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Department of Mechanical Engineering

Course Outcomes & CO-PO Mapping Even Sem(2024-25)

Department of Mechanical Engineering

Program Name : B Tech	**Academic Session : 2024-25**	**Semester: II**
Course name : Differential Equations and Complex Integration	**Course Code: MA104L**	**Faculty : Dr. Barkha Rohtagi**

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 to solve ordinary and higher order differential equation using various methods.	**3**	C,P
CO2	Apply the concept of periodic function to find Fourier series and Fourier half range series.	**3**	C,P
CO3	Employ the concept of Partial Differential Equations in heat equation, wave equation and Laplace equation with different types of boundary conditions.	**3**	C,P.
CO4	Apply the concept of Laplace transforms techniques to solve ordinary differential equations.	**3**	C,P
CO5	Apply the knowledge of complex integration to solve integrals and expansion of function using Laurent and Taylor series.	**3**	.C,P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Differential Equations and Complex Integration (MA104L)

Course Code	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				1				1		
CO-2	2	2	2	1				1				1		
CO-3	2	2	2	1				1				1		
CO-4	2	2	2	1				1				1		
CO-5	2	2	1					1				1		
PO Target	**2.2**	**2**	**1.8**	**1**				**1**				**1**		

Barkha

Signature of Course Coordinator | Signature of Addl. HoD | Signature of HoD

Please Note (Reference: OBE Guidelines wef. Session 2023–24)

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Department of Mechanical Engineering

Program Name : B. Tech.	**Academic Session : 2024-25**	**Semester: II**
Course name : Environment Chemistry	**Course Code: CH101L**	**Faculty : Dr. Sheetal Mital**

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 knowledge of advanced materials for interdisciplinary applications.	**2**	C, P
CO2	Employ the concept of electrochemistry for portable energy devices to provide viable solutions for industrial problems.	**3**	C, P
CO3	Apply the insight of environment and resources for sustainable development.	**3**	C, P
CO4	Determine the environment related issues, their impacts and provide the sustainable solutions.	**3**	C, P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Environment Chemistry (CH101L)												
Course Code	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PO-12**
CO-1	2	1	1	1		1	1					1
CO-2	2	1	2	2		1	1					1
CO-3	2	1	1	1		2	2					2
CO-4	2	1	1	1		2	2					2
PO Target	**2**	**1**	**1.25**	**1.25**		**1.5**	**1.5**					**1.5**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: II**
Course name : Data Structure	**Course Code: CS201B**	**Faculty : Mr. Omprakash Kushwaha**

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	Use the concept of the array in searching and sorting algorithms	3	C, P
CO2	Illustrate the concept of Dynamic Memory Allocation for Operations on Linked List.	4	C, P
CO3	Analyze different recursion techniques using stack.	4	C, P
CO4	Implementation of Queue and its applications using basic data structures.	3	C, P
CO5	Apply the knowledge of tree and binary search tree structures for problem solving.	3	C, P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Data Structure(CS201B)

Course Code	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	1	-	1	1	-	-	-	-	-	2	2	-
CO-2	3	2	2	1	1	1	-	-	-	-	-	2	2	-
CO-3	3	2	2	1	1	1	-	-	-	-	-	2	2	-
CO-4	3	2	2	1	1	1	-	-	-	-	-	2	2	-
CO-5	3	2	1	1	1	1	-	-	-	-	-	2	2	-
PO Target	3	1.8	1.6	1	1	1	-	-	-	-	-	2	2	-

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B. Tech.	**Academic Session : 2024-25**	**Semester: II**
Course name: Design and Realization	**Course Code: ME101B**	**Faculty: Dr. Neha Bhadauria**

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 Computer-Aided Design (CAD).	2	C & P
CO2	Apply CAD software to create basic 3D models.	3	C & P
CO3	Apply CAD and Additive Manufacturing software for 3D printing.	3	C & P
CO4	Understand the fundamentals of Computer-Aided Manufacturing and CNC machining.	2	C & P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Design and Realization (ME101B)

Course Code	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
CO-2	2	-	2	-	3	-	-	-	-	2	-	3	-	2
CO-3	2	-	2	-	3	-	-	-	2	2	-	3	-	2
CO-4	-	-	-	-	2	-	-	-	2	2	-	3	-	2
PO Target	2	-	2	-	2.5	-	-	-	2	2	-	3	-	2

