**												**2.00**
	KEC 058	**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
			KEC 058		**K3**	**2.25**	**3.00**											**3.00**	**3.00**
27	**KEC 551**	**V**	LO-1	Analyze and design different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators.	k4		3											3	3.00
			LO-2	Analyze and design different linear applications of operational amplifiers such as filters	k4		3											3	3.00
			LO-3	Able to generate different types of waveforms using wave shaping circuits.	k3	3												3	3.00
			LO-4	Design multivibrators circuits using IC555.	K6	3												3	3.00
			LO-5	To test the performance of voltage to current and current to voltage conversion.	k3	3												3	3
			KEC 551		**K3**	**3.00**	**3.00**											**3.00**	**3.00**
28	**KEC 552**	**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	3												3	3.00
			LO-2	Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	k4	3												3	3.00
			LO-3	Use various conversion techniques using 8085 & 8086 to generate waveforms.	K3	3												3	3.00

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			LO-4	Implement programming concept of 8051 Microcontroller.	K3	3	2											3	3.00
			LO-5	Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	k6	3		3										3	3.00
				KEC 552	**K3**	**3.00**	**2.00**	**3.00**										**3.00**	**3.00**
29	**KEC 553**	**V**	LO-1	Create and visualize various discrete/digital signals using MATLAB/Scilab.	k6	3				3								3	3
			LO-2	Implement and test the basic operations of Signal processing.	K3	3				3								3	3
			LO-3	Examine and analyse the spectral parameters of window functions.	k4		3			3								3	3
			LO-4	Design IIR and FIR filters for band pass, band stop, low pass and high pass filters.	k3	3				3								3	3
			LO-5	Design the signal processing algorithms using MATLAB/Scilab.	k3	3				3								3	3
				KEC 553	**K3**	**3.00**	**3.00**			**3.00**								**3.00**	**3.00**
	KEC 554	**V**	CO1	To conduct investigations and determine technical / social problem	K3	3								2				3	
			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.	k4									3	3		3	3	
				KEC 554	**K3**	**3.00**	**3.00**							**2.80**	**2.67**	**3.00**	**3.00**	**3.00**	**3.00**
26	**KNC 501**	**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 IndianLegal System and its related bodies	k4						3		3				3		
			CO-4	Apply different Law and regulations related to engineering practieces	K3						3		3				3		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	To examin the role of engineers in different organizations and e-governance	K4						3		3				3		
			KNC 501		**K3**						**3.00**		**3.00**				**3.00**		
30	**KEC 601**	**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	
			KEC 601		**K3**	**2.80**	**2.00**											**3**	
31	**KEC 651**	**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
			KEC 651		**K3**	**3.00**	**3.00**											**3.00**	**3.00**
32	**KEC**	**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	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
32	**602**	**VI**	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	
			KEC 602		**K3**	**3.00**	**2.75**											**2.60**	
33	**KEC 652**	**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 functio	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	
			KEC 652		**K3**	**3.00**	**3.00**			**3.00**								**3.00**	
34	**KEC 603**	**VI**	CO-1	To illustrate the concepts of electromagnetic waves theory and antenn	k3	3												2	2.00
			CO-2	To illustrate the different laws of electrostatic fields and magneto stat	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
			CO-5	To illustrate the concepts of wave propagations.	k3	3												3	3.00
			KEC 603		**K3**	**3.00**	**3.00**											**2.40**	**2.40**
35	**KEC 062**	**VI**	CO-1	To understand the fundamentals of various Satellite systems terminologies, types, generation and lunching 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	
			KEC 062		**K3**	**3.00**	**3.00**											**3.00**	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
36	KEC 063	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	
				KEC 063	**K3**	**3.00**	**3.00**											**3.00**	
37	KEC 653B	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**
38	KOE 069	VI	CO-1	To interpret the basic human aspirations and their fulfillment in the light of resolution.	k3						3								
			CO-2	APPLY the understanding of co-existence to make right use of self, body and wealth in terms of enrichment, protection and right utilization and To fulfill comprehensive human goals.	k3						3		3	3					
			CO-3	ANALYZE reasons for harmony and contradiction in the self on the bases of their state comparing and tasting.	k4						3		3	3					
			CO-4	To analyze how different aspects of all encompassing resolution leads to harmony from self to nature and entire existence.	k4						3		3	3					

