Course Outcome

Session 2023-24 (Odd)

Department of Electrical & Electronics Engineering

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

- The theory courses/ project having credits 3 to 6 should have 5 number of COs. The laboratory course/ mini project/ seminar/ industrial training having credits less than 3 should have 3 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
- The statement of a CO must be formed considering a proper structure having mandatory and optional parts. The mandatory parts are Action & Knowledge and optional parts are Condition and Criteria.

Department of Electrical & Electronics Engineering

Index

HoD (EEE)

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

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Department of Electrical & Electronics Engineering

7th Semester			
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HoD (EEE)

Please Note (Reference: OBE Guidelines wef. Session 2021 – 22)

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NIRF-2023
Engineering Rank Band (151-200)
Pharmacy Rank - 88
Innovation Rank Band (51-100)

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Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Technical Communication **Course Code: BAS 301**
Course Coordinator: Dr. Babita Tyagi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand the significance of value inputs in a classroom, process of value education, meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society.	PO:6,7,8,9,10,11,12	Understand	Conceptual
CO2	Apply the meaning of Harmony in the Self the Co-existence of Self and Body.	PO: 8,9,10,11,12	Understand	Procedural
CO3	Apply the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships.	PO: 8,9,10,11,12	Understand	Procedural
CO4	Analyze the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.	PO:6,7,9.10.11,12	Understand	Procedural
CO5	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.	PO:9,10,11,12	Understand	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	1	1	1	2	3	2	2	-	-
CO2	-	-	-	-	-	-	-	1	1	3	2	2	-	-
CO3	-	-	-	-	-	-	-	1	2	3	2	2	-	-
CO4	-	-	-	-	-	1	1	-	1	3	2	3	-	-
CO5	-	-	-	-	-	-	-	-	2	3	2	1	-	-
PO Target	-	-	-	-	-	1	1	1	1.6	3	2	2	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Maths-IV **Course Code: BAS 302**
Course Coordinator: Dr. Swati Maheshwari

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Identify the application of partial differential equations and apply for solving Linear and non- linear partial differential equations	PO:1,3,4,5,12	Understand	Procedural
CO2	Understand the classification of second order partial differential equations	PO:1,2,3,4,12	Understand	Procedural
CO3	Evaluate general solution of Heat, Wave, Laplace equations and Transmission lines.	PO:1,3,4,5,12	Analyze	Procedural
CO4	Analyze the concept of moments, skewness, kurtosis and moment generating function and the linear and non-linear regression.	PO:1,2,3,12	Analyze	Procedural
CO5	Apply the concept of probability, random variable and for solving the problem related to discrete and continuous probability distribution	PO:1,2,3,12	Analyze	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	2	2	-	-	-	-	-	-	2	-	-
CO2	2	1	1	1	-	-	-	-	-	-	-	1	-	-
CO3	3	3	2	2	3	-	-	-	-	-	-	3	-	-
CO4	1	1	1	-	-	-	-	-	-	-	-	1	-	-
CO5	1	1	1	-	-	-	-	-	-	-	-	1	-	-
PO Target	2	1.8	1.4	1.66	2.5							1.6		

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Electromagnetic Field Theory **Course Code: BAS 303**
Course Coordinator: Dr. Varun Gupta

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Apply different coordinate systems and their application in electromagnetic field theory.	PO:1,2,3,4,9 .12	Apply	Conceptual
CO2	Analyze the concept of static electric field, current, properties of conductors and boundary conditions.	PO:1,2,3,4,9 .12	Analyze	Procedural
CO3	Analyze the concept of static magnetic field, magnetic scalar and vector potential.	PO:1,2,3,4,9 .12	Analyze	Procedural
CO4	Analyze the forces due to magnetic field, magnetization, magnetic boundary conditions and inductors.	PO:1,2,3,4,9 .12	Analyze	Procedural
CO5	Analyze displacement current, time varying fields, propagation and reflection of EM waves and transmission lines.	PO:1,2,3,4, 9,12 PSO:1	Metacognitive	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	1	2	-	-	-	-	1	-	-	1	-	-
CO2	3	3	2	3	-	-	-	-	1	-	-	2	-	-
CO3	3	3	2	3	-	-	-	-	1	-	-	2	-	-
CO4	3	3	2	2	-	-	-	-	1	-	-	2	-	-
CO5	3	3	2	3	2	-	-	-	1	-	-	3	2	-
PO Target	3	2.8	1.8	2.6	2	-	-	-	1	-	-	2	2	

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Electrical Measurements & Instruments **Course Code: BEE 302**
Course Coordinator: Dr. Natwar Singh Rathore

