

LESSON PLAN

Name of Faculty : YOGENDER

Discipline : Civil Engineering L T P

Subject : ERBC

Semester : 6th 3 - -

Lesson plan Duration :Jan 2026 - June 2026 (15 weeks)

Week	Lecture Day	THEORY	Delivery Date of Lecture		Whether the Lesson Plan Followed ?
		TOPIC	Expected	Actual	Yes / No
		(including Assignments / Seeminar / Group Discussion / Sessional Tests)			
1st	1st	UNIT-I 1. Elements of Engineering Seismology- 1.1 Concept of Earthquake & Earthquake Seismology			
	2nd	1.2 Various important terminologies related with earthquake seismology			
	3rd	1.3 Earthquake- Causes, effects and classification			
2nd	4th	1.4 Seismic waves- Concept, types and characteristics			
	5th	1.5 Earthquake size- magnitude and intensity			
	6th	1.6 Recording of an earthquake- Seismograph and Seismogram its working, Applications			
3rd	7th	1.7 Seismic zoning map of India with their importance			
	8th	1.8 Concept of static loading, dynamic loading and fundamental period			
	9th	UNIT-II 2.1 Seismic Behaviour of Traditionally-Built Constructions of India 2.1.1 Name of various past earthquake and their magnitude			
4th	10th	2.1.2 Seismic performance of masonry building during earthquakes			
	11th	2.1.3 Common mode of failures of masonry building- Out-of-plane failure, in-plane failure, Diaphragm failure,			
	12th	Connection failure, Non-structural components failure with their causes & characteristics			
5th	13th	Revision			
	14th	Assignment – I / Group discussion / Technical Quiz / Seminar			
	15th	Sessional Test - 1 2.2 Modern techniques and Special construction			

6th	16th	methods of earthquake resistant buildings 2.2.1 Modern techniques used in the construction of earthquake resistant buildings- pneumatic. Base isolation and			
	17th	Seismic dampers and others latest, with their advantages, disadvantages and utility.			
	18th	2.2.2 Special construction method- tips and precautions to be observed while planning, designing and construction of earthquake resistant building.			

7th	19th	2.2.2 Special construction method- tips and precautions to be observed while planning, designing and construction of earthquake resistant building.			
	20th	UNIT-III 3. Introduction of Various Types of Earthquake Resistant Building Construction Codes as per BIS. 3.1 IS: 1893 (Part-1) 2002, IS: 13920 (1993),			
	21st	IS: 4326 (1993), IS: 13828 (1993) SP 22: 1982 (Introduction only)			
8th	22nd	3.2 Importance of seismic codes in various aspects			
	23rd	3.3 Assumptions made in IS: 1893: 2000 for the earthquake resistant design of structure.			
	24th	3.4 General specifications of IS: 13920: 1993			
9th	25th	3.5 General principles considered as per IS: 4326			
	26th	Revision			
	27th	Revision			
10th	28th	Revision			
	29th	Assignment – 2 / Group discussion / Technical Quiz / Seminar			
	30th	Sessional Test – 2			

11th	31st	UNIT-IV 4.1 Seismic Provision of Strengthening and Retrofitting measures for Building Construction (Masonry & RCC Structure) 4.1.1 Seismic provision of strengthening-Concept and objectives			
	32nd	4.1.2 Definitions of Repairing, Restoration, Retrofitting 4.1.3 Retrofitting-Concept, objectives and classification.			
	33rd	4.1.4 Non Conventional methods of retrofitting used for RCC Building			
12th	34th	4.1.5 Retrofitting in masonry construction- Methods/Techniques used			
	35th	4.1.6 Retrofitting in RCC Structures- Methods/Techniques used			
	36th	4.2 Provision of reinforcement detailing in masonry and RCC constructions 4.2.1 Necessity of seismic strengthening arrangements of masonry building			
13th	37th	4.2.2 Concept of horizontal bend in masonry building			
	38th	4.2.3 Various types of horizontal bends & their functions.			
	39th	UNIT-V 5. Disaster Management 5.1 Disaster- Concept and types 5.2 Disaster management-Concept, function and their objectives			