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-5	To apply right understanding, right feeling, right thoughts and competence for living with the world outside in terms of behaviour, work and participation in larger order.	k3						3		3	3					
			KOE 069		**K3**						**3.00**		**3.00**	**3.00**					
39	**KNC 602**	**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						
			KNC 602		**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			

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			KHU 701		**K3**						**2.60**					**2.00**			
	KEC 071	**VII**	CO-1	To interpret the basic concepts of digital image processing and	k2	3													
			CO-2	To apply the various transforms and image enhancement techniques	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**	
	KEC 076	**VII**	CO-1	Express the basic knowledge of Mobile radio & cellular communicati	k2	3	3										2	3	
			CO-2	Express the performance of various voice coding and diversity techni	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
			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	
45	**KEC**	**VII**	CO-3	To apply techniques in spatial and frequency domain filters to obtain better quality image.	k3	3				3								3	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
45	**751A**	**VII**	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**	
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
			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
			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
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-discplinary 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
			CO-5	To write and present report on proposed problem and its developmen	K5					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**
			CO-1	Interpret the fundamentals of automation, robotics and its components.	K3	3													

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
47	**KOE 091**	**VIII**	CO-2	Apply concepts of Drives and Transmission systems in a robotic system.	K3	3													
			CO-3	Apply the concepts of kinematics and dynamics of robotics to find related parameters.	k3	3													
			CO-4	Outline the function of grippers and effectors in a robotic system.	k3	3													
			CO-5	Demonstrate programming and processing skills in Robot simulation.	k3					3									
				KOE 091	**K3**	**3.00**				**3.00**									
48	**KOE 094**	**VIII**	CO-1	Explain the key concepts related to Digital Marketing and Consumer'	**K4**		3										2		
			CO-2	Illustrate the role of Social Media Marketing in Digital Marketing.	**K3**					2				2			2		
			CO-3	Illustrate various tools of Digital Marketing.	**K3**					2				2			2		
			CO-4	Differentiate the role & relationship between organizational design &	**K4**											2			
			CO-5	Illustrate the Digital Trends of Past & Future.	**K3**								1						
				KOE 094						**2**			**1**	**2**		**2**	**1**		
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
				KHU 802	**K3**						2			2		3	3		3
49	**KOE 083**	**VIII**	CO-1	Illustrate the concept and essential qualities of entrepreneurship.	K3						2			2		-	3	-	3
			CO-2	Illustrate the key steps required to initiate and develop a business enterprise.	K3						2			2		3	3	-	3
			CO-3	Develop awareness about entrepreneurship with respect to Accountancy	K6						2			2		3	3	-	3

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (POs) and Program Specific Outcomes (PSOs) : Dept. of ..... : 2019-23
(Batch passed-out in 2023; 2019-23) 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
				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
			CO-4	To apply the fundamentals of Project planning, controlling, administration, Costing and Budgeting and legal aspects.	K3						2			2		3	3	-	3
			CO-5	Evaluate role of Government in Promoting Entrepreneurship	K5						2			2			3	-	3
			KOE 083		**K3**						2			2		3	3		3
50	**KEC 851**	**VIII**	CO-1	To conduct investigations of available related literature and identify/formulate problems.	K4		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
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-discplinary 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
			CO-5	To write and present report on proposed problem and its development	K5					3				3	3		3	3	3
			KEC 851		**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**