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Analyze different types of instruments for the measurement of voltage, current, power and energy.	PO:1,2,3,4,12 PSO:1	Analyze	Procedural
CO2	Understand measurement of electrical quantities resistance, inductance and capacitance with the help of bridges	PO:1,2,3,4,12 PSO:1	Understand	Conceptual
CO3	Analyze the working of instrument transformers and find the errors in current and potential transformers	PO:1,2,3,4,12 PSO:1	Analyze	Procedural
CO4	Understand the working of electronic instruments like voltmeter, multi-meter, frequency meter and CRO.	PO:1,2,3,4,12 PSO:1	Understand	Conceptual
CO5	Apply the knowledge of transducers, their classifications and their applications for the measurement of physical quantities like motion, force, pressure, temperature, flow and liquid level.	PO:1,2,3,4,12 PSO:1	Apply	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	3	2	-	-	-	-	-	-	-	2	3	-
CO2	2	2	1	1	-	-	-	-	-	-	-	2	2	-
CO3	2	3	3	3	-	-	-	-	-	-	-	2	2	-
CO4	2	2	1	1	-	-	-	-	-	-	-	2	1	-
CO5	3	3	3	3	-	-	-	-	-	-	-	2	2	-
PO Target	2.4	2.6	2.2	2	-	-	-	-	-	-	-	2	2	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Basics Signal Systems **Course Code: BEE 303**
Course Coordinator: Dr. Sumit Sharma

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Draw the various types of signals & systems and perform mathematical operations on them.	PO:1,2,3,4,12 PSO:1	Remember	Conceptual
CO2	Analyze Fourier series and Fourier transform and its applications to network analysis.	PO:1,2,3,4,12 PSO:1	Analyze	Procedural
CO3	Analyze the properties of continuous time signals and system through Laplace transform to get the response of linear system to known inputs.	PO:1,2,3,4,5,12 PSO:1	Analyze	Procedural
CO4	Construct the state-space models of SISO & MIMO system using the concept of state-space.	PO:1,2,3,4,12 PSO:1	Apply	Procedural
CO5	Solve complex engineering problems using difference equations using the concepts of Z transform.	PO:1,2,3,4,12 PSO:1	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	1	1	-	-	-	-	-	-	-	3	1	-
CO2	3	3	2	2	-	-	-	-	-	-	-	3	2	-
CO3	3	3	2	2	-	-	-	-	-	-	-	3	2	-
CO4	3	2	1	1	1	-	-	-	-	-	-	3	2	-
CO5	3	2	1	1	-	-	-	-	-	-	-	3	1	-
PO Target	2.8	2.4	**1.4**	1.4	**1**	-	-	-	-	-	-	3	1.6	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 3**
Course: Circuit Simulation lab **Subject Code: BEE-351**
Course Coordinator: Dr. Sumit Kumar

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	Statement of Course Outcome			
CO1	Apply the knowledge of basic circuital law, nodal and mesh analysis for given circuit.	PO:1,2,5,9,10,12 PSO1,2	Apply	Procedural
CO2	Analyze AC and DC circuits using simulation techniques.	PO:1,2,5,9,10,12 PSO1,2	Analyze	Procedural
CO3	Analyze the transient response of AC circuits.	PO:1,2,5,9,10,12 PSO1,2	Analyze	Procedural
CO4	Evaluate the two-port network parameters.	PO:1,2,5,9,10,12 PSO1,2	Evaluate	Procedural
CO5	Estimate the parameters of different filters.	PO:1,2,5,9,10,12 PSO1,2	Evaluate	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO2	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO3	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO4	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO5	3	2	-	-	3	-	-	-	1	1	-	1	1	1
PO Target	3	2	-	-	3	-	-	-	1	1	-	1	1	1

Department of Electrical & Electronics Engineering

Academic Session: 2023-24 Year: II Semester: 3
Course: Electrical Measurements & Instrumentation Lab Course Code: BEE 352
Course Coordinator: Dr. Natwar Singh Rathore

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand the importance of calibration of measuring instruments.	PO:1,3,4,12	Understand	Conceptual
CO2	Demonstrate the construction and working of different measuring instruments.	PO:1,3,4	Apply	Procedural
CO3	Apply the knowledge of AC and DC bridges in different measuring applications	PO:1,3,4,12 PSO:1	Apply	Procedural
CO4	Determine electrical engineering parameters like voltage, current, power & phase difference in industry as well as in power generation, transmission and distribution sectors.	PO:1,3,4,12 PSO:1	Evaluate	Conceptual
CO5	Analyze and solve the variety of problems in the field of electrical measurements.	PO:1,3,4,12	Analyze	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	1	1	-	-	-	-	-	-	-	1	-	-
CO2	2	1	1	1	-	-	-	-	-	-	-	-	-	-
CO3	3	3	2	2	-	-	-	-	-	-	-	2	1	-
CO4	2	2	2	1	-	-	-	-	-	-	-	3	1	-
CO5	2	2	2	1	-	-	-	-	-	-	-	3	-	-
PO Target	2.2	1.8	1.6	1.2								2.25	1	

