R.K INSTITUTE OF ENGINEERING & TECHNOLOGY
At/Po: Kantapada-Apuja, Niali, Dist- Cuttack, Odisha
DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

Discipline: Civil Engg.	**Semester:** 5th	**Name of the Teaching faculty:** Poonam Behera	**Status**
Subject: Estimating & Cost Evaluation-II Th-5	**No of Days/Week class alloted:**	**Semester from Date:** 1/08/23 **ToDate:** **No of weeks:**	
Week	**Class Day**	**Topics**	
1st	1st	Detailed estimate of culverts and bridges 1.1 Detailed estimate of a simple Hume pipe culvert with right angled wing walls	
	2nd	problem	
	3rd	problem	
	4th	problem	
2nd	1st	problem	
	2nd	1.2 RCC deck slab culvert with right angled wing wall	
	3rd	problem	
	4th	problem	
3rd	1st	problem	
	2nd	problem	
	3rd	1.3RCC deck slab culvert with splayed wing wall	
	4th	problem	
4th	1st	problem	
	2nd	problem	
	3rd	problem	
	4th	1.4Quantity of steel for deck slab with bar bending schedule of the above jobs	
5th	1st	problem	
	2nd	problem	
	3rd	problem	
	4th	problem	
6th	1st	2. Estimate of irrigation structures 2.1 Detailed estimate of simple type of vertical fall to given specification	
	2nd	problem	
	3rd	problem	
	4th	problem	
7th	1st	problem	
	2nd	problem	
	3rd	2.3Detailed estimate of siphon well drop to given specification.	
	4th	problem	

8th	1st	problem	
	2nd	problem	
	3rd	problem	
	4th	problem	
9th	1st	3. Detailed estimate of roads 3.1 Detail estimate of a water bound macadam road	
	2nd	problem	
	3rd	problem	
	4th	problem	
10th	1st	problem	
	2nd	problem	
	3rd	3.2 Detailed estimate of a National Highway in cutting / filling	
	4th	problem	
11th	1st	problem	
	2nd	problem	
	3rd	problem	
	4th	problem	
12th	1st	PWD accounts works 4.1 Works 1.1 Classification of work-original, major, petty, repair work, annual repair, special repair, quadrantal repair	
	2nd	Method of execution of works through the contractors, departmentally, contract and agreement, work order, item rate contract, lump sum contract, labour contract and daily labour, piece work agreement, scheduled contract, cost plus percentage contract	
	3rd	Accounts of works 4.2.1 Explanation of various terms Administrative approval, technical sanction, contingency budget, tender, preparation of notice inviting tender, receiving of quotations, earnest money, security deposit, advance payment, on account payment, intermediate payment	
	4th	final payment, running bill, final, regular and temporary establishment, cash, major & subhead of account, temporary advance, issue rate, storage, supervision charges, suspense account, debit, credit, book transfer, voucher and related accounts	
13th	1st	4.2.2 Measurement book use & maintenance, procedure of marking entries of measurement of work and supply of materials, labour employed, standard measurement books and common irregularity	
	2nd	**4.2.3 Master roll : Its preparation & use for making payment of pay & wages**	
	3rd	4.2.4 Acquitance Roll : Its preparation & use for making payment of pay & wages	
	4th	**4.2.5 Labour & labour report, method of labour payment, use of forms and necessity of submission**	
14th	1st	4.2.6 Classification of stores, receipt / issue statement on standard form, method of preparation of stock account	
	2nd	preparation and submission of returns, verification of stocks, shortage and excess	
	3rd	Doubt clearing classes	
	4th	Previous year question answer discussion	
15th	1st	REVISION	

	2nd	REVISION	
	3rd	REVISION	
	4th	REVISION	
16th	1st	REVISION	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	M.Chakraborty.	Estimating,Costing,specification &Valuation in Civil Engineering
2	B.N.Dutta.	Estimating &Costing
3	Latest Orissa PWD Schedule of Rates & Analysis of rates	Latest Orissa PWD Schedule of Rates & Analysis of rates

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Discipline: Civil Engg	Semester: 5Th	Name of the Teaching faculty: Annapurna Sethy	STATUS
Subject: Water Supply & Waste Water Engineering Th-4	No of Days/Week class alloted: days	Semester from Date: 01/08/23 To Date: No of weeks:	
Week	**Class Day**	**Topics**	
1st	1st	**Introduction to Water Supply, Quantity and Quality of water** Necessity of treated water supply	
	2nd	Per capita demand, variation in demand and factors affecting demand	
	3rd	Methods of forecasting population	
	4th	Numerical problems using different methods	
	5th	Impurities in water – organic and inorganic, Harmful effects of impurities	
2nd	1st	Analysis of water –physical, chemical and bacteriological	
	2nd	Analysis of water –physical, chemical and bacteriological	
	3rd	Analysis of water –physical	
	4th	Analysis of water –physical	
	5th	Water quality standards for different uses	
3rd	1st	Sources and Conveyance of water Surface sources – Lake, stream, river and impounded reservoir	
	2nd	Underground sources – aquifer type & occurrence – Infiltration gallery,infiltration well, springs, well	
	3rd	Yield from well- method s of determination, Numerical problems usingyield formulae (deduction excluded)	
	4th	Yield from well- method s of determination, Numerical problems usingyield formulae (deduction excluded)	
	5th	Intakes – types, description of river intake, reservoir intake, canal intake	
4th	1st	Pumps for conveyance & distribution – types, selection, installation.	
	2nd	Pipe materials – necessity, suitability, merits & demerits of each type	
	3rd	Pipe joints – necessity, types of joints, suitability, methods of jointingLaying of pipes – method	
	4th	Treatment of water Note: Design of treatment units excluded.	
	5th	Revision	
5th	1st	Flow diagram of conventional water treatment system	
	2nd	Sedimentation	
	3rd	Sedimentation with coagulation: Necessity, principles of coagulation,	

