#### LESSION PLAN FOR STRUCTURAL DESIGN-II FOR 5TH SEM ,CIVIL ENGG WINTER -2025 W.E.F. 14.07.2025

Name of the Faculty: Rasmi Gadapalla, Senior Lecturer				
WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	
W-1	14.07.25 TO 19.07.25	<ol> <li>1.0 Introduction:</li> <li>1.1 Common steel structures, Advantages &amp; disadvantages of steel structures.</li> <li>1.2 Types of steel, properties of structural steel.</li> <li>1.3 Rolled steel sections, special considerations in steel design.</li> <li>1.4 Loads and load combinations.</li> <li>1.5 Structural analysis and design philosophy.</li> <li>1.6 Brief review of Principles of Limit State design.</li> </ol>	5	
W-2	21.07.25 TO 25.07.25	2.0 Structural Steel Fasteners and Connections. 2.1 Bolted Connections. 2.1.1 Classification of bolts, advantages and disadvantages of bolted connections. 2.1.2 Different terminology, spacing and edge distance of bolt holes. 2.1.3 Types of bolted connections.		
W-3	28.07.25 TO 02.08.25	2.1.4 Types of action of fasteners, assumptions and principles of design. 2.1.5 Strength of plates in a joint, strength of bearing type bolts (shear capacity& bearing capacity), reduction factors, and shear capacity of HSFG bolts. 2.1.6 Analysis & design of Joints using bearing type and HSFG bolts (except eccentric load and prying forces) 2.1.7 Efficiency of a joint.	10+2	
W-4	04.08.25 TO 08.08.25	<ul> <li>2.2 Welded Connections:</li> <li>2.2.1 Advantages and Disadvantages of welded connection.</li> <li>2.2.2 Types of welded joints and specifications for welding.</li> <li>2.2.3 Design stresses in welds.</li> <li>2.2.4 Strength of welded joints.</li> <li>3.0 Design of Steel tension Members</li> <li>3.1 Common shapes of tension members.</li> </ul>		
W-5	11.08.25 TO 16.08.25	3.2 Maximum values of effective slenderness ratio. 3.3 Analysis and Design of tension members.( Considering strength only and concept of block shear failure.)	8	
W-6	18.08.25 TO 22.08.25	·		
W-7	25.08.25 TO 30.08.25	<ul><li>4.0 Design of Steel Compression members.</li><li>4.1 Common shapes of compression members.</li><li>4.2 Bulking class of cross sections and slenderness ratio.</li></ul>		
W-8	01.09.25 TO 06.09.25	<ul> <li>4.3 Design compressive stress and strength of compression members.</li> <li>4.4 Analysis and Design of compression members (axial load)</li> <li>5.0 Design of Steel beams:</li> <li>5.1 Common cross sections and their classification.</li> </ul>	10+2	
W-9	08.09.25 TO 12.09.25			

N-10	15.09.25 TO 20.09.25	.2 Deflection limits, web buckling and web crippling.	
W-11	22.09.25 TO 26.09.25	5.3 Design of laterally supported beams against bending and shear.	8
W-12		6.0 Design of Tubular Steel structures: 6.1 Round tubular sections, permissible stresses. 6.2 Tubular Commercial & Tarada Maria Land	
W-13	13.10.25 TO 18.10.25	<ul> <li>6.2 Tubular Compression &amp; Tension Members</li> <li>6.3 Joints in tubular trusses</li> <li>7.0 Design of Masonry Structures:</li> <li>7.1 Design consideration for masonry walls &amp; Columns</li> </ul>	6+2
W-14	20.10.25 TO 24.10.25	Load Bearing & Non-Load Bearing walls, Permissible stresses,	7
W-15	27.10.25 TO 01.11.25	Slenderness Ratio, Effective Length, Height & Thickness	
W-16 &	03.11.25 TO	REVISION AND DOUBT CLEARING CLASSES WITH QUESTION BANK	
17	15.11.25	DISCUSSION.	

