

Course Outcome



Session 2024-25 (Even) 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

4th Semester			
S No.	Subject Code	Subject Name	Page No.
1	BVE-401	Universal Human Values & Professional Ethics	1
2	BEE-401	Digital Electronics	2
3	BCC-401	Cyber Security	3
4	BEE-402	Electrical Machines-I	4
5	BOE-402	Automation and Robotics	5
6	BOE-407	Basics of Data Base Management System	6
7	BEE-403	Networks Analysis & Synthesis	7
8	BEE-451	Networks Analysis & Synthesis Lab	8
9	BEE-452	Electrical Machine-I Lab	9
10	BEE-453	Digital Electronics Lab	10

6th Semester			
S No.	Subject Code	Subject Name	Page No.
1	BEE-601	Power System-II	11
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4	BEE-061	Special Electrical Machines	14
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7	BEE-651	Power System-II Lab	17
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Dean (EEE)

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Department of Electrical & Electronics Engineering

8th Semester			
S No.	Subject Code	Subject Name	Page No.
1	KHU-802	Project Management & Entrepreneurship	20
2	KOE-083	Entrepreneurship Development	21
3	KOE-097	Big Data	22
4	KOE-099	Human Values in Vedic Darsana	23
5	KEN-851	Project-II	24



Dean (EEE)

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

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- ❖ 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

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Univ. Human Values & Professional Ethics	Course Code: BVE-401	Faculty: Dr. Jyoti Srivastava

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the essential complementarities between 'VALUES" and 'SKILLS' with its relation of engineering concept.	Remember	Factual, Conceptual
CO2	Analyze the sustained happiness and prosperity which are the core aspirations of all human beings keeping social environmental, economic, political scenario.	Analyze	Factual, Conceptual
CO3	Apply the development of a Holistic perspective among students.	Apply	Conceptual, Procedural
CO4	Apply the value-based living in a natural way using technological advancement.	Apply	Conceptual, Procedural
CO5	Analyze the plausible implications of such a Holistic approach in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with nature by using engineering, management principle.	Analyze 4	Factual, Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	1	3	3	2	1	1	3	-	-
CO-2	-	-	-	-	-	2	3	3	3	2	2	3	-	-
CO-3	-	-	-	-	-	2	3	3	3	3	2	3	-	-
CO-4	-	-	-	-	-	2	3	3	2	1	1	3	-	-
CO-5	-	-	-	-	-	2	3	3	2	2	2	3	-	-
PO Target	-	-	-	-	-	1.8	3	3	2.4	1.8	1.6	3	-	-



Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Digital Electronics	Course Code: BEE-401	Faculty: Dr. Natwar Singh

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO 1	Implement logic gates using concepts of binary number system	Apply	Procedural
CO 2	Design combinational logic circuits	Create	Procedural
CO 3	Design sequential logic circuits	Create	Procedural
CO 4	Implement the design of synchronous & asynchronous sequential circuits	Create	Procedural
CO 5	Apply the concept of Digital Logic Families in logic circuit-implementation	Apply	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	2	3	2	2	-	-	-	-	-		1	-	1
CO-2	3	3	3	3	3	-	-	-	-	-	1	2	-	1
CO-3	3	3	3	3	3	-	-	-	-	-	1	2	-	2
CO-4	3	3	3	3	3	-	-	-	-	-	1	1	-	2
CO-5	3	3	3	3	3	-	-	-	-	-	1	3	-	3
PO Target	3.0	2.8	3.0	2.8	2.8	-	-	-	-	-	1	1.8	-	1.8

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Cyber Security	Course Code: BCC-401	Faculty: Prof. Varun Sharma

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the basic concepts of cyber security and cybercrimes.	Understand	Conceptual
CO2	Understand cybercrime in mobile and wireless devices.	Understand	Conceptual
CO3	Analyze the tools and methods used in cyber crime	Analyze	Conceptual
CO4	Analyze the concepts of cyber forensics	Analyze	Procedural
CO5	Summarize the cyber security policies and cyber laws	Create	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	1	-	1	-	-	-	1	-	-
CO-2	-	-	-	-	-	3	-	3	-	-	-	2	-	-
CO-3	2	-	2	-	3	2	-	2	-	-	-	2	-	-
CO-4	2	-	1	-	3	2	-	2	-	-	-	1	-	-
CO-5	2	-	1	-	1	2	-	3	-	-	-	1	-	-
PO Target	2	-	1.33	-	2.33	1.8	-	2.2	-	-	-	1.4	-	-



Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Electrical Machines-I	Course Code: BEE-402	Faculty: Dr. Masood Rizvi

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Classify the various types of Electromechanical Energy devices.	Understand	Conceptual
CO2	Determine the response of the dc machine on the basis of Armature Reaction and commutation.	Apply	Procedural
CO3	Calculate the performance of dc machine by performing Swinburne' and Hopkinson' test.	Apply	Procedural
CO4	Calculate the performance of single-phase transformer by performing open circuit test, short circuit test and Sumpner's test.	Apply	Procedural
CO5	Understand the different types of 3 phase transformer connections & conversion from 3-phase to 2-phase using Scott's connection.	Understand	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	2	2	-	-	-	-	-	-	-	-	-	2	-	-
CO-2	3	2	1	1	-	-	-	-	-	1	-	3	1	-
CO-3	3	2	1	1	-	-	-	-	-	1	-	3	1	-
CO-4	3	2	1	1	-	-	-	-	-	1	-	3	2	-
CO-5	3	1	1	1	1	-	-	-	-	1	-	3	2	-
PO Target	2.8	1.8	1	1	1	-	-	-	-	1	-	2.8	1.5	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Automation & Robotics	Course Code: BOE-402	Faculty: Dr. Neeraj Kumar Gupta

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the concept of automation, including its classification and terminology, and its necessity in industrial systems.	Understand	Conceptual
CO2	Understand the basic principles of robotics, including the history, scope, and fundamental laws of robotics.	Understand	Conceptual
CO3	Understand the components of industrial automation systems, including sensors, controllers, actuators, and their roles and applications.	Understand	Conceptual
CO4	Understand the basic elements of automation in manufacturing, including Computer Integrated Manufacturing (CIM) systems and Flexible Manufacturing Systems (FMS).	Understand	Conceptual
CO5	Apply the concepts of automation and robotics to various industrial applications such as material handling, welding, medical applications, their effectiveness and impact.	Apply	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	2	2	3	2	-	-	2	2	-	3	-	2
CO-2	3	3	2	1	3	2	-	2	2	3	2	3	1	3
CO-3	3	3	2	3	2	2	-	2	2	2	2	3	2	3
CO-4	3	3	3	3	3	2	2	1	2	3	2	3	-	2
CO-5	3	2	1	3	3	2	1	-	2	3	2	3	-	-
PO Target	3	2.8	2	2.4	2.8	2	1.5	1.6	2	2.6	2	3	1.5	2.5

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Basics of Data Base Management System	Course Code: BOE-407	Faculty: Prof. Salim

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Describe the features of a database system and its application and compare various types of data models.	Understand	Conceptual
CO2	Construct an ER Model for a given problem and transform it into a relation database schema.	Analyze Create	Procedural
CO3	Formulate solution to a query problem using SQL Commands, relational algebra, tuple calculus and domain calculus.	Analyze Create	Procedural
CO4	Explain the need of normalization and normalize a given relation to the desired normal form.	Understand Apply	Procedural
CO5	Explain different approaches of transaction processing and concurrency control.	Understand	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	-	-	-	3			1	1		1	2	-	1
CO-2	2	1	3	2	3			1		3	2	1	3	2
CO-3	3	-	-	-	3			1		1	1	1	3	1
CO-4	2	3	-	3	-			1				1	2	1
CO-5	2	3	-	3	-			1				1	1	2
PO Target	2.4	2.33	3	2.66	3			1	1	2	2	1.2	2.25	1.4

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Network Analysis & Synthesis	Course Code: BEE-403	Faculty: Dr. Jyoti Srivastava

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Apply the knowledge of basic circuit law, nodal and mesh methods of circuit solution through Graph Theory approach.	Apply	Procedural
CO2	Analyze the AC and DC circuits through Kirchhoff's law and Network simplification theorems.	Analyze	Procedural
CO3	Analyze steady-state responses and transient response of DC and AC circuits by classical and Laplace transform methods.	Analyze	Procedural
CO4	Use the concept of complex frequency and the structure and function of one and two port network.	Apply	Procedural
CO5	Develop one port network and different filters.	Create	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	2	1	2	1	-	-	-	-	-	-	3	1	-
CO-2	3	3	2	2	2	-	-	-	-	-	-	3	2	-
CO-3	3	3	2	2	2	-	-	-	-	-	-	3	2	-
CO-4	3	2	1	2	1	-	-	-	-	-	-	3	1	-
CO-5	3	3	3	2	2	-	-	-	-	-	-	3	3	-
PO Target	3	2.6	1.8	2	1.6	-	-	-	-	-	-	3	1.8	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Network Analysis & Synthesis Lab	Course Code: BEE-451	Faculty: Dr. Jyoti Srivastava

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	After completion of the course, the student will be able to		
CO1	Apply the knowledge of basic circuit law, nodal and mesh analysis for given circuit.	Apply	Procedural
CO2	Analyze AC and DC circuits using simulation techniques.	Analyze	Procedural
CO3	Analyze the transient response of AC circuits.	Analyze	Procedural
CO4	Evaluate the two-port network parameters.	Evaluate	Procedural
CO5	Estimate the parameters of different filters.	Evaluate	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-2	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-3	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-4	3	2	-	-	3	-	-	-	1	1	-	1	1	1
CO-5	3	2	-	-	3	-	-	-	1	1	-	1	1	1
PO Target	3	2	-	-	3	-	-	-	1	1	-	1	1	1

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Electrical Machines-I Lab	Course Code: BEE-452	Faculty: Dr. Masood Rizvi

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	After completion of the course, the student will be able to		
CO1	Perform the speed control of dc motor above and below the rated speed.	Apply	Procedural
CO2	Evaluate the efficiency of dc motor by conducting load test.	Evaluate	Procedural
CO3	Evaluate the efficiency of transformer by performing load test.	Evaluate	Procedural
CO4	Evaluate the parameters of equivalent circuit of transformer by conducting short circuit and open circuit test	Evaluate	Procedural
CO5	Design transformer and dc machine parts using MATLAB	Analyze	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	-	2	2	-	-	-	-	-	1	-	2	-	-
CO-2	2	-	2	-	-	-	-	-	-	-	-	3	-	-
CO-3	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-4	3	-	2	2	-	-	-	-	-	1	-	2	1	-
CO-5	3	-	1	1	-	-	-	-	-	1	-	3	-	-
PO Target	2.8	-	1.8	1.4	-	-	-	-	-	1	-	2.6	1	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 4th Even Semester
Course Name: Digital Electronics Lab	Course Code: BEE-453	Faculty: Prof. Varun Sharma

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	After completion of the course, the student will be able to		
CO1	Apply digital binary system it for implementation of Gates.	Understand, Apply	Procedural
CO2	Design the Sequential circuits with the help of Combinational circuits and feedback element.	Create	Procedural
CO3	Design data selector circuits with the help of universal Gates.	Create	Procedural
CO4	Design the counters with the help of sequential circuit and basic Gates.	Create	Procedural
CO5	Develop the projects using the digital ICs and electronics components.	Apply	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	2	3	2	-	-	-	-	-	-	-	2	-	1
CO-2	3	3	3	2	-	-	-	-	-	-	-	2	-	2
CO-3	3	3	3	2	-	-	-	-	-	-	-	3	-	1
CO-4	3	2	2	3	-	-	-	-	-	-	-	2	-	1
CO-5	3	3	3	3	-	-	-	-	-	-	-	3	-	1
PO Target	3	2.6	2.8	2.4	-	-	-	-	-	-	-	2.4		1.2

