Lesson Plan

Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Mechanical Engineering**
Semester/Division/Branch:	**5th Sem/ME**
Subject Name with code:	**Design of Machine Elements (Th-2)**
Total No. of Class (Required):	**60**
Faculty Name:	**Mr.RadhamohanKabisatapathy**

Class No.	*Brief description of the Topic/Chapter to be taught*	Remarks
1	Introduction to Machine Design and its classification.	
2	Different mechanical engineering materials used in design and their uses.	
3	Mechanical engineering materials used in design and their mechanical and physical properties	
4	Define working stress, yield stress	
5	ultimate stress & factor of safety and stress –strain curve for M.S & C.I.	
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7	Modes of Failure (By elastic deflection, general yielding & fracture)	
8	Modes of Failure (By elastic deflection, general yielding & fracture)	
9	State the factors governing the design of machine elements.	
10	Describe design procedure.	
11	State types of welded joints,	
12	State advantages of welded joints over other joints.	
13	Design of welded joints for eccentric loads.	
14	State types of riveted joints and types of rivets.	
15	Describe failure of riveted joints.	

16	Determine strength & efficiency of riveted joints.	
17	Design riveted joints for pressure vessel.	
18	Numerical on Welded Joint. and Riveted Joints.	
19	Numerical on Riveted Joints	
20	State function of shafts, State materials for shafts	
21	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;	
22	Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity	
23	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension;	
24	Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity	
25	State standard size of shaft as per I.S.	
26	State function of keys, types of keys & material of keys	
27	Describe failure of key, effect of key way	
28	Design rectangular sunk key considering its failure against shear & crushing	
29	Design rectangular sunk key considering its failure against shear & crushing	
30	Design rectangular sunk key considering its failure against shear & crushing	
31	Design rectangular sunk key by using empirical relation for given diameter of shaft	
32	State specification of parallel, gib-head key, taper key as per I.S.	
33	State specification of parallel, gib-head key, taper key as per I.S.	
34	State specification of parallel, gib-head key, taper key as per I.S.	
35	Numerical on Design of Shaft and keys.	
36	Numerical on Design of Shaft and keys.	
37	Numerical on Design of Shaft and keys.	

38	Design of Shaft Coupling	
39	Design of Shaft Coupling	
40	Requirements of a good shaft coupling	
41	Requirements of a good shaft coupling	
42	Types of Coupling	
43	Types of Coupling	
44	Design of Sleeve or Muff-Coupling	
45	Design of Sleeve or Muff-Coupling	
46	Design of Clamp or Compression Coupling	
47	Design of Clamp or Compression Coupling	
48	Simple numerical on muff coupling	
49	Simple numerical on muff coupling	
50	Simple numerical on clamp coupling	
51	Materials used for helical spring.	
52	Materials used for helical spring.	
53	Standard size spring wire. (SWG)	
54	Terms used in compression spring	
55	Stress in helical spring of a circular wire	
56	Stress in helical spring of a circular wire	
57	Deflection of helical spring of circular wire	
58	Surge in spring	
59	Numerical on design of closed coil helical compression spring.	
60	Numerical on design of closed coil helical compression spring.	

Signature of the Faculty

Signature of the H.O.D