GOVT.POLYTECHNICMAYURBHANJ

LESSON PLAN

DISCIPLINE:MEACHANICAL ENGINEERING

SUBJECT: DESIGN OF MACHINE ELEMENT(C302)			Semester:5th		Name of theTeachingFaculty: THAKURA HANSDAH
			No.of Days/Perweek	CHAPTER	SemesterFromdate:1.08.2023 ToDate:30.11.2023
MONTH	Week		DAY		TOPIC TO BE COVER
AUGUST	2ND		3RD	CHAPTER -1	1. **Introduction.** Introduction to Machine Design& Classification of Machine
			4TH		Different mechanical engineering materials used in design with their uses and their mechanical and physical properties
			5TH		Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.
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	3RD		3RD		Modes of Failure (By elastic deflection, general yielding & fracture)
			4TH		Modes of Failure (By elastic deflection, general yielding & fracture)
			5TH		Modes of Failure (By elastic deflection, general yielding & fracture)
			5TH		State the factors governing the design of machine elements
	4TH		3RD		State the factors governing the design of machine elements
			4TH		State the factors governing the design of machine elements
			5TH		Solve of simple problem.
			5TH		REVISION
	5TH		3RD		**2.0 Design of fastening elements:** Joints and their classification .
	1st		5TH		State types of welded joints
			5TH		Design of welded joints for single transverse fillet welded joint
	2ND		4TH		Design of welded joints for double parallel fillet welded joint
			5TH		Design of welded joints for sinle transverse double parallel fillet welded joint

			5TH		Design the welded joint with eccentric loading.
	3rd		3RD	CHAPTE-2	State advantages of welded joints over other joints.
			4TH		State types of riveted joints.
			5TH		Joints and their classification.
			5TH		**CLASS TEST-1**
SEPTEMBER	4th		3RD		Dermine strength & efficiency of riveted joint
			4TH		State advantages of riveted joints over other joints.
			5TH		Question Discussion
			5TH		Solve of simple problem.
	5th		3RD		**3.0 Design of shafts and Keys:**
			4TH		State function of shafts &State materials for shafts.
			5TH		Design solid 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
			5TH		Design solid 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
	1st		3RD		Design 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
			5TH		Solve numerical problem on shaft
			5TH	CHAPTER-3	**State function of keys, types of keys & material of keys**
OCTOBER	2ND		3RD		State function of keys, types of keys & material of keys
			4TH		Describe failure of key, effect of key way.
			5TH		Describe failure of parallel sunkkey, effect of key way.
			5TH		Describe failure of square key, effect of key way
			3RD		Describe failure of rectangular sunk key, effect of key way
			4TH		**INTERNAL EXAMINATION**

3rd		5TH		Design rectangular sunk key considering its failure against shear & crushing.
		5TH		Design rectangular sunk key by using empirical relation for givendiameter of shaft
		4TH		Solve numerical on Design of keys.
1ST		5TH		**4.0 Design of Coupling:** Design of Shaft Coupling
		5TH	CHAPER-4	Requirements of a good shaft coupling&Types of Coupling.
		3RD		**Design of Sleeve or Muff-Coupling.**
2ND		4TH		Design of Clamp or Compression Coupling.
		5TH		**SOLVE OF SIMPLE NUMERICAL PROBLEM**
		5TH		5.0 Design a closed coil helical spring Materials used for helical spring
3RD		3RD		Terms used in compression spring ,Standard size spring wire. (SWG)
4TH		3RD	CHAPTER-5	**Stress in helical spring of a circular wire**
		4TH		Deflection of helical spring of circular wire
		5TH		Surge in spring
		5TH		**CLASS TEST-2**

HOD
MECHANICAL ENGINEERING

SUBJECT
EXPERT

ACADEMIC
COORDINATOR