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
1	**KAS101/201**		CO-1	Understand the concept of theory of relativity and their related concepts.	K2		
			CO-2	To solve the engineering problems based on Electromagnetic Field Theory.	K3		
			CO-3	To solve the limiting problems of Classical Physics using concepts of Quantum Mechanics.	K3		
			CO-4	Understand the concept of wave nature related phenomenon and resolving power of an optical instrument.	K2		
			CO-5	Understand basic concept of LASER and fiber optics.	K2		
				KAS101/201 (Engg. Physics)			
2	**KAS151/251**		CO-1	Make use of optical methods to determine the properties of light.	K2		
			CO-2	Assess the properties of semi conductor using electrical methods.	K3		
			CO-3	Determine specific resistance of material using Carey Foster's bridge method.	K3		
			CO-4	Examine the Stefan's law using electrical method.	K2		
			CO-5	Intrepret variation of magnetic field for a current carrying circular coil and ferro magnetic materials.	K3		
				KAS151/251 (Engg. Physics Lab)			
3	**KAS102/202**		CO-1	Understanding atomic and molecular structure from nanoscale to macromolecules.	K2		
			CO-2	Apply the concept of spectroscopy for compound identification and structural analysis.	K3		
			CO-3	Apply the concepts of electrochemistry to corrosion, batteries and phase rule .	K3		
			CO-4	Analyse the water sample and coal samples for their hardness and calorific values respectively.	K3		
			CO-5	Attain the chemical knowledge on the concept of polymers and polymerization.	K2		
				KAS102/202 (Engg. Chemistry)			

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
4	**KAS152/252**		CO-1	Perform experiments with different analytical instruments for chemical properties.	K3		
			CO-2	Compare molecular / system properties such as surface tension, viscosity with water.	K3		
			CO-3	Measure alkalinity, hardness and chloride content of water.	K2		
			CO-4	Determine the iron content and available chlorine in given sample.	K3		
			CO-5	Know the fundamental concepts of the preparation of phenol formaldehyde & urea formaldehyde resin	K2		
				KAS152/252 (Engg. Chemistry Lab)			
5	**KAS103**		CO-1	Apply the concept of matrices for solving the linear simultaneous equations.	K3		
			CO-2	Apply the concept of limit, continuity and differentiability in the study of Rolle's, Lagrange's, Cauchy Mean Value theorem and Leibnitz theorems .	K3		
			CO-3	Apply the concept of partial differentiation in finding extreme value, expansion of functions and Jacobians.	K3		
			CO-4	Apply multiple integrals for finding area, volume, centre of mass and centre of gravity.	K3		
			CO-5	Applying the concept of vector differentiation and integration to determine line, surface and volume integrals.	K3		
				KAS103 (Engg. Maths I)			
6	**KAS203**		CO-1	Apply the concept of differentiation for solving differential equations.	K3		
			CO-2	Apply the concept of definite integral for evaluating surface areas and volumes.	K3		
			CO-3	Application of identifying the convergence of sequence and series and expension of Fourier series	K3		
			CO-4	Application of complex functions to determine analytic functions	K3		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	Apply the comlex functions for finding Taylor's series, Laurent's series and definite integrals.	K3		
			KAS203 (Engg. Maths II)				
7	**KAS104/204**		CO-1	Be acquainted with specific dimensions of communication skills.	K2		
			CO-2	Create substantial base by the formation of strong professional vocabulary.	K3		
			CO-3	Apply communication skills at their work place for writing purposes.	K3		
			CO-4	Cultivate relevant technical style of communication & presentation.	K3		
			CO-5	Apply techniques for developing interpersonal communication skills and positive attitude.	K3		
			KAS104/204 (Professional English)				
8	**KAS154/254**		CO-1	Make use of converstional skills for effective group talks and interviews.	K3		
			CO-2	Develop communication and presentation skills for technical papers/project reports/proposals in seminars/conferences/workshops/theme presentations.	K2		
			CO-3	Build conversational skills for public/individual speaking /conferencing/role play/JAM /arguementation.	K2		
			CO-4	Make use of comprehension skills based on reading and listening practical's on model audio.	K3		
			CO-5	Execution social skills for a given work station.	K3		
			KAS154/254 (Professional English Lab)				
9	**E101/201**		CO-1	Apply the concepts of KVL/KCL and network theorems in solving DC circuits.	K3		
			CO-2	Analyze the steady state behavior of single phase and three phase AC electrical circuits.	K2		
			CO-3	Identify the application areas of a single phase two winding transformer and calculate their efficiency.	K2		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
	KE		CO-4	Illustrate the working principles of induction motor, synchronous machine and DC machine.	K2		
			CO-5	Describe the components of low voltage electrical installations.	K2		
				KEE101/201 (Basic Electrical Engg.)			
10	KEE151/251		CO-1	Apply KVL/KCL and network theorums in DC circuits.	K3		
			CO-2	Demonstrate the behaviour of single phase and three phase AC circuits	K3		
			CO-3	Illustrate and study the parameters of single phase transformer.	K3		
			CO-4	Analysing speed control of AC and DC Motor	K3		
			CO-5	Determine energy consumption (kWH)using single phase induction type energy meter.	K3		
				KEE151/251 (Basic Electrical Engg. Lab)			
11	KCS101/201		CO-1	Translate the algorithms to programs & perform its execution in C language.	K3		
			CO-2	Implement conditional branching, instructions along with operators.	K3		
			CO-3	Use looping control instructions to decompose a problem into function.	K3		
			CO-4	Apply arrays and structures to develop programs.	K3		
			CO-5	Utilize pointer, file handling, dynamic memory allocation to solve problems.	K3		
				KCS101/201			
12	KCS151/251		CO-1	Solve simple problems based on arithmetic expressions using operators.	K3		
			CO-2	Implement conditional branching instructions to develop programs.	K3		
			CO-3	Use looping control instructions and functions to solve complex problems.	K3		
			CO-4	Design solutions by using arrays and structures to develop programs.	K3		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	Utilize pointer, file handling, dynamic memory allocation to solve problems.	K3		
			KCS 151P/251P				
13	**KWS101/201**		CO-1	Use various engineering materials, tools, machines and measuring equipments.	K3		
			CO-2	Perform machine operations in lathe and CNC machine.	K3		
			CO-3	Perform manufacturing operations on components in fitting and carpentry shop.	K3		
			CO-4	Perform operations in welding, moulding and casting	K3		
			CO-5	Fabricate a job by 3D printing manufacturing technique.	K3		
			KWS101/201 (Workshop Practices)				
14	**KCE101/201**		CO-1	Use scales and draw projections of objects.	K2		
			CO-2	Explain views of solids and their sectional surfaces.	K2		
			CO-3	Analyze and draw isometric projections of objects.	K3		
			CO-4	Demonstrate orthographic representation of perspective views using modern tools.	K2		
			CO-5	Apply AutoCAD software for creation of engineering drawing and models.	K3		
			KCE101/201 (Engg. Graphics and Design)				
1	**KAS 301**	**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		
			KAS 301		**K3**		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
2	**KEC 301**	**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	2	
			CO-4	To explain the concept of BJT and it's applications.	K4	2	
			CO-5	To analyze the structure and characteristics of MOSFETs.	K3		
			KEC 301			**2.00**	
3	**KEC 302**	**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	Exaplain various ADC and DAC and application in amplifier, integrator etc.	K3		
			KEC 302		**K3**		
4	**KEC 303**	**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	2	
			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	3	
			KEC 303		**K3**	2.50	
			CO-1	UNDERSTAND about the need of value education and harmony in self, family, society and nature.	K2		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
5	**KVE 301**	**III**	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 relevence 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		
			KVE 301		**K3**		
6	**KNC 302**	**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	1.00	
			CO-5	To do searching ,sorting and merging in Python	K3		
			KNC 302		**K3**	**1.00**	
7	**KEC 351**	**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	2.00	
			KEC 351		**K3**	**2.00**	
			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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
8	**KEC 352**	**III**	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	3.00	
			KEC 352		**K3**	**3.00**	
9	**KEC 353**	**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		
			KEC 353		**K3**		
10	**KEC 354**	**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		
			KEC 354		**K3**		
11	**KEC 401**	**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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	To evaluate bit error rate (BER) performance of digital communication systems	K5		