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B. Tech	**Academic Session : 2024-25**	**Semester: II**
Course name : Emerging Technology for Engineering /Lab	**Course Code: EE103L/EE103P**	**Faculty : 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	Understand the concepts of Industry 1.0 to Industry 5.0 & 5G technology	**2**	C,P
CO2	Apply the MATLAB for Engineering Applications	**3**	C,P
CO3	Understand the concepts of cloud computing	**2**	C,P
CO4	Understand the concepts of block chain.	**2**	C,P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Emerging Technology for Engineering /Lab (EE103L/EE103P)

Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO1	PSO1
CO-1	2	2	2	2	-	-	-	-	-	-	-	2	2	2
CO-2	3	2	2	2	-	-	-	-	-	-	-	2	3	2
CO-3	3	3	3	2	-	-	-	-	-	-	-	3	3	3
CO-4	3	3	2	2	-	-	-	-	-	-	-	3	3	3
PO Target	2.75	2.5	2.25	2								2.5	2.75	2.5

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: II**
Course Name : Engineering Mechanics	**Course Code: ME102L**	**Faculty : Mr. Ashok 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 shear forces and bending moments for different beam configurations and loading conditions.	2	C,P
CO2	Analyze truss structures using the methods of joints and sections and demonstrate a thorough understanding of friction types and laws.	4	P
CO3	Apply first principles and theorems to calculate centroids, centers of gravity and moments of inertia for area and masses.	3	P
CO4	Apply the principles of kinematics and kinetics of rigid bodies.	3	C,P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes(CO-POs/PSOs Matrix)

Engineering Mechanics (ME102L)

Course Code	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	-	-	1	-	-	-	-	-	2	-	-
CO-2	3	2	2	-	-	1	-	-	-	-	-	2	-	-
CO-3	3	-	2	-	-	1	-	-	-	-	-	2	-	-
CO-4	3	-	2	-	-	1	-	-	-	-	-	2	-	-
PO Target	**3**	**2**	**1**	-	-	**1**	-	-	-	-	-	2	-	-

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: II**
Course name : Python for Engineers	**Course Code: AI102P**	**Faculty : Dr. Piyush Pant**

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	Use Python variables, operators, expressions, blocks, and numeric types to solve computational problems.	**2**	C
CO2	Apply Python conditional statements, loops, and loop control.	**3**	C
CO3	Use Python complex data types (strings, lists, tuples, and dictionaries) and functions for efficient data manipulation and problem-solving.	**3**	.C
CO4	Apply Python file operations for reading, writing, manipulating files, and processing structured data efficiently.	**3**	.C
CO5	Develop simple programs utilizing built-in functions of Python packages like Matplotlib, NumPy, and Pandas.	**4**	.C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Python for Engineers (AI102P)

Course Code	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	-	3	-	-	-	-	-	-	3		
CO-2	3	3	2	-	3	-	-	-	2	2	-	3		
CO-3	3	3	3	2	3	-	-	-	2	2	-	3		
CO-4	3	3	2	2	3	-	-	2	2	2	-	3		
CO-5	3	3	2	2	3	-	-	2	2	3	-	3		
PO Target	**3**	**3**	**2.22.25**	**2**	**3**			**2**	**2**	**2.25**		**3**		

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: II**
Course name : Indian Knowledge System	**Course Code: HS198B**	**Faculty : Dr. Piyush Pant**

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	Explain the architectural principles and design elements that govern the orientation of South Indian temples.	**2**	C
CO2	Analyze the astronomical associations of South Indian temples, exploring how celestial events and movements were integrated into temple rituals and festivals.	**4**	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Course Name (Course Code)

Course Code	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	1					1		
CO-2	1					3	1					1		
PO Target						**3**	**1**					**1**		

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 2nd**
Course name : Innovation and Entrepreneurship	**Course Code: (ID 104 B)**	**Faculty : Prashant Vashishtha**

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 an understanding of the various types of innovation, their importance in personal and professional growth, and how to apply innovative thinking to solve real-world problems.	**3**	F
CO2	Gain the ability to generate and refine innovative ideas through creative techniques and utilize the Business Model Canvas to structure viable business concepts.	**3**	F
CO3	Develop the skills to conduct comprehensive market research, identify and segment target customers, and validate their business ideas based on market insights and data analysis.	**6**	P
CO4	Transform their innovative ideas into tangible prototypes (Minimum Viable Products) and will acquire the ability to craft and deliver compelling pitches for potential investors and stakeholders.	**6**	P
CO5	Effectively present their business ideas to industry experts and investors, apply feedback to improve their ideas, and explore opportunities for securing funding or mentorship.	**6**	P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Innovation and Entrepreneurship (ID 104 B)

Course Code	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	2	1	3	3	2	3	3	3	3	-	-
CO-2	2	2	2	2	0	2	2	1	2	2	2	2	-	-
CO-3	2	2	2	2	0	2	2	1	3	3	3	3	-	-
CO-4	2	1	1	1	2	2	2	2	3	3	3	3	-	-
CO-5	1	1	1	1	1	2	2	2	3	3	3	3	-	-
PO Target	**1.8**	**1.6**	**1.6**	**1.6**	**0.8**	**2.2**	**2.2**	**1.6**	**2.8**	**2.8**	**2.8**	**2.8**	**-**	**-**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Program Name : B. Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course name : Energy Science & Engineering	**Course Code: BOE404**	**Faculty : Mr. Vineet Kumar Vashishtha**

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 basics concepts of Energy and its Usage.	**2**	**C**
CO2	Understand the use of nuclear energy, Nuclear reactors and its safety operation.	**2**	**C**
CO3	Apply the use of solar energy and its generations for solar photovoltaic devices etc.	**3**	**P**
CO4	Apply the use of Conventional & non-conventional energy sources for different power plant.	**3**	**C**
CO5	Analyze the Systems and Synthesis for Green energy, green buildings etc. and environment impact assessment.	**4**	**P**

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes(CO-POs/PSOs Matrix)

Energy Science & Engineering (BOE404)

Course Code	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	1	1							1		1
CO-2	1	1	1	1	1	1	1	1				1		1
CO-3	2	2	2	2	2	1	1	1				2		2
CO-4	2	2	2	2	2	1	1	1				2		1
CO-5	2	2	2	2	2	2	2	2				2		1
PO Target	**1.6**	**1.6**	**1.6**	**1.6**	**1.6**	**1**	**1**	**1**				**1.6**		**1.2**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course Name : UHVPE	**Course Code: BVE401**	**Faculty : Mr. Sonendra**

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 process of value education, comparison between values & skill, the meaning of happiness and prosperity.	**2**	F,C
CO2	Analyze the Harmony in the Self "the Co-existence of Self and Body"	**4**	F,C
CO3	Understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships	**2**	F,C
CO4	Analyze the harmony in nature, mutually fulfilling and participation in the nature.	**4**	F,C
CO5	Decide the role of holistic understanding of harmony on professional ethics.	**5**	F,C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

UHVPE (BVE401)

Course Code	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	1	1	1	1	-	-
CO-2	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO-3	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO-4	-	-	-	-	-	2	2	3	1	1	1	1	-	-
CO-5	-	-	-	-	-	2	2	3	1	1	1	1	-	-
PO Target	-	-	-	-	-	2	2	3	1	1	1	1	-	-

Sonendra

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Program Name :B .Tech.	**Academic Session : 2024-25**	**Semester: 4th**
Course name : Cyber Security	**Course Code:BCC-401**	**Faculty : YOUSUF HAIDER**

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.	2	F/C
CO2	Understand the security policies and cyber laws.	2	F/C
CO3	Understand the tools and methods used in cyber crime	2	F/C
CO4	Understand the concepts of cyber forensics	2	F/C
CO5	Understand the cyber security policies and cyber laws	2	F/C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes(CO-POs/PSOs Matrix)

Course Name (Course Code)

Course Code	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	-	3	-	-	1	2	-	-	-	2	-	-
CO-2	2	1	-	3	1	-	1	2	-	-	-	2	-	-
CO-3	2	1	-	3	3	-	1	2	-	-	-	2	1	-
CO-4	2	1	-	3	-	-	1	2	-	-	-	2	-	-
CO-5	1	1	-	3	1	3	1	3	-	-	-	2	-	-
PO Target														

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

Please Note (Reference: OBE Guidelines wef. Session 2023–24)

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course Name : Applied Thermodynamics	**Course Code: BME 401**	**Faculty : Mr. SONENDRA**

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 air standard cycle and performance of I.C engines.	**2**	F,C
CO2	Analyze the combustion of fuel and basic power cycles.	**4**	F,C
CO3	Understand the working and performance of boiler, draught and condenser.	**2**	F,C
CO4	Analyze the design and working of nozzles and steam turbines.	**4**	F,C
CO5	Analyze performance of gas turbines and jet propulsion.	**4**	F,C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Applied Thermodynamics (BME 401)

Course Code	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	-	2		
CO-2	3	3	2	2	-	-	1	-	-	1	-	2		
CO-3	2	2	1	2	-	-	-	-	-	1	-	2	2	1
CO-4	3	3	-	1	-	-	-	-	-	1	-	2	2	1
CO-5	2	2	-	-	-	-	-	-	-	1	-	2	2	1
PO Target	2.6	2.6	1.5	1.67	-	-	1	-	-	1	-	2	**2**	**1**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name: B.Tech. (ME)	**Academic Session: 2024-25**	**Semester: 4th**
Course name: Engineering Mechanics and Strength of Materials	**Course Code: BME402**	**Faculty: Dr. Ashish Karnwal**

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 shall be able to			
CO1	Understand the force systems and applications of force equilibrium of various two dimensional problems.	2	C/P
CO2	Analyses the effect of applied load on the solid body under various loading conditions.	4	C/P
CO3	Evaluate stresses and deflection by various methods on beams and shafts.	5	C/P
CO4	Analyze spring and column under various loading conditions.	4	C/P
CO5	Analyze the stresses developed in pressure vessels.	4	C/P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Engineering Mechanics and Strength of Materials (BME402)

Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	2	-	2	-	-	-	-	-	1	-	-	2
CO-2	2	-	3	-	-	-	-	-	1	-	-	2
CO-3	2	-	3	-	-	-	-	-	1	-	-	2
CO-4	2	-	2	-	1	-	-	-	1	-	-	2
CO-5	2	-	3	-	-	-	-	-	1	-	-	2
PO Target	**2**	**-**	**2.6**	**-**	**1**	**-**	**-**	**-**	**1**	**-**	**-**	**2**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course name : Manufacturing Processes	**Course Code: BME 403**	**Faculty : Dr. Gaurav 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	Analyze the various manufacturing processes.	4	C
CO2	Analyze the phenomenon of metal cutting processes.	4	C,P
CO3	Analyze grinding and different types of super finishing operations.	4	C
CO4	Apply the knowledge of various welding processes and their thermodynamic and metallurgical aspects.	3	C,P
CO5	Understand the concepts of non-conventional machining processes.	2	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Manufacturing Processes (BME 403)

Course Code	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		3
CO-2	3	3	2				2					3		3
CO-3	3	3	2				2					3		3
CO-4	3	3	2				2					3		3
CO-5	2	2					2					3		3
PO Target	2.8	2.8	2				2					3		3

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course Name : Applied Thermodynamics Lab	**Course Code: BME 451**	**Faculty : Mr. SONENDRA**

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 construction and working of fire tube and water tube boilers, their parts, differences, mountings and accessories.	**2**	P,C
CO2	Understand the construction and working of two-stroke, four-stroke petrol and diesel engines, their parts, working strokes and applications.	**2**	P,C
CO3	Understand the construction and working of steam engine, its components and the modified Rankine cycle.	**2**	P,C
CO4	Understand the construction and working of the steam turbines, its types, differences between impulse & reaction turbine and the compounding od impulse turbines.	**2**	P,C
CO5	Understand the construction and working of gas turbine and its types, working and process of Brayton's cycle.	**2**	P,C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Applied thermodynamics Lab (BME451)

Course Code	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	-	2	1	1	2	-	1
CO-2	-	-	2	2	-	-	2	-	2	1	1	2	-	3
CO-3	-	-	2	2	-	-	2	-	2	1	1	2	-	1
CO-4	-	-	2	2	-	-	2	-	2	1	1	2	-	1
CO-5	-	-	2	2	-	-	2	-	2	1	1	2	-	1
PO Target	-	-	**2**	**2**	-	-	**2**	-	**2**	**1**	**1**	**2**	-	**1.4**

Sonendra

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course name : Manufacturing Processes Lab	**Course Code: BME 452**	**Faculty : Dr. Gaurav 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 the Casting process and remember various elements of gating system.	3	P
CO2	Apply different operations of lathe machine.	3	P
CO3	Apply different operations of milling machine.	3	P
CO4	Apply the various operations of unconventional machining methods.	3	C/P
CO5	Apply the concept of welding operation in welding shop.	3	P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Manufacturing Processes Lab (BME 452)

Course Code	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	3		3
CO-2	3	3				2	2		3		2	3		3
CO-3	3	3				2	2		3		2	3		3
CO-4	3	3				2	2		3		2	3		3
CO-5	3	3				2	2		3		2	3		3
PO Target	3	3				2	2		3		2	3		3

