LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

(UGC Autonomous)

Approved by AICTE | Affiliated to Osmania University | Estd.2003.

Department of Science and Humanities

Course Outcomes & Course Articulation Matrix

ACADEMIC YEAR: 2025-26

(GROUP A: COMMON TO CSE AIML, AIML, INF, ECE)

Course Outcomes:

Semester No:	II		
Course Title:	Mathematics-II	**Course Code:**	U24MA201
Course Outcome No.	**Description**		
M-II.CO1	Determine the rank of matrix' system of linear equations with the help of Matrices and solving Eigen value problems.		
M-II.CO2	Discuss the methods for solving certain first order differential equations and get insight into its applications.		
M-II.CO3	Solve certain higher order differential equations along its applications.		
M-II.CO4	Analyze the basic problems of Gamma, Beta and Legendre's functions.		
M-II.CO5	Apply the concept of Laplace Transforms in improper integrals and to the ordinary differential equations		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
M-II.CO1	3	3	3	3	2						1	2	2
M-II.CO2	3	3	3	3	2						1	2	2
M-II.CO3	3	3	3	3	2						1	2	2
M-II.CO4	3	3	3	3	2						1	2	2
M-II.CO5	3	3	3	3	2						1	2	2
M-II	3	3	3	3	2						1	2	2

Course Outcomes:

Semester No:	II		
Course Title:	Engineering Physics	**Course Code:**	**U24PH201**
Course Outcome No.	**Description**		
EP.CO 1	Explain crystals based on their structure and their appropriate uses		
EP.CO 2	Identify working of lasers and optical fibers in high-speed communication.		
EP.CO 3	Compare the wave nature and to develop the skills in designing the various electronic devices.		
EP.CO4	Outline the Properties and applications of Solids in divergent fields.		
EP.CO 5	Summarize the principles of nanoscience in new technological device		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EP.CO 1	3	3			2	2	3						
EP.CO 2	3	3			2	2	3						
EP.CO 3	3	3			2	2	3						
EP.CO4	3	3			2	2	3						
EP.CO 5	3	3			2	2	3						
EP	3	3			2	2	3						

Course Outcomes:

Semester No:	II		
Course Title:	Programming for Problem Solving	**Course Code:**	U24CS201
Course Outcome No.	**Description**		
PPS.CO1	Illustrate basic concepts of programming, algorithms, and flowchart and apply it for problem solving.		
PPS.CO2	Explain conditional branching and iterations for programming and usage of data types like arrays and strings.		
PPS.CO3	Apply modular function approach to implement searching (linear, binary) and sorting (bubble, selection & insertion).		
PPS.CO4	Analyze the usage of structure and recursion concepts.		
PPS.CO5	Apply the concept of file handling and pointers for storage and implementation of data.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PPS.CO1	2	3	2	1	3								2
PPS.CO2	3	3	2	3	3								3
PPS.CO3	2	3	2	2	2								2
PPS.CO4	2	3	3	3	2								3
PPS.CO5	3	3	3	2	3								3
PPS	2.4	3	2.4	2.2	2.6								2.6

Course Outcomes:

Semester No:	II		
Course Title:	Basic Electrical Engineering	**Course Code:**	U24EE201
Course Outcome No.	**Description**		
BEE.CO1	Analyze DC electrical circuits and measure the parameters of electrical energy.		
BEE.CO2	Illustrate the key laws and concepts of electromagnetism through suitable examples		
BEE.CO3	Analyze AC Electrical circuits and measures the parameters of electrical energy.		
BEE.CO4	Describe and interpret the working principles and construction of DC machines and transformers.		
BEE.CO5	Describe and interpret the working principles and construction of DC machines and transformers.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
BEE.CO1	3	3	2	1					2	2	1		
BEE.CO2	3	3	3	1					2	2	1		
BEE.CO3	3	3	3	2					2	2	1		
BEE.CO4	3	3	3	2					2	2	2		
BEE.CO5	2	3	3	2					2	2	2		
BEE	2.8	3.0	2.8	1.6					2.0	2.0	1.4		

