

G.P. DHANGAR (Fatehabad)

Name of Faculty : Mr. Sandeep

Discipline : CIVIL ENGG.

Semester : 3rd

Subject : Structural Mechanics

Week	Lecture No.	Topic Covered
1	1	Introduction to properties of materials
	2	Classification of materials
	3	Tensile test, compressive test, impact test, fatigue test, torsion test
2	4	Concept of stress: Definition and types
	5	Types of strain and poisson's ratio
	6	Hooke's law, moduli of elasticity: Types
3	7	relationship between the elastic constants
	8	Numericals
	9	Stress-strain diagram for mild steel and HYSD steel,
4	10	Mechanical properties of materials and factor of safety
	11	Temperature stresses and strains
	12	Numericals
5	13	Revision
	14	Concept & Types of a beam and supports
	15	Types of loads
6	16	Concept of B.M and S.F
	17	Sign conventions and BMD SFD
	18	BMD & SFD for Cantilever and simply supported beams
7	19	Numericals
	20	Revision
	21	Relationship between load, S.F and B.M, point of maximum B.M & contraflexure
8	22	Revision
	23	Concept of moment of inertia
	24	theorems of parallel and perpendicular axis, second moment of area
9	25	M.O.I of L, T, I sections
	26	Numericals
	27	Concept of pure/simple bending & assumptions of bending theory
10	28	Numericals based on bending equation & moment of resistance
	29	Concept of shear stresses in beams, shear stress distribution
	30	Revision
11	31	Determination of slope and deflection using Moment Area Theorem for simply supported with point load and UDL
	32	Introduction to Theory of columns
	33	Numerical Problem solving using Eulers and Rankine Formula
12	34	Revision
	35	Concept of a perfect, redundant and deficient frames
	36	Assumptions and analysis of trusses by Method of Joints
13	37	Numericals
	38	Method of sections
	39	Numericals