

Dr. B.R. Ambedkar Govt. Polytechnic, Ambota Una (H.P.)

Department of Civil Engineering

LESSON PLAN

Program Name	Diploma in Civil Engineering
Course/Subject Name	Hydraulics
Course/Subject Code	N-2022 / CEPC202
Course/Subject Co-ordinator Name	Amandeep Singh

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. & Ext.)
		L	BS	Total	Internal Assessment			External Assessment			
1	Hydraulics	2	2	4 Hrs./week	Th.	Pr.	T	Th.	Hrs.	T	100
					40	-	40	60	3	60	
Reference Books		Modi, P. N. and Seth, S.M., Hydraulics and Fluid Mechanics, Standard book house, Khurmi R S, Hydraulics, Fluid Mechanics, Hydraulic machines, S. Chand Publishers Rajput, R K, Fluid Mechanics, S Chand, New Delhi.									

Teaching Plan

Unit No.	Name of Topic	Proposed Week	Actual Date	Remarks
1	Technical terms used in Hydraulics –fluid, fluid mechanics, hydraulics, hydrostatics, and hydrodynamics - ideal and real fluid, application of hydraulics	1 st Week (08/02/2024-15/02/2024)		
	Physical properties of fluid – density-specific volume, specific gravity, surface tension, capillarity, and viscosity-Newton's law of viscosity.	1 st Week (08/02/2024-15/02/2024)		
	Various types of pressure – Atmospheric Pressure, Gauge Pressure, Absolute Pressure, Vacuum Pressure.	2 nd Week (16/02/2024-22/02/2024)		

	Concept of Pressure head and its unit, Pascal's law of fluid pressure and its uses, Measurement of differential Pressure by different methods.	2 nd Week (16/02/2024-22/02/2024)	
	Variation of pressure with depth, Pressure diagram, hydrostatic pressure and center of pressure on immersed surfaces and on tank walls.	3 rd Week (23/02/2024-01/03/2024)	
	Determination of total pressure and center of pressure on sides and bottom of water tanks, sides and bottom of tanks containing two liquids,	4 th Week (02/03/2024-11/03/2024)	
1	Vertical surface in contact with liquid on either side	4 th Week (02/03/2024-11/03/2024)	
2	Types of flow – Gravity and pressure flow, Laminar, Turbulent, Uniform, Non-uniform, Steady, Unsteady flow. Reynolds number	5 th Week (12/03/2024-18/03/2024)	
2	Discharge and its unit, continuity equation of flow.	5 th Week (12/03/2024-18/03/2024)	
2	Energy of flowing liquid: potential, kinetic and pressure energy.	6 th Week (19/03/2024-26/03/2024)	
2	Bernoulli's theorem: statement, assumptions, equation.	6 th Week (19/03/2024-26/03/2024)	
3	Major Head loss in pipe: Frictional loss and its computation by Darcy's Welsbach equation.	7 th Week (27/03/2024-03/04/2024)	
3	Minor losses in pipe: loss at entrance, exit, sudden contraction, sudden enlargement, and fittings.	7 th Week (27/03/2024-03/04/2024)	
3	Flow through pipes in series, pipes in parallel and Dupuit's equation for equivalent pipe.	8 th Week (04/04/2024-10/04/2024)	
3	Hydraulic gradient line and total energy line	9 th Week (12/04/2024-	

	wetted perimeter, hydraulic radius for rectangular and trapezoidal channel section.	29/04/2024)	
4	Determination of discharge by Chezy's equation and Manning's equation.	11 th Week (30/04/2024-06/05/2024)	
4	Conditions for most economical rectangular and trapezoidal channel section.	11 th Week (30/04/2024-06/05/2024)	
4	Discharge measuring devices: Triangular and rectangular Notches.	12 th Week (07/05/2024-15/05/2024)	
4	Velocity measurement devices: current meter, floats and Pitot's tube.	12 th Week (07/05/2024-15/05/2024)	
4	Specific energy diagram, Froude's Number.	13 th Week (16/05/2024-22/05/2024)	
5	Concept of pump, Types of pumps - centrifugal, reciprocating, submersible.	14 th Week (24/05/2024-30/05/2024)	
5	Suction head, delivery head, static head, Manometric head.	14 th Week (24/05/2024-30/05/2024)	
5	Selection and choice of pump.	15 th Week (31/05/2024-01/06/2024)	