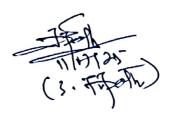
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## LESSION PLAN FOR RAILWAY & BRIDGE ENGINEERING FOR 5TH SEM, CIVIL ENGG WINTER -2025 W.E.F. 14.07.2025

Name of the Faculty: Soumyasagar Tripathy, Lecturer -II

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC
W-1	14.07.25 TO 19.07.25	<ol> <li>Introduction</li> <li>Railway terminology</li> <li>Advantages of railways</li> <li>Classification of Indian Railways</li> <li>Permanent way</li> <li>Definition and components of a permanent way</li> </ol>	2+2
W-2	21.07.25 TO 25.07.25	2.2 Concept of gauge, different gauges prevalent in India, suitability of these gauges under different conditions	3
W-3	28.07.25 TO 02.08.25	3. Track materials 3.1 Rails 3.1.1 Functions and requirement of rails 3.1.2 Types of rail sections, length of rails 3.1.3 Rail joints – types, requirement of an ideal joint 3.1.4 Purpose of welding of rails & its advantages	
W-4	04.08.25 TO 08.08.25	3.1.5 Creep- definition, cause & prevention 3.2 Sleepers 3.2.1 Definition, function & requirements of sleepers 3.2.2 Classification of sleepers 3.2.3 Advantages & disadvantages of different types of sleepers 3.3 Ballast 3.3.1 Functions & requirements of ballast 3.3.2 Materials for ballast 3.4 Fixtures for Broad gauge 3.4.1 Connection of rails to rail-fishplate, fish bolts 3.4.2 Connection of rails to sleepers	10
W-5	11.08.25 TO 16.08.25		
W-6	18.08.25 TO 22.08.25	4. Geometric for broad gauge 4.1Typical cross – sections of single & double broad gauge railway	
W-7	25.08.25 TO 30.08.25	track in cutting and embankment 4.2 Permanent & temporary land width 4.3 Gradients for drainage	8

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W-8	01.09.25 TO 06.09.25	4.4 Super elevation – necessity & limiting valued  5. Points and crossings  5.1 Definition, necessity of Points and crossings	2+2
W-9	08.09.25 TO 12.09.25	5.2 Types of points & crossings with the diagrams 6. Laying & maintenance of track 6.1 Methods of Laying & maintenance of track 6.2 Dutles of a permanent way inspector	2+2
W-10	15.09.25 TO 20.09.25	Section – B: BRIDGES  1. Introduction to bridges  1.1 Definitions  1.2 Components of a bridge  1.3 Classification of bridges  1.4 Requirements of an ideal bridge	2+2
W-11	22.09.25 TO 26.09.25	2. Bridge site investigation, hydrology & planning 2.1 Selection of bridge site, Alignment, 2.2 Determination of Flood Discharge 2.3 Waterway & economic span 2.4 Afflux, clearance & free board	5
W-12	08.10.25 TO 10.10.25	3. Bridge foundation 3.1 Scour depth minimum depth of foundation 3.2 Types of bridge foundations – spread foundation, pile foundation-	8
W-13	13.10.25 TO 18.10.25	well foundation – sinking of wells, caission foundation 3.3 Coffer dams	
W-14	20.10.25 TO 24.10.25	4. Bridge substructure and approaches 4.1 Types of piers 4.2 Types of abutments 4.3 Types of wing walls 4.4 Approaches	5
W-15	27.10.25 TO 01.11.25	5. Culvert & Cause ways 5.1 Types of culvers – brief description 5.2 Types of causeways – brief description	5
W-16 & 17	03.11.25 TO 15.11.25	REVISION AND DOUBT CLEARING CLASSES WITH QUESTION BANK DISCUSSION.	-



## LESSION PLAN FOR WATER SUPPLY AND WASTE WATER ENGINEERING FOR 5TH SEM, **CIVIL ENGG WINTER -2025 W.E.F. 14.07.2025**

Name of the Faculty: Rasmi Gadapaila, Sr. Lecturer, Soumyasagar Tripathy, Lecturer -ii, Sanuj Kumar Sahoo, Lecturer-I

