Lesson Plan

Name of the Paper	**THEORY OF STRUCTURES**
Course Name	**THEORY OF STRUCTURES**
Course Code	**1615501**
Faculty Name	**PARAS NATH KUSHWAHA**

Unit No	Name Of unit	Week	Lecture no	Topic	No of Hour	Total Hour	Teaching Method
Unit - 1	Direct And Bending Stresses	Week 1	1	Concept of direct and eccentric loads, eccentricity about one principal axis	1	10	
			2	nature of stresses, maximum and minimum stresses	1		
			3	resultant stress distribution diagram.	1		
		Week 2	4	Condition for no tension or zero stress at extreme fiber,limit of eccentricity	1		
			5	core of section for rectangular	1		
			6	core of section for circular cross sections	1		
		Week 3	7	Columns, pillars and chimneys of uniform section subject to lateral wind pressure	1		
			8		1		
			9	coefficient of wind resistance	1		
		Week 4	10	stress distribution at bases	1		
Unit - 2	Slope And Deflection		11	Concept of slope and deflection,	1	10	
			12	stiffness of beam	1		
		Week 5	13	Relation between slope, deflection and radius of curvature,	1		
			14	differential equation (no derivation),	1		
			15	double integration method to find slope and deflection of simply supported and cantilever beam	1		
		Week 6	16		1		
			17	Macaulay's method for slope and deflection	1		

		Week 6	18	application to simply supported and cantilever beam subjected to concentrated and	1		
		Week 7	19	uniformly distributed	1		
			20	load.	1		
Unit - 3	Fixed Beam		21	Concept of fixity, effect of fixity,	1	6	**Whatt's app Group, PDF, PPT, Notes, Video, Google forms, Google meet**
		Week 8	22	advantages and disadvantages of fixed beam.	1		
			23	Principle of superposition	1		
			24	Fixed end moments from first principle for beam subjected to UDL over entire span, central point load, Point load other than mid span	1		
		Week 9	25	Application of standard formulae in finding moments and drawing S.F. and B.M.	1		
			26	Application of standard formulae in finding moments and drawing S.F. and B.M.	1		
Unit - 4	Continuous Beam		27	Definition, effect of continuity practical example	1	8	
		Week 10	28	nature of moments induced due to continuity, concept of deflected shape	1		
			29	Clapeyron's theorem of three moment (no derivation)	1		
			30	Application of theorem maximum up to three spans and two unknown support moment only	1		
		Week 11	31	Support at same level, spans having same moment of inertia subjected to concentrated loads	1		
			32	and uniformly distributed loads over entire span.	1		
			33	Drawing SF	1		
		Week 12	34	and BM diagrams for continuous beams.	1		
			35	Introduction, sign convention	1		
			36	Carry over factor, stiffness factor, distribution factor.	1		
			37	Application of moment distribution method for various types of continuous beams subjected to concentrated loads	1		

Unit - 5	Moment Distribution Method	Week 13	38	and uniformly distributed load over entire span having same or different moment of inertia up to three spans	1	8	
			39	two unknown support moment only, SF and BM diagrams (Supports at same level)	1		
		Week 14	40	Application of moment distribution method to single storey single bay symmetrical portal frames	1		
			41	SF diagrams	1		
			42	BM diagrams	1		
Unit - 6		Week 15	43	Definition, classification of column	1	6	
			44	Buckling of axially loaded compression member, Types of end conditions for column, effective length,	1		
			45	radius of gyration, slenderness ratio	1		
		Week 16	46	Assumptions in the theory of long column Euler's theory, buckling load and Rankin's theory, crippling load , factor of safety, safe load	1		
			47	Application of Rankin's and Euler theory,	1		
			48	designing solid circular or hollow circular sections	1		