14th	40th	5.3 Disaster rescue- Psychology of rescue, rescue workers and their role, rescue plan & stages, rescue by steps, rescue equipment, safety in			
	41st	5.4 Definition of debris clearance, Percussion in debris clearance			
	42nd	5.5 Casualty management- Concept, function and classification			
15th	43rd	Revision			
	44th	Assignment – 3/ Group discussion / Technical Quiz / Seminar			

Name of Faculty : Mr. Prateek Malik		
Discipline : Civil Engineering Department		
Semester : 6th		
Subject : RMCI		
Lesson Plan Duration : 15 Weeks (January, 2026 to June, 2026)		
***Work Load (Lectuer / Practical) Per week (in hours) : Lectuer-03, Practical- 00		
Week	Theory	
	Lecture day	Topic (Including assignment/ Test)
1	1st	Concept of repair and maintenance of buildings
	2nd	Need and objective of repair and maintenance of buildings
	3rd	Importance and significance of repair and maintenance of buildings
2	1st	Factors influencing the repair and maintenance
	2nd	Agencies Causing Deterioration (Sources, Causes, Effects)
	3rd	Definition of deterioration/decay
3	1st	Factors causing deterioration, their classification a) Human factors causing deterioration
	2nd	b) Chemical factors causing deterioration c) Environmental conditions causing deterioration d) Miscellaneous factors
	3rd	Effects of various agencies of deterioration on various building materials i.e. bricks, timber, concrete, paints, metals, plastics, stones
4	1st	Investigation and Diagnosis of Defects
	2nd	Concept of Investigation and Diagnosis of Defects Systematic approach/procedure of investigation
	3rd	Sequence of detailed steps for diagnosis of building defects/problems
5	1st	List non-destructive and others tests on structural elements and materials to evaluate the condition of the building and study of three most commonly used tests.
	2nd	Defects and their root causes
	3rd	Define defects in buildings
6	1st	Classification of defects
	2nd	Main causes of building defects in various building elements: - a) Foundations, Walls b) Basements and DPC c) Column and Beams d) Roof and Terraces, Joinery e) <u>Decorative and protective finishes. Services.</u>
	3rd	Defects caused by dampness.
7	1st	Materials for Repair, maintenance and protection
	2nd	Compatibility aspects of repair materials
	3rd	State application of following materials in repairs: Anti corrosion coatings
8	1st	Adhesives/bonding aids
	2nd	Repair mortars
	3rd	Curing compounds
9	1st	Joints sealants
	2nd	Waterproofing systems for roofs
	3rd	Protective coatings
10	1st	Remedial Measures for Building Defects
	2nd	Preventive maintenance considerations
	3rd	Surface preparation techniques for repair
	1st	Crack repair methods- Epoxy injection, Grooving and sealing,

11	2nd	Stitching, Adding reinforcement and grouting, Flexible sealing by sealant
	3rd	Repair of surface defects of concrete: - Bug holes, Form tie holes,
12	1st	Repair of corrosion in RCC elements
	2nd	Steps used in repairing of RCC elements
	3rd	Prevention of corrosion in reinforcement
13	1st	Material placement techniques with sketch Pneumatically applied (The gunite techniques) Open top placement
	2nd	Pouring from the top to repair bottom face Birds mouth, Dry packing
	3rd	Form and pump, Preplaced – aggregate concrete, Trowel applied method
14	1st	Repair of DPC against Rising Dampness: - Physical methods Electrical methods, Chemical methods
	2nd	Repair of walls: - Repair of mortar joints against leakage, Efflorescence removal
	3rd	Waterproofing of wet areas, flat RCC roofs, Various water proofing systems and their characteristics
15	1st	Repair of joints in buildings: - Techniques for repair of joints
	2nd	Types of sealing joints with different types of sealants
	3rd	Repair of overhead and underground water tanks