	4th	types of coagulants, Flash Mixer, Flocculator, Clarifier (Definition andconceptonly
	5th	Filtration : Necessity, principles, types of filters Slow Sand Filter, Rapid Sand Filter and Pressure Filter essentialfeatures
6th	1st	Filtration : Necessity, principles, types of filters Slow Sand Filter, Rapid Sand Filter and Pressure Filter essentialfeatures
	2nd	Filtration : Necessity, principles, types of filters Slow Sand Filter, Rapid Sand Filter and Pressure Filter – essentialfeatures
	3rd	Disinfection : Necessity, methods of disinfection Chlorination – free and combined chlorine demand, availablechlorine
	4th	residual chlorine, pre-chlorination, break point chlorination, super-chlorination
	5th	Softening of water – Necessity, Methods of softening – Lime sodaprocess and Ion exchange method
7th	1st	Distribution system And Appurtenance in distribution system: General requirements, types of distribution system-gravity, direct andcombined
	2nd	General requirements, types of distribution system-gravity, directand combined
	3rd	Methods of supply – intermittent and continuous
	4th	Distribution system layout – types, comparison, suitability
	5th	Valves-types, features, uses, purpose-sluice valves, check valves, air valves,scour valves, Fire hydrants, Water meters
8th	1st	Valves-types, features, uses, purpose-sluice valves, check valves, air valves,scour valves,Fire hydrants, Water meters
	2nd	Valves-types, features, uses, purpose-sluice valves, check valves, air valves,scour valves, Fire hydrants, Water meters
	3rd	Valves-types, features, uses, purpose-sluice valves, check valves, air valves,scour valves, Fire hydrants, Water meters
	4th	W/s plumbing in building : Method of connection from water mains to building supply
	5th	WASTE WATER ENGINEERING Introduction Aims and objectives of sanitary engineering
9th	1st	Definition of terms related to sanitary engineering
	2nd	Systems of collection of wastes– Conservancy and Water CarriageSystem –features, comparison, suitability
	3rd	Systems of collection of wastes– Conservancy and Water CarriageSystem –features, comparison, suitability
	4th	Systems of collection of wastes– Conservancy and Water CarriageSystem – features, comparison, suitability
	5th	Quantity and Quality of sewage Quantity of sanitary sewage – domestic & industrial sewage, variation insewageflow
10th	1st	numerical problem on computation quantity of sanitary sewage.

	2nd	Computation of size of sewer, application of Chazy's formula, Limitingvelocities of flow : self-cleaning and scouring	
	3rd	General importance, strength of sewage, Characteristics of sewage-physical, chemical & biological	
	4th	General importance, strength of sewage, Characteristics of sewage- physical, chemical & biological	
	5th	Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen,BOD, COD	
11th	1st	Concept of sewage-sampling, tests for – solids, pH, dissolved oxygen,BOD, COD	
	2nd	Sewerage system Types of system-separate, combined, partially separate , features, comparison between the types, suitability	
	3rd	Types of system-separate, combined, partially separate , features, comparison between the types, suitability	
	4th	Shapes of sewer – rectangular, circular, avoid-features, suitability	
	5th	Laying of sewer-setting out sewer alignment	
12th	1st	Laying of sewer-setting out sewer alignment	
	2nd	Sewer appurtenances and Sewage Disposal: Manholes and Lamp holes – types, features, location, function	
	3rd	Inlets, Grease & oil trap – features, location, function	
	4th	Storm regulator, inverted siphon – features, location, function	
	5th	Disposal on land – sewage farming, sewage application and dosing,sewage sickness-causes and remedies	
13th	1st	Disposal on land – sewage farming, sewage application and dosing, sewage sickness-causes and remedies	
	2nd	Disposal by dilution – standards for disposal in different types of water bodies, self purification of stream	
	3rd	Disposal by dilution – standards for disposal in different types of waterbodies, self purification of stream	
	4th	Sewage treatment : (Note: 1.Design of treatment units excluded. 2.Students may be asked to prepare detailed sketches of units	
	5th	Principles of treatment, flow diagram of conventional treatment	
14th	1st	Principles of treatment, flow diagram of conventional treatment	
	2nd	Primary treatment – necessity, principles, essential features, functions	
	3rd	Primary treatment – necessity, principles, essential features, functions	
	4th	Primary treatment – necessity, principles, essential features, functions	
	5th	Secondary treatment – necessity, principles, essential features,functions	

15th	1st	Secondary treatment – necessity, principles, essential features,functions	
	2nd	Sanitary plumbing for building : Requirements of building drainage, layout of lavatory blocks in residential buildings, layout of building drainage	
	3rd	Plumbing arrangement of single storied & multi storied building as per I.S. code practice	
	4th	Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets, flushing cisterns, urinals, inspection chambers,traps, anti-syphonage pipe	
	5th	Sanitary fixtures – features, function, and maintenance and fixing of the fixtures – water closets, flushing cisterns, urinals, inspection chambers,traps, anti-syphonage pipe	
16th	1st	CLASS TEST 3, PREVIOUS YEAR QUESTIONS, QUIZ	

LearningResources:

Sl No.	Author Name	Name of the Book
1	G.S.Birdie	Text book on water supply and sanitary engineering
2	S.K.Garg	Water Supply Engineering
3	S.K.Garg	Waste Water Disposal Engg

