



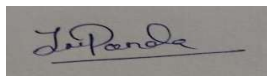
**GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
5TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)
DESIGN OF MACHINE ELEMENTS(TH-2)**

Name of the Faculty – ER. LAKSHMI NARAYANA PANDA						
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.	16/09/2022 TO 15/10/2022	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.	16.09.2022 21.09.2022(2) 23.09.2022 24.09.2022 28.09.2022(2) 30.09.2022 12.10.2022(2) 14.10.2022 15.10.2022	

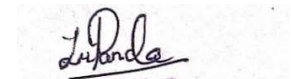
2. Design of fastening elements:	12	2.1 Joints and their classification.	19/10/2022 TO 9/11/2022	2.1 Joints and their classification.	19.10.2022(2)
		2.2 State types of welded joints .		2.2 State types of welded joints .	21.10.2022
		2.3 State advantages of welded joints over other joints.		2.3 State advantages of welded joints over other joints.	22.10.2022
		2.4 Design of welded joints for eccentric loads.		2.4 Design of welded joints for eccentric loads.	26.10.2022
		2.5 State types of riveted joints and types of rivets.		2.5 State types of riveted joints and types of rivets.	28.10.2022
		2.6 Describe failure of riveted joints.		2.6 Describe failure of riveted joints.	29.10.2022
		2.7 Determine strength & efficiency of riveted joints.		2.7 Determine strength & efficiency of riveted joints.	2.11.2022(2)
		2.8 Design riveted joints for pressure vessel.		2.8 Design riveted joints for pressure vessel.	4.11.2022
		2.9 Solve numerical on Welded Joint and Riveted Joints.		2.9 Solve numerical on Welded Joint and Riveted Joints.	5.11.2022
					9.11.2022

3. Design of shafts and Keys	12	<p>3.1 State function of shafts.</p> <p>3.2 State materials for shafts.</p> <p>3.3 Design solid & hollow shafts to transmit a given power at given rpm based on</p> <p>a) Strength: (i) Shear stress, (ii) Combined bending tension;</p> <p>b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity</p> <p>3.4 State standard size of shaft as per I.S.</p> <p>3.5 State function of keys, types of keys & material of keys.</p> <p>3.6 Describe failure of key, effect of key way.</p> <p>3.7 Design rectangular sunk key considering its failure against shear & crushing.</p> <p>3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.</p> <p>3.9 State specification of parallel key, gib-head key, taper key as per I.S.</p> <p>3.10 Solve numerical on Design of Shaft and keys.</p>	<p>9/11/2022</p> <p>TO</p> <p>2/12/2022</p>	<p>3.1 State function of shafts.</p> <p>3.2 State materials for shafts.</p> <p>3.3 Design solid & hollow shafts to transmit a given power at given rpm based on</p> <p>a) Strength: (i) Shear stress, (ii) Combined bending tension;</p> <p>b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity</p> <p>3.4 State standard size of shaft as per I.S.</p> <p>3.5 State function of keys, types of keys & material of keys.</p> <p>3.6 Describe failure of key, effect of key way.</p> <p>3.7 Design rectangular sunk key considering its failure against shear & crushing.</p> <p>3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.</p> <p>3.9 State specification of parallel key, gib-head key, taper key as per I.S.</p> <p>3.10 Solve numerical on Design of Shaft and keys.</p>	<p>9.11.2022</p> <p>11.11.2022</p> <p>12.11.2022</p> <p>18.11.2022</p> <p>19.11.2022</p> <p>23.11.2022(2)</p> <p>25.11.2022</p> <p>26.11.2022</p> <p>30.11.2022(2)</p> <p>2.12.2022</p>	

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.	3/12/2022 TO 23/12/2022	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.	3.12.2022 7.12.2022(2) 9.12.2022 10.12.2022 14.12.2022(2) 16.12.2022 17.12.2022 21.12.2023(2) 23.12.2023	
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.	24/12/2022 TO 13/01/2023	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.	24.12.2022 28.12.2022(2) 30.12.2022 31.12.2022 4.01.2023(2) 6.01.2023 7.01.2023 11.01.2023(2) 13.01.2023	



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SESSION PLAN
5TH SEMESTER, BRANCH-MECHANICAL(GROUP 2)
DESIGN OF MACHINE ELEMENTS(TH-2)**

Name of the Faculty – ER. SUNIL KUMAR SABAT						
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
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		1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.		1.2 Different mechanical engineering materials used in design with their uses and their mechanical and physical properties.	16.09.2022	
		1.3 Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.		1.3 Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.	19.09.2022	
		1.4 Modes of Failure (By elastic deflection, general yielding & fracture)		1.4 Modes of Failure (By elastic deflection, general yielding & fracture)	20.09.2022	
		1.5 State the factors governing the design of machine elements.		1.5 State the factors governing the design of machine elements.	22.09.2022	
		1.6 Describe design procedure.		1.6 Describe design procedure.	23.09.2022	

<p>2. Design of fastening elements:</p>	<p>12</p>	<p>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.</p>	<p>14/10/2022 TO 11/11/2022</p>	<p>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.</p>	<p>14.10.2022 17.10,2022 18.10.2022 20.10.2022 21.10.2022 27.10.2022 28.10.2022 1.11.2022 3.11.2022 4.11.2022 10.11.2022 11.11.2022</p>	
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3. Design of shafts and Keys	12	3.1 State function of shafts.	14/11/2022 TO 5/12/2022	3.1 State function of shafts.	14.11.2022
		3.2 State materials for shafts.		3.2 State materials for shafts.	15.11.2022
		3.3 Design solid & hollow shafts to transmit a given power at given rpm based on		3.3 Design solid & hollow shafts to transmit a given power at given rpm based on	17.11.2022
		a) Strength: (i) Shear stress, (ii) Combined bending tension;		a) Strength: (i) Shear stress, (ii) Combined bending tension;	
		b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity		b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity	18.11.2022
		3.4 State standard size of shaft as per I.S.		3.4 State standard size of shaft as per I.S.	21.11.2022
		3.5 State function of keys, types of keys & material of keys.		3.5 State function of keys, types of keys & material of keys.	22.11.2022
		3.6 Describe failure of key, effect of key way.		3.6 Describe failure of key, effect of key way.	24.11.2022
		3.7 Design rectangular sunk key considering its failure against shear & crushing.		3.7 Design rectangular sunk key considering its failure against shear & crushing.	25.11.2022
		3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.		3.8 Design rectangular sunk key by using empirical relation for given diameter of shaft.	28.11.2022
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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.	6/12/2022 TO 26/12/2022	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.	6.12.2022 8.12.2022 9.12.2022 12.12.2022 13.12.2022 15.12.2022 16.12.2022 19.12.2022 20.12.2022 22.12.2023 23.12.2023 26.12.2022	
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