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Electrical Workshop **Course Code: BEE 353**
Course Coordinator: Prof. Ameer Faisal

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand various types of electrical connections.	PO:1,3,4,10,11	Understand	Factual
CO2	Analyze the difference between various electrical wires, cables and accessories.	PO:1,3,4,10,11	Analyze	Conceptual
CO3	Understand the layout of electrical substation & various safety measures.	PO:1,3,4,10,11	Understand	Conceptual
CO4	Understand the construction, working and application of various workshop tools.	PO:1,3,4,10,11	Understand	Conceptual
CO5	Develop small circuits on printed circuit boards.	PO:1,3,4,10,11	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	2	-	-	-	-	-	2	1	2	-	-
CO2	3	3	3	2	-	-	-	-	-	2	2	2	-	-
CO3	3	2	3	2	-	-	-	-	-	2	2	2	-	-
CO4	3	2	2	2	-	-	-	-	-	2	2	2	-	-
CO5	3	2	2	2	-	-	-	-	-	2	2	3	-	-
PO Target	3	2.4	2.4	2	-	-	-	-	-	2	1.8	2.2	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 3**
Course: Mini Project & Internship Assessment **Course Code: BCC 351**
Course Coordinator: Prof. Masood Rizvi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand research papers for exploring new fields and review reporting.	CO:1,2,4,6,11,12	Understand	Conceptual
CO2	Evaluate new directions of various cutting edge technologies.	CO:1,2,4,5,6,7,9,11,12	Create	Procedural
CO3	Create various skills by preparing detailed project report including all the findings.	CO:1,2,4,6,7,9,11,12	Create	Conceptual, Procedural
CO4	Effective communication by making an oral presentation to show the findings.	CO:2,4,10,12	Apply	Procedural
CO5	Create facts related knowledge by preparing detailed report including outcomes.	CO:2,4,5,6,7,9,11,12	Evaluate	Conceptual, Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	2	-	1	-	-	-	-	2	2	-	-
CO2	3	3	-	2	2	1	2	-	2	-	2	2	-	-
CO3	3	2	-	3	2	1	2	-	2	-	2	2	-	-
CO4	-	1	-	1	-	-	-	-	-	3	-	1	-	-
CO5	-	2	-	1	1	1	2	-	2	-	2	2	-	-
PO Target	3	2		1.8	1.66	1	2		2	3	2	1.8	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 5**
Course: Power System-I **Course Code: KEE 501**
Course Coordinator: Dr. Brijesh Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Describe the working principle and basic components of conventional and nonconventional power plants as well as the other aspects of power generation.	PO:1,2,3,4,7,12, PSO:1,2	Understand	Factual, Conceptual
CO2	Analyze the role and functioning of different types of supply systems, conductors and performance of transmission lines.	PO:1,2,3,4,12, PSO:1,2	Analyze	Conceptual, Procedural
CO3	Calculate the sag and tension in overhead lines with wind & ice loading, potential distribution over a string of insulators, string efficiency and its improvement.	PO:1,2,3,4,12, PSO:1,2	Apply	Conceptual, Procedural
CO4	Calculate the inductance and capacitance of single phase, three phase lines with symmetrical and unsymmetrical spacing including effect of earth on capacitance of transmission lines.	PO:1,2,3,4,12, PSO:1,2	Apply	Conceptual, Procedural
CO5	Calculate the resistance and capacitance parameters of different types of cables including grading of cables.	PO:1,2,3,4,12, PSO:1,2	Apply	Conceptual, Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	2	1	1	-	-	1	-	-	-	-	1	2	1
CO2	3	3	2	1	-	-	-	-	-	-	-	1	2	1
CO3	3	3	1	1	-	-	-	-	-	-	-	1	2	1
CO4	3	3	1	2	-	-	-	-	-	-	-	1	2	1
CO5	3	3	1	1	-	-	-	-	-	-	-	1	2	1
PO Target	2.8	2.8	1.2	1.2			1					1	2	1

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 5**
Course: Control System **Course Code: KEE 502**
Course Coordinator: Prof. Alok Pandey

