

## LESSON PLAN

<b>Discipline:</b> Mech. Engg.	<b>Semester:</b> Fifth (5 <sup>th</sup> )	<b>Name of the Faculty:</b> Er Surya Kanta Kar
<b>Subject:</b> Design of Machine Elements	<b>No. of days/week class allotted:</b> Five (5)	<b>Semester from Date:</b> 15.09.2022 <b>to Date:</b> 22.12.2022 <b>No. of Weeks:</b> 15
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY TOPICS</b>
1 <sup>ST</sup>	1 <sup>ST</sup>	Introduction to machine design
	2 <sup>ND</sup>	Classification of Machine Design
	3 <sup>RD</sup>	Different materials used in Design
	4 <sup>TH</sup>	Working Stress, Ultimate Stress & Factor of Safety
	5 <sup>TH</sup>	Stress- Strain Diagram for MS & CI
2 <sup>ND</sup>	1 <sup>ST</sup>	Factors affecting Machine Design
	2 <sup>ND</sup>	Cont...
	3 <sup>RD</sup>	Design Procedure
	4 <sup>TH</sup>	Cont...
	5 <sup>TH</sup>	Review Class
3 <sup>RD</sup>	1 <sup>ST</sup>	Joints and their classification
	2 <sup>ND</sup>	State types of welded joints
	3 <sup>RD</sup>	State advantages of welded joints over other joints
	4 <sup>TH</sup>	Design of welded joints for eccentric loads
	5 <sup>TH</sup>	Numerical on Welded Joint
4 <sup>TH</sup>	1 <sup>ST</sup>	Cont...
	2 <sup>ND</sup>	Monthly Test- 1
	3 <sup>RD</sup>	State types of riveted joints and types of rivets
	4 <sup>TH</sup>	Describe failure of riveted joints
	5 <sup>TH</sup>	Determine strength & efficiency of riveted joints
5 <sup>TH</sup>	1 <sup>ST</sup>	Design riveted joints for pressure vessel
	2 <sup>ND</sup>	Numerical on Riveted Joints
	3 <sup>RD</sup>	Cont...
	4 <sup>TH</sup>	Cont...
	5 <sup>TH</sup>	Cont...
6 <sup>TH</sup>	1 <sup>ST</sup>	Review Class
	2 <sup>ND</sup>	State function of shafts
	3 <sup>RD</sup>	State materials for shafts
	4 <sup>TH</sup>	Design solid & hollow shafts to transmit a given power at given rpm based on Strength: (i) Shear stress, (ii) Combined bending tension
	5 <sup>TH</sup>	State standard size of shaft as per I.S.
7 <sup>TH</sup>	1 <sup>ST</sup>	Numerical on Shaft Design
	2 <sup>ND</sup>	Monthly Test- 2
	3 <sup>RD</sup>	Numerical on Shaft Design
	4 <sup>TH</sup>	Numerical on Shaft Design
	5 <sup>TH</sup>	State function of keys & material of keys

8 <sup>TH</sup>	1 <sup>ST</sup>	Types of keys
	2 <sup>ND</sup>	Describe failure of key, effect of key way
	3 <sup>RD</sup>	Design rectangular sunk key considering its failure against shear & crushing
	4 <sup>TH</sup>	Design rectangular sunk key considering its failure against crushing
	5 <sup>TH</sup>	Numerical on Key Design
9 <sup>TH</sup>	1 <sup>ST</sup>	Cont...
	2 <sup>ND</sup>	Design rectangular sunk key by using empirical relation for given diameter of shaft
	3 <sup>RD</sup>	Numerical on Key Design
	4 <sup>TH</sup>	State specification of parallel key, gib-head key, taper key as per I.S.
	5 <sup>TH</sup>	Review Class
10 <sup>TH</sup>	1 <sup>ST</sup>	Monthly Test- 3
	2 <sup>ND</sup>	Shaft Coupling
	3 <sup>RD</sup>	Requirements of a good shaft coupling
	4 <sup>TH</sup>	Types of Coupling
	5 <sup>TH</sup>	Design of Sleeve or Muff-Coupling
11 <sup>TH</sup>	1 <sup>ST</sup>	Numerical on Muff Coupling
	2 <sup>ND</sup>	Cont...
	3 <sup>RD</sup>	Design of Clamp or Compression Coupling
	4 <sup>TH</sup>	Numerical on Compression Coupling
	5 <sup>TH</sup>	Cont...
12 <sup>TH</sup>	1 <sup>ST</sup>	Review Class
	2 <sup>ND</sup>	Materials used for helical spring
	3 <sup>RD</sup>	Standard size spring wire. (SWG).
	4 <sup>TH</sup>	Terms used in compression spring
	5 <sup>TH</sup>	Stress in helical spring of a circular wire
13 <sup>TH</sup>	1 <sup>ST</sup>	Deflection of helical spring of circular wire
	2 <sup>ND</sup>	Surge in spring
	3 <sup>RD</sup>	Numerical on design of spring
	4 <sup>TH</sup>	Cont...
	5 <sup>TH</sup>	Cont...
14 <sup>TH</sup>	1 <sup>ST</sup>	Monthly Test- 4
	2 <sup>ND</sup>	Review Class
	3 <sup>RD</sup>	Revision Class
	4 <sup>TH</sup>	Revision Class
	5 <sup>TH</sup>	Revision Class
15 <sup>TH</sup>	1 <sup>ST</sup>	Revision Class
	2 <sup>ND</sup>	Revision Class
	3 <sup>RD</sup>	Revision Class
	4 <sup>TH</sup>	Revision Class
	5 <sup>TH</sup>	Revision Class