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 4th**
Course name : CAMD-II LAB	**Course Code: BME453**	**Faculty : Dr. Gaurav Sharma & Dr. Ravi Datt Yadav**

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 different types of Engineering Drawing and BIS Codes.	**2**	P
CO2	Analyze the interchangeability system and its requirement in machine drawing.	**3**	P
CO3	Understand & drafting the 3D/2D machine and allied component.	**2**	P
CO4	Interpret and understand sketching the different machine components analysis on drawing software.	**2**	P
CO5	Understand the sketching part Modelling & Assemblies.	**2**	P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Manufacturing Processes Lab (BME 452)

Course Code	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	2	-
CO-2	2	-	3	-	1	-	-	2	-	-	-	2	2	-
CO-3	3	-	3	-	2	-	-	2	-	-	-	2	3	-
CO-4	3	-	3	-	2	-	-	2	-	-	-	2	3	-
CO-5	3	-	3	-	2	-	-	1	-	-	-	3	3	-
PO Target	**2.8**	**-**	**3**	**-**	**1.8**	**-**	**-**	**1.8**	**-**	**-**	**-**	**2.2**	**2.6**	**-**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name: B.Tech. (ME)	**Academic Session: 2024-25**	**Semester: 6th**
Course name: Refrigeration and Air-conditioning	**Course Code: BME601**	**Faculty: Dr. Sandeep Chhabra**

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 shall be able to			
CO1	Analyze the performance of air refrigeration systems.	4	C/P
CO2	Analyze the performance of vapor compression refrigeration systems.	4	C/P
CO3	Analyze the performance of vapor absorption refrigeration system, categorize the refrigerants and describe the properties of refrigerants.	4	C/P
CO4	Analyze different psychrometric processes and examine the cooling load calculation.	4	C/P
CO5	Illustrate the working of different refrigeration and air-conditioning equipment's, non-conventional refrigeration systems and cold storage.	3	C/P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Refrigeration and Air-conditioning (BME601)												
Course Code	**PO-1**	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PO-12**
CO-1	3	3	-	-	-	2	2	-	-	2	-	-
CO-2	3	3	-	-	-	2	2	-	-	2	-	-
CO-3	3	3	-	-	-	2	2	-	-	2	-	2
CO-4	3	3	-	-	-	2	3	-	-	2	-	-
CO-5	-	-	-	-	-	2	2	-	-	1	-	2
PO Target	**3**	**3**	-	-	-	**2**	**2.2**	-	-	**1.8**	-	**2**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.TECH	**Academic Session : 2024-25**	**Semester: 6th**
Course name : CAD/CAM	**Course Code: BME602**	**Faculty : RANJEET 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 product cycle, CAD system architecture, computer graphics, and transformations.	**2**	C
CO2	Apply geometric modeling techniques, including curves, surfaces, and solid modeling.	**3**	P
CO3	Analyze CAD standards, data exchange formats, and communication protocols for design.	**4**	C
CO4	Apply CNC principles and create part programs using G and M codes for lathe and milling machines.	**3**	P
CO5	Understand cellular manufacturing, group technology, and flexible manufacturing systems and their quantitative analysis.	**2**	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

CAD/CAM (BME602)

Course Code	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								3	
CO-2	3	2			2								3	2
CO-3	2	3	3		1								2	
CO-4	2				3								2	
CO-5	3			2	2							2	3	3
PO Target	**2**	**2.3**	**3**	**2**	**2**							**2**	**2**	**2.5**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 6th**
Course name : Theory of Machines	**Course Code: BME-603**	**Faculty : Dr. Ajay Singh Verma**

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	Calculate velocity and acceleration for 4bar and slider crank mechanism.	3	C
CO2	Develop cam profiles for different motion of followers and apply the concepts of gears.	4	C,P
CO3	Apply the static and dynamic force analysis of four bar mechanism and slider crank mechanism.	3	C
CO4	Apply the concept of static and dynamic balancing and principles of governors.	3	C,P
CO5	Apply the principle of brakes, dynamometer and gyroscope and understand it's working.	3	C

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Theory of Machines (BME-603)

Course Code	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-1
CO-1	3	2	2	2						1		3		
CO-2	3	3	3	3						1		3		
CO-3	3	2	2	3						1		3		
CO-4	3	2	2							1		3		
CO-5	3	2	2	1						1		3		
PO Target	**3**	**2.2**	**2.2**	**2.25**						**1**		**3**		

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 6th**
Course name : Industrial Robotics	**Course Code: BME061**	**Faculty : Dr. Ravi Datt Yadav**

