MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY
JAMSHORO

Department of Civil Engineering

LESSON PLAN

COURSE TITLE: **Applied Physics**	COURSE CODE: **CE119**	CREDIT HOURS: **03**	MINIMUM CONTACT HOURS: **48**
COURSE INSTRUCTER: **Engr. Maroosha larik (A+B) / Engr. Zaid Khan (C)**			
Batch: **24CE**	Semester: **1st**	Semester Starting Date: 19-08-2024	Semester Suspension Date: 04-12-2024

COURSE LEARNING OUTCOMES:

CLO No.	Description	Taxonomy level	Associated PLO
1	**SOLVE** the two-dimensional Force System and Equilibrium conditions by applying the basic principles of statics.	C4	1
2	**APPLY** fundamental concepts of kinematics and dynamics to the analysis of a body when it is subjected to different types of motion	C3	1
3	**UNDERSTAND** fundamental concepts of basic electrical and mechanical engineering	C2	1

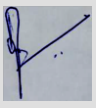
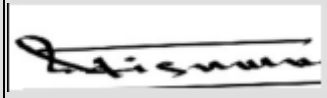
LESSON CONTENTS AND ASSOCIATED CLO(s)

Contents	CLO No.	Marks Assigned	Delivery Methods	Assessment Methods (Marks)
• **Introduction:** - Concept of mass, force, time and space, - Scalar and Vector quantities • **System of Forces:** - Force types, characteristics - system of forces - resolution and composition of force system by analytical and graphical method, - Concept of moment of force, - Principle of Transmissibility, - Principle of Moment • **Equilibrium of Rigid Bodies:** - Equilibrium and its Conditions - Free body diagram and its application - Equilibrium of rigid bodies • **Friction:** - Concepts and laws of friction - Friction on horizontal and inclined plane - Angle and co-efficient of friction **No. of lectures: 25**	**1**	**52**	• Class Lectures • Discussion	• Assignment-I (05) • Class test-I (07) • Mid semester Exam (30) • Final Exam (10)

	• **Kinematics:** - Newton's laws of motion - Motion under constant acceleration - Motion under variable acceleration - Projectile Motion - Simple harmonic motion • **Applications of Principles of Dynamics:** - Rectilinear and curvilinear motion - Newton's equation of motion - Dynamic equilibrium - Practical use of the above principles and properties **No. of lectures: 13**	**2**	**28**	• Class Lectures • Discussion	• Assignment -II (05) • Class test-II (08) • Final Exam (15)
	• **Electrical Elements and circuits:** - Electric current - voltage - power and energy - Ohm's law - Inductance and capacitance. - Kirchhoff's laws - Introduction to node voltage and loop current methods. - Related problems • **Basic Mechanical Concepts:** - Fundamentals of heat transfer - Conduction and Thermal conductivity - Overall heat transfer coefficients - Practical equations - Laws of thermodynamics **No. of lectures: 10**	**3**	**20**	• Class Lectures • Discussion	• Assignment-III (05) • Final Exam (15)

ASSESSMENT DETAILS

S. No.	Assessment Activities	Marks	Activities		CLO(s) to be assessed
1	Class test /Assignment	**30**	Class Test(s)	2	1, 2
			Assignment(s)	3	1, 2, 3
2	Mid Semester Exam	**30**	1		1
3	Final Semester Exam	**40**	1		1, 2, 3

Prepared by: **Engr. Maroosha larik**  Signature: Dated: 15-09-2024	Reviewed by: **Curriculum Review Committee**  Signature: Dated: 20-11-2024	Approved by: **Chairman, CED**  Signature: Dated: 20-11-2024