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LESSON PLAN

Discipline: Civil Engg.	Semester: 5th	Name of the Teaching faculty: Sahidha Khanum	Status
Subject: Railway & Bridge Engg. Th-3	No of Days/Week class alloted:	Semester from Date: 01/08/23 To Date: No of weeks:	
Week	**Class Day**	**Topic**	
1st	1st	1.0 Introduction : 1.1Railway terminology	
	2nd	1.2Advantages of railways 1.3Classification of Indian Railways	
	3rd	2. Permanent way 2.1 Definition	
	4th	components of a permanent way	
2nd	1st	Concept of gauge	
	2nd	different gauges prevalent in India	
	3rd	suitability of these gauges under different	
	4th	3.Track materials 3.1 Rails 3.1.1 Functions and requirement of rails	
3rd	1st	3.1.2 Types of rail sections , length of rails 3.1.3 Rail joints – types, requirement of an ideal joint	
	2nd	3..1.4 Purpose of welding of rails & its advantages 3.1.5 Creep definition, cause & prevention	
	3rd	3.2 Sleepers 3.2.1 Definition, function & requirements of sleepers 3.2.2Classification of sleepers 3.2.3 Advantages & disadvantages of different types ofsleepers	
	4th	3.3 Ballast 3.3.1 Functions & requirements of ballast 3.3.2 Materials for ballast	
4th	1st	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	
	2nd	4.Geometric for Broad gauge 4.1 Typical cross – sections of single	
	3rd	double broad gauge railway track in cutting	
	4th	embankment	
5th	1st	4.2 Permanent & temporary land width	
	2nd	Gradients for drainage	

	3rd	Super elevation – necessity & limiting valued	
	4th	Numerical problem	
6th	1st	Numerical problem	
	2nd	Numerical problem	
	3rd	Numerical problem	
	4th	5.0 Points and crossings	
7th	1st	5.1 Definition,	
	2nd	necessity of Points and crossings	
	3rd	5.2 Types of points	
	4th	&types of crossings with tie diagrams	
8th	1st	diagrams	
	2nd	6.0 Laying & maintenance of track	
	3rd	6.1 Methods of Laying	
	4th	maintenance of track	
9th	1st	Details of a permanent way inspector	
	2nd	Section – B : BRIDGES 7.0 Introductions 7.1 Definitions 7.2 Components of a bridge	
	3rd	7.3 Classification of bridges. 7.4 Requirements of an ideal bridge	
	4th	8. Bridge Site investigation, hydrology & planning 8.1 Selection of bridge site	
10th	1st	8.2 Bridge alignments	
	2nd	8.3 Determination of flood discharge	
	3rd	8.4 Waterway & economic span	
	4th	8.5 Afflux, clearance & free board 8.6 Collection of bridge design data & sub surface investigation	
11th	1st	9.Bridge foundation	
	2nd	9.1 Scour depth minimum depth of foundation 9.2 Types of bridge	
	3rd	pile foundation-, pile driving,	
	4th	well foundation – sinking of wells caission foundation	
12th	1st	foundations – spread foundation	
	2nd	9.3 Coffer dams	
	3rd	pile foundation-, pile driving,	
	4th	well foundation – sinking of wells caission foundation	
13th	1st	foundations – spread foundation	
	2nd	9.3 Coffer dams	
	3rd	10.Bridge substructure and approaches	
	4th	10. Bridge substructure and approaches 10.1 Types of piers	
14th	1st	10.2 Types of abutments	
	2nd	10.3 Types of wing walls	
	3rd	**10.4 Approaches**	
	4th	11.0 Permanent bridges 11.1 Masonry bridges	
15th	1st	**11.2 Steel bridges – classification with sketches**	

		Concrete bridges – classification, brief description with sketches	
	3rd	11.4 IRC bridge loading	
		12. Culvert & cause ways	
16th	4th	12.1 Types of culvers - brief description	
	1st	12.2 Types of causeways - brief description	
		PREVIOUS YEAR QUESTION DISCUSSION	

Learning Resources:

Sl No.	Author Name	Name of the Book
1	Chandra & Agrawal	Railway Engineering
2	S.C.Sexena & S.P.Arora	A Text book of Railway Engineering
3	S. C. Rangwala	Railway Engineering

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Discipline: Civil Engg.	**Semester: 5th**	**Name of the Teaching faculty:** Radhashyam Jena	**Status**
Subject: Structural Design-II Th-2	**No of Days/Week class alloted:**	**Semester from Date:** 01/08/23 **To Date:** **No of weeks:**	
Week	**Class Day**	**Topics**	
1st	1st	1.0 Introduction: Common steel structures, Advantages & disadvantages of steel structures. Types of steel, properties of structural steel.	
	2nd	Rolled steel sections, special considerations in steel design.Loads and load combinations.	
	3rd	Structural analysis and design philosophy. Brief review ofPrinciples ofLimit State design	
	4th	Structural Steel Fasteners and Connections Classification of bolts, advantages and disadvantages of boltedconnections.	
2nd	1st	Different terminology, spacing and edge distance of bolt holes.Types ofbolted connections.	
	2nd	Types of action of fasteners, assumptions and principles of design.Strength of plates in a joint, strength of bearing type bolts(shear capacity& bearing capacity)	
	3rd	reduction factors, and shear capacity of HSFG bolts. Analysis & design of Joints using bearing type and HSFG bolts(except eccentric load and prying forces)	
	4th	Efficiency of a joint .Welded Connections: Advantages and Disadvantages of welded connection	
3rd	1st	Types of welded joints and specifications for welding.	
	2nd	Design stresses in welds	
	3rd	Strength of welded joints. Reduction of design stresses for longjoints	
	4th	03.Design of Steel tension Members	
4th	1st	Common shapes of tension members.	
	2nd	Design strength of tension members	
	3rd	yielding of gross cross section, rupture of critical section	
	4th	the concept of block shear	

5th	1st	Maximum values of effective slenderness ratio	
	2nd	Analysis of tension members	
	3rd	Design of tension members	
	4th	04.Design of Steel Compression members	
6th	1st	Common shapes of compression members	
	2nd	Bulking class of cross sections.	
	3rd	slenderness ratio	
	4th	Design compressive stress	
7th	1st	strength of compression members.	
	2nd	Analysis of compression members	
	3rd	Design of compression members (axial load only).Analysis	
	4th	5.0Steel Column bases and foundations	
8th	1st	Types of column bases ,their suitability	
	2nd	Design of slab base Design of slab base (subjected to axial loading) with concretefooting	
	3rd	Design of gusseted base	
	4th	Design of gusseted base subjected to axial loadingDesign of gusseted base with concrete footing	
9th	1st	6.0Design of Steel beamsCommon cross sections	
	2nd	their classification	
	3rd	Plastic moment capacity of sections, moment capacity andshearresistance.	
	4th	Deflection limits, web buckling and web crippling.	
10th	1st	Design of laterally supported beams against bending and shear.	
	2nd	Types of built up sections	
	3rd	design of simple built up sections using flange plates with I-sections or web plates.	
	4th	.7.0 Design of Tubular Steel structures	
11th	1st	Tube columns and compression members, crinklingRound tubular sections, permissible stresses	
	2nd	Tube tension members and tubular roof trusses.	
	3rd	Joints in tubular trusses Design of tubular beams and purlins	
	4th	8.0Design of Timber StructuresTypes of timber	
12th	1st	Types of grading of timber	
	2nd	Types of defects,	
	3rd	Types of permissible stresses.	
	4th	Design of axially loaded timber columnssolid, box	
13th	1st	built up section except spaced columns	
	2nd	Design of simple timber structural elements in flexure Solidsections & flitched beams	
	3rd	form factor and moment of resistance of built-up sections	
	4th	check for shear, bearing and deflection	

14th	1st	9.0Design of Masonry Structures Design consideration for masonry walls	
	2nd	Design of Masonry Structures	
	3rd	Design consideration for masonry walls	
	4th	Load bearing walls -Permissible stresses Slenderness ratio,Effective length, Effective height	
15th	1st	Load bearing walls -Permissible stresses Slenderness ratio,Effective length, Effective height	
	2nd	Effective thickness, Eccentricity of loads, Grade of mortar	
	3rd	Non-Load bearing walls – Panel walls, Curtain walls, Partitionwalls.	
	4th	Design consideration for masonry columns, piers and buttresses	
16th	1st	REVISION	

LearningResources:

Sl No.	Author Name	Name of the Book
1	B.N.Duggal	Design of Steel Structures
2	Samal & Panigrahi	Elements of Steel ,Timber & Masonry Design
3	Samal & Panigrahi	Steel Tables

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LESSONPLAN

Discipline:Civil Engg	Semester:6th	NameoftheTeachingfaculty: Sipra Dash	
Subject:LandSurvey-II Th-1	No ofDays/Weekclassallotted: 5days	SemesterfromDate: 7/02/23 ToDate: 25/05/23 Noofweeks: 16	Status
Week	**ClassDay**	**Topics**	
1st	1st	**TACHEOMETRY: Principles,stadiaconstantsdetermination**	Completed
	2nd	**Stadiatacheometrywithstaffheldverticalandwithlineofcollimationhorizontalor inclined,numericalproblems**	
	3rd	**Stadiatacheometrywithstaffheldverticalandwithlineofcollimationhorizontalor inclined,numericalproblems**	
	4th	**Stadiatacheometrywithstaffheldverticalandwithlineofcollimation horizontalor inclined, numericalproblems**	
	5th	**Elevationsanddistancesofstaffstations–numericalproblems**	
2nd	1st	**Elevationsanddistancesofstaffstations–numericalproblems**	Completed
	2nd	**Elevationsanddistancesofstaffstations–numericalproblems**	
	3rd	**Elevationsanddistancesofstaffstations–numericalproblems**	
	4th	**Elevationsanddistancesofstaffstations–numericalproblems**	
	5th	**CURVES: compound,reverseandtransitioncurve,Purpose&useofdifferenttypesofcurvesinfield**	
3rd	1st	**Elementsofcircularcurves,numericalproblems**	Completed
	2nd	**Elementsofcircularcurves,numericalproblems**	
	3rd	**Preparationofcurvetableforsettingout**	
	4th	**Settingoutofcircularcurvebychainandtapeandbyinstrumentangularmethods(i)offsetsfromlongchord,**	
	5th	**(ii)successivebisectionofarc,(iii)offsetsfromtangents,(iv)offsets from chordproduced**	
4th	1st	**(v)Rankine'smethodoftangentangles(Noderivation)**	Completed
	2nd	**Obstaclesincurveranging–pointofintersectioninaccessible**	
	3rd	**BASICSONSCALEANDBASICSOFMAP: FractionalorRatioScale,LinearScale,GraphicalScale**	
	4th	**WhatisMap,MapScaleandMapProjections**	
	5th	**HowMapsConveyLocationandExtent**	
5th	1st	**HowMapsConveycharacteristicsoffeatures**	
	2nd	**HowMapsConveySpatialRelationship**	
	3rd	**ClassificationofMaps PhysicalMap,TopographicMap**	
	4th	**RoadMap,PoliticalMap**	