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Calculate the transfer function for the operation of open loop and closed loop control systems.	PO:1,10, PSO:2	Apply	Procedural
CO2	Analyze the performance of basic control systems in the time domain.	PO:1,2,4,5,10,12 PSO:2	Analyze	Procedural
CO3	Analyze the stability of linear time-invariant systems in time domain using Routh Hurwitz criterion and root locus technique.	PO:1,2,4,5,10,12 PSO:2	Apply	Procedural
CO4	Analyze the stability of linear time-invariant systems in frequency domain using Nyquist criterion and Bode plot.	PO:1,2,4,5,10,12 PSO:2	Apply	Procedural
CO5	Understand the different types of compensators to achieve the desired performance of control System by root locus and Bode plot method.	PO:1,2,4,5,10,12 PSO:2	Understand	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	-	-	-	-	-	-	-	1	-	3	-	2
CO2	3	2	-	2	2	-	-	-	-	1	-	3	-	1
CO3	3	2	-	2	3	-	-	-	-	1	-	3	-	1
CO4	3	2	-	2	3	-	-	-	-	1	-	3	-	1
CO5	3	1	-	1	2	-	-	-	-	1	-	2	-	1
PO Target	3	1.75		1.75	2.5					1		2.8		1.2

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: II** **Semester: 5**
Course: Electrical Machine-II **Course Code: KEE 502**
Course Coordinator: Prof. Masood Rizvi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Analyze the performance of the synchronous machines using voltage regulation methods, voltage and frequency control, load sharing and parallel operation	PO:1,2,4,10,11,12	Analyze	Procedural
CO2	Analyze the performance of salient pole synchronous machine using two reaction theory and effect of varying field current at different loads	PO:1,2,3,11,12	Analyze	Procedural
CO3	Analyze the performance of induction machine using phasor diagram and torque slip characteristics	PO:1,2,3,11,12	Analyze	Procedural
CO4	Analyze the performance of induction machine using different speed control methods	PO:1,2,4,10,11,12 PSO:1	Analyze	Procedural
CO5	Analyze the performance of single-phase induction machine using no-load and block rotor test and different starting methods	PO:1,2,3,11,12	Analyze	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	2	1	-	-	-	-	-	1	1	3	-	-
CO2	3	1	3	-	-	-	-	-	-	-	2	1	-	-
CO3	3	2	3	-	-	-	-	-	-	-	1	2	-	-
CO4	3	2	3	1	-	-	-	-	-	1	1	3	1	-
CO5	2	2	2	-	-	-	-	-	-	-	1	3	-	-
PO Target	2.8	1.8	**2.6**	1	-	-	-	-	-	1	1.2	2.4	1	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Sensors & Transducer **Course Code: KEE 052**
Course Coordinator: Prof. Varun Sharma

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand sensors used in industry for measurement of displacement, force and pressure.	PO:1,2,3,4,5	Understand	Conceptual
CO2	Understand sensors in industry for measurement of temperature, position, accelerometer, vibration sensor, flow and level.	PO:1,2,3,4,5	Understand	Conceptual
CO3	Analysis of image processing and machine vision system in a pick and place robot.	PO:1,2,3,4,5	Apply	Procedural
CO4	Analyze data acquisition systems.	PO:1,2,3,4,5	Analyze	Procedural
CO5	Apply the concept of smart sensors in recent technologies like e Vehicle, and Industrial robots.	PO:1,2,3,4,5 PSO:2	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**
CO1	2	1	2	1	1	-	-	-	-	-	-	2	-	-
CO2	2	1	2	1	1	-	-	-	-	-	-	1	-	-
CO3	3	2	2	2	1	-	-	-	-	-	-	2	-	-
CO4	3	2	2	2	2	-	-	-	-	-	-	1	-	-
CO5	3	2	2	1	1	-	-	-	-	-	-	1	-	2
PO Target	2.6	1.6	2	1.4	1.2	-	-	-	-	-	-	1.4		2

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Industrial Automation & Control **Course Code: KEE 053**
Course Coordinator: Prof. Arika Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand the concept of automation, its terminology and basic communication protocols	PO:1,3,4,5,9,12 PSO: 2	Understand	Conceptual
CO2	Understand the working and applications of relay	PO:1,3,4,5,12 PSO: 2	Apply	Procedural
CO3	Learn the basics of PLC ,its operation and applications in automation.	PO:1,3,4,5,12 PSO: 2	Apply	Procedural
CO4	Study the basics of industrial sensors and its interfacing	PO:1,3,4,5,12	Apply	Procedural
CO5	Understand the basics of pneumatic systems and its applications	PO:1,3,4,5,12	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	-	1	1	3				2			2		1
CO2	2	-	3	2	3				-			2		2
CO3	2	-	3	2	3				-			2		2
CO4	2	-	2	1	1				-			2		-
CO5	2	-	1	1	1				-			2		-
PO Target	2.00		2.0	1.40	2.20				2.0			2		1.66

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Neural Network & Fuzzy System **Course Code: KEE 056**
Course Coordinator: Prof. (Dr.) Neeraj Kumar Gupta