Sanuj Kumar June 2				
WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC	
W-1		1. Introduction to Water Supply, Quantity and Quality of water 1.1 Necessity of treated water supply 1.2 Per capita demand, variation in demand and factors affecting demand1.3 Methods of forecasting population, Numerical	10	
W-2	21.07.25 TO 25.07.25	problems using different methods  1.4 Impurities in water – organic and inorganic, Harmful effects of impurities		
W-3	28.07.25 TO 02.08.25	2.2 Underground sources – aquifer type & occurrence – Infiltration gallery, infiltration well, springs, well 2.3 Yield from well- method s of determination, Numerical	r	
W-4	04.08.25 TO 08.08.25	problems using yield formulae (deduction excluded)  2.4 Intakes – types, description of river intake, reservoir intake, canal intake  2.5 Pumps for conveyance & distribution – types, selection, installation.  2.6 Pipe materials – necessity, sultability, merits & demerits of each type  2.7 Pipe joints – necessity, types of joints, sultability, methods of jointing  Laying of pipes – method	8 f	
W-5	11.08.2 TO 16.08.2	3. Treatment of water 3.1 Flow diagram of conventional water treatment system 3.2 Treatment process / units: 3.2.1 Aeration; Necessity		

W-6	18.08.25 TO 22.08.25	3.2.3 Sedimentation with coagulation: Necessity, principles of coagulation, types of coagulants, Flash Mixer, Flocculator, Clarifier (Definition and concept only) 3.2.4 Filtration: Necessity, principles, types of filters Slow Sand Filter, Rapid Sand Filter and Pressure Filter — essential features 3.2.5 Disinfection: Necessity, methods of disinfection Chlorination — free and combined chlorine demand, available chlorine, residual chlorine, pre-chlorination, break point chlorination, super- chlorination 3.2.6 Softening of water — Necessity, Methods of softening — Lime	12
W-7		soda process and Ion exchange method (Concept Only)	
W-8		4. Distribution system And Appurtenance in distribution system: 4.1 General requirements, types of distribution system-gravity, direct and combined 4.2 Methods of supply – intermittent and continuous 4.3 Distribution system layout – types, comparison, suitability 4.4 Valves-types, features, uses, purpose-sluice valves, check valves, air valves, scour valves, Fire hydrants, Water meters	8+2
W-9	08.09.25 TO 12.09.25	5. W/s plumbing in building: 5.1 Method of connection from water mains to building supply 5.2 General layout of plumbing arrangement for water supply in single storied and multi-storied building as per I.S. code.	
W-10	то	6. Introduction 6.1 Aims and objectives of sanitary engineering 6.2 Definition of terms related to sanitary engineering 6.3 Systems of collection of wastes—Conservancy and Water Carriage System — features, comparison, suitability.	5
W-11	22.09.25 TO 26.09.25	variation in sewage flow, numerical problem on computation	
W-12	08.10.25 TO 10.10.25	7.3 General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological 7.4 Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen, BOD, COD 8. Sewerage system	7+5

W-13	13.10.25 TO 18.10.25	9. Sewer appurtenances and Sewage Disposal: 9.1 Manholes and Lamp holes – types, features, location, function 9.2 Inlets, Grease & oil trap – features, location, function 9.3 Storm regulator, inverted siphon – features, location, function 9.4 Disposal on land – sewage farming, sewage application and dosing,	
W-14	20.10.25 TO 24.10.25	sewage sickness-causes and remedies  9.5 Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream  10. Sewage treatment: 10.1 Principles of treatment, flow diagram of conventional	7+8
W-15	ТО	treatment 10.2 Primary treatment – necessity, principles, essential features, functions 10.3 Secondary treatment – necessity, principles, essential features, functions	
W-16	03.11.25 TO 07.11.25	11. Sanitary plumbing for buiding: 11.1 Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage 11.2 Plumbing arrangement of single storied & multi storied building as per I.S. code practice 11.3 Sanitary fixtures − features, function, and maintenance and fixing of the fixtures − water closets, flushing cisterns, urinals, inspection chambers, traps, anti-syphonage pipe	3
W-17	10.11.25 TO 15.11.25	REVISION AND DOUBT CLEARING CLASSES WITH QUESTION BANK DISCUSSION.	