6th	1st	SURVEYOFINDIAMAPSERIES: OpenSeriesmap	Complete
	2nd	Defense Series Map, MapNomenclature, Quadrangle Name	
	3rd	Latitude,Longitude,UTM's, Contour Lines	
	4th	MagneticDeclination	
	5th	Public Land Survey System	
7th	1st	BASICSOFAERIALPHOTOGRAPHY,PHOTOGRAMMETRY,DEMANDORTHOIMAGEGENERATION:	Complete
	2nd	AerialPhotography: Film, Focal Length, Scale	
	3rd	ypesofAerialPhotographs (Oblique, Straight) Photogrammetry:	
	4th	Photogrammetry: Classification ofPhotogrammetry	
	5th	AerialPhotogrammetry	
8th	1st	Terrestrial Photogrammetry	completed
	2nd	Photogrammetry Process: AcquisitionofImageryusingaerialandsatellite platform	
	3rd	Control Survey GeometricDistortion in Imagery	
	4th	Applicationof Imagery and its support data Orientation and Triangulation	
	5th	StereoscopicMeasurement X-parallax Y-parallax	
9th	1st	DTM/DEMGeneration Ortho Image Generation	Completed
	2nd	MODERN SURVEYING METHODS : Principles,featuresanduseof(i)Micro-optictheodolite, digital theodolite	
	3rd	Working principles of a Total Station (Set up and use of total station to measure angles,distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation.	
	4th	BASICSOFAERIALPHOTOGRAPHY,PHOTOGRAMMETRY,DEMANDORTHOIMAGEGENERATION:	
	5th	AerialPhotography: Film, Focal Length, Scale	
10th	1st	ypesofAerialPhotographs (Oblique, Straight) Photogrammetry:	completed
	2nd	Photogrammetry: Classification ofPhotogrammetry	

	3rd	Working principles of a Total Station (Set up and use of total station to measure angles,distances of points under survey from total station and the co-ordinates (X,Y & Z or northing, easting, and elevation) of surveyed points relative to Total Station position using trigonometry and triangulation.	
	4th	BASICS ON GPS & DGPS AND ETS: GPS:-GlobalPositioning	
	5th	WorkingPrincipleof GPS,GPS Signals,	Completed
11th	1st	ErrorsofGPS,Positioning Methods	
	2nd	DGPS:-DifferentialGlobalPositioningSystem	
	3rd	Base Station Setup Rover GPS Set up	Completed
	4th	Download, Post-Process and Export GPS data	
	5th	Sequence to download GPS data from flashcards	
12th	1st	Sequence to Post-Process GPS data	
	2nd	Sequence to export post process GPS data	
	3rd	Sequence to export GPS Time tags to file	Completed
	4th	Sequence to download GPS data from flashcards	
	5th	DistanceMeasurement	
13th	1st	Angle Measurement	

2021 - 2022

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:- Laxmipriya Chinmayee
Subject. WSPWWE	No. Of days / per week class allotted:-	Semester 5th from date: 01/10/2021 To Date: 18/01/2022 No. Of weeks:-

Week	Class day	Theory/ Practical Topics :
CH 1	1st 01.10.21	Necessety of treated water supply
	2nd 5.10.21	Percapeta Demand
FIRST	3rd 7.10.21	Variation in demand and factor affe-demand
	4th 8.10.21	Methods of forecasting Population
	5th 9.10.21	Numerical Problems using different Methods
	1st 19.10.21	Impurities in water - organic and inorganic, Harmful effects of impurities.
	2nd 21.10.21	Analysis of water - physical, chemical and Bacteriological
SECOND	3rd 22.10.21	Water quality standards for different uses.
CH-2	4th 23.10.21	Surface sources - Lake, stream, river and inponded reservoir.
	5th 26.10.21	Underground sources - aquifer types & occurrence - Infiltration gallery, infiltration well, Spring, well
	1st 27.10.21	Pumps for conveyance & distribution - types, selection, installation.
	2nd 28.10.21	Pipe materials - necessity, suitability, Methods of Jointing Laying of Pipes - Method.
THIRD CH-3	3rd 29.10.21	Flow diagram of conventional water treatment system.
	4th 30.10.21	Aeration; Necessity
	5th 02.11.21	Plain Sedimentation: Necessity, working principles, Sedimentation tanks.
	1st 03.11.21	Types, essential features, operation & Maintenance.
	2nd 05.11.21	Sedimentation with coagulation, Necessity
FORTH	3rd 06.11.21	Principles of coagulation, types, Flash Mixer, flocculator, Clarifier.
	4th 09.11.21	filtration: Necessity, principles, types of filters.
	5th. 10.11.21	Slow sand filter, Rapid sand filter and pressure filter. essential features

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st 11.11.21	Disinfection : Necessity, Methods of disinfection.
	2nd 12.11.21	Chlorination - free and combined chlorine demand, available chlorine, residual chlorine
	3rd 13.11.21	Pre-chlorination, break point chlorination, Super-Chlorination.
	4th 16.11.21	Softening of water - necessity, methods of softening, Lime soda process and ione exchange.
CH-4	5th 17.11.21	General requirements, types of distribution system.
SECOND	1st 18.11.21	Gravity, direct and combined.
	2nd 20.11.21	Methods of supply - intermittent and continuous.
	3rd 23.11.21	Distribution system layout - types, comparison, suitability
	4th 24.11.21	valves - types, features, uses, Purpose - Sluice valves, check valves, air valves, scour, fire hydrant
CH-5	5th 25.11.21	Method of connection from water mains to building
Civil E Section-B CH-6	1st 26.11.21	General layout of plumbing arrangement for water supply in single storied and multi-storied building
THIRD	2nd 27.11.21	Aims and objectives of sanitary engineering
	3rd 30.11.21	Definition of terms related to sanitary engineering.
	4th 30.11.21	System of collection of wastes - conservancy and [illegible] Carriage system - features, comparison
CH7	5th 01.12.21	Quantity of sanitary sewage - domestic & industrial sewage, variation in sewage flow.
FORTH	1st 02.12.21	Numerical problem on computation quantity of sanitary sewage.
	2nd 03.12.21	Computation of size of sewer, application of Chazys formula, Limiting velocities of flow.
	3rd 04.12.21	Self cleaning and scouring.
	4th 07.12.21	General importance, Strength of sewage
	5th 08.12.21	Characteristics of sewage - physical, chemical, Biological.