			KEC 401		**K3**		
12	**KEC 402**	**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		
			KEC 402		**K3**		
13	**KEC 403**	**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		
			KEC 403		**K3**		
			CO-1	Explain the software bugs that pose cyber security threats and how to fix the bugs to mitigate such threats.	K4		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
14	**KNC 401**	**IV**	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		
			KNC 401		**K3**		
15	**KOE 045**	**IV**	CO-1	To illustrate the fundamental of data structure	K3		
			CO-2	To apply Algorithms for stack, Queue and Link list.	K3		
			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.	K4		
			KOE 045		**K3**		
16	**KAS 401**	**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 competancy	K3		
			CO-5	It would enable them to evaluate their efficacy as fluent and efficient communications by learning the voice-dynamics.	K1		
			KAS 401		**K3**		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
17	**KEC 451**	**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		
				KEC 451	**K3**		
18	**KEC 452**	**IV**	CO-1	To Analyze characteristics of transistors.	K4		
			CO-2	Design and analyze various configurations of amplifier circuits.	k4	3.00	
			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		
				KEC 452	**K3**	**3.00**	
19	**KEC 453**	**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		
				KEC 453	**K3**		
20	**KEC 501**	**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	3.00	
			CO-3	To design OP-AMP based analog linear and non-linear integrated circuits.	k3	3.00	
			CO-4	To design CMOS based digital integrated circuits.	k3	3.00	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	To apply the concepts of Integrated Circuits for applications like 555 timer, VCO IC 566 and PLL.	k3	3.00	
			KEC 501		**K3**	**3.00**	
21	**KEC 502**	**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	3.00	
			CO-5	To analyze the process functionalities and Application related to Microprocessor and Microcontroller.	k4	3.00	
			KEC 502		**K3**	**3.00**	
22	**KEC 503**	**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 t	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 interprete the basic concepts & terminologies of MDSP.	k3		
			KEC 503		**K3**		
23	**KEC 053**	**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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	Analyse the process of oxidation, thin layer growing, and defects involved during epitaxy and wafer preparation.	k4		
			KEC 053		**K3**		
	KEC 058	**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		
			KEC 058		**K3**		
27	**KEC 551**	**V**	LO-1	Analyze and design different non-linear applications of operational amplifiers such as log, antilog amplifiers and voltage comparators.	k4	3.00	
			LO-2	Analyze and design different linear applications of operational amplifiers such as filters	k4	3.00	
			LO-3	Able to generate different types of waveforms using wave shaping circuits.	k3	3.00	
			LO-4	Design multivibrators circuits using IC555.	K6	3.00	
			LO-5	To test the performance of voltage to current and current to voltage conversion.	k3	3	
			KEC 551		**K3**	**3.00**	
28	**KEC 552**	**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	3.00	
			LO-2	Examine 8085 & 8086 microprocessor and its interfacing with peripheral devices.	k4	3.00	
			LO-3	Use various conversion techniques using 8085 & 8086 to generate waveforms.	K3	3.00	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			LO-4	Implement programming concept of 8051 Microcontroller.	K3	3.00	
			LO-5	Design concepts to Interface peripheral devices with Microcontroller so as to design Microcontroller based projects.	k6	3.00	
				KEC 552	**K3**	**3.00**	
29	**KEC 553**	**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		
				KEC 553	**K3**		
	KEC 554	**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		
				KEC 554	**K3**		
26	**KNC 501**	**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 IndianLegal System and its related bodies	k4		
			CO-4	Apply different Law and regulations related to engineering practieces	K3		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	To examin the role of engineers in different organizations and e-governance	K4		
			KNC 501		**K3**		
30	**KEC 601**	**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		
			KEC 601		**K3**		
31	**KEC 651**	**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		
			KEC 651		**K3**		
32	**KEC**	**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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
32	**602**	**VI**	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		
				KEC 602	**K3**		
33	**KEC 652**	**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 functio	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		
				KEC 652	**K3**		
34	**KEC 603**	**VI**	CO-1	To illustrate the concepts of electromagnetic waves theory and antenn	k3		
			CO-2	To illustrate the different laws of electrostatic fields and magneto stat	k3		
			CO-3	To evaluate different types of antenna and their parameters.	k3		
			CO-4	To analyze performance of antennas.	k4	3.00	
			CO-5	To illustrate the concepts of wave propagations.	k3	3.00	
				KEC 603	**K3**	**3.00**	
35	**KEC 062**	**VI**	CO-1	To understand the fundamentals of various Satellite systems terminologies, types, generation and lunching 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		
				KEC 062	**K3**		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
36	**KEC 063**	**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		
			KEC 063		**K3**		
37	**KEC 653B**	**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**		
38	**KOE 069**	**VI**	CO-1	To interpret the basic human aspirations and their fulfillment in the light of resolution.	k3		
			CO-2	APPLY the understanding of co-existence to make right use of self, body and wealth in terms of enrichment, protection and right utilization and To fulfill comprehensive human goals.	k3		
			CO-3	ANALYZE reasons for harmony and contradiction in the self on the bases of their state comparing and tasting.	k4		
			CO-4	To analyze how different aspects of all encompassing resolution leads to harmony from self to nature and entire existence.	k4		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			CO-5	To apply right understanding, right feeling, right thoughts and competence for living with the world outside in terms of behaviour, work and participation in larger order.	k3		
				KOE 069	**K3**		
39	**KNC 602**	**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		
				KNC 602	**K3**		
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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
				KHU 701	**K3**		
	KEC 071	**VII**	CO-1	To interpret the basic concepts of digital image processing and	k2		
			CO-2	To apply the various transforms and image enhancement techniques	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	**K3**		
	KEC 076	**VII**	CO-1	Express the basic knowledge of Mobile radio & cellular communicati	k2		
			CO-2	Express the performance of various voice coding and diversity techni	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	**K3**		
	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.	2		
			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	2		
45	**KEC**	**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		