Assignments

Assignment Serial	Contents of Syllabus Covered	Proposed Week	Actual I
A-1	Unit 1- Pressure Measurement & Hydrostatic Pressure, Unit 2- Fluid flow & parameters.	6 th Week	
A-2	Unit 3- Flow through pipes , Unit 4- Flow through Open Channel, Unit 5- Hydraulic pumps.	13 th Week	

House Test/Class Test

Name of Test	Contents of Syllabus Covered	Proposed Week	Actual Date
Class Test 1	Unit 1- Pressure Measurement & Hydrostatic Pressure, Unit 2- Fluid flow & parameters.	4 th Week of March	
Class Test 2	Unit 3- Flow through pipes , Unit 4- Flow through Open Channel	4 th Week of April	
House Test	Unit 1- Pressure Measurement & Hydrostatic Pressure, Unit 2- Fluid flow & parameters, Unit 3- Flow through pipes , Unit 4- Flow through Open Channel	3 rd Week of May	


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Dr. B.R. Ambedkar Govt. Polytechnic, Ambota Una (H.P.)

Department of Civil Engineering

LESSON PLAN

Program Name	Diploma in Civil Engineering
Course/Subject Name	Hydraulics Lab.
Course/Subject Code	N-2022 / CEPC214
Course/Subject Co-ordinator Name	Amandeep Singh

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. Ext.)
		P	BS	Total	Internal Assessment			External Assessment			
1	Hydraulics Lab.	2	-	2 Hrs./week	Th.	Pr.	T	Pr.	Hrs.	T	10
					-	40	40	60	3	60	
Reference Books		Shrinath, LS, "PERT and CPM-Principles and Applications". New Delhi. East West S.S. Rattan, Fluid Mechanics and Hydraulic Machines, Khanna Publishing House, I Rajput, R K, Fluid Mechanics, S Chand, New Delhi.									

Lab. Plan

Unit No.	Name of Topic	Proposed Week	Actual Date	Re
1	Use piezometer to measure pressure at a given point.	1 st Week (08/02/2024- 15/02/2024)	G1- G2-	
2	Use U tube differential manometer to measure pressure difference between two given points.	2 nd Week (16/02/2024- 22/02/2024)	G1- G2-	
3	Find the resultant pressure and its position for given situation of liquid in a tank.	3 rd Week (23/02/2024- 01/03/2024)	G1- G2-	
4	Use Reynold's apparatus to determine type of flow.	4 th Week (02/03/2024- 11/03/2024)	G1- G2-	

5	Use Bernoulli's apparatus to apply Bernoulli's theorem to get total energy line for a flow in a closed conduit of varying cross sections.	5 th Week (12/03/2024-18/03/2024)	G1- G2-	
6	Determine minor losses in pipe fittings due to sudden contraction and sudden enlargement.	6 th Week (19/03/2024-26/03/2024)	G1- G2-	
7	Determine minor losses in pipe fitting due to Bend and Elbow.	7 th Week (27/03/2024-03/04/2024)	G1- G2-	
8	Calibrate Venturimeter to find out the discharge in a pipe.	8 th Week (04/04/2024-10/04/2024)	G1- G2-	
9	Calibrate the Orifice to find out the discharge through a tank	9 th Week (12/04/2024-22/04/2024)	G1- G2-	
10	Use Current meter to measure the velocity of flow of water in open channel.	10 th Week (23/04/2024-29/04/2024)	G1- G2-	
11	Use Pitot tube to measure the velocity of flow of water in open channel.	11 th Week (30/04/2024-06/05/2024)	G1- G2-	
12	Use triangular notch to measure the discharge through open channel.	12 th Week (07/05/2024-15/05/2024)	G1- G2-	
13	Use Rectangular notch to measure the discharge through open channel	14 th Week (24/05/2024-30/05/2024)	G1- G2-	


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Department of Civil Engineering
Dr. B.R Ambedkar Govt. Polytechnic Ambota Distt Una (H.P)

Lesson Plan for Advanced Surveying (Semester-4th) Session: (Feb-June 2024)

S.No.	MONTH	WEEK	CONTENTS	REMARKS
1	February	Week-2	Plane Table Surveying: Principles of plane table survey	
		Week-3	Accