SHAMBHUNATH INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF CIVIL ENGINEERING

Subject Name- Design of Steel Structure

Subject Code-RCE-701

Basic job of a civil engineer is to design a structure safe in all conditions where material is structural steel. Here we study properties and behaviour of steel and design method in accordance with IS800

Unit Number	Topic number	Topic covered	lecture number	refference books
UNIT 1	1	General Introduction	1	IS:800 2007, Limit State Design by S.K Duggal
	2	Advantages of Steel as a Structural member	2	
	3	Disadvantages of Steel as a Structural member	3	
	4	Stress-Strain Curve for Mild Steel	4	
	5	Rolled steel section	5	
	6	Convention for member axis and structural steel	6	
	7	Loads and types of load	7	
	8	Design philosophies	8	
	9	Introduction to limit state design	9	
	10	Doubt clearing class	10	
UNIT 2	1	Introduction to Rivetted and Bolted Connections	11	
	2	Types of Bolt, pattern of joint	12	
	3	Types of bolted joint, load transfer mechanism and failure in joints	13	
	4	Specification for Bolted Joints	14	
	5	Bearing-Type Connections, prying action,	15	
	6	Tensile Strenghth of plate and Efficiency of joint	16	
	7	Numerical Problems on bolted connection	17	
	8	**welding**	18	
	9	Introduction to welding , symbol , and defects	19	
	10	Designing of welding	20	
	11	Slotted welding and Comarision of bolted and welded connection	21	
	12	Numericals	22	
UNIT 3	1	Introduction to tension member	23	
	2	Type of tension member	24	
	3	Net sectional area and effective area	25	
	4	Design of tension member	26	
	5	Numerical Problems on Tension members	27	
	6	Concept of Lug Angle & Spliuce plate with Numericals	28	
	7	Doubt clearing class	29	
UNIT 5	1	Beams (introduction), Type of section & Sectional Classification	30	
	2	Lateral Stability , Lateral-Torsional Buckling, Bending Strength	31	
	3	Concept of web Buckling and web cripling	32	
	4	Design of laterally Supported Beams	33	
	5	Numericals	34	
	6	Design of laterally UnSupported Beams	35	
	7	Numericals	36	
	8	Purlins, Introduction to Gantry Girder and plate Griders	37	
	9	Doubt clearing class	38	
UNIT 4	1	Introduction to Compression Members , Effective length, Slenderness Ratio	39	
	2	Type of section, Classificaion and Buckling	40	
	3	Design of Axially Loaded Members	41	
	4	Introduction to Built-up Columns	42	
	5	Lacing and batten Sysytem Designing	43	
	6	Encased Column and splices	44	
	7	Doubt clearing class	45	
		Total number of lectures	45	

Aims and objectives reached:

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