MERI College of Engineering and Technology
(MERI - CET)

Session: 2020–21

Lesson Plan

Name of the Faculty : Mr. Pardeep
Discipline : Mechanical Engineering
Semester : 3rd
Subject : Engineering Mechanics (ESC-ME- 209G)
Lesson Plan Duration : 15 Weeks (from Aug. 2020 to Nov. 2020)
** Work Load (Lecture) per week (in hours): Lectures-02, Practicals-00

Week	Theory		Practical	
	Lecture Day	Topic (including assignment/test)	Practical day	Topic
1st	1st	Introduction: Force system, dimensions and units in mechanics, laws of mechanics, vector algebra.		No Practical
	2nd	Addition and subtraction of forces, cross and dot products of vectors, moment of a force about a point and axis, couple and couple moment, transfer of a force to a parallel position.		
2nd	3rd	Resultant of a force system using vector method, Problems involving vector application.		
	4th	Equilibrium: Static and dynamic equilibrium, static in determinacy		
3rd	5th	General equations of equilibrium, Varingnon's theorem.		

	6th	Lami's theorem, equilibrium of bodies under a force system, Problems.		
4th	7th	Truss and Frames:Truss, classification of truss.		
	8th	Assumptions in truss analysis, perfect truss.		
5th	9th	Analysis of perfect plane truss using method of joints and method of sections.		
	10th	Centroid , Centre of mass and Centre of gravity, Determination of centroid.		
6th	11th	Centre of mass and centre of gravity.		
	12th	Integration method of regular and composite figures and solid objects, Problems.		
7th	13th	Moment of Inertia: Area moment of inertia, mass moment of inertia.		
	14th	Parallel axis and perpendicular axis theorems.		
8th	15th	Radius of gyration, polar moment of inertia, product of inertia, principle axis.		

	16th	Problem based on composite figures and solid objects.		
9th	17th	Kinematics: Concept of rigid body, velocity and acceleration.		
	18th	Relative velocity, translation and rotation of rigid bodies.		
10th	19th	Equations of motion for translation and rotation, problems.		
	20th	Particle Dynamics: Energy methods and momentum methods.		
11th	21th	Newton's laws, work energy equation for a system of particles.		
	22nd	Linear and angular momentum equations, projectile motion, problem.		
12th	23nd	Shear Force and Bending Moment Diagram for statically determinant beams.		
	24nd	Classification of beams, types of loads.		
13th	25nd	Shear force and bending moment calculation and their graphical presentation.		
	26nd	Point of inflection, problem.		
14th	27nd	Revision.		
	28nd	Revision.		
15th	29nd	Revision.		
	30nd	Revision.		