

Discipline: Mechanical Engineering	Semester : 5th Semester	Name of the Teaching Faculty: Miss,Shradha Suman Adabar Lect. In Mechanical Engineering
Subject: MACHINE DESIGN	No. of Days/week Class Allotted: 60	No of weeks: 18
week	Class Day	Theory Topics
1 st	1 st	Introduction to Machine Design and Classify it.
	2 nd	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties..
	3 rd	Define working stress, yield stress, ultimate stress & factor of safety and stress –strain curve for M.S & C.I.
	4 th	Modes of Failure (By elastic deflection, general yielding & fracture)
2 nd	1 st	State the factors governing the design of machine elements.
	2 nd	Describe design procedure.
	3 rd	Joints and their classification.
	4 th	State types of welded joints
3 rd	1 st	State advantages of welded joints over other joints.)
	2 nd	Design of welded joints for eccentric loads.
	3 rd	Design of welded joints for eccentric loads.
	4 th	Describe failure of riveted joints.
4 th	1 st	Determine strength & efficiency of riveted joints.
	2 nd	Design riveted joints for pressure vessel.
	3 rd	Solve numerical on Welded Joint and Riveted Joints.
	4 th	Solve numerical on Welded Joint and Riveted Joints.
5 th	1 st	Solve numerical on Welded Joint and Riveted Joints.
	2 nd	State function of shafts. State materials for shafts.
	3 rd	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;

	4 th	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;
6 th	1 st	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;
	2 nd	Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	3 rd	Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
	4 th	State standard size of shaft as per I.S. State function of keys, types of keys & material of keys.
7 th	1 st	Describe failure of key, effect of key way
	2 nd	Design rectangular sunk key considering its failure against shear & crushing
	3 rd	Design rectangular sunk key by using empirical relation for given diameter of shaft.
	4 th	State specification of parallel key, gib-head key, taper key as per I.S.
8 th	1 st	Solve numerical on Design of Shaft and keys.
	2 nd	Solve numerical on Design of Shaft and keys.
	3 rd	Solve numerical on Design of Shaft and keys.
	4 th	Design of Shaft Coupling
9 th	1 st	Requirements of a good shaft coupling
	2 nd	Major components and their function
	3 rd	Types of Coupling.
	4 th	Design of Sleeve or Muff-Coupling.
10 th	1 st	Design of Clamp or Compression Coupling.
	2 nd	Solve simple numerical on above.

	3 rd	Solve simple numerical on above.
	4 th	Solve simple numerical on above.
11 th	1 st	Materials used for helical spring
	2 nd	Standard size spring wire. (SWG)
	3 rd	Terms used in compression spring.
	4 th	Stress in helical spring of a circular wire.
12 th	1 st	Deflection of helical spring of circular wire.
	2 nd	Surge in spring
	3 rd	Solve numerical on design of closed coil helical compressionspring.
	4 th	Solve numerical on design of closed coil helical compressionspring.
13 th	1 st	Solve numerical on design of closed coil helical compressionspring.
	2 nd	Solve numerical on design of closed coil helical compressionspring.
	3 rd	Revision of Chapter – 1
	4 th	Revision of Chapter – 2.
14 th	1 st	Revision of Chapter – 2.
	2 nd	Revision of Chapter – 2
	3 rd	Revision of Chapter – 3
	4 th	Revision of Chapter – 3
15 th	1 st	Revision of Chapter – 3
	2 nd	Revision of Chapter – 3
	3 rd	Revision of Chapter – 4
	4 th	Revision of Chapter – 4
16 th	1 st	Revision of Chapter – 4
	2 nd	Revision of Chapter – 4
	3 rd	Revision of Chapter – 5
	4 th	Revision of Chapter – 5

17 th	1 st	Revision of Chapter – 5
	2 nd	Revision of Chapter – 5
	3 rd	Discussion of Probable Questions and Answers (1)
	4 th	Discussion of Probable Questions and Answers(2)
18 th	1 st	Discussion of Probable Questions and Answers (3)
	2 nd	Discussion of Probable Questions and Answers(4)
	3 rd	Discussion of Probable Questions and Answers (5)
	4 th	Discussion of Probable Questions and Answers (6)