GOVT.POLYTECHNICMAYURBHANJ

LESSON PLAN

DISCIPLINE:MEACHANICAL ENGINEERING

SUBJECT: DESIGN OF MACHINE ELEMENT(C302)		Semester:5th		Name of theTeachingFaculty: THAKURA HANSDAH
		No.of Days/Perweek classallotted:04	CHAPTER	SemesterFromdate:1.10.2021 ToDate:8.01.2022
MONTH	**Week**	**DAY**		**TOPIC**
OCTOBER		5TH	CHAPTER -1	**1. Introduction.** Introduction to Machine Design& Classification of Machine
	2ND	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.
		5TH		Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.
	4TH	2ND		Modes of Failure (By elastic deflection, general yielding & fracture)
		3RD		Modes of Failure (By elastic deflection, general yielding & fracture)
		4TH		Modes of Failure (By elastic deflection, general yielding & fracture)
		5TH		State the factors governing the design of machine elements
	5TH	2ND		State the factors governing the design of machine elements
		3RD		QuestionDiscussion.
		4TH		Solve of simple problem.
		5TH		Solve of simple problem.
	1st	2ND		**2.0 Design of fastening elements: Joints and their classification .**
		3RD		State types of welded joints
		4TH		Design of welded joints for single transverse fillet welded joint
		5TH		
				Design of welded joints for double parallel fillet welded joint
	2ND	2ND		Design of welded joints for sinle transverse double parallel fillet welded joint
		3RD		Solve of simple problem
		4TH		**CLASS TEST-1**

	2ND	5TH	CHAPTE-2	Design the welded joint with eccentric loading.
		4TH		State advantages of welded joints over other joints.
		5TH		Solve of simple problem
	3rd	2ND		Solve of simple problem
		3RD		State types of riveted joints.
NOVEMBER		4TH		Joints and their classification.
		5TH		Determine strength & efficiency of riveted joint
	4th	2ND		Dermine strength & efficiency of riveted joint
		3RD		State advantages of riveted joints over other joints.
		4TH		Question Discussion
		5TH		Solve of simple problem.
	5th	2ND		**3.0 Design of shafts and Keys:**
		3RD		State function of shafts &State materials for shafts.
		4TH		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	2ND		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
		3RD	CHAPTER-3	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		Solve numerical problem on shaft
		5TH		**INTERNAL EXAMINATION**
	2ND	2ND		State standard size of shaft as per I.S
		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.
DECEMBER	3rd	2ND		Describe failure of square key, effect of key way
		3RD		Describe failure of rectangular sunk key, effect of key way.
		4TH		Design rectangular sunk key considering its failure against shear &
		5TH		crushing.
	4th	2ND		Design rectangular sunk key by using empirical relation for givendiameter of shaft
		3RD		Solve numerical on Design of keys.
		4TH		**4.0 Design of Coupling:** Design of Shaft Coupling
		5TH	CHAPER-4	Requirements of a good shaft coupling&Types of Coupling.
		2ND		**Design of Sleeve or Muff-Coupling.**

		3RD		Design of Clamp or Compression Coupling.
	5th	4TH		**5.0 Design a closed coil helical spring** Materials used for helical spring
		5TH		Standard size spring wire. (SWG)
JANUARY	1st	2ND	CHAPTER-5	Terms used in compression spring
	2ND	2ND		**Stress in helical spring of a circular wire**
		3RD		Deflection of helical spring of circular wire
		4TH		Surge in spring
		5TH		**CLASS TEST-2**

HOD
MECHANICAL ENGINEERING

SUBJECT
EXPERT

ACADEMIC
COORDINATOR