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 fundamentals and applications of robotics, including robotic anatomy, automation, and industrial use.	2	C
CO2	Analyze the working of grippers and sensors in robotic systems.	4	C
CO3	Understand the types of drives, actuators, and controllers used in robotic systems.	2	C
CO4	Apply robotic programming concepts and evaluate different robotic programming languages.	3	C
CO5	Analyze socio-economic aspects, safety standards, AI, and trends in robotics, including mobile robot locomotion.	4	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Industrial Robotics (BME061)

Course Code	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									
CO-2	3	3	2	2										
CO-3	3	2		2	3									
CO-4	3	2	2	2	3					2		2		
CO-5	3	3		3		2	2	2			2	3		
PO Target	**3**	**2.4**	**2**	**2.3**	**2.7**	**2**	**2**	**2**		**2**	**2**	**2.5**		

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 6th**
Course name : Automotive Electrical & Electronics	**Course Code: BAU 061**	**Faculty : ASHISH KUMAR 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 basic concepts of electrical systems and features of charge storage devices and methods to test these devices	**2**	C
CO2	Apply the principles & characteristics of charging & starting system of automobile	**3**	P
CO3	Analyze the ignition & auxiliary system- types, constructional features used in car	**4**	P
CO4	Understand the principles and architecture of electronics systems and its components present in an automobile	**2**	C
CO5	Understand the latest trends developed in electrical & electronic systems of automobile	**2**	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Automotive Electrical & Electronics (BAU 061)

Course Code	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		3		3
CO-2	3	3	1							1		3		3
CO-3	3	3	1							1		3		3
CO-4	3	2	1							1		3		3
CO-5	3	3	1							1		3		3
PO Target	3	3	1							**1**		**3**		**3**

Ashish K. Singh

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.TECH	**Academic Session : 2024-25**	**Semester: 6th**
Course name : Essence of Indian Traditional Knowledge	**Course Code: BNC 602**	**Faculty : ABHISHEK YADAV**

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	To understand the roots and details of Society State and Polity in India.	**2**	C
CO2	To understand the importance of Indian Literature, Culture, Tradition, Practices and to apply in present system.	**2**	C
CO3	To understand the Indian Religion, Philosophy, Practices and in shadow of Pre-Vedic and Vedic Religion, Buddhism, Jainism, Six System Indian Philosophy and to apply in present system .	**2**	C
CO4	To Understand the Science, Management and Indian Knowledge System and to apply in present system.	**2**	C
CO5	To Understand the Indian Architect, Engineering and Architecture in Ancient India, Indian's Cultural Contribution to the World and to create environment in Arts and Cultural for the present system.	**2**	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Essence of Indian Traditional Knowledge (BNC 602)

Course Code	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	-	-	-	-	-	2	-	2	-	-	-	2	-	-
CO-3	-	-	-	-	-	2	-	1	-	-	-	2	-	-
CO-4	1	-	-	-	-	2	2	-	-	-	-	2	-	-
CO-5	-	-	-	-	-	2	1	-	-	-	-	2	-	-
PO Target	**1**	**-**	**-**	**-**	**-**	**2**	**1.5**	**1.67**	**-**	**-**	**-**	**2**	**-**	**-**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name: B.Tech. (ME)	**Academic Session: 2024-25**	**Semester: 6th**
Course name: Refrigeration and Air-conditioning Lab	**Course Code: BME651**	**Faculty: Dr. Sandeep Chhabra**

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 shall be able to			
CO1	Understand the working of refrigeration and air-conditioning systems	2	C/P
CO2	Analyze the performance parameters of refrigeration and air-conditioning systems	4	C/P
CO3	Analyze the performance parameters of a two-stage air compressor.	4	C/P
CO4	Analyze the performance parameters of an air washer	4	C/P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Refrigeration and Air-conditioning (BME601)

Course Code	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12
CO-1	3	3	2	-	-	1	-	-	-	**2**	-	2
CO-2	3	3	3	-	-	3	3	**2**	-	**2**	-	3
CO-3	3	3	3	-	-	3	3	**2**	-	**2**	-	3
CO-4	3	3	3	-	-	1	2	**2**	-	**2**	-	2
PO Target	**3**	**3**	**2.8**	**-**	**-**	**2.5**	**2.67**	**2**	**-**	**2**	**-**	**2.5**