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Power System-II	Course Code: BEE-601	Faculty: Dr. Mohd. Shariz Ansari

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Analyze the role of components and one line diagram in power system studies including network under both balanced and unbalanced fault conditions	Analyze	Procedural
CO2	Analysis of load flow problem of an electrical power network	Analyze	Procedural
CO3	Apply the concept of travelling wave theory in transmission lines operations	Apply	Procedural
CO4	Analyze the steady state and transient state stability of the power system under various conditions.	Analyze	Procedural
CO5	Understand the operating principle and applications of a various types of relays and circuit breakers in power systems.	Understand	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	2	2	-	2	-	-	-	-	-	3	-	-
CO-2	3	3	2	2	-	2	-	-	-	-	-	3	-	-
CO-3	3	2	1	2	-	1	-	-	-	-	-	3	-	-
CO-4	3	3	2	2	-	2	-	-	-	-	-	3	-	-
CO-5	2	2	1	1	-	2	-	-	-	-	-	2	-	-
PO Target	2.8	2.6	1.6	1.8	-	1.8	-	-	-	-	-	2.8	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Microprocessor	Course Code: BEE-602	Faculty: Dr. Ruchika Singh

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the general architecture of microprocessor and basics of programming.	Understand	Conceptual
CO2	Understand the internal architecture of 8085 microprocessor and programming instructions of 8085.	Understand	Conceptual, Procedural
CO3	Understand the general architecture of 8086 microprocessor and instructions of 8086.	Understand	Conceptual
CO4	Develop assembly language programs of 8085 microprocessor .	Apply	Conceptual, Procedural
CO5	Interface different external peripheral devices with 8085 microprocessor.	Evaluate	Conceptual, Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	2	1					2			2	2	2
CO-2	3	3	2	2	1				2			2	2	2
CO-3	3	3	2	2	1				2			2	2	2
CO-4	3	3	3	3					2			2	3	2
CO-5	3	3	2	2	1				2			2	2	2
PO Target	3	3	2.2	2	1				2			2	2.2	2

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Power Electronics	Course Code: BEE-603	Faculty: Dr. S.K Tripathi

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the characteristics as well as the operation of BJT, MOSFET, IGBT, SCR, TRIAC and GTO and identify their use in the power switching applications	Apply	Conceptual
CO2	Analyze the non-isolated DC-DC converters and identify their use in different Power electronics applications.	Apply	Procedural
CO3	Evaluate the performance parameters of phase controlled rectifiers	Evaluate	Procedural
CO4	Analyze single-phase ac voltage controllers, cyclo-converters and their various applications	Analyze	Procedural
CO5	Analyze the single-phase and three phase bridge inverters, Voltage source inverters and current source inverters	Create	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	1	2	2	-	-	-	-	-	-	2	2	2
CO-2	3	3	2	3	3	1	-	-	-	1	1	2	3	2
CO-3	3	3	2	3	2	1	-	-	-	1	1	2	2	3
CO-4	3	3	2	3	3	1	-	-	-	1	2	2	2	3
CO-5	3	3	2	3	2	2	-	-	-	2	2	3	3	1
PO Target	3.00	3.00	1.8	2.8	2.40	1.25	-	-	-	1.25	1.5	2.20	2.4	2.2

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Special Electrical Machines	Course Code: BEE-061	Faculty: Dr. Vanya Goel

