GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
5TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

DESIGN OF MACHINE ELEMEMTS(TH-2)

Name of the Faculty – ER. SANJAY KUMAR PANIGRAHY

Topics to be taken				Actually taken		
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. Introduction	**12**	1.1 Introduction to Machine Design and Classify it. 1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties. 1.3 Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I. 1.4 Modes of Failure (By elastic deflection, general yielding & fracture) 1.5 State the factors governing the design of machine elements. 1.6 Describe design procedure.	**1.08.2023 TO 21.08.2023**	1.1 Introduction to Machine Design and Classify it. 1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties. 1.3 Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I. 1.4 Modes of Failure (By elastic deflection, general yielding & fracture) 1.5 State the factors governing the design of machine elements. 1.6 Describe design procedure.	**1.08.2023** **3.08.2023** **5.08.2023** **7.08.2023** **8.08.2023** **10.08.2023** **12.08.2023** **14.08.2023** **15.08.2023** **17.08.2023** **19.08.2023** **21.08.2023**	

2. Design of fastening elements:	**12**	2.1 Joints and their classification. 2.2 State types of welded joints . 2.3 State advantages of welded joints over other joints. 2.4 Design of welded joints for eccentric loads. 2.5 State types of riveted joints and types of rivets. 2.6 Describe failure of riveted joints. 2.7 Determine strength & efficiency of riveted joints. 2.8 Design riveted joints for pressure vessel. 2.9 Solve numerical on Welded Joint and Riveted Joints.	**22.08.2023 TO 11.09.2023**	2.1 Joints and their classification. 2.2 State types of welded joints . 2.3 State advantages of welded joints over other joints. 2.4 Design of welded joints for eccentric loads. 2.5 State types of riveted joints and types of rivets. 2.6 Describe failure of riveted joints. 2.7 Determine strength & efficiency of riveted joints. 2.8 Design riveted joints for pressure vessel. 2.9 Solve numerical on Welded Joint and Riveted Joints.	**22.08.2023** **24.08.2023** **26.08.2023** **28.08.2023** **29.08.2023** **31.08.2023** **2.09.2023** **4.09.2023** **7.09.2023** **9.09.2023** **11.09.2023**	

3. Design of shafts and Keys	**12**	3.1 State function of shafts. 3.2 State materials for shafts. 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 3.4 State standard size of shaft as per I.S. 3.5 State function of keys, types of keys & material of keys. 3.6 Describe failure of key, effect of key way. 3.7 Design rectangular sunk key considering its failure against shear & crushing. 3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft. 3.9 State specification of parallel key, gib-head key, taper key as per I.S. 3.10 Solve numerical on Design of Shaft and keys.	**12.09.2023 TO 7.10.2023**	3.1 State function of shafts. 3.2 State materials for shafts. 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 3.4 State standard size of shaft as per I.S. 3.5 State function of keys, types of keys & material of keys. 3.6 Describe failure of key, effect of key way. 3.7 Design rectangular sunk key considering its failure against shear & crushing. 3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft. 3.9 State specification of parallel key, gib-head key, taper key as per I.S. 3.10 Solve numerical on Design of Shaft and keys.	**12.09.2023** **14.09.2023** **16.09.2023** **18.09.2023** **21.09.2023** **23.09.2023** **25.09.2023** **26.09.2023** **30.09.2023** **31.09.2023** **5.10.2023** **7.10.2023**	

4. Design of Coupling	**12**	4.1 Design of Shaft Coupling 4.2 Requirements of a good shaft coupling 4.3 Types of Coupling. 4.4 Design of Sleeve or Muff-Coupling. 4.5 Design of Clamp or Compression Coupling. 4.6 Solve simple numerical on above.	**9.10.2023 TO 9.11.2023**	4.1 Design of Shaft Coupling 4.2 Requirements of a good shaft coupling 4.3 Types of Coupling. 4.4 Design of Sleeve or Muff-Coupling. 4.5 Design of Clamp or Compression Coupling. 4.6 Solve simple numerical on above.	**9.10.2023** **10.10.2023** **12.10.2023** **16.10.2023** **17.10.2023** **19.10.2023** **31.10.2023** **2.11.2023** **4.11.2023** **6.11.2023** **7.11.2023** **9.11.2023**	
5. Design a closed coil helical spring:	**12**	5.1 Materials used for helical spring. 5.2 Standard size spring wire. (SWG). 5.3 Terms used in compression spring. 5.4 Stress in helical spring of a circular wire 5.5 Deflection of helical spring of circular wire. 5.6 Surge in spring. 5.7 Solve numerical on design of closed coil helical compression spring.	**11.11.2023 TO 7.12.2023**	5.1 Materials used for helical spring. 5.2 Standard size spring wire. (SWG). 5.3 Terms used in compression spring. 5.4 Stress in helical spring of a circular wire 5.5 Deflection of helical spring of circular wire. 5.6 Surge in spring. 5.7 Solve numerical on design of closed coil helical compression spring.	**11.11.2023** **16.11.2023** **18.11.2023** **20.11.2023** **21.11.2023** **23.11.2023** **25.11.2023** **28.11.2023** **30.11.2023** **2.12.2023** **4.12.2023** **7.12.2023**	

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