ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline: Mechanical	Semester: 5th.	Name of the Teaching Faculty: Dipti Ranjan Pattnayak	
Subject: Design of Machine element.	No of Days/Week Class Allotted: 4	Semester From date: 15/09/22 To date	No.of Weeks: 15

WEEK	Class Day	Theory Topics
1st week 15.9.22 to 17.9.22	1st Monday.	1. Introduction of Machine design and its classification.
	2nd Tuesday.	1. Different Mechanical engineering material used in design with their uses.
	3rd Thursday	Mechanical and physical properties.
	4th	
	5th	
2nd week 19.9.22 to 24.9.22	19.09.22 1st Monday.	1.3 Define Working stress, yield stress, ultimate stress.
	20.09.22 2nd Tuesday.	Factore of safety, Stress-Strain Curve For MS & CI.
	22.09.22 3rd Thursday	1.4. Modes of failure by elastic deflection.
	23.09.22 4th Friday.	Modes of failure by general yielding & fracture.
	5th	
3rd week 26.9.22 to 1.10.22	26.09.22 1st Monday.	1.5. State the factors governing the design of Machine element.
	27.09.22 2nd Tuesday	1.6. Describe the design procedure.
	29.09.22 3rd Thursday	Doubt clearing class & Assignment question.
	30.09.22 4th Friday.	Class test - 1
	5th	

WEEK	Class Day	Theory Topics
4th week 10.10.22 to 15.10.22	10.10.22 1st Monday	2. Design of fastening element :— 2.1 Explain joints and their classification.
	11.10.22 2nd Tuesday	2.2. Explain welded joints and its types.
	13.10.22 3rd Thursday	2.3. State advantages of welded joints over other joints.
	14.10.22 4th Friday.	2.4. Strength of transverse fillet welded joints & strength of parallel fillet welded joints.
	5th	
5th week 17.10.22 to 22.10.22	17.10.22 1st Monday	2.4. Special cases of fillet welded joints. (D)esign of welded joints for eccentric loading.
	18.10.22 2nd Tuesday	2.9. Solve numericals on welded joints.
	20.10.22 3rd Thursday	2.9. Solve numericals on welded joints.
	21.10.22 4th Friday	2.5. Introduction of rivet joint, and its types.
	5th	
6th week 24.10.22 to 29.10.22	24.10.22 1st Monday	2.6. (D)escribe failure of riveted joints. 2.7. (D)etermine Strength and efficiency of riveted joints.
	25.10.22 2nd Tuesday.	← (D)iwali Holiday →
	27.10.22 3rd Thursday	2.8. (D)esign riveted joints for Pressure Vessel.
	28.10.22 4th Friday.	2.9. Solve numericals of riveted joints.
	5th	

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Subject: (1) Design of Machine element	No of Days/Week Class Allotted: 4	Semester From date: 15/09/22 To date: 15

WEEK	Class Day	Theory Topics
7th week 31.10.22 to 5.11.22	31.10.22 1st Monday	3.0 Design of shaft and keys:— 3.1 Introduction of shaft and its function.
	1.11.22 2nd Tuesday.	3.2. State Materials for shaft. - Types of shaft.
	3.11.22 3rd Thursday	3.3. (1) esign solid and hollow shafts to transmit a given power at given rpm - i) Strength. ii) Shear stress. iii) Combind bending tension.
	4.11.22 4th Friday.	ii) Rigidity - i) Angle of twist ii) (1) Deflection iii) Modulous of rigidity.
	5th	
8th week 7.11.22 to 12.11.22	7.11.22 1st Monday.	3.4. State Standard size of shaft. 3.10. Solve numericals on shaft.
	8.11.22 2nd Tuesday.	← Kartika Purnima Holiday →
	10.11.22 3rd Thursday.	3.5 State function of keys, types of keys & Material of keys. 3.6. (1) escribe failure of key, effect of keyway.
	11.11.22 4th Friday.	3.7. (1) esign rectangular Sunk key considering its failure against shear and Crushing.
	5th	
9th week 14.11.22 to 19.11.22	14.11.22 1st Monday.	3.8. (1) esigning rectangular Sunk key by using empirical relation for given dia of shaft.
	15.11.22 2nd Tuesday.	3.9. State specification of parallel key, gib head key tapere key as per IS.
	17.11.22 3rd Thursday.	3.10. Solve numericals on keys.
	18.11.22 4th Friday.	class test - II, Assignment question of module 2&3.
	5th	

WEEK	Day	Theory Topics
10th week 21.11.22 to 26.11.22	21.11.22 Monday.	4. Design of Coupling:— 4.1 Introduction and design of Shaft Coupling.
	22.11.22 Tuesday.	4.2. Requirements of a good Shaft Coupling.
	24.11.22 Thursday	4.3. Types of Coupling.
	25.11.22 Friday.	4.4. Sleeve or Muff Coupling.
11th week 28.11.22 to 3.12.22	28.11.22 Monday.	4.4. Solve numerical on Sleeve or Muff Coupling.
	29.11.22 Tuesday.	4.5. Design of clamp or Compression Coupling.
	01.12.22 Thursday.	4.5. Continuing design of clamp Coupling.
	02.12.22 Friday.	4.5. Numerical Solve on clamp Coupling.
12th week 5.12.22 to 10.12.22	5.12.22 Monday	4.6. Design of Flange Coupling.
	6.12.22 Tuesday	4.6. Numerical Solve on Flange Coupling.
	8.12.22 Thursday	Doubt clearing class & Assignment.
	9.12.22 Friday.	Class test - III.

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WEEK	Class Day	Theory Topics
13th week 12.12.22 to 17.12.22	12.12.22 1st Monday	① Design a closed coil helical spring:- Introduction of spring and its types.
	13.12.22 2nd Tuesday	5.1. Materials used for helical spring. 5.2 Standard size of spring wire.
	15.12.22 3rd Thursday	5.3. Terms used in Compression springs.
	16.12.22 4th Friday.	5.4. Stress in helical springs of a circular wire.
	5th	
14th week 19.12.22 to 24.12.22	19.12.22 1st Monday	5.4. Continuing stress in helical spring of a circular wire.
	20.12.22 2nd Tuesday	5.5. Deflection of helical spring of circular wire.
	22.12.22 3rd Thursday	Eccentric loading of springs. Buckling of compression spring.
	23.12.22 4th Friday.	5.6. Surge in spring.
	5th	
Extra classes.	1st	5.7. Solve Numericals on closed coil helical compression spring.
	2nd	Numericals Solve.
	3rd	Assignment submission and doubt clearing class.
	4th	Previous years Question answers discussion.
	5th	