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
45	**751A**	**VII**	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		**K3**		
46	**KEC 752**	**VII**	CO-1	To assess Strengths, Weaknesses, Opportunities and Threats (SWOT) and apply emerging technologies in teaching and learning environments	K3	3.00	
			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	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	
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-discplinary areas	K3	3	
			CO-4	To work in a group and lead a group to solve problem	K3	3	
			CO-5	To write and present report on proposed problem and its developmen	K5	3	
			KEC 753		**K3**	**3.00**	
			CO-1	Interpret the fundamentals of automation, robotics and its components.	K3	3.00	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
47	**KOE 091**	**VIII**	CO-2	Apply concepts of Drives and Transmission systems in a robotic system.	K3	3.00	
			CO-3	Apply the concepts of kinematics and dynamics of robotics to find related parameters.	k3	3.00	
			CO-4	Outline the function of grippers and effectors in a robotic system.	k3	3.00	
			CO-5	Demonstrate programming and processing skills in Robot simulation.	k3	3.00	
				KOE 091	**K3**	**3.00**	
48	**KOE 094**	**VIII**	CO-1	Explain the key concepts related to Digital Marketing and Consumer'	**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 &	**K4**		
			CO-5	Illustrate the Digital Trends of Past & Future.	**K3**		
				KOE 094			
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**		
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	-	