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# LESSON PLAN FOR ESTIMATION & COST EVALUATION — II FOR 5TH SEM ,CIVIL ENGG WINTER -2025 W.E.F. 14.07.2025

Name of the Faculty: Sanuj kumarSahoo, Lecturer -I

WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED
W-1	14.07.25 TO 19.07.25	1. Introduction to culvert, types of culvert, parts of a culvert & difference between culvert & bridge Detailed study of plan and sectional elevation of RCC deck slab culvert with right angled wing wall Calculation of E/W in excavation, cement concrete work in foundation & Brick work in cement mortar of RCC deck slab culvert Bar bending schedule Calculation of quantity of RCC work & reinforcement	PER JOPIC
W-2	то	Calculation of quantity of cement concrete wearing coat &cement pointing of RCC slab culvert  Detailed study of plan & sectional elevation of hume pipe culvert with right angled wing wall  Calculation of quantity of E/W in excavation and cement concrete work in foundation of hume pipe culvert  Calculation of quantity of brickwork in cement mortar of hume pipe culvert  Calculation of quantity of cement pointing of hume pipe culvert  Detailed study of plan & sectional elevation of a slab culvert with splayed wing	12
W-3	28.07.25 TO 02.08.25		
W-4	04.08.25 TO 08.08.25	2. Concept of fall, its types and necessity Study of plan& sectional elevation of a vertical fall Calculation of quantity of earthwork in excavation of vertical fall. Calculation of quantity of earth work in excavation & cement concrete work in foundation of vertical fall Calculation of quantity of brickwork in 1:4 cement mortar of vertical fall	
W-5	11.08.25 TO 16.08.25	Calculation of quantity of brick on edge flooring & brick pitching Of fall Calculation of quantity of cement pointing in 1:3 cement mortar of fall Concept of cross drainage work, its types and introduction to drainage syphon Study of plan and sectional elevation of a drainage syphon Study of plan and sectional elevation of a drainage syphon Calculation of quantity of earthwork in excavation and cement concrete work in	
W-6	18.08.25 TO 22.08.25	foundation of drainage syphon Calculation of quantity of brickwork in 1:4 cement mortar of drainage siphon Calculation of quantity of RCC work in slab, 10 cm thick brick flooring in 1:3 cement mortar & 10 cm dry brick pitching of drainage syphon	14
W-7	25.08.25 TO 30.08.25		