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.TECH	**Academic Session : 2024-25**	**Semester: 6th**
Course name : CAD/CAM Lab	**Course Code: BME652**	**Faculty : RANJEET 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	Apply geometric transformation algorithms and develop computer programs for translation, rotation, and scaling.	**3**	**P**
CO2	Develop and validate computer programs for numerical methods such as root finding, curve fitting, numerical differentiation, and integration.	**3**	**P**
CO3	Implement 3D solid modeling and FEM-based simulations using CAD software for mechanical components.	**4**	**C**
CO4	Generate CNC part programs for machining operations and analyze their execution on CNC machines.	**5**	**P**

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

CAD/CAM Lab (BME652)

Course Code	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								2	
CO-2	2		2		2								2	
CO-3	2		2		3							3	3	
CO-4		3			3							3	3	
CO-5	2.33	2.5	2		2.5							3	2.5	
PO Target	3	2			2								2	

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name: B.Tech.	**Academic Session : 2024-25**	**Semester: 6th**
Course name : Theory of Machines Lab	**Course Code: BME-653**	**Faculty : Dr. Ajay Singh Verma**

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 various mechanisms, their inversions.	3	C,P
CO2	Apply cam follower mechanism to get desired motion of follower.	3	C,P
CO3	Apply the concepts of gears and gear train to get desired velocity ratio for power transmission.	3	C,P
CO4	Apply the concept of governors to check their stability and sensitivity.	3	C,P
CO5	Determine the balancing load in static and dynamic balancing problem and whirling speed of shafts.	3	C,P
CO6	Apply the principal of gyroscopic couple on Motorized Gyroscope and its verification.	3	C,P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Theory of Machines Lab (BME-653)

Course Code	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	1	2					3	1	2	2		
CO-2	3	3	2	3					3	1	2	2		
CO-3	3	3	2	3					3	1	3	2		
CO-4	3	3	2	3					3	1	3	2		
CO-5	3	3	2	3					3	1	3	2		
CO-6	3	3	2	3					3	1	3	2		
PO Target	**2.83**	**2.83**	**1.83**	**2.83**					**3**	**1**	**2.67**	**2**		

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HoD

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 8th/Even Semester**
Course name : Entrepreneurship Development	**Course Code: KOE 083**	**Faculty : Dr. Piyush Pant**

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 concepts of entrepreneurship and micro, small, medium enterprise (MSME).	**2**	C
CO2	Understand the concepts of project identification and its features	**2**	C
CO3	Apply the knowledge of accountancy and inventory control.	**3**	C
CO4	Understand the concepts of project planning and control.	**2**	C
CO5	Understand the laws concerning entrepreneur and partnership.	**2**	C

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Entrepreneurship Development (KOE 083)

Course Code	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		3	3		3	3	3	3		
CO-2	3	1		2		3	3		3	3	3	3		
CO-3	3	1		2		3	3		3	3	3	3		
CO-4	3	1		2		3	3		3	3	3	3		
CO-5	3	1		2		3	3		3	3	3	3		
PO Target	**3**	**1**		**2**		**3**	**3**		**3**	**3**	**3**	**3**		

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Program Name: B.Tech	**Academic Session: 2024-25**	**Semester: 8th/Even Semester**
Course name: Quality Management	**Course Code: KOE085**	**Faculty : Dr. Anurag 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 concepts of quality management system in order to managing a product quality.	2	C
CO2	Describe the effective organizational structure and the methods of managing the economic and the human aspects in controlling the quality of a product.	2	C
CO3	Demonstrate the application of Statistical Quality Control techniques in managing a product quality proactively.	3	C,P
CO4	Acquire various techniques for the evaluation and the improvement of reliability and maintainability as well as the motivational techniques (zero defects, quality circles) for the adaptability of a new quality control system.	3	C,P
CO5	Demonstrate the ISO 9000 Series, Taguchi method and JIT in improving a product quality.	3	C,P

Mapping of Course outcomes with Program outcomes CO-POs Matrix

Quality Management (KOE085)

Course Code	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	-	-	-
CO-2	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO-3	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO-4	3	2	-	-	1	-	-	-	-	-	2	-	-	-
CO-5	3	2	-	-	1	-	-	-	-	-	1	-	-	-
PO Target	**3**	**2**	-	-	**1**	-	-	-	-	-	**1.8**	-	-	-

Signature of Course Coordinator Signature of Addl. HoD Signature of HoD

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Department of Mechanical Engineering

Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 8th/Even Semester**
Course Name : Human Values in Buddha and Jain Darshan	**Course Code: KOE098**	**Faculty : Mr. SONENDRA**