Course Outcomes:

Semester No:	II		
Course Title:	Environmental Science	**Course Code:**	U24CH202
Course Outcome No.	**Description**		
ES.CO1	Recognize the environmental science is interdisciplinary and need for sustainable development.		
ES.CO2	Explain the role of ecosystems to preserve ecological balance.		
ES.CO3	Determine the importance and conservation strategies for biodiversity.		
ES.CO4	Illustrate the sources and effects of pollution and suggest appropriate preventive measures.		
ES.CO5	Categorize how environmental problems affect society and propose suitable strategies for efficient disaster management.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
ES.CO1	3	-	2	-	-	2	2	-	-	-	2		
ES.CO2	3	-	2	-	-	2	2	-	-	-	2		
ES.CO3	2	-	2	-	-	3	3	-	-	-	2		
ES.CO4	2	-	3	-	-	2	3	-	-	-	2		
ES.CO5	3	-	2	-	-	3	2	-	-	-	3		
ES	2.6		2.2			2.4	2.4				2.2		

Course Outcomes:

Semester No:	II		
Course Title:	Engineering Physics Lab	**Course Code:**	U24PH2L1
Course Outcome No.	**Description**		
EPL.CO 1	Demonstrate the basic principles of lasers and optical fibers to determine wavelength and numerical aperture.		
EPL.CO 2	Explain the electrical properties of semiconductors and evaluate the energy band gap.		
EPL.CO 3	Calculate the carrier concentration of semiconductor materials using the Hall effect principle.		
EPL.CO4	Explain the fundamental concepts of semiconductors and analyze the I–V characteristics of p–n junction diode, solar cell, and LED devices.		
EPL.CO 5	Plot and interpret experimental curves for temperature dependence of resistance (thermistor) and determine rigidity modulus using a torsional pendulum.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EPL.CO 1	3	3			2	2		3					
EPL.CO 2	3	3			2	2		3					
EPL.CO 3	3	3			2	2		3					
EPL.CO4	3	3			2	2		3					
EPL.CO 5	3	3			2	2		3					
EPL	3	3			2	2		3					

Course Outcomes:

Semester No:	II		
Course Title:	Programming for ProblemSolving Lab.	**Course Code:**	U24CS2L1
Course Outcome No.	**Description**		
PPSL.CO1	Identify and choose appropriate data types for implementing C programs.		
PPSL.CO2	Apply input–output operations, decision-making statements, and looping constructs to design and implement modular C programs.		
PPSL.CO3	Apply modular programming techniques to decompose programming problems and develop reusable C functions.		
PPSL.CO4	Apply pointers and dynamic memory allocation techniques to implement C programs efficiently.		
PPSL.CO5	Apply structures and file-handling techniques to store, retrieve, and manage data in C programs.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PPSL.CO1	3	2	1									3	2
PPSL.CO2	3	3	2	1	1							2	3
PPSL.CO3	3	2	3	2	2							3	3
PPSL.CO4	3	2	2	1	2							2	2
PPSL.CO5	3	2	3	2	3							3	2
PPSL	3	2.2	2.2	1.2	1.6							2.6	2.4

Course Outcomes:

Semester No:	II		
Course Title:	Basic Electrical Engineering Lab	**Course Code:**	U24EE2L1
Course Outcome No.	**Description**		
BEEL.CO1	Calculate the ohms law and Network Theorems by practical and theoretically.		
BEEL.CO2	Evaluate of self and mutual inductance, coefficient of coupling.		
BEEL.CO3	Demonstrate the Sinusoidal steady state response of R-L, and R-C circuits.		
BEEL.CO4	Analyze the different phenomenon for balanced three phase circuit connected in Star and Delta.		
BEEL.CO5	Demonstrate the ability to compare the characteristics of DC and AC machines and to conduct and interpret standard tests on a single-phase transformer.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
BEEL.CO1	3	3	2	1					2	1	1		
BEEL.CO2	3	3	3	1					2	1	1		
BEEL.CO3	3	3	3	2					2	1	1		
BEEL.CO4	3	3	3	2					2	1	1		
BEEL.CO5	2	3	3	2					2	1	1		
BEEL	2.8	3.0	2.8	1.6					2.0	1.0	1.0		