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Analyze the concepts of learning in neural network.	PO:1,2,3,4,5,12 PSO 1,2	Analyze	Conceptual
CO2	Apply neural network for designing linear and non-linear type problems.	PO:1,2,3,4,5,12 PSO:1,2	Apply	Procedural
CO3	Analyze the concepts of fuzzy logic.	PO:1,2,3,4,5,12 PSO 1,2	Analyze	Procedural
CO4	Apply fuzzy logic for designing control systems.	PO:1,2,3,4,5,12 PSO 1,2	Apply	Procedural
CO5	Apply the concepts of neuro-fuzzy networks and neuro-fuzzy systems for solving conventional problems.	PO:1,2,3,4,5,12 PSO 1,2	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	2	1	1	-	-	-	-	-	-	2	2	1
CO2	2	1	2	2	1	-	-	-	-	-	-	1	2	2
CO3	2	1	1	1	1	-	-	-	-	-	-	2	1	1
CO4	1	2	1	1	2	-	-	-	-	-	-	1	2	2
CO5	2	1	1	1	1	-	-	-	-	-	-	1	2	2
PO Target	1.80	1.20	1.4	1.20	1.20	-	-	-	-	-	-	1.40	1.80	1.60

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 3**
Course: Circuit Simulation lab **Subject Code: KEE-451**
Course Coordinator: Dr. Ruchika Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Apply the knowledge of basic circuital law, nodal and mesh analysis for given circuit.	PO:1,2,5,9,10,12 PSO1,2	Apply	Procedural
CO2	Analyze AC and DC circuits using simulation techniques.	PO:1,2,5,9,10,12 PSO1,2	Analyze	Procedural
CO3	Analyze the transient response of AC circuits.	PO:1,2,5,9,10,12 PSO1,2	Analyze	Procedural
CO4	Evaluate the two-port network parameters.	PO:1,2,5,9,10,12 PSO1,2	Evaluate	Procedural
CO5	Estimate the parameters of different filters.	PO:1,2,5,9,10,12 PSO1,2	Evaluate	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO2	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO3	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO4	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO5	3	2	-	-	3	-	-	-	1	1	-	1	1	1
PO Target	3	2	-	-	3	-	-	-	1	1	-	1	1	1

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Power System-I Lab **Course Code: KEE 551**
Course Coordinator: Dr. Brijesh Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Simulation of power system model for various parameters of transmission line	PO:1,2,4,5,9,10,12 PSO:1	Apply	Procedural
CO2	Simulation of power system model for ABCD constant of transmission line	PO:1,2,4,5,9,10,12 PSO:1	Apply	Procedural
CO3	Simulation of power system model for the Ferranti effect in transmission line	PO:1,2,4,5,9,10,12 PSO:1	Apply	Procedural
CO4	Simulation of power system model for the sag & tension and string efficiency of insulator of transmission line	PO:1,2,4,5,9,10,12 PSO:1	Apply	Procedural
CO5	Simulation of power system model for the skin effect, and ground clearance of transmission line.	PO:1,2,4,5,9,10,12 PSO:1	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO2	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO3	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO4	3	2	-	1	3	-	-	-	1	1	-	1	1	-
CO5	3	2	-	1	3	-	-	-	1	1	-	1	1	-
PO Target	3	2	-	1	3	-	-	-	1	1	-	1	1	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Control System Lab **Course Code: KEE 552**
Course Coordinator: Prof. Alok Pandey

