LESSION PLAN 5TH SEMESTER (2021-2022)				
SUBJECT:- **DESIGN OF MACHINE ELEMENTS.**				
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MONTH	CHAPTER/ UNIT	COURSE TO BE COVERED	CLASSES REQUIRED	REMARKS(IF ANY)
	Chapter-1.0 1.1	Introduction: Introduction to Machine Design and Classify it.	2	
	1.2	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.	2	
	1.3	Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.	3	
	1.4	Modes of Failure (By elastic deflection, general yielding & fracture).	2	
	1.5	State the factors governing the design of machine elements..	2	
	1.6	Describe design procedure.	1	
	CHAPTER:2.0	Design of fastening elements:		
	2.1	Joints and their classification.	1	
	2.2	State types of welded joints .	1	
	2.3	State advantages of welded joints over other joints	1	
	2.4	Design of welded joints for eccentric loads.	1	
	2.5	State types of riveted joints and types of rivet	1	
	2.6	Describe failure of riveted joints.	2	
	2.7	Determine strength & efficiency of riveted joints	2	
	2.8	Design riveted joints for pressure vessel.	2	
	2.9	Solve numerical on Welded Joint and Riveted Joints	1	
	CHAPTER:3.0	**Design of shafts and Keys:**		
	3.1	State function of shafts.	1	
	3.2	State materials for shafts.	1	
	3.3	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity.	2	
	3.4	State standard size of shaft as per I.S	1	
	3.5.	State function of keys, types of keys &	1	

		material of keys.		
	3.6	Describe failure of key, effect of key way.	1	
	3.7	Design rectangular sunk key considering its failure against shear & crushing	2	
	3.8	Design rectangular sunk key by using empirical relation for given diameter of shaft	1	
	3.9	State specification of parallel key, gib-head key, taper key as per I.S.	1	
	3.10	Solve numerical on Design of Shaft and keys	1	
	CHAPTER: 4.0	**Design of Coupling:**		
	4.1	Design of Shaft Coupling	1	
	4.2	Requirements of a good shaft coupling	1	
	4.3	Types of Coupling.	1	
	4.4	Design of Sleeve or Muff-Coupling	3	
	4.5	Design of Clamp or Compression Coupling.	3	
	4.6	Solve simple numerical on above.	3	
	CHAPTER: 5.0	**Design a closed coil helical spring:**		
	5.1	Materials used for helical spring.	1	
	5.2	Standard size spring wire. (SWG).	1	
	5.3	Terms used in compression spring.	1	
	5.4	Stress in helical spring of a circular wire	2	
	5.5	Deflection of helical spring of circular wire.	2	
	5.6	Surge in spring.	2	
	5.7	Solve numerical on design of closed coil helical compression spring.	3	