

## TEACHING PLAN FOR THEORY

**Name of Subject Teacher: Smita Kuralkar**

<b>Subject: Structural Design – I</b>		<b>Class: T.E. (A)</b>	<b>Branch: CIVIL</b>	<b>Year 2017-2018</b>
<b>Lecture No</b>	<b>Scheduled Date</b>	<b>Topics to be covered on the scheduled date</b>		
1	16.06.2017	Syllabus Discussion, Discussion on course objective & course outcome		
		<b>Unit-1:</b>		
2	19.06.2017	Types of steel structures, grades of structural steel, various rolled steel sections,		
3	20.06.2017	Relevant IS specifications such as IS: 800-2007, IS:808-1989, IS:875 part I to III, SP: 6(1), SP: 6(6), IS:4000- 1992, codes for welded connections. Philosophy of limit state design for strength and serviceability		
4	22.06.2017	Partial safety factor for load and resistance, various design load combinations, classification of cross section such as plastic, compact, semi-compact and slender.		
5	23.06.2017	<b>Tension member:</b> various cross sections such as solid threaded rod, cable and angle sections.		
6	26.06.2017	Limit strength due to yielding, rupture and block shear.		
7	27.06.2017	Design of tension member: using single angle section		
10	03.07.2017	Design of tension member: using double angle section		
13	06.07.2017	Connections of member with gusset plate by bolts and welds.		
		<b>Unit-2:</b>		
15	10.07.2017	Buckling classification as per geometry of cross section, buckling curves,		
16	11.07.2017	Design of struts in trusses using single angle section,		
18	14.07.2017	Design of struts in trusses using double angle section,		

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21	20.07.2017	Connections of members with gusset plate by bolts and welds.
23	24.07.2017	Design of axially loaded column using rolled steel section.
26	28.07.2017	Design of built-up column, lacing and battening, connection of lacing/battening with main components by bolts and welds.
		<b>Unit-6:</b>
31	07.08.2017	Roof truss: assessment of dead load, live load and wind load, design of purlin, design of members of a truss, detailing of typical joints and supports
38	18.08.2017	Design of gantry girder: Selection of gantry girder, design of cross section, check for moment capacity, buckling resistance, bi-axial bending, deflection at working load and fatigue strength.
		<b>Unit-3:</b>
44	29.08.2017	Design of eccentrically loaded column providing uniaxial and biaxial bending (check for section strength only).
47	01.09.2017	Design of column bases: Design of slab base
49	05.09.2017	Design of column bases: Design of gusseted base
52	11.09.2017	Design of column bases: Design of moment resistant base. (axial load and uni-axial bending)
		<b>Unit-4:</b>
55	15.09.2017	Design of laterally supported beams using single rolled steel section with and without flange plate,
58	21.09.2017	Curtaiment of flange plates, strength in flexure, low and high shear, check for web buckling, web crippling and deflection.
59	22.09.2017	Design of laterally unsupported beams using single rolled steel section with and without flange plate,

62	28.09.2017	Curtailment of flange plates, strength in flexure and shear, check for deflection.
		<b>Unit-5:</b>
63	29.09.2017	Secondary and main beam arrangement for floor of a building, design of beam to beam connections using bolt / weld.
65	03.10.2017	Design of beam to column connections using bolt / weld
67	06.10.2017	Design of welded plate girder: design of cross section, curtailment of flange plates, stiffeners and connections.