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	After completion of the course, the student will be able to		
CO1	Understand the working principle and constructional Features of different types of electrical machines.	Understand	Conceptual
CO2	Analyze the torque- speed characteristics of different electrical machines and interpret their performance.	Analyze	Conceptual, Procedural
CO3	Apply different types of control techniques for a machine and identify the best control strategy.	Apply	Conceptual, Procedural
CO4	Illustrate the use of stepper, BLDCs, SRM, and other special machines in the area of the various industrial and domestic as well as commercial applications.	Analyze	Conceptual, Procedural
CO5	Understand the concepts of Single phase synchronous motor and characteristics of reluctance and hysteresis motors.	Understand	Factual, Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	2	2	-	-	-	-	3	-	-	-	-	2	2	2
CO-2	3	2	-	-	-	-	3	-	-	-	-	2	3	2
CO-3	3	3	-	2	-	-	3	-	-	-	-	3	3	3
CO-4	3	3	-	2	-	-	3	-	-	-	-	3	3	3
CO-5	2	-	-	-	-	1	3	-	-	-	-	3	2	-
PO Target	2.6	2.5	-	2	-	1	3	-	-	-	-	2.6	2.6	2.5

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Essence of Indian Traditional Knowledge	Course Code: BNC-601	Faculty: Prof. Ameer Faisal

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Identify and explore the basic features and modalities about the Indian constitution.	3	Conceptual
CO2	Differentiate and relate the functioning of Indian parliamentary system at the center and state level.	6	Conceptual, Procedural
CO3	Differentiate different aspects of the Indian Legal System and its related bodies.	2	Conceptual
CO4	Discover and apply different laws and regulations related to engineering practices.	5	Conceptual
CO5	Correlate role of engineers with different organizations and governance models	3	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-2	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-3	-	-	-	-	-	3	3	2	2	2	-	-	-	-
CO-4	-	-	-	-	-	2	1	2	2	2	-	-	-	-
CO-5	-	-	-	-	-	2	1	2	2	2	-	-	-	-
PO Target	-	-	-	-	-	2.2	1.4	2	2	2	-	-	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Understanding the Human Being Comprehensively	Course Code: BOE-069	Faculty: Dr. Satish Kumar

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the comprehensive human goal of life.	Understand	Conceptual
CO2	Understand the harmony of nature and existence.	Understand	Conceptual
CO3	Analyze the activities of self in its completeness.	Analyze	Procedural
CO4	Analyze the coexistence in all four orders of nature.	Analyze	Procedural
CO5	Analyze the human traditions from self to entire existence.	Analyze	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	1	1	2	2	2	1	3	-	-
CO-2	-	-	-	-	-	2	2	1	1	1	1	3	-	-
CO-3	-	-	-	-	-	1	1	3	3	3	2	3	-	-
CO-4	-	-	-	-	-	1	2	2	1	1	1	3	-	-
CO-5	-	-	-	-	-	2	1	3	2	2	1	3	-	-
PO Target	-	-	-	-	-	1.4	1.4	2.2	1.8	1.8	1.2	3	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Power System-II Lab	Course Code: BEE-651	Faculty: Dr. Mohd. Shariz Ansari

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Compare the different performance characteristics of various relays including data provided by manufacturers.	Evaluate	Procedural
CO2	Develop programs for load-flow solutions using NR and GS methods.	Evaluate	Procedural
CO3	Develop programs for various types of faults in power network.	Evaluate	Procedural
CO4	Demonstrate different numerical integration methods and factors influencing transient stability.	Apply	Procedural
CO5	Determine the effect of load in long transmission line.	Apply	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	3	2	-	-	-	-	2	1	-	-	3	-
CO-2	3	3	3	2	3	-	-	-	2	1	-	-	3	-
CO-3	3	3	3	2	3	-	-	-	2	1	-	-	3	-
CO-4	3	3	2	2	2	-	-	-	2	1	-	-	3	-
CO-5	3	3	2	2	-	-	-	-	2	1	-	-	3	-
PO Target	3	3	2.6	2	2.6	-	-	-	2	1	-	-	3	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Microprocessor Lab	Course Code: BEE-652	Faculty: Dr. Ruchika Singh