Name of the faculty: Mr. MANISH

Discipline: Civil

Semester: 6th Civil Engineering

Subject: Steel Structural Design & Drawing

Lesson Plan Duration: 15 week (JAN 2026-JUNE 2026)

**Work Load (Lecture/Practical) per week (in hours):Theory-02,P-06

Week	Theory		PRACTICAL
	Lecture Day	Topic (including test)	TOPIC
1	1	Unit1:Structural Steel and Section Properties of structural steel as per IS Code Designation of structural steel sections as per IS handbook. Types of rivets,permissible stresses in rivets, Types of riveted Joints	Drawing No. 1: Roof Truss – Drawing of Fink Roof Truss with details of joints, fixing details of purlins and roof sheets.
	2	Failure of a riveted joint. Strength and efficiency of a riveted joint. Design of riveted joints for axially loaded members	
2	3	Numerical Problems Practice	Drawing No. 1: Roof Truss – Drawing of Fink Roof Truss with details of joints, fixing details of purlins and roof sheets.
	4	Numerical Problems Practice	
3	5	Types of bolts, permissible stresses in bolt, type of bolted joints, specification of bolted joints as per IS 800. Failure of a joints, Assumptions in the theory of bolted joints	Drawing No. 1: Roof Truss – Drawing of Fink Roof Truss with details of joints, fixing details of purlins and roof sheets.
	6	Strength and efficiency of a bolted joint. Design of bolted joints for axially loaded members (No staggered bolts)	
4	7	Types of welds and welded joints, Advantages and disadvantages of welded joints Design of fillet weld (For	Drawing No.2 : Column and Column Bases - Drawing of splicing of steel columns.
	8	Design of butt weld (For axially loaded member)::NumericalProblems. NumericalProblems (Assignment-1)	
5	9	SessionalTest–1	Drawing No.2 : Column and Column Bases - Drawing of splicing of steel columns.
	10	Group discussion related previous chapters	
6	11	Analysis and design of single and double angle section tension members and their rivetted and Welded connections with gusset plate as perIS:800	Drawing No.2 : Column and Column Bases - Drawing of splicing of steel columns.
	12	Analysis and design of single angle section tension members as per IS:800 Numerical problems(Riveted connections)	

7	13	Analysis and design of double angle section tension members as per IS:800 (welded connection) Numerical problems	Drawing No.3 : Column Beam Connections
	14	Numericals	

Week	Theory		PRACTICAL
	Lecture Day	Topic (including test)	TOPIC
8	15	Analysis and design of single and double angle sections compression members	Drawing No.3 : Column Beam Connections
	16	Analysis and design of single angle compression member (Numerical)	
9	17	Analysis and design of double angle compression member (Numerical)	Drawing No.3 : Column Beam Connections
	18	Analysis and design of single angle compression member (Numerical)	
10	19	Numerical	Drawing No. 4 : Plate Girder (Bolted)
	20	Analysis and design of double angle compression member (Numerical)	
11	21	Analysis and design of single and double angle sections compression members	Drawing No. 4 : Plate Girder (Bolted)
	22	Analysis and design of single and double angle sections compression members	
12	23	Analysis and design of single angle compression member (Numerical)	Drawing No. 4 : Plate Girder (Bolted)
	24	Group discussion/TechnicalQuiz/Seminar	
13	25	Form of trusses	Drawing No. 5 : Draw atleast one sheet using CAD software
	26	Pitch of roof truss, spacing of trusses,	
14	27	spacing of purlins, connection between purlin and roof coverings.	Drawing No. 5 : Draw atleast one sheet using CAD software
	28	Connection between purlin and principal rafter(no design,only concept)	
15	29	Types of column bases, I.e. slab base, guessted base	Drawing No. 5 : Draw atleast one sheet using CAD software
	30	Concept of buckling, effective length, slenderness ratio	