Department of Advanced Mechatronics and Industrial Automation

CO-PO Mapping

2025-26

Department of Advanced Mechatronics and Industrial Automation

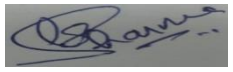
Program Name: B. Tech.-AM&IA	**Academic Session: 2025-26**		**Semester: I**
Course name: CFE	**Course Code: MAL101L**		**Faculty: Dr. Archana Sharma**

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 concept of partial differentiation in application of homogeneous and composite functions.	**3**	C, P
CO2	Apply knowledge of partial differentiation in extrema, series expansion of functions and Jacobians.	**3**	C, P
CO3	Apply the concept of vector differentiation in engineering problems.	**3**	C, P
CO4	Employ the concept of multiple integration to find the area of bounded region.	**3**	C, P
CO5	Apply the concept of analytic and harmonic functions of complex variables in transformation.	**3**	C, P

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	2	2	2					1				2		
CO-2	2	2	2					1				2		
CO-3	3	2	2					1				1		
CO-4	2	2	2					1				1		
CO-5	2	2	2					1				1		
PO Target	**2.2**	**2**	**2**					**1**				**1.4**		



Signature of Course Coordinator

Signature of Program Head

Signature of Dean

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

- 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 4 number of COs. The Project having 7 to 12 credits should have 6 to 10 number of COs.
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Department of Advanced Mechatronics and Industrial Automation

Program Name : B.Tech- AM&IA	**Academic Session : 2025-26**	**Semester: 1st**
Course name : Environmental Chemistry	**Course Code: CH 101L**	**Faculty : Dr. Prathana 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 advanced materials for interdisciplinary applications.	**3**	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.	**2**	C.P

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	**2**	**2**	**1**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**1**			
CO-2	**2**	**2**	**1**	**2**	**-**	**1**	**-**	**-**	**-**	**-**	**1**			
CO-3	**2**	**2**	**1**	**1**	**-**	**2**	**-**	**-**	**-**	**-**	**2**			
CO-4	**2**	**2**	**1**	**1**	**-**	**2**	**-**	**-**	**-**	**-**	**2**			
PO Target	**2**	**2**	**1**	**1.25**	**-**	**1.5**	**-**	**-**	**-**	**-**	**1.5**			

Signature of Course Coordinator **Signature of Program Head** **Signature of Dean**

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Department of Advanced Mechatronics and Industrial Automation

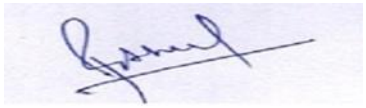
Program Name : B.Tech- AM&IA	**Academic Session : 2025-26**	**Semester: 1st**
Course name : PPS	**Course Code: IT101L**	**Faculty : Mr. Rahul Kumar**

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 programming constructs of C language to solve real-world problems.	**3**	M
CO2	Use the concepts of looping, branching, and decision-making statements for a given problem.	**3**	M
CO3	Develop Solutions to problems using modular programming constructs such as functions and recursion.	**4**	C
CO4	Demonstrate the ability to write C programs using pointers, strings structures and unions.	**3**	M
CO5	Design a solution to problems using the concepts of pointers and files handling.	**4**	M

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	3	2	-	-	2	-	-	1	-	-	-	2	2	-
CO-2	3	2	-	2	2	-	-	1	-	-	-	2	2	-
CO-3	3	3	-	2	2	-	-	1	-	-	-	2	2	-
CO-4	3	3	2	2	2	-	-	1	-	-	-	2	2	-
CO-5	3	3	2	2	2	-	-	1	-	-	-	2	2	-
PO Target	**3**	**2.6**	**2**	**2**	**2**	**-**	**-**	**1**	**-**	**-**	**-**	**2**	**2**	**-**



Signature of Course Coordinator

Signature of Program Head

Signature of Dean

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Department of Advanced Mechatronics and Industrial Automation

Program Name : B.Tech- AM&IA	**Academic Session : 2025-26**	**Semester: I**
Course name : Fundamentals of Mechatronics and Industrial Automation	**Course Code: ME103L**	**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	Explain the fundamentals, scope, and interdisciplinary nature of Mechatronics and its applications in modern industries.	**2**	F,C
CO2	Identify and describe key mechanical, electrical, pneumatic, and hydraulic components used in Mechatronic systems.	**2**	F,C
CO3	Illustrate the working principles and applications of various sensors and actuators and evaluate their suitability for specific applications.	**2**	F,C
CO4	Understand the basics of industrial automation, types of control devices, and the concept of PLCs with real-world industrial examples.	**2**	F,C

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO1**
CO-1	2				3					2		2		
CO-2	2		2		2							2		
CO-3	2		2		3				2	2		2		
CO-4					2				2	2		3		
PO Target	**2**		**2**		**2.5**				**2**	**2**		**2.25**		

Signature of Course Coordinator **Signature of Program Head** **Signature of Dean**

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Department of Advanced Mechatronics and Industrial Automation

Program Name : B. Tech- AM&IA	**Academic Session : 2025-26**	**Semester: 1st**
Course name : Exploration in Electrical Engineering	**Course Code: EE102 L**	**Faculty : Dr Bandana**

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 electric circuit solutions with DC supply using mesh-nodal analysis and Network Theorems.	**1,2,3,4**	F,C,M
CO2	Apply the concepts of electrical circuits with AC supply in single and three phase system	**1,2,3,4**	F,C,M
CO3	Analyze the equivalent circuit and performance of single phase AC transformer	**1,2,3,4**	F,C,M
CO4	Illustrate the working principle of induction motors, synchronous machines and DC machines.	**1,2,3,4**	F,C,M

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	2	2	2	2	-	-	-	-	-	-	-	2	-	-
CO-2	3	2	2	2	-	-	-	-	-	-	-	2	-	-
CO-3	3	3	2	2	-	-	-	-	-	-	-	3	-	-
CO-4	3	3	2	2	-	-	-	-	-	-	-	3	-	-
PO Target	**2.75**	**2.5**	**2**	**2**	-	-	-	-	-	-	-	**2.5**	-	-

Signature of Course Coordinator **Signature of Program Head** **Signature of Dean**

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Department of Advanced Mechatronics and Industrial Automation

Program Name: B. Tech.	**Academic Session: 2025-26**		**Semester: I**
Course name: Design Thinking	**Course Code: IT103L**		**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 will be able to			
CO1	Understand the basic requirements of a good design.	**3**	C, P
CO2	Empathize and ideate the solutions to problems in his environment.	**3**	C, P
CO3	Prototype and test the developed solutions.	**3**	C, P
CO4	Apply the principles of design thinking on developing innovative solutions to the real world problems.	**3**	C, P

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	1	2	3	2		1			2	2		2		
CO-2	1	2	3	2		1			2	2		2		
CO-3	1	2	3	2		1			2	2		2		
CO-4	1	2	3	2		1			2	2		2		
PO Target	**1**	**2**	**3**	**2**		**1**			**2**	**2**		**2**		

Signature of Course Coordinator | Signature of Program Head | Signature of Dean

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Department of Advanced Mechatronics and Industrial Automation

Program Name : B.Tech- AM & IA	**Academic Session : 2025-26**	**Semester: I**
Course name : Design & Realization	**Course Code: ME101B**	**Faculty : Mr. 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 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 CO-POs 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**	**PSO1**	**PSO2**
CO-1					2					2		3		
CO-2	2		2		3					2		3	2	
CO-3	2		2		3				2	2		3	2	
CO-4					2				2	2		3		
PO Target	**2**		**2**		**2.5**				**2**	**2**		**3**	**2**	

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Department of Advanced Mechatronics and Industrial Automation

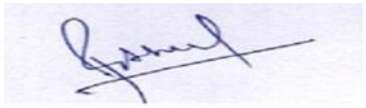
Program Name : B.Tech- AM&IA	**Academic Session : 2025-26**	**Semester: 1st**
Course name : PPS Lab	**Course Code: IT101P**	**Faculty : Mr. Rahul Kumar**

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 programming constructs of C language to solve real-world problems.	**3**	M
CO2	Use the concepts of looping, branching, and decision-making statements for a given problem.	**3**	M
CO3	Develop Solutions to problems using modular programming constructs such as functions and recursion.	**4**	C
CO4	Demonstrate the ability to write C programs using pointers, strings structures and unions.	**3**	M
CO5	Design a solution to problems using the concepts of pointers and files handling.	**4**	M

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	3	2	-	-	2	-	-	1	-	-	-	2	2	-
CO-2	3	2	-	2	2	-	-	1	-	-	-	2	2	-
CO-3	3	3	-	2	2	-	-	1	-	-	-	2	2	-
CO-4	3	3	2	2	2	-	-	1	-	-	-	2	2	-
CO-5	3	3	2	2	2	-	-	1	-	-	-	2	2	-
PO Target	**3**	**2.6**	**2**	**2**	**2**	**-**	**-**	**1**	**-**	**-**	**-**	**2**	**2**	**-**



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Department of Advanced Mechatronics and Industrial Automation

Program Name : B. Tech- AM&IA	**Academic Session : 2025-26**	**Semester: 1st**
Course name : Exploration in Electrical Engineering Lab	**Course Code: EE102 P**	**Faculty : Dr Bandana**

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 electric circuit solutions with DC supply using mesh-nodal analysis and Network Theorems.	**1,2,3,4**	F,C,M
CO2	Apply the concepts of electrical circuits with AC supply in single and three phase system	**1,2,3,4**	F,C,M
CO3	Analyze the equivalent circuit and performance of single phase AC transformer	**1,2,3,4**	F,C,M
CO4	Illustrate the working principle of induction motors, synchronous machines and DC machines.	**1,2,3,4**	F,C,M

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO2**
CO-1	2	2	2	2	-	-	-	-	-	-	-	2	-	-
CO-2	3	2	2	2	-	-	-	-	-	-	-	2	-	-
CO-3	3	3	2	2	-	-	-	-	-	-	-	3	-	-
CO-4	3	3	2	2	-	-	-	-	-	-	-	3	-	-
PO Target	**2.75**	**2.5**	**2**	**2**	-	-	-	-	-	-	-	**2.5**	-	-

Signature of Course Coordinator **Signature of Program Head** **Signature of Dean**

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Department of Advanced Mechatronics and Industrial Automation

Program Name: B. TECH	**Academic Session: 2025-26**	**Semester:1**
Course name: Indian Knowledge System	**Course Code: HS164P**	**Faculty: Yasir Karim**

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 Embrace the rich heritage and lineage of Indian Knowledge systems	**1,2,3**	F,C
CO2	The acquaint continuous knowledge traditions of Bharata since time immemorial	**1,2,3**	F,C
CO3	To understand and apply the practical utility of the Indian Knowledge System to solve current and emerging problems of India and the world.	**1,2,3**	F,C

Mapping of Course outcomes with Program outcomes CO-POs 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**	**PSO1**	**PSO1**
CO-1						2				2		1		
CO-2						2				2		1		
CO-3						2				2		1		
PO Target						**2**				**2**		**1**		

Signature of Course Coordinator **Signature of Program Head** **Signature of Dean**

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