

5th Semester

2023 (W)

Mechanical

5th Sem, Mech.
Winter - 2023

Discipline	Semester	Name of the faculty
Mechanical	5th	- Byomkesh Mishra

Subject	Number of classes/week	Session from - 01/8/23 to 09/12/23
Design of machine elements	(4)	Number of weeks - (17)

Week days

1st	Wed	Introduction to machine design
	Thurs	Classification of machine design
	Fri	Different materials used in design.
	Sat	Physical Properties of material
	Wed	Mechanical Properties of engg. materials
2nd	Thurs	Cont. . . .
	Fri	Simple stress, yield stress, ultimate stress
	Sat	Stress-strain curve of M.S. and C.I.
3rd	Wed	Factor of safety, working stress . . .
	Thurs	Modes of failure .
	Fri	Governing factors of m/c design
	Sat	Machine design Procedure

wed Classification of Fastening

Thurs Introduction to welded joints

4th

Fri Types of welded joints

Sat

wed Advantages of welded joints

Thurs Design for eccentric loading

5th

Fri Solving of numerical problems

Sat

wed Types of riveted joints.

Thurs Classification of riveted joints.

6th

Fri Failure of riveted joints

Sat Strength of riveted joints; efficiency

wed Numerical problems.

Thurs Design for Boiler (pressure vessels)

7th

Fri Numerical solving

Sat

Cont - - -

wed Shaft: Definition, function
shaft materials.

8th Thu Design of shaft for strength
pure tension, bending, combined -
Fri Solid shaft & hollow shaft.

Sat Standard size of shafts.

wed Design of shaft for rigidity.

9th Thu Design for angle of twist; deflection.
Fri x

Sat Numericals solving.

wed Cont.

10th Thu Design of key, Key materials
Types of keys. Key function.
Fri Failure of key by shearing, crushing

Sat Design of rectangular sunk key.

wed Parallel key, Gibhead key.

11th Thu Solving of numerical problems

Fri cont.

Sat x

Wed Introduction to shaft coupling requirements.

Thurs Types of coupling

12th

Fri Design of Sleeve coupling

Sat X X

Wed X X

Thurs X

13th

Fri X

Sat X

Wed solving of numerical problems.

14th Thurs Design of Compression coupling.

Fri Numerical Problems.

Sat cont. -

Wed Introduction to Spring function, Materials

Thurs standard wire size

15th

Fri Terms used in Compression spring

Sat effect of stresses and stress factors.

wed stress in helical spring

16th Thurs Deflection of helical spring

Fri Design procedure

Sat Surge in spring

wed solving of numerical problems

17th Thurs cont - -

Fri cont - -

Sat