Statements of Course Outcomes (COs) and Mapping with Program Outcomes (PO
(Batch passed-out in 2023; 2019-23) BKL # K1 – Remember, K2 – Unde

S. No.	Sub Code	Sem	COx	Statement of Course Outcomes (COs)	Kx	PSO 3	PSO 4
				Statement of Course Outcomes (COs) Upon completion of topic concerned, students will be able to :	Blooms Knowledge Level	use the skills earned in Robotics, IoT and Automation fields.	
			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	**K3**		
50	**KEC 851**	**VIII**	CO-1	To conduct investigations of available related literature and identify/formulate problems.	K4	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	
			CO-3	To apply engineering knowledge and modern tools to solve proposed problem in Electronics and Communication Engineering and its allied/ multi-discplinary areas.	K3	3	
			CO-4	To work in a group and lead a group to solve problem	K3	3	
			CO-5	To write and present report on proposed problem and its development	K5	3	
				KEC 851	**K3**	**3.00**	

Compiled Record of Mapping of Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
Dept of ECE : Batch 2019-23

S. No.	Session	Sem	Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
					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	2019-20	I	KAS101	Physics	3	2.6	2.5									3					
2	2019-20	I	KAS102	Chemistry	3.00	2.00				2.00	2.00					2.00					
3	2019-20	I	KAS103	Mathematics I	3.00	3.00	3.00	3.00								2.00					
4	2019-20	II	KAS203	Mathematics II	3.00	3.00	3.00	3.00								2.00					
5	2019-20	I	KEE101	Basic Electrical Engineering	3.00	2.40	3.00									2.20					
6	2019-20	I	KCS101	Programming for Problem Solving	3.00	3.00	3.00									3.00					
7	2019-20	I	KAS151	Physics Lab	2.60	2.00	2.00					2.00	3.00			2.00					
8	2019-20	I	KAS152	Chemistry Lab	2.20	2.00				2.00	2.00		2.00			2.00					
9	2019-20	I	KEE151	Basic Electrical Engineering Lab	2.80	2.40	2.00	2.00		2.00						2.00					
10	2019-20	I	KCS151	Programming for Problem Solving Lab	2.80	2.80	2.80									3.00					
11	2019-20	I	KCE101	Engg. Graphics and Design	3.00	2.00	2.00		3.00				2.00	2.00		2.00					
12	2019-20	I	KWS101	Workshop Practices	2.40				2.00	2.00	2.00	2.00	2.40			2.00					
13	2019-20	II	KAS204	Professional English	2.00	2.00	3.00	2.00					2.50	2.50	3.00	2.00					
14	2019-20	II	KAS254	Professional English Lab									2.00	2.00		2.00					
15	2020-21	III	KAS302	MATHS IV	3.00		3.00	3.00	2.00												
16	2020-21	III	KVE 301	UNIVERSAL HUMAN VALUE						2.33	2.25	2.75	1.50			1.00					
17	2020-21	III	KEC 301	ELECTRONIC DEVICES	2.60		2.00										3.00	2.00	2.00		
18	2020-21	III	KEC 302	DIGITAL SYSTEM DESIGN	2.40	2.50	2.00										3.00				
19	2020-21	III	KEC 303	NETWORK ANALYSIS ANS SYNTHESIS	3.00	3.00											2.75	2.00	2.50		

Compiled Record of Mapping of Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
Dept of ECE : Batch 2019-23

S. No.	Session	Sem	Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
					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.		
20	2020-21	III	KEC 351	ELECTRONIC DEVICES LAB	2.00	3.00	3.00	2.00	2.00									1.33	2.00		
21	2020-21	III	KEC 352	DIGITAL SYSTEM DESIGN LAB	2.50	3.00	3.00	2.00					3.00		2.00				3.00		
22	2020-21	III	KEC 353	NETWORK ANALYSIS ANS SYNTHESIS LAB		3.00	3.00		3.00							2.00		3.00			
23	2020-21	III	KEC 354	MINI PROJECT	3.00	3.00				3.00			2.80	2.67	3.00	3.00	3.00	3.00			
24	2020-21	III	KNC 302	PYTHON PROGRAMMING	2.00				2.00									2.00	1.00		
25	2020-21	IV	KOE045	BASICS DATA STRUCTURE & ALGORITHMS	2.00	2.00												2.00			
26	2020-21	IV	KAS401	TECHNICAL COMMUNICATION	3.00	2.00	2.00			2.00	2.00										
27	2020-21	IV	KEC401	COMMUNICATION ENGINEERING	3.00	3.00		3.00									3.00	3.00			
28	2020-21	IV	KEC402	ANALOG CIRCUIT	3.00	3.00											3.00	3.00			
29	2020-21	IV	KEC403	SIGNAL SYSTEM		2.33	3.00										2.75				
30	2020-21	IV	KEC 451	COMMUNICATION ENGINEERING LAB		3.00	3.00	3.00										3.00			
31	2020-21	IV	KEC 452	ANALOG CIRCUIT LAB		3.00	3.00											3.00	3.00		
32	2020-21	IV	KEC 453	SIGNAL SYSTEM LAB	3.00	3.00	3.00		3.00									3.00			
33	2020-21	IV	KNC 401	COMPUTER SYSTEM SECURITY		3.00	3.00	3.00										2.00			
34	2021-22	V	KEC 501	INTEGRATED CIRCUITS	2.80		2.67											3.00	3.00		
35	2021-22	V	KEC 502	MICROPROCESSOR & MICROCONTROLLER	3.00	2.25												3.00	3.00		

Compiled Record of Mapping of Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
Dept of ECE : Batch 2019-23