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Study of microprocessor system.	Understand	Conceptual
CO2	Development of flow chart for understanding the data flow.	Apply	Conceptual, Procedural
CO3	Learning assembly language to program microprocessor based system.	Apply	Conceptual, Procedural
CO4	Interfacing different peripheral devices with the microprocessor.	Analyze	Conceptual, Procedural
CO5	Building logic for microprocessor based system	Analyze	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	3	2	1					2			2	2	2
CO-2	3	3	2	2	1				2			2	2	2
CO-3	3	3	2	2	1				2			2	2	2
CO-4	3	3	3	3					2			2	3	2
CO-5	3	3	2	2	1				2			2	2	2
PO Target	3	3	2.2	2	1				2			2	2.2	2

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 6th Even Semester
Course Name: Power Electronics Lab	Course Code: BEE-653	Faculty: Dr. S.K Tripathi

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
	After completion of the course, the student will be able to		
CO1	Design and simulation of uncontrolled rectifier circuit.	Create	Procedural
CO2	Design and simulation of inverter circuit with R and RL loads	Create	Procedural
CO3	Hardware simulation of chopper circuit with DC motor load.	Analyze	Procedural
CO4	Hardware simulation of cycloconverter circuit.	Analyze	Procedural
CO5	Analysis of advance power converters.	Analyze	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	2	3	3	3	2					2	2	2	2	2
CO-2	2	3	2	2	2					2	2	2	2	2
CO-3	3	3	3	2	3					3	2	2	3	2
CO-4	3	3	3	2	2					2	2	2	2	2
CO-5	2	3	3	3	2					2	2	2	2	2
PO Target	2.4	3	2.8	2.20	2.20					2.20	2	2	2.20	2

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 8th Even Semester
Course Name: Project Management & Entrepreneurship	Course Code: KHU-802	Faculty: Dr. Rahat U Khan

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the theories of entrepreneurship and entrepreneurial development programs	Understand	Factual
CO2	Apply innovative business ideas and market opportunities.	Apply	Procedural
CO3	Apply the importance of Project Management and Project's life cycle	Apply	Procedural
CO4	Analyze project finance and report.	Analyze	Procedural
CO5	Analyze social sector perspectives & social entrepreneurship.	Analyze	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	1	1	2	2	-	3	1	-	-
CO-2	-	-	-	-	-	2	2	3	3	-	3	2	-	-
CO-3	-	-	-	-	-	3	3	2	3	-	3	2	-	-
CO-4	-	-	-	-	-	2	3	2	3	-	3	2	-	-
CO-5	-	-	-	-	-	2	3	3	2	-	3	3	-	-
PO Target	-	-	-	-	-	2	2.4	2.4	2.6	-	3	2	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 8th Even Semester
Course Name: Entrepreneurship Dev.	Course Code: KOE-083	Faculty: Prof. Ameer Faisal

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the growth and role of small-scale industries in the national economy, demand-based and resources, stages in starting a small-scale industry.	Understand	Conceptual
CO2	Apply for assessment of the viability, formulation, financing, field study, demand analysis, material balance, output methods, and benefit-cost analysis.	Apply	Procedural
CO3	Analyze the preparation of balance sheets and assessment of economic viability, decision making, expected costs wages and incentive, inventory control, and preparation of financial reports.	Analyze	Procedural
CO4	Understand the financial functions, cost of capital approach in project planning, risk analysis, capital expenditures profit planning, and control of financial flows.	Understand	Conceptual
CO5	Apply partnership laws, business ownership, sales, income taxes, and workman compensation act.	Apply	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	1	-	-	-	-	-	1	3	3	2	3	2	-	-
CO-2	2	-	-	-	1	-	2	3	3	2	3	2	-	-
CO-3	2	-	-	-	2	-	2	1	3	3	3	2	-	-
CO-4	1	-	-	-	2	-	2	2	3	3	3	2	-	-
CO-5	1	-	-	-	-	-	1	3	3	2	3	2	-	-
PO Target	1.4	-	-	-	1.66	-	1.6	2.4	3	2.4	3	2	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 8th Even Semester
Course Name: Big Data	Course Code: KOE-097	Faculty: Prof. Kapil Gandhi

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand fundamentals of Big Data analytics	Understand	Factual Conceptual
CO2	Application of Hadoop and map reduce frameworks	Understand	Procedural
CO3	Analyzing Hadoop Distributed File System with simple JAVA and Hadoop I/O	Understand	Conceptual, Procedural
CO4	Understand NoSQL MongoDB, spark and scala for Big Data	Understand	Factual, Conceptual
CO5	Inspect the big data using programming tools like Pig, Hive and HBase.	Understand	Conceptual, Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	2	3	2	3	3	-	-	3	-	1	-	3	-	-
CO-2	2	3	2	3	3	-	-	-	-	1	-	3	-	-
CO-3	2	3	2	3	3	-	-	-	-	1	-	3	-	-
CO-4	2	3	3	3	3	-	-	-	-	1	-	3	-	-
CO-5	2	3	3	3	3	-	-	-	-	1	-	3	-	-
PO Target	2	3	2.4	3	3	-	-	3	-	1	-	3	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 8th Even Semester
Course Name: Human Values in Vedic Darsana	Course Code: KOE-099	Faculty: Dr. Jyoti Srivastava

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Understand the need and importance of Vedic Literature with Nyay Darsana	Understand	Conceptual
CO2	Understand the basics of Vaisesika Darsana	Understand	Conceptual
CO3	Understand the philosophy of spirituality with Samkhya & Yoga Darsana	Understand	Procedural
CO4	Understand the philosophy of the God with the Upanisad & the Vedant Darsana	Understand	Conceptual
CO5	Understand the purpose and program for a human being based on Vedic Darsana.	Understand	Conceptual

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	-	-	-	-	-	1	2	1	-	-	1	2	-	-
CO-2	-	-	-	-	-	1	-	1	-	1	1	2	-	-
CO-3	-	-	-	-	-	2	2	2	1	1	1	2	-	-
CO-4	-	-	-	-	-	1	1	1	-	-	-	2	-	-
CO-5	-	-	-	-	-	1	2	1	1	1	1	2	-	-
PO Target	-	-	-	-	-	1.2	2		1	1	1	2	-	-

Department of Electrical & Electronics Engineering

Program Name: B.Tech.	Academic Session: 2024-25	Semester: 8th Even Semester
Course Name: Project-II	Course Code: KEN-851	Faculty: Dr. Ruchika Singh

Tagging COs with BLs & KCs			
CO No.	Statement of Course Outcome	Bloom's Cognitive Process Level (BL)	Knowledge Category (KC)
After completion of the course, the student will be able to			
CO1	Demonstrate a sound technical knowledge of their selected project topic.	Apply	Procedural
CO2	Identification of problem, interpretation and solution.	Analyze	Procedural
CO3	Formulate engineering solutions to complex problems utilizing a systems approach.	Create	Metacognitive
CO4	Develop an engineering project and communicate with engineers and the community at large in written and oral forms.	Create	Metacognitive
CO5	Demonstrate the knowledge, skills and attitudes of a professional engineer as a team.	Apply	Procedural

Mapping of Course outcomes with Program outcomes CO-POs Matrix														
POs	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
CO-1	3	1	-	2	-	1	1	1	1	2	2	2	2	1
CO-2	3	2	1	2	-	2	2	-	2	2	3	2	2	2
CO-3	3	2	3	3	-	1	2	2	3	2	3	2	3	3
CO-4	3	2	2	3	3	1	1	-	3	3	3	3	3	3
CO-5	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



Department of Electrical & Electronics Engineering

THE END



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