Course Outcomes:

Semester No:	II		
Course Title:	Basic Electrical Engineering Lab	**Course Code:**	U24EE2L1
Course Outcome No.	**Description**		
EGDP.CO1	Identify basics of Dimensioning, lettering and use of different drawing instruments.		
EGDP.CO2	Demonstrate different geometric methods to construct conics & engineering curves.		
EGDP.CO3	Apply the concept of Orthographic projection and projection of lines and planes to develop physical objects.		
EGDP.CO4	Analyze the need of projection of solids and section of solids in real world using CAD tool.		
EGDP.CO5	Apply the concept of development of surfaces of right regular solids i.e., Prisms, Pyramids, Cylinder, Cone etc., Isometric Views, and Orthographic projections on AutoCAD.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EGDP.CO1	2	-	3	-	3	3	-	-	3	-	2	1	1
EGDP.CO2	2	-	2	-	3	2	-	-	3	-	2	1	1
EGDP.CO3	2	-	3	-	3	3		-	3	-	3	1	1
EGDP.CO4	3	-	3	-	3	2	-	-	3	-	3	1	1
EGDP.CO5	3	-	2	-	3	3	-	-	3	-	3	1	1
EGDP	2.2		2.6	1	3	2.6			3		2.6	1	1

Course Outcomes & Course Articulation Matrix

ACADEMIC YEAR: 2025-26

(GROUP B: COMMON TO CSE,CSD)

Course Outcomes:

Semester No:	II		
Course Title:	MATHEMATICS-II	**Course Code:**	U24MA201
Course Outcome No.	**Description**		
M-II.CO1	Determine the rank of matrix' system of linear equations with the help of Matrices and solving Eigen value problems.		
M-II.CO2	Discuss the methods for solving certain first order differential equations and get insight into its applications.		
M-II.CO3	Solve certain higher order differential equations along its applications.		
M-II.CO4	Analyze the basic problems of Gamma, Beta and Legendre's functions.		
M-II.CO5	Apply the concept of Laplace Transforms in improper integrals and to the ordinary differential equations		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
M-II.CO1	3	3	3	3	2						1	2	2
M-II.CO2	3	3	3	3	2						1	2	2
M-II.CO3	3	3	3	3	2						1	2	2
M-II.CO4	3	3	3	3	2						1	2	2
M-II.CO5	3	3	3	3	2						1	2	2
M-II	3	3	3	3	2						1	2	2

Course Outcomes:

Semester No:	II		
Course Title:	ENGINEERING CHEMISTRY	**Course Code:**	U24CH201
Course Outcome No.	**Description**		
EC CO.1	Discuss the fundamental principles of electrochemical cells.		
EC CO.2	Determine the total hardness of water and apply the corrosion control methods.		
EC CO.3	Illustrate the synthesis and applications of engineering materials.		
EC CO.4	Identify various fuels and compare their key properties and applications.		
EC CO.5	Apply the principles of green chemistry for sustainable environment.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EC CO.1	2	2	3	2		2							
EC CO.2	2	3	3	2		2							
EC CO.3	2	2	3	-		2							
EC CO.4	2	2	2	-		2							
EC CO.5	2	3	2	2		3							
EC	2	2.4	2.6	2		2.2							

Course Outcomes:

Semester No:	II		
Course Title:	PYTHON PROGRAMMING	**Course Code:**	U24CS202
Course Outcome No.	**Description**		
PP.CO1	Illustrate basic concepts of python programming , data types and control statements.		
PP.CO2	Demonstrate modular programming concepts, functions and recursion for problem solving.		
PP.CO3	Apply core data structures lists, tuples, dictionaries, sets for storing and manipulating data.		
PP.CO4	Explain concept of object-oriented programming principles and file operations in Python.		
PP.CO5	Use Python libraries NumPy and Pandas for basic data analysis.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PP.CO1	3	2	1									3	2
PP.CO2	3	3	2		1							3	3
PP.CO3	3	2	3		2							3	3
PP.CO4	3	2	3	1	2							3	3
PP.CO5	3	2	2	2	3							3	1
PP	3	2.2	2.2	1.5	2							3	2.4

Course Outcomes:

Semester No:	II		
Course Title:	ENGLISH FOR PROFESSIONAL COMMUNICATION	**Course Code:**	U24EN201
Course Outcome No.	**Description**		
EPC.1	Study and write the content meaningfully		
EPC.2	Recognize the given texts and respond appropriately		
EPC.3	Demonstrate proficiency in vocabulary relatively		
EPC.4	Build grammar structure precisely in writing sentences and paragraphs		
EPC.5	Apply the knowledge of various types of writing confidently		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EPC.1	1	3						2	3		3		
EPC.2					1	2		1	3		1		
EPC.3					2				3		2		
EPC.4								1	3		1		
EPC.5	1							1	3		2		
EPC	1	3			1.5	2		1	3		1.8		

Course Outcomes:

Semester No:	II		
Course Title:	UNIVERSAL HUMAN VALUES	**Course Code:**	U24EN203
Course Outcome No.	**Description**		
UHV.CO 1	Illustrate the significance of human values and the importance of value education .		
UHV.CO 2	Explain the relationship between the happiness and prosperity of 'I' with the body clearly.		
UHV.CO 3	Compare the role of harmony in family, society and nature.		
UHV.CO 4	Compare and contrast social conduct, ethics, trust and mutual human behavior.		
UHV.CO 5	Apply and adapt professional ethics effectively in their streams of technology .		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
UHV. CO1						1	3	2	3		3		
UHV. CO2						2	3		3				
UHV. CO3						3	3	2	3				
UHV. CO4						2	3	3	3		3		
UHV. CO5						2	3		3		3		
UHV						2.3	3	2.3	3		3		

Course Outcomes:

Semester No:	II		
Course Title:	INDIAN CONSTITUTION	**Course Code:**	U24EN202
Course Outcome No.	**Description**		
IC. CO1	Recall the background of the present constitution of India thoroughly		
IC.CO2	Recognize efficiently the working of the Union, State and Local government		
IC.CO3	Identify the fundamental rights and duties completely		
IC.CO4	Explain the relation between union and state policies carefully		
IC.C05	Discuss the role of Election Commission of India elaborately		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
IC.CO1						1	2		3		2		
IC.CO2									3		2		
IC.CO3						1	2		3		2		
IC.CO4						1	2		3		2		
IC.CO5									3		2		
IC						1	2		3		2		

Course Outcomes:

Semester No:	II		
Course Title:	ENGINEERING CHEMISTRY LAB	**Course Code:**	U24CH2L1
Course Outcome No.	**Description**		
ECL CO.1	Demonstrate the amount of Ferrous ions by volumetric analysis.		
ECL CO.2	Calculate the total hardness and alkalinity of water.		
ECL CO.3	Explain the mobility of ions in strong acids and weak acids using conductivity meter.		
ECL CO.4	Compute the amount of Fe^{+2} and HCl by using potentiometer.		
ECL CO.5	Infer Beer- Lambert's law by Colorimetry and demonstrate the synthesis of Aspirin.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
ECL CO.1	2	3	3	-									
ECL CO.2	2	3	3	2		3							
ECL CO.3	2	3	2	-		-							
ECL CO.4	2	3	2	2		2							
ECL CO.5	2	3	2	-		-							
ECL	2	3	2.4	2		2.5							

Course Outcomes:

Semester No:	II		
Course Title:	PYTHON PROGRAMMING LAB	**Course Code:**	U24CS2L2
Course Outcome No.	**Description**		
PPL.CO1	Summarize the fundamental concepts of python programming.		
PPL.CO2	Demonstrate user defined functions and modules to improve code reusability.		
PPL.CO3	Apply fundamental data structures for manipulating data.		
PPL.CO4	Show the concept of file handling and object-oriented programming in Python.		
PPL.CO5	Apply suitable libraries to solve simple problems.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PPL.CO1	3	3	2									3	2
PPL.CO2	3	3	2		2							3	3
PPL.CO3	3	2	3		2							3	3
PPL.CO4	3	2	3	1	2							3	3
PPL.CO5	3	2	2	2	3							3	1
PPL	3	2.4	2.4	1.5	2.2							3	2.4