Sanuj Kumar Sahoo

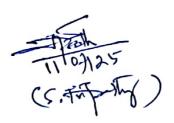
W-8	01.09.25 TO 06.09.25	3. Concept of lead and lift, derivation of formula for calculation of earthwork using different methods Problem discussion on calculation of earthwork using Mid-sectional Area method, Mean sectional Area Method and Prismoidal Formula Calculation of earthwork of a road in banking Calculation of earthwork of a road in banking Calculation of earthwork of a road in banking	
W-9	08.09.25 TO 12.09.25	Calculation of earthwork of a road in banking and cutting Detailed estimate of a water bound macadam road Detailed estimate of a water bound macadam road, Detailed estimate of a national highway in cutting and banking Detailed estimate of septic tank and soak pit for 50 users Detailed estimate of septic tank and soak pit for 50 users	12
W-10	TO 25	Detailed estimate of septic tank and soak pit for 50 users	
W-11	22.09.25 TO 26.09.25	4. Detailed estimate of Tube well(Prepare an estimate of a 40 mm dia. Tube well 40 meter deep from the given drawing)  Detailed estimate of Tube well(Prepare an estimate of a 40 mm dia. Tube well 40 meter deep from the given drawing)  Detailed estimate of Tube well(Prepare an estimate of a 40 mm dia. Tube well 40 meter deep from the given drawing)  Detailed estimate of Tube well(Prepare an estimate of a 40 mm dia. Tube well 40 meter deep from the given drawing)	
W-12	08.10.25 TO 10.10.25	Detailed estimate of Tube well(ESTIMATE OF 50 MM Dia. TUBE WELL WITH DEEP HAND PUMP) DISCUSSION OF CLASS TEST QUESTION AND ANSWER SHEET DISTRIBUTION Detailed estimate of Tube well(ESTIMATE OF 50 MM Dia. TUBE WELL	12
W-13	13.10.25 TO 18.10.25	WITH DEEP HAND PUMP) Detailed estimate of Tube well(ESTIMATE OF 50 MM Dia. TUBE WELL WITH DEEP HAND PUMP) Detailed estimate of Tube well(ESTIMATE OF 50 MM Dia. TUBE WELL WITH	10
W-14		5. Classification of work-original, major, petty, repair work, annual repair, special repair, quadrantal repair. Concept of Method of execution of works through the contractors and department, contract and agreement, work order, types of contract, piece work agreement.  Explanation of various terms  Administrative approval, technical sanction, tender, preparation of notice inviting tender, quotations, earnest money, E-tendering, security deposit, advance	

Sanuj kumar Sahoo

W-15	27.10.25 TO 01.11.25	payment, intermediate payment, final payment, running bill, final bill, regular and temporary establishment, cash, major & subhead of account, temporary advance (imprest money), supervision charges, suspense account, debit, credit, book transfer, voucher and related accounts.  Measurement book use & maintenance, procedure of marking entries of measurement of work and supply of materials, labour employed, standard measurement books and common irregularity, Muster roll: Its preparation & use for making payment of pay & wages, Acquittance Roll: Its preparation & use for making payment of pay & wages, Labour & labour report, method of labour payment, use of forms and necessity of Submission  Classification of stores, receipt / issue statement on standard form, method of preparation of stock account, preparation and submission of returns, verification of stocks, shortage and excess, Building BYLAWS and REGULATORY Bodies,  Development authorities, types and their levels, RERA etc.	
W-16 8	ТО	REVISION AND DOUBT CLEARING CLASSES WITH QUESTION BANK	
	15.11.25	DISCUSSION.	

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DISCIPLING	SEMESTER:5TH	District Control of Co	050:00
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1012		Tripatny, Lect-II	PER TOPIC
July	3rd week and 4th week	1.0 TESTS ON SOIL: 1.1 Determination of Specific gravity of Soil by Pycnometer /Density bottle. 1.2 Determination of Field Density of Soil by Core Cutter Method. 1.3 Determination of Particle Size gradation of sand/Gravel by isleve analysis.	)
August	1st week 2nd week 3rd week and 4th week	1.4 Wet mechanical analysis using pipette method for clay and silt. 1.5 (a)Determination of Liquid Limit by soil by Casagrande"s apparatus. (b)Determination of Plastic limit of soil. 1.6 Determination of Shrinkage limit of soil. 1.7 Determination of MDD & OMC of soil by using modified Proctor Test. 1.8 Determination of CBR value using Laboratory CBR Testing device. 1.9 Determination of c and \$\phi\$ of soil by triaxial testing device. 1.10 Determination of coefficient of permeability of soil by constant head method	36
Septmber	1st week 2nd week 3rd week and 4th week	2.0 HYRAULICS LABORATORY: 2.1 Verification of Bernoulli's Theorem 2.3 Determination of coefficient of Discharge of a rectangular notch fitted in open Channel. 2.3 Determination of coefficient of Discharge of a Venturimeter, Orificemeter fitted in a pipe 2.4 Determination of head Loss due to friction and coefficient of friction for flow through pipe.	18
	1st week 2nd week 3rd week and 4th week	3.0 TRANSPORTATION LABORATORY: 3.1 Penetration Test of Bitumen. 3.2 Ductility Test of Bitumen. 3.3 Viscosity Test of Bitumen. 3.4 Bitumen content by centrifuge extractor. 4.0 PUBLIC HEALTH ENGINEERING LABORATORY: 4.1 Determination of Turbidity of water Sample using Turbidimeter/Nephlometer/Jackson's Candle Turbidimeter. 4.2	18+6
lovember	,	Determination of pH of Water sample using (a) pH – meter (b) colour Comparator. 4.3 Determination of Chloride content of a Water sample using method of titration. 4.4 Determination of Coagulant (Alum) dose requirement for a turbid water sample by Jar Test. 4.5 Determination of dissolved oxygen in a water sample. 4.6 Determination of bacteriological quality of water sample by Coliform test.	12