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 origin of Buddha and Jain Darshan	**2**	C
CO2	Understand the human being, the needs and activities of human being through Buddha Darshan	**2**	C
CO3	Analyze Purpose and Program for a Human Being based on Bauddha Darshan.	**4**	C,M
CO4	Understand the basic concepts of Jain Darshan.	**2**	C
CO5	Analyze Purpose and Program for a Human Being based on Jain Darshan	**4**	C,M

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Human Values in Buddha and Jain Darshan (KOE098)

Course Code	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					
CO-2						2	2	3	2					
CO-3						2	2	3	2					
CO-4						2	2	3	2					
CO-5						2	2	3	2					
PO Target						**2**	**2**	**3**	**2**					

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B.TECH	**Academic Session : 2024-25**	**Semester: 8th/Even Semester**
Course name : AUTOMATION AND ROBOTICS	**Course Code: KOE091**	**Faculty : RANJEET 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	Explain the fundamentals of automation, including its types, advantages, and principles.	**2**	**C**
CO2	Analyse different automation systems in manufacturing, including transfer machines, automated flow lines, and CNC machines.	**4**	**C**
CO3	Describe various robot classifications, coordinate systems, and kinematic concepts in industrial robotics.	**2**	**C**
CO4	Compare different robot drive mechanisms, power transmission methods, and gripper designs.	**5**	**C**
CO5	Illustrate robot simulation techniques and applications in industrial automation.	**3**	**P**

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

AUTOMATION AND ROBOTICS (KOE091)

Course Code	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	
CO-2		3	3		2							3	2	
CO-3	2	2	2		2								1	
CO-4			3	2	2							3	3	
CO-5			2		3							2	3	
PO Target	2.5	2.3	2.5	2	2.3							2.7	2.4	

Signature of Course Coordinator **Signature of Addl. HoD** **Signature of HoD**

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Department of Mechanical Engineering

Program Name : B. Tech	**Academic Session : 2024-25**	**Semester: 8th/Even Semester**
Course name : Rural development: Administration & Planning	**Course Code: KHU801**	**Faculty : Mr. Vineet Kumar Vashishtha**

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 concept of Rural Development.	**2**	C,P
CO2	Understand the various experiments carried out prior to independence for Rural Development.	**2**	C,P
CO3	Apply the procedures of rural administration through Panchayati Raj.	**3**	C,P
CO4	Analyze the need for Human Resource for Rural Development.	**4**	C,P
CO5	Evaluate the need for Rural Industrialization and Entrepreneurship.	**5**	C,P

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes(CO-POs/PSOs Matrix)

Rural development: Administration & Planning (KHU801)

Course Code	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	1	-	-	1	2	-	-
CO-2	-	-	-	-	-	1	1	1	-	-	-	1	-	-
CO-3	-	-	-	-	-	1	1	2	-	-	-	1	-	-
CO-4	-	-	-	-	-	2	3	2	2	-	1	2	-	-
CO-5	-	-	-	-	-	2	3		2	-	1	2	-	-
PO Target	-	-	-	-	-	**1.6**	**2**	**1.2**	**2**	-	**1**	**1.6**	-	-

Signature of Course Coordinator

Signature of Addl. HoD

Signature of HoD

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Program Name : B.Tech	**Academic Session : 2024-25**	**Semester: 8th/Even Semester**
Course name : Project	**Course Code: KME853**	**Faculty : ASHISH KUMAR 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 methods and materials and their selection to carry out experiments.	**2**	**C**
CO2	Apply the procedures with a concern for society, environment and ethics.	**3**	**P**
CO3	Analyze and discuss the results to draw valid conclusions.	**4**	**P**
CO4	Create a report as per recommended format and defend the work.	**6**	**M**
CO5	Evaluate the possibility of publishing papers in peer-reviewed journal/conference proceedings.	**5**	**P/M**

Mapping of Course outcomes with Program outcomes/Program Specific Outcomes (CO-POs/PSOs Matrix)

Project (KME 853)

Course Code	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	3	3				3	2	3		3	3
CO-2	3	3	3	3	3				3	2	3		3	3
CO-3	3	3	3	3	3				3	2	3		3	3
CO-4	2	2	2	2	2				3	3	2		3	3
CO-5	1	1	1	2	2				3	3	2		3	3
PO Target	**2.4**	**2.4**	**2.4**	**2.6**	**2.6**				**3**	**2.4**	**2.6**		**3**	**3**

Ashish K. Singh

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