S. No.	Session	Sem	Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
					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.		
36	2021-22	V	KEC 503	DIGITAL SIGNAL PROCESSING	2.67	2.00	2.33		3.00									2.00			
37	2021-22	V	KEC-053	VLSI TECHNOLOGY	3.00	3.00												2.00			
38	2021-22	V	KEC-058	OPTICAL COMMUNICATION	2.25	3.00											3.00	3.00			
39	2021-22	V	KEC 551	INTEGRATED CIRCUITS LAB	3.00	3.00											3.00	3.00	3.00		
40	2021-22	V	KEC 552	MICROPROCESSOR & MICROCONTROLLER LAB	3.00	2.00	3.00										3.00	3.00	3.00		
41	2021-22	V	KEC 553	DIGITAL SIGNAL PROCESSING LAB	3.00	3.00			3.00								3.00	3.00			
42	2021-22	V	KEC 554	MINI PROJECT/INTERNSHIP	3.00	3.00							2.80	2.67	3.00	3.00	3.00	3.00			
43	2021-22	V	KNC501	CONSTITUTION OF INDIA, LAW AND ENGINEERING						3.00		3.00				3.00					
44	2021-22	VI	KEC-601	DIGITAL COMMUNICATION	2.80	2.00											3.00				
45	2021-22	VI	KEC-602	CONTROL SYSTEM	3.00	2.75											2.60				
46	2021-22	VI	KEC-603	ANTENNA AND WAVE PROPAGATION	3.00	3.00											2.40	2.40	3.00		
47	2021-22	VI	KOE-062	SATELLITE COMMUNICATION	3.00	3.00											3.00				
48	2021-22	VI	KEC 063	DATA COMMUNICATION NETWORK	3.00	3.00											3.00				
49	2021-22	VI	KOE069	UNDERSTANDING THE HUMAN BEING COMPREHENSIVELYHUMAN ASPIRATIONS AND ITS FULFILLMENT						3.00		3.00	3.00								

Compiled Record of Mapping of Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
Dept of ECE : Batch 2019-23

S. No.	Session	Sem	Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
					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.		
50	2021-22	VI	KEC-651	DIGITAL COMMUNICATION LAB	3.00	3.00											3.00	3.00			
51	2021-22	VI	KEC-652	CONTROL SYSTEM LAB	3.00	3.00			3.00								3.00				
52	2021-22	VI	KEC-653B	CAD FOR ELECTRONICS LAB	3.00		2.00		2.00								3.00	2.00			
53	2021-22	VI	KNC 602	INDIAN TRADITION, CULTURE AND SOCIETY						2.20		2.20									
54	2022-23	VII	KHU 701	RURAL DEVELOPMENT : ADMINISTRATION & PLANNING						2.60					2.00						
55	2022-23	VII	KEC 071	DIGITAL IMAGE PROCESSING	3.00				2.00							3.00	3.00				
56	2022-23	VII	KEC 076	WIRELESS & MOBILE COMMUNICATION	3	2.8										2.2	2.8				
57	2022-23	VII	KOE 074	RENEWABLE ENERGY RESOURCES	2	2					3					2			3		
58	2022-23	VII	KEC 751A	DIGITAL IMAGE PROCESSING LAB	3.00				3.00								3.00				
59	2022-23	VII	KEC 752	MINI PROJECT OR INTERNSHIP ASSESSMENT	2.50	2.00	2.00		2.00			2.50	2.50	2.00		2.50	2.00	3.00			
60	2022-23	VII	KEC 753	PROJECT-I	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		
61	2022-23	VIII	KHU 802	PROJECT MANAGEMENT AND ENTREPRENEURSHIP						2			2		3	3		3			
62	2022-23	VIII	KOE 083	ENTREPRENEURSHIP DEVELOPMENT						2			2		3	3		3			

Compiled Record of Mapping of Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs)
Dept of ECE : Batch 2019-23

S. No.	Session	Sem	Subject Code	Subject Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
					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.		
63	2022-23	VIII	KOE-091	AUTOMATION AND ROBOTICS	3.00				3.00										3.00		
64	2022-23	VIII	KOE-094	DIGITAL AND SOCIAL MEDIA MARKETING					2			1	2		2	1					
65	2022-23	VIII	KEC-851	PROJECT II	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		
	Overall				**2.80**	**2.73**	**2.68**	**2.75**	**2.56**	**2.56**	**2.65**	**2.56**	**2.51**	**2.67**	**2.67**	**2.48**	**2.90**	**2.66**	**2.70**		