## LESSON PLAN FOR ESTIMATION & COST EVALUATION PRACTICE—II FOR 5TH SEM, CIVIL ENGG WINTER -2025 W.E.F. 14.07.2025

Name of the Faculty: GF-2

		Name of the Faculty: GF-2	
WEEK NO.	DATE	TOPIC	PERIODS ASSIGNED PER TOPIC
W-1	14.07.25 TO 19.07.25	1. Detailed estimate of culverts and bridges 1.1 Detailed estimate of a RCC slab culvert with	
W2	21.07.25 TO 25.07.25	right angled wing walls with bar bending schedule.	12
W3	28.07.25 TO 02.08.25	1.2 RCC Hume pipe culvert with splayed angled	
W4	04.08.25 TO 08.08.25	wing wall.	
W5	11.08.25 TO 16.08.25	2.Estimate of irrigation structures 2.1Detailed estimate of simple type of vertical	
W6	18.08.25 TO 22.08.25	fall to given specification	12
W7	25.08.25 TO 30.08.25	2.2Detailed estimate of drainage siphon to given specification.	
W8	08.09.25 TO 12.09.25		
W9	08.09.25 TO 12.09.25	3. Detailed estimate of roads 3.1Detail estimate of a water bound macadam	
W10	15.09.25 TO 20.09.25	road	12
WII	22.09.25 TO 26.09.25	3.2Detailed estimate of a flexible pavement in cutting / filling	12
W12	08.10.25 TO 10.10.25	3.2Detailed estimate of septic tank and soak pit for 50 users	
W13	13.10.25 TO 18.10.25	4. Miscellaneous estimates	
W14	20.10.25 TO 24.10.25		9
W15	27.10.25 TO 01.11.25	combined footings.	
W-16 & 17	03.11.25 TO 15.11.25	REVISION	

# LESSON PLAN FOR PROJECT PHASE-I FOR 5TH SEM, CIVIL ENGG

#### WINTER -2025 W.E.F. 14.07.2025

### NAME OF THE TEACHING FACULTY: MRS RASMI GADAPALLA, MR. SOUMYASAGAR TRIPATHY, MR. SANUJ KUMAR SAHOO, GF-2

Week	Class Day	Practical Topics
July- 1st, 2nd week Auguts - 1st,2nd,3rd, 4th week Septmber- 1st,2nd,3rd,4th week October 1st,2nd,3rd,4th week November- 1st,2nd,3rd week	August- 1st,2nd 3rd, 4th week Septmber- 1st,2nd,3rd,4th week October-1st,2nd,3rd,4th week November-1st,2nd,3rd week	<ol> <li>Selection of project assignment</li> <li>Planning and execution of considerations</li> <li>Quality of performance</li> <li>Providing solution of the problems or production of final product</li> <li>Sense of responsibility</li> <li>Self expression/ communication/ Presentation skills</li> <li>Interpersonal skills/human relations</li> <li>Report writing skills</li> <li>Viva voce</li> </ol>

Sanuj ku. Sahoo Phulapalle 11/07/25 11-07-25