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Analyze the characteristics of control system components like ac servo motor, synchro, potentiometer, servo voltage stabilizer.	PO:1,2,4,5,10,12 PSO:1	Analyze	Procedural
CO2	Analyze the performance of control systems with different controllers / compensators.	PO:1,2,4,5,10,12 PSO:1	Analyze	Procedural
CO3	Analyze the behavior of dc motor in open loop and closed loop.	PO:1,2,4,5,10,12	Analyze	Procedural
CO4	Analyze the system's stability with different methods of time & frequency domain using MATLAB software.	PO:1,2,4,5,10,12	Analyze	Procedural
CO5	Apply the conversion of transfer functions into state space & vice versa and check the performance parameters in time domain response of a second order system for step input via MATLAB software.	PO:1,2,4,5,10,12	Analyze	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	1	2	-	-	-	-	2	-	2	2	-
CO2	3	2	-	1	2	-	-	-	-	2	-	2	2	-
CO3	3	2	-	1	2	-	-	-	-	2	-	2	-	-
CO4	2	1	-	2	3	-	-	-	-	1	-	3	-	-
CO5	2	1	-	2	3	-	-	-	-	1	-	3	-	-
PO Target	2.6	1.6		1.4	2.4	-	-	-	-	1.6		2.4	2	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Electrical Machine-II Lab **Course Code: KEE 553**
Course Coordinator: Prof. Masood Rizvi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Calculate the parameters of the synchronous machines.	PO:1,3,4,10,12	Analyze	Procedural
CO2	Understand parallel operation of two alternators.	PO:1,3,12	Analyze	Procedural
CO3	Determine the parameters of the three phase induction motors.	PO:1,3,4,10,12	Analyze	Procedural
CO4	Evaluate the performance of single-phase induction motor under different operating conditions	PO:1,3,4,10,12	Analyze	Procedural
CO5	Evaluate the performance of synchronous motor	PO:1,3,4,10,12	Analyze	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	-	2	2	-	-	-	-	-	1	-	2	-	-
CO2	2	-	2	-	-	-	-	-	-	-	-	3	-	-
CO3	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO4	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO5	3	-	1	1	-	-	-	-	-	1	-	3	-	-
PO Target	2.8	-	1.8	1.4	-	-	-	-	-	1	-	2.6	1	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 5**
Course: Mini Project **Course Code: KEE 554**
Course Coordinator: Prof. Masood Rizvi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand research papers for exploring new fields and review reporting.	CO:1,2,4,6,11,12	Understand	Conceptual
CO2	Evaluate new directions of various cutting-edge technologies.	CO:1,2,4,5,6,7,9,11,12	Create	Procedural
CO3	Create various skills by preparing detailed project report including all the findings.	CO:1,2,4,6,7,9,11,12	Create	Conceptual, Procedural
CO4	Effective communication by making an oral presentation to show the findings.	CO:2,4,10,12	Apply	Procedural
CO5	Create facts related knowledge by preparing detailed report including outcomes.	CO:2,4,5,6,7,9,11,12	Evaluate	Conceptual, Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	2	-	1	-	-	-	-	2	2	-	-
CO2	3	3	-	2	2	1	2	-	2	-	2	2	-	-
CO3	3	2	-	3	2	1	2	-	2	-	2	2	-	-
CO4	-	1	-	1	-	-	-	-	-	3	-	1	-	-
CO5	-	2	-	1	1	1	2	-	2	-	2	2	-	-
PO Target	3	2		1.8	1.66	1	2		2	3	2	1.8	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Rural Development: Administration & Planning **Course Code: KHU 701**
Course Coordinator: Prof. Varun Sharma

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand the concepts , basics and importance of rural development	PO:6,7,8,12	Understand	Conceptual
CO2	Explain pre and post-independence rural development programs.	PO:6,7,8,12	Understand	Procedural
CO3	Understand the importance, structure, significance of Panchayati raj and rural administration.	PO:6,7,8,12	Understand	Conceptual
CO4	Acquire the knowledge about the need and importance of human resource development in rural sector .	PO:6,7,8,9,12	Understand	Conceptual
CO5	Examine the importance of rural industrialization and entrepreneurship	PO:6,7,8,9,11,12	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	-	-	-	-	-	2	2	2	-	-	-	2	-	-
CO2	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO3	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO4	-	-	-	-	-	2	3	2	2	-	-	2	-	-
CO5	-	-	-	-	-	2	3	2	2	-	1	2	-	-
PO Target	-	-	-	-	-	1.6	2	1.6	2	-	1	1.6	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Energy Conservation & Auditing **Course Code: KEE 071**
Course Coordinator: Dr. S.K Tripathi

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Analyze the energy conservation/saving opportunities in different electric system and understand related legislations.	PO:1,2,3,4,6,7,12 PSO:2	Analyze	Factual, Procedural
CO2	Evaluate the energy saving behavior of utilities through implementation of demand side management (DSM).	PO:1,2,4,6,7,8.12 PSO:2	Evaluate	Procedural
CO3	Analyze energy audit & management and preparation of energy audit report for different energy conservation instances.	PO:1,2,3,4,6,7,9,10 .11,12 PSO:2	Analyze	Procedural
CO4	Apply the energy audit for Mechanical Utilities.	PO:1,2,3,4,7,9,10,12 PSO:2	Apply	Procedural
CO5	Evaluate cost-effective measures towards improving energy efficiency and energy conservation by implementation of energy efficient technologies	PO:1,2,3,4,6,7,12 PSO:2	Evaluate	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**
CO1	3	3	2	1	-	1	2	-	-	-	-	2	-	1
CO2	3	3	-	2	-	1	2	1	-	-	-	2	-	1
CO3	3	3	2	2	-	1	2	-	2	1	1	3	-	1
CO4	3	3	2	2	-	-	1	-	2	1	-	2	-	1
CO5	3	3	1	2	-	1	2	-	-	-	-	2	-	1
PO Target	3	3	1.75	1.8	-	1	1.8	1	2	1	1	2.2	-	1