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-	
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST	1st 09.12.21	concept of sewage – sampling, tests for – solid, pH, dissolved oxygen, BOD, COD.	
CH-8	2nd 10.12.21	Types of system – separate, combined, partary separate, features; comparison best type, suitability.	
	3rd 11.12.21	Shapes of sewer – rectangular, circular, ovoid – features, suitability.	
	4th 14.12.21	Laying of sewer – setting out sewer alignment.	
CH-9	5th 15.12.21	Manholes and Lamp holes – types, features (location, function).	
SECOND	1st 16.12.21	Inlet, grease and oil trap – features, location, function.	
	2nd 17.12.21	Storm regulator, inverted siphon – feature (location, function).	
	3rd 18.12.21	Disposal on land – sewage farming, sewage application and dosing.	
	4th 21.12.21	Sewage sickness – causes and remedies.	
	5th 22.12.21	Disposal by dilute – standards for disposal in different types of water bodies.	
THIRD	1st 23.12.21	Self purification of stream.	
CH-10	2nd 24.12.21	Principles of treatment, flow diagram of conventional treatment.	
	3rd 28.12.21	Primary treatment – necessity, principles, essential features, functions.	
	4th 29.12.21	Secondary treatment – necessity, principles essential features, functions.	
CH-11	5th 30.12.21	Requirements of building drainage, layout of lavatory blocks in residential building.	
FORTH	1st 31.12.21	layout of building drainage	
	2nd 04.1.22	Plumbing arrangement of single storied and multi storied building.	
	3rd 05.1.22	Sanitary fixtures – features, function.	
	4th 06.1.22	Maintenance and fixing of the fixtures	
	5th 07.1.22	water closets, flushing cisterns, urinals.	

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-	
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST	1st 08.1.22	inspection chambers, traps &	
	2nd 11.1.22	Anti Syphonage pipe.	
	3rd 12.1.22	Revision	
	4th 13.1.22	Revision	
	5th 15.1.22	Revision	
SECOND	1st 18.1.22	Revision.	
	2nd		
	3rd		
	4th		
	5th		
THIRD	1st		
	2nd		
	3rd		
	4th		
	5th		
FORTH	1st		
	2nd		
	3rd		
	4th		
	5th		

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-:LESSON PLAN:- 2021 – 2022

scipline	Semester	Name of the teaching faculty:- Annapurna Sethy	
bject. SD-II	No. Of days / per week class allotted:-	Semester 5th from date: 01/10/2021 To Date: 18/01/2022 No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
CH-1	1st 04/10/2021	INTRODUCTION:- Introduction steel structure, & common steel structure	
	2nd 05/10/2022	Advantages of steel structure.	
FIRST	3rd 09/10/2022	Disadvantages of steel structure.	
	4th 19/10/2022	Types of steel, Properties of structural steel	
	5th 23/10/2022	Rolled steel sections, special Consideration erected.	
	1st 25/10/2022	Loads and load Combinations.	
	2nd 26/10/2022	Structural analysis and design Philosophy	
SECOND	3rd 27/10/2022	Brief review of principles of limit state design.	
CH-2 →	4th 30/10/2022	STRUCTURAL STEEL FASTENERS & CONNECTIONS	
	5th		
	1st 30/10/2022	Bolted Connections.	
	2nd 01/11/2022	Classification of bolts, advantages and disadvantages of bolted Connections.	
THIRD	3rd 02/11/2022	Different terminology, spacing and edge distance of bolt holes.	
	4th 03/11/2022	Types of Bolted Connection.	
	5th 06/11/2022	Types of action fasteners, assumptions and principles of design.	
	1st 08/11/2022	Strength of plates in a joint, Strength of bearing type bolts (shear capacity, bearing capacity)	
	2nd 09/11/2022	Reduction factor and shear capacity of HSFG Bolts.	
FORTH	3rd 10/11/2022	Analysis & design of joints using bearing type and HSFG Bolt (except eccentric load applying force)	
	4th 13/11/2022	Efficiency of Joint	
	5th 15/11/2022	welded Connection.	

:LESSON PLAN:

Discipline	Semester	Name of the teaching faculty
Subject	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:
Week	Class day	Theory/ Practical Topics :
FIRST	1st 16/11/2021	Advantages of welded Connection.
	2nd 17/11/2021	Disadvantages of welded Connection
	3rd 20/11/2021	Types of welded joint.
	4th 22/11/2021	Specification for welding
	5th 23/11/2021	Design Stresses in welds.
SECOND CH-3	1st 24/11/2021	Strength of welded joints.
	2nd 27/11/2021	DESIGN OF STEEL TENSION MEMBERS
	3rd	
	4th 27/11/2021	Common Shapes of tension members.
	5th 29/11/2021	Maximum values of effective Slenderness ratio
THIRD CH-4	1st 30/11/2021	Doubt Clearing classes.
	2nd 01/12/2021	Analysis and Design of tension members
	3rd 04/12/2021	DESIGN OF STEEL COMPRESSION MEMBERS.
	4th	
	5th 04/12/2021	Common Shapes of Compression members.
ORTH	1st 06/12/2021	Buckling class of Cross Sections.
	2nd 07/12/2021	Slenderness ratio
	3rd 08/12/2021	Design Compressive Stress.
	4th 11/12/2021	Strength of Compression members.
	5th 13/12/2021	Analysis and Design of Compression members