Course Outcomes:

Semester No:	II		
Course Title:	EFFECTIVE COMMUNICATION SKILS LAB	**Course Code:**	U24EN2L1
Course Outcome No.	**Description**		
ECS.1	Interpret spoken language productively		
ECS.2	Understand the neutralized pronunciation, stress and intonation		
ECS.3	Develop critical thinking and acknowledge team work effectively		
ECS.4	Speak confidently in individual and group activity		
ECS.5	Perform formal presentations dynamically		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
ECS.1				1	1		2	3	3				
ECS.2									3				
ECS.3				3	2			3	3				
ECS.4					1	2		3	3		2		
ECS.5									3				
ECS				2	1.3	2	2	3	3		2		

Course Outcomes:

Semester No:	II		
Course Title:	ENGINEERING AND IT WORKSHOP	**Course Code:**	U24ME2L2
Course Outcome No.	**Description**		
WMP.CO1	Identify the working tools and Fabricate components with their own hands.		
WMP.CO2	Determine the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.		
WMP.CO3	Categorize the different components and will be able to produce small models /devices of their interest.		
WMP.CO4	Demonstrate practical skills of Blacksmithy, Plumbing, and Machining.		
WMP.CO5	Determine trades and techniques used in Workshop and chooses the best material/ manufacturing process for the application.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
WMP.CO1	3	-	2	-	2	-	-	-	3	-	3	3	2
WMP.CO2	3	-	3	-	2	-	-	-	2	-	3	3	3
WMP.CO3	2	-	2	-	3	-	-	-	2	-	2	3	3
WMP.CO4	3	-	3	-	3	-	-	-	2	-	3	3	2
WMP.CO5	3	-	2	-	-	-	-	-	2	-	2	3	3
WMP	2.8		2.4		2.5				2.2		2.6	3	2.8

Course Outcomes & Course Articulation Matrix

ACADEMIC YEAR: 2025-26

(GROUP A: COMMON TO CE &ME)

Course Outcomes:

Semester No:	II		
Course Title:	Mathematics-II	**Course Code:**	U24MA201
Course Outcome No.	**Description**		
M-II.CO1	Determine the rank of matrix' system of linear equations with the help of Matrices and solving Eigen value problems.		
M-II.CO2	Discuss the methods for solving certain first order differential equations and get insight into its applications.		
M-II.CO3	Solve certain higher order differential equations along its applications.		
M-II.CO4	Analyze the basic problems of Gamma, Beta and Legendre's functions.		
M-II.CO5	Apply the concept of Laplace Transforms in improper integrals and to the ordinary differential equations		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
M-II.CO1	3	3	3	3	2						1	2	2
M-II.CO2	3	3	3	3	2						1	2	2
M-II.CO3	3	3	3	3	2						1	2	2
M-II.CO4	3	3	3	3	2						1	2	2
M-II.CO5	3	3	3	3	2						1	2	2
M-II	3	3	3	3	2						1	2	2

Course Outcomes:

Semester No:	II		
Course Title:	Engineering Physics	**Course Code:**	**U24PH201**
Course Outcome No.	**Description**		
EP.CO 1	Explain crystals based on their structure and their appropriate uses		
EP.CO 2	Identify working of lasers and optical fibers in high-speed communication.		
EP.CO 3	Compare the wave nature and to develop the skills in designing the various electronic devices.		
EP.CO4	Outline the Properties and applications of Solids in divergent fields.		
EP.CO 5	Summarize the principles of nanoscience in new technological device		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EP.CO 1	3	3			2	2	3						
EP.CO 2	3	3			2	2	3						
EP.CO 3	3	3			2	2	3						
EP.CO4	3	3			2	2	3						
EP.CO 5	3	3			2	2	3						
EP	3	3			2	2	3						

Course Outcomes:

Semester No:	II		
Course Title:	Programming for Problem Solving	**Course Code:**	U24CS201
Course Outcome No.	**Description**		
PPS.CO1	Illustrate basic concepts of programming, algorithms, and flowchart and apply it for problem solving.		
PPS.CO2	Explain conditional branching and iterations for programming and usage of data types like arrays and strings.		
PPS.CO3	Apply modular function approach to implement searching (linear, binary) and sorting (bubble, selection & insertion).		
PPS.CO4	Analyze the usage of structure and recursion concepts.		
PPS.CO5	Apply the concept of file handling and pointers for storage and implementation of data.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PPS.CO1	2	3	2	1	3								2
PPS.CO2	3	3	2	3	3								3
PPS.CO3	2	3	2	2	2								2
PPS.CO4	2	3	3	3	2								3
PPS.CO5	3	3	3	2	3								3
PPS	2.4	3	2.4	2.2	2.6								2.6

Course Outcomes:

Semester No:	II		
Course Title:	ENGINEERING MECHANICS	**Course Code:**	U24CE201
Course Outcome No.	**Description**		
EM.CO1	Determine the unknown forces by the parallelogram law of force method and method of resolution, solve the engineering problems by drawing the free body diagram.		
EM.CO2	Locate the position of centroid and centres of gravity of plane figures and solid bodies of various shapes.		
EM.CO3	Analyze the motion of bodies on a plane surface or on an inclined surface connected with strings and passes over pulleys.		
EM.CO4	Evaluate the forces in the determinate frames by using method of joints, method of sections and tension coefficient method.		
EM.CO5	Apply the concept of work energy method and impulse momentum method to bodies who are in motion position on horizontal and inclined plane surface.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EM.CO1	**3**	3	-	1							2	3	
EM.CO2	3	3	-	1							2	3	
EM.CO3	3	3	-	2							2	3	
EM.CO4	3	3	-	2							2	3	
EM.CO5	3	3	-	2							2	3	
EM	3	3		1.6							2	3	

Course Outcomes:

Semester No:	II		
Course Title:	Environmental Science	**Course Code:**	U24CH202
Course Outcome No.	**Description**		
ES.CO1	Recognize the environmental science is interdisciplinary and need for sustainable development.		
ES.CO2	Explain the role of ecosystems to preserve ecological balance.		
ES.CO3	Determine the importance and conservation strategies for biodiversity.		
ES.CO4	Illustrate the sources and effects of pollution and suggest appropriate preventive measures.		
ES.CO5	Categorize how environmental problems affect society and propose suitable strategies for efficient disaster management.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
ES.CO1	3	-	2	-	-	2	2	-	-	-	2		
ES.CO2	3	-	2	-	-	2	2	-	-	-	2		
ES.CO3	2	-	2	-	-	3	3	-	-	-	2		
ES.CO4	2	-	3	-	-	2	3	-	-	-	2		
ES.CO5	3	-	2	-	-	3	2	-	-	-	3		
ES	2.6		2.2			2.4	2.4				2.2		

Course Outcomes:

Semester No:	II		
Course Title:	Engineering Physics Lab	**Course Code:**	U24PH2L1
Course Outcome No.	**Description**		
EPL.CO 1	Demonstrate the basic principles of lasers and optical fibers to determine wavelength and numerical aperture.		
EPL.CO 2	Explain the electrical properties of semiconductors and evaluate the energy band gap.		
EPL.CO 3	Calculate the carrier concentration of semiconductor materials using the Hall effect principle.		
EPL.CO4	Explain the fundamental concepts of semiconductors and analyze the I–V characteristics of p–n junction diode, solar cell, and LED devices.		
EPL.CO 5	Plot and interpret experimental curves for temperature dependence of resistance (thermistor) and determine rigidity modulus using a torsional pendulum.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EPL.CO 1	3	3			2	2		3					
EPL.CO 2	3	3			2	2		3					
EPL.CO 3	3	3			2	2		3					
EPL.CO4	3	3			2	2		3					
EPL.CO 5	3	3			2	2		3					
EPL	3	3			2	2		3					

Course Outcomes:

Semester No:	II		
Course Title:	Programming for ProblemSolving Lab.	**Course Code:**	U24CS2L1
Course Outcome No.	**Description**		
PPSL.CO1	Identify and choose appropriate data types for implementing C programs.		
PPSL.CO2	Apply input–output operations, decision-making statements, and looping constructs to design and implement modular C programs.		
PPSL.CO3	Apply modular programming techniques to decompose programming problems and develop reusable C functions.		
PPSL.CO4	Apply pointers and dynamic memory allocation techniques to implement C programs efficiently.		
PPSL.CO5	Apply structures and file-handling techniques to store, retrieve, and manage data in C programs.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
PPSL.CO1	3	2	1									3	2
PPSL.CO2	3	3	2	1	1							2	3
PPSL.CO3	3	2	3	2	2							3	3
PPSL.CO4	3	2	2	1	2							2	2
PPSL.CO5	3	2	3	2	3							3	2
PPSL	3	2.2	2.2	1.2	1.6							2.6	2.4

Course Outcomes:

Semester No:	II		
Course Title:	Engineering Mechanics lab	**Course Code:**	U24CE2L3
Course Outcome No.	**Description**		
EML.CO1	To Study the performance of differential axle and wheel and find the velocity ratio, efficiency and law of machine.		
EML.CO2	To verify lami's theorem and the law of polygon and calculate the resultant of coplanar concurrent force system by using universal force table.		
EML.CO3	Determine the centre of gravity of irregular shaped bodies and coefficient of friction for various surfaces on an inclined plane.		
EML.CO4	Determine the mechanical advantage, velocity ratio, and efficiency of a simple screw jack, and moment of intertia of a fly wheel.		
EML.CO5	To verify the principle of moments by using bell crank lever apparatus, to determine the reactions of parallel forces on simply supported beam apparatus.		
EML			

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EML.CO1	3	3	-	3	-	1	-	-	-	2	3	3	
EML.CO2	3	3	-	-	-	1	-	-	-	-	3	3	
EML.CO3	3	3	2	3	-	-	-	-	-	-	3	3	
EML.CO4	3	3	2	3	-	-	-	-	-	-	3	3	
EML.CO5	3	3	3	2	-	-	-	-	-	-	3	3	
EML	3	3	2.3	2.7	-	1	-	-	-	2	3	3	

Course Outcomes:

Semester No:	II		
Course Title:	Basic Electrical Engineering Lab	**Course Code:**	U24EE2L1
Course Outcome No.	**Description**		
EGDP.CO1	Identify basics of Dimensioning, lettering and use of different drawing instruments.		
EGDP.CO2	Demonstrate different geometric methods to construct conics & engineering curves.		
EGDP.CO3	Apply the concept of Orthographic projection and projection of lines and planes to develop physical objects.		
EGDP.CO4	Analyze the need of projection of solids and section of solids in real world using CAD tool.		
EGDP.CO5	Apply the concept of development of surfaces of right regular solids i.e., Prisms, Pyramids, Cylinder, Cone etc., Isometric Views, and Orthographic projections on AutoCAD.		

Course Articulation Matrix:

Mapping of Course Outcomes (CO) with Program Outcomes (PO's) and Program Specific Outcomes (PSO's):

Course Outcomes (CO's)	**Program Outcomes (PO)**											**Program Specific Outcomes (PSO's)**	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PSO1**	**PSO2**
EGDP.CO1	2	-	3	-	3	3	-	-	3	-	2	1	1
EGDP.CO2	2	-	2	-	3	2	-	-	3	-	2	1	1
EGDP.CO3	2	-	3	-	3	3		-	3	-	3	1	1
EGDP.CO4	3	-	3	-	3	2	-	-	3	-	3	1	1
EGDP.CO5	3	-	2	-	3	3	-	-	3	-	3	1	1
EGDP	2.2		2.6	1	3	2.6			3		2.6	1	1