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Electric & Hybrid Vehicle **Course Code: KEN 071**
Course Coordinator: Dr. Brijesh Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Explain the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamentals.	PO: 1,2,3,4,12 PSO:1	Understand	Procedural
CO2	Design plug – in hybrid electric vehicle architecture, and component-sizing Power electronics devices used in hybrid electric vehicles.	PO: 1,2,3,4,12 PSO:1	Understand	Procedural
CO3	Analyze various electric drives suitable for hybrid electric vehicles	PO: 1,2,3,4,12 PSO:1	Analyze	Procedural
CO4	Discuss different energy storage technologies used for hybrid electric vehicles and their control	PO: 1,2,3,4,12 PSO:1	Understand	Conceptual
CO5	Design different configurations of electric vehicles and its components, hybrid vehicle configuration by different techniques, sizing of components, optimization and energy management	PO: 1,2,3,4,12 PSO:1	Understand	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	3	2	2	-	-	-	-	-	-	-	3	2	
CO2	3	3	2	2	-	-	-	-	-	-	-	2	3	
CO3	3	3	2	2	-	-	-	-	-	-	-	2	3	
CO4	3	3	3	2	-	-	-	-	-	-	-	3	3	
CO5	3	3	3	3	-	-	-	-	-	-	-	2	3	
PO Target	3	3	2.4	2.2	-	-	-	-	-	-	-	2.4	2.8	

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Power System Protection **Course Code: KEN 077**
Course Coordinator: Prof. Arika Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand the need for the power system protection devices.	PO:1,2,4,5,6,,12	Understand	Conceptual
CO2	Explain Relay types ,basic terminology and its application.	PO:1,2,4,5,6,,12	Understand	Conceptual
CO3	Examine types of faults and protection scheme for major power system components	PO:1,2,4,5,6,,12	Apply	Conceptual
CO4	Describe the circuit breaker operation, testing and types.	PO:1,2 4,5,6,,12	Apply	Conceptual
CO5	Explain the electronic relay, microprocessor and computer-based protection schemes	PO:1,2 4,5,6,,12	Understand	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	-	1	1			1					2		
CO2	1	2	1	1			1					2		
CO3	2	2	2	2			1					2		
CO4	2	2	2	2			1					2		
CO5	2	-	1	1			1					2		
PO Target	1.60	1.20	1.40	1.40			1.00					2.00		

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Utilization of Electrical Energy & Electric Traction **Course Code: KEE-079**
Course Coordinator: Prof. Ameer Faisal

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand different types of electric heating.	PO:1,2,12	Understand	Conceptual
CO2	Apply concept of electric welding and electrolyte process.	PO:1,2,12	Apply	Procedural
CO3	Design of interior and exterior lighting systems, illumination levels for various purposes light fittings, factory lighting, flood lighting, street lighting.	PO:1,2,3,4,5,6,9,11,12	Apply	Procedural
CO4	Apply the fundamental concepts of electric traction.	PO:1,2,3,4,5,6,7,12	Apply	Procedural
CO5	Apply the knowledge of power electronics converters in Electric Traction.	PO:1,2,3,4,5,6,7,12	Apply	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1	1	-	-	-	-	-	-	-	-	-	2	-	-
CO2	3	1	-	1	-	-	-	-	-	-	-	2	-	-
CO3	3	3	3	3	2	2	-	-	1	-	1	3	-	-
CO4	3	2	1	2	1	1	1	-	-	-	-	2	-	-
CO5	3	3	1	2	1	1	1	-	-	-	-	2	-	-
PO Target	2.6	2	1.66	2	1.33	1.33	**1**	-	1	-	1	2.2	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Renewable Energy Resources **Code: KOE-074**
Course Coordinator: Dr. Mohd. Shariz Ansari

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand various non-conventional energy resources and their availability along with knowledge on solar cells.	PO:1,2,3,4,5,6,7,10,12	Understand	Factual
CO2	Apply the concept of solar radiation on flat plate and focusing type collectors to convert solar energy into electrical energy.	PO:1,2,3,4,5,6,7,10,12 PSO:2	Apply	Conceptual
CO3	Understand the concept of electrical energy generation from geothermal energy, magneto-hydro dynamics and fuel cells.	PO:1,2,3,4,5,6,7,10,12 PSO:2	Understand	Conceptual
CO4	Understand the concept of electrical energy generation from thermo-electrical, thermionic and wind energy conversions.	PO:1,2,3,4,5,6,7,10,12 PSO:2	Understand	Conceptual
CO5	Understand biomass, ocean thermal, wave and tidal wave energy conversions.	PO:1,2,3,4,5,6,7,10,12 PSO:2	Understand	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	1			1		2	3			1		1		
CO2	3			2		3	3			1		2		
CO3	1			2		2	3			1		2		
CO4	1			2		2	3			1		2		
CO5	1			2		2	3			1		2		
PO Target	1.4			1.8		2.2	3			1		1.8		