-:LESSON PLAN:-

cipline	Semester	Name of the teaching faculty:-	
ject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST Ch-5	1st 14/12/2021	DESIGN OF STEEL BEAMS.	
	2nd 14/12/2021	Common Cross Section.	
	3rd 15/12/2021	Common cross section and their classification	
	4th 18/12/2021	Deflection limits	
	5th 20/12/2021	Web buckling	
SECOND Ch-6	1st 21/12/2021	Web crippling.	
	2nd 22/12/2021	Doubt Clearing Classes.	
	3rd 25/12/2021	Design of laterally supported beam against bending and shear	
	4th 27/12/2021	DESIGN OF TUBULAR STEEL	
	5th	STRUCTURES	
THIRD	1st 27/12/2021	Rounded Tubular Section.	
	2nd 28/12/2021	Permissible stress	
	3rd 29/12/2021	Tubular Compression.	
	4th 03/01/2022	Tension Members.	
	5th 04/01/2022	Joints in Tubular trusses.	
FORTH Ch-7	1st 05/01/2022	DESIGN OF MASONRY	
	2nd	STRUCTURES:	
	3rd 05/01/2022	Design Considerations for Masonry walls columns	
	4th 08/01/2022	Load Bearing & non-Load Bearing Walls	
	5th 10/01/2022	Permissible Stresses.	

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST	1st 11/01/2022	Slenderness Ratio
	2nd 12/01/2022	Effective length.
	3rd 15/01/2022	Height & thickness.
	4th 17/01/2022	Doubt cleaning classes
	5th 18/01/2022	Doubt clearing classes.
SECOND	1st	
	2nd	
	3rd	
	4th	
	5th	
THIRD	1st	
	2nd	
	3rd	
	4th	
	5th	
ORTH	1st	
	2nd	
	3rd	
	4th	
	5th	

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-:LESSON PLAN:-

2021 – 22

Discipline	Semester	Name of the teaching faculty:- Annapurna Mallik	
Subject. RRB Engg.	No. Of days / per week class allotted:-	Semester 5th from date: 1.10.2021 To Date: 18.01.2022 No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
CH-1	1st 4.10.21	Railway terminology	
	2nd 5.10.21	Advantages of railways	
FIRST	3rd 7.10.21	classification of Indian Railways	
CH-2	4th 9.10.21	Definition and Components of a permanent way	
	5th 19.10.21	Concept of gauge	
	1st 21.10.21	different gauges prevalent in India	
	2nd 23.10.21	Suitability of these gauges under different condn	
SECOND CH-3	3rd 25.10.21	Rails	
	4th 26.10.21	Functions and requirement of rails	
	5th 28.10.21	Types of rail sections, length of rails.	
	1st 30.10.21	Rail joints - types, requirement of an ideal joint	
	2nd 1.11.21	Purpose of welding of rails & its advantages	
THIRD	3rd 2.11.21	Creep : definition, cause & prevention	
	4th 6.11.21	Sleepers	
	5th 8.11.21	Definition, Function & requirements of sleepers	
	1st 9.11.21	Classifications of sleepers	
	2nd 11.11.21	Advantages & disadvantages of different types of sleepers	
ORTH	3rd 13.11.21	Ballast	
	4th 15.11.21	Functions & requirements of ballast	
	5th 16.11.21	Materials for ballast.	

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
Week	Class day	Theory/ Practical Topics :
FIRST CH-4	1st 18.11.21	Fixtures for Broad gauge
	2nd 20.11.21	Connection of rails to rail - Fish plate ;
	3rd 22.11.21	Fish bolts
	4th 23.11.21	Connection of rails to sleepers
	5th 25.11.21	(Geometric for broad gauge) - Typical cross-section
SECOND CH-1	1st 27.11.21	Permanent & temporary land width.
	2nd 29.11.21	Gradients for drainage
	3rd 30.11.21	Supercelevation - necessity & limiting value
	4th 2.12.21	(Points and crossings) - Definition ;
	5th 4.12.21	neccessity of Points and crossings
HIRD CH-6	1st 6.12.21	Types of Points & crossings with tie. diagram
	2nd 7.12.21	Methods of laying & Maintenance of track
CH-1	3rd 9.12.21	Duties of a permanent way inspector
	4th 11.12.21	Definitions Bridges
	5th 13.12.21	Components of a bridge
RTH CH-2	1st 14.12.21	Classification of bridges
	2nd 16.12.21	Requirements of an Ideal bridge
	3rd 18.12.21	Selection of bridge site
	4th 20.12.21	Alignment
	5th 21.12.21	Determination of Flood Discharge

:LESSON PLAN:

...line	Semester	Name of the teaching faculty:-
...t	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-
...eek	Class day	Theory/ Practical Topics :
IRST CH-3	1st 23.12.21	Waterway & economic Span
	2nd 27.12.21	Afflux, Clearance & Free board
	3rd 28.12.21	Scour depth minimum depth of Foundation
	4th 30.12.21	Types of bridge Foundations- Spread Foundation
	5th 3.01.22	Pile Foundation - Well Foundation
SECOND CH-4	1st 4.01.22	Sinking of Wells, Caission Foundation
	2nd 6.01.22	Cofferdams
	3rd 8.01.22	Types of Piers
	4th 10.01.22	Types of Abutments
	5th 11.01.22	Types of Wing Walls
CH-5 THIRD	1st 13.01.22	Approaches
	2nd 15.01.22	Types of Culverts - brief description
	3rd 17.01.22	Types of Causeways - brief description
	4th 18.01.22	Revision Class.
	5th	
ORTH	1st	
	2nd	
	3rd	
	4th	
	5th	

