LESSION PLAN

Discipline :Mechanical engineering	Semester : 5th	Name of the Teachnig Faculty : Mrs LOPAMUDRA SWAIN
Subject: DESIGN OF MACHINE ELEMENTS	No.of days/Per weeks Class Alloted Weeks :4	Semester :5th No.of Weeks : 4
Weeks	**Class day**	**Theory**
3rd week(Sep-2022)	1st	Introduction to Machine Design and Classify it.
	2nd	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.
	3rd	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.
	4th	Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.
4th week	1st	Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.
	2nd	Modes of Failure (By elastic deflection, general yielding & fracture)
	3rd	Modes of Failure (By elastic deflection, general yielding & fracture)
	4th	State the factors governing the design of machine elements.
2nd week (Oct-2022)	1st	Describe design procedure.
		CLASS TEST -1
	2nd	Describe design procedure.
	3rd	State types of welded joints .
	4th	State advantages of welded joints over other joints.
3rd week	1st	Design of welded joints for eccentric loads.
	2nd	Design of welded joints for eccentric loads.
	3rd	State types of riveted joints and types of rivets.
	4th	Describe failure of riveted joints.
4th week	1st	Determine strength & efficiency of riveted joints
	2nd	Design riveted joints for pressure vessel.
	3rd	Solve numerical on Welded Joint and Riveted Joints.
	4th	Solve numerical on Welded Joint and Riveted Joints.
1st week (Nov -2022)	1st	Solve numerical on Welded Joint and Riveted Joints.
	2nd	State function of shafts.
	3rd	State materials for shafts.
	4th	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

2nd	1st	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
		CLASS TEST -2
	2nd	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
	3rd	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
	4th	State standard size of shaft as per I.S., Describe failure of key, effect of key way
3rd	1st	INTERNAL
	2nd	INTERNAL
	3rd	INTERNAL
	4th	INTERNAL
4th	1st	Design rectangular sunk key considering its failure against shear & crushingDesign rectangular sunk key by using empirical relation for given diameter of shaft.
	2nd	State specification of parallel key, gib-head key, taper key as per I.S.
	3rd	Solve numerical on Design of Shaft and keys.
	4th	Solve numerical on Design of Shaft and keys.
1st week (Dec -2022)	1st	Solve numerical on Design of Shaft and keys.
	2nd	Solve numerical on Design of Shaft and keys.
	3rd	Design of Shaft Coupling.
	4th	Requirements of a good shaft coupling.
2nd	1st	Types of Coupling.
	2nd	Design of Sleeve or Muff-Coupling.
	3rd	Solve simple numerical on above.
	4th	Solve simple numerical on above.
3rd	1st	Solve simple numerical on above.
	2nd	Materials used for helical spring.
	3rd	Standard size spring wire. (SWG).
	4th	Terms used in compression spring.
4th	1st	Stress in helical spring of a circular wire.
	2nd	Deflection of helical spring of circular wire.
	3rd	Surge in spring.
	4th	Solve numerical on design of closed coil helical compression spring.

Lopamudra Swain