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Industrial Automation & PLC Lab **Subject Code: KEN-751**
Course Coordinator: Prof. Salim

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand automation, PLC, I/O modules of PLC, Programming languages and instructions of PLC	PO:1,2,3,5,7.9,12 PSO:2	Understand	Conceptual
CO2	Analyze Ladder diagram concept to test digital logic gates, Boolean expression, Demorgan's theorem."	PO:1,2,3,4,5,7.9,12 PSO:2	Apply	Procedural
CO3	Understand the Ladder program for DOL starter, timers, and counters	PO:1,2,3,5,7.9,12	Understand	Conceptual
CO4	Understand evolution and architecture of DCS, hierarchical control in DCS, programming DCS	PO:1,2,3,4,5,7.9,12	Understand	Conceptual
CO5	Explain the concept of basic digital electronics and data manipulation, basic PLC circuits for entry-level PLC applications.	PO:1,2,3,5,7.9,12 PSO:2	Understand	Conceptual

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	2	1	1	-	1	-	1	-	1	-	-	2	-	1
CO2	3	2	2	1	1	-	1	-	1	-	-	2	-	2
CO3	2	1	1	-	1	-	1	-	1	-	-	2	-	-
CO4	2	1	2	2	2	-	2	-	1	-	-	3	-	-
CO5	2	1	1	-	1	-	1	-	1	-	-	2	-	1
PO Target	2.2	1.2	1.4	1.5	1.2	-	1.2	-	1.00	-	-	2.2	-	1.33

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Mini Project or Internship Assessment **Subject Code: KEN-752**
Course Coordinator: Dr. Ruchika Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Understand research papers for exploring new fields and review reporting.	CO:1,2,4,6,11,12	Understand	Conceptual
CO2	Evaluate new directions of various cutting edge technologies.	CO:1,2,4,5,6,7,9,11,12	Create	Procedural
CO3	Create various skills by preparing detailed project report including all the findings.	CO:1,2,4,6,7,9,11,12	Create	Conceptual, Procedural
CO4	Effective communication by making an oral presentation to show the findings.	CO:2,4,10,12	Apply	Procedural
CO5	Create facts related knowledge by preparing detailed report including outcomes.	CO:2,4,5,6,7,9,11,12	Evaluate	Conceptual, Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	2	-	2	-	1	-	-	-	-	2	2	-	-
CO2	3	3	-	2	2	1	2	-	2	-	2	2	-	-
CO3	3	2	-	3	2	1	2	-	2	-	2	2	-	-
CO4	-	1	-	1	-	-	-	-	-	3	-	1	-	-
CO5	-	2	-	1	1	1	2	-	2	-	2	2	-	-
PO Target	3.0	3.0	-	-	2.4	1	-	-	-	3.0	2.0	2.0	-	-

Department of Electrical & Electronics Engineering

Program: B.Tech **Academic Session: 2023-24** **Year: III** **Semester: 7**
Course: Project-I **Subject Code: KEN-753**
Course Coordinator: Dr. Ruchika Singh

Course Outcomes

After completion of the course, the student will be able to		Relevant POs/ PSOs/ APOs	Revised Bloom's Level (BL)	Knowledge Category (KC)
CO No.	**Statement of Course Outcome**			
CO1	Demonstrate a sound technical knowledge of their selected project topic.	PO:1,2,4,6,7,8,9,10,11,12 PSO:1,2	Understand	Procedural
CO2	Identification of problem, interpretation and solution.	PO:1,2,3,4,6,7,9,10,11,12 PSO:1,2	Analyze	Procedural
CO3	Formulate engineering solutions to complex problems utilizing a systems approach.	PO:1,2,3,4,6,7,8,9,10,11,12 PSO:1,2	Evaluate	Metacognitive
CO4	Develop an engineering project and communicate with engineers and the community at large in written and oral forms.	PO:1,2,3,4,5,6,7,9,10,11,12 PSO:1,2	Evaluate	Metacognitive
CO5	Demonstrate the knowledge, skills and attitudes of a professional engineer as a team.	PO:1,2,3,4,6,7,9,10,11,12 PSO:1,2	Apply	Procedural

CO No.	Programme Outcome (PO)												PSO/ APO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
CO1	3	1	-	2	-	1	1	1	1	2	2	2	2	1
CO2	3	2	1	2	-	2	2	-	2	2	3	2	2	2
CO3	3	2	3	3	-	1	2	2	3	2	3	2	3	3
CO4	3	2	2	3	3	1	1	-	3	3	3	3	3	3
CO5	2	1	1	2	-	1	1	-	2	2	2	2	2	2
PO Target	2.8	1.6	1.75	2.4	3	1.2	1.4	1.5	2.2	2.2	2.6	2.2	2.4	2.2

HoD (EEE)

The End

HoD (EEE)