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-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:- Debyashree Bhuyan	
subject. THS- estimating and costing	No. Of days / per week class allotted:- 4P/W	Semester - 5th from date: 01.10.2021 To Date: 18/01/2022 No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST	1st 4/10/2021	Detailed estimate of a Rcc Slab Culvert with right angled.	
	2nd 06/10/2021	Detailed estimate of a Rcc Slab Culvert with right angle.	
	3rd 7/10/2021	Detailed estimate of a Rcc Slab Culvert with right angle.	
	4th 8/10/2021	Detailed estimate of a Rcc Slab Culvert with wingwalls.	
	5th		
SECOND	1st 21/10/2021	Detailed estimate of a Rcc Slab Culvert with wing walls.	
	2nd 23/10/2021	Detailed estimate of a Rcc Slab Culvert with wing walls.	
	3rd 25/10/2021	Detailed estimate of a Rcc Slab Culvert with bar bending shedule.	
	4th 27/10/2021	Detailed estimate of a Rcc Slab Culvert with bar bending shedule.	
	5th		
THIRD	1st 28/10/2021	Detailed estimate of a Rcc Slab Culvert with bar bending shedule.	
	2nd 29/10/2021	RCC Hume Pipe Culvert with Splayed angles wing walls.	
	3rd 01/11/2021	Rcc hume Pipe Culvert with Splayed angles wing walls.	
	4th 03/11/2021	RCC humePipe Culvert with Splayed angles wingwalls.	
	5th 6/11/2021		
FORTH	1st 05/11/2021	Estimate of Irrigation structure:- Detailed estimate of Simple type of vertical fall to given Specification	
	2nd 08/11/2021	Detailed estimate of simple type of vertical fall to given specification.	
	3rd 10/11/2021	Detailed estimate of simple type of vertical fall to given specification	
	4th 11/11/2021	Detailed estimate of simple type of vertical fall to given specification.	
	5th		

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:-	
Subject	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST	1st 12/11/2021	Detailed estimate of simple type of vertical fall to given specification.	
	2nd 15/11/2021	Detailed estimate of simple type of vertical fall to given specification.	
	3rd 17/11/2021	Detailed estimate of drainage siphon to given specification	
	4th 18/11/2021	Detailed estimate of drainage siphon to given specification	
	5th		
SECOND	1st 22/11/2021	Detailed estimate of drainage siphon to given specification	
	2nd 24/11/2021	Detailed estimate of drainage siphon to given specification.	
	3rd 25/11/2021	Detailed estimate of drainage siphon to given specification.	
	4th 26/11/2021	Detailed estimate of drainage siphon to given specification.	
	5th		
THIRD	1st 29/11/2021	Estimating Practice Class.	
	2nd 01/12/2021	Previous year doubt clearing Classes.	
	3rd 02/12/2021	Detailed estimate of roads :- Detail estimate of water bound macadam road.	
	4th 03/12/2021	Detail estimate of water bond macadam road.	
	5th	~~Detail estimate of waterbond macadam~~	
ORTH	1st 06/12/2021	Detail estimate of waterbond macadam road.	
	2nd 08/12/2021	Detail estimate of a flexible Pavement in Cutting	
	3rd 09/12/2021	Detail estimate of a flexible Pavement in Cutting	
	4th 10/12/2021	Detail estimate of a flexible Pavemat in Cutting	
	5th		

-:LESSON PLAN:-

Discipline	Semester	Name of the teaching faculty:	
Subject.	No. Of days / per week class allotted:-	Semester: from date: To Date: No. Of weeks:-	
Week	Class day	Theory / Practical Topics :	
FIRST	1st 13/12/2021	Detail estimate of a flexible pavement in filling.	
	2nd 15/12/2021	Detail estimate of a flexible pavement in filling	
	3rd 16/12/2021	Detail estimate of a flexible pavement in filling	
	4th 17/12/2021	Detailed estimate of septic tank and Sock pit for 50 users.	
	5th		
SECOND	1st 20/12/2021	Detailed estimate of septic tank and Sock pit for 50 users.	
	2nd 22/12/2021	Miscellaneous estimates: Tube well.	
	3rd 23/12/2021	Tube well	
	4th 24/12/2021	Tube well	
	5th		
THIRD	1st 27/12/2021	Tube well	
	2nd 29/12/2021	Piles and Pile Cap	
	3rd 30/12/2021	Piles and Pile Cap	
	4th 03/01/2022	Piles and Pile Cap	
	5th		
FORTH	1st 05/01/2022	Piles and Pile Cap	
	2nd 06/01/2022	Isolated and Combined footing	
	3rd 07/01/2022	Isolated and Combained footing	
	4th 10/01/2022	Isolated and Combained footing	
	5th		

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Discipline	Semester	Name of the teaching faculty:-	
Subject.	No. Of days / per week class allotted:-	Semester from date: To Date: No. Of weeks:-	
Week	Class day	Theory/ Practical Topics :	
FIRST	1st 12/01/2022	Classification of work original, Major, Petty repair work, Quadrantal repair,	
	2nd 13/01/2022	Concept of method of execution of work through the contractors and department, work order.	
	3rd 17/01/2022	Accounts of work, explanation of various terms. Debit, credit, book transfer.	
	4th 19/01/2022	Majon ment book use and maintaince, procedure of making entries of Majonment common irregularity	
	5th		
SECOND	1st 20/01/2022	Muster roll, Acedence roll, Labour and labour rate Classification of Stones,	
	2nd 21/01/2022	Building by laws and regulary bodies development Authority types and there levels Rera. etc.	
	3rd		
	4th		
	5th		
THIRD	1st		
	2nd		
	3rd		
	4th		
	5th		
ORTH	1st		
	2nd		
	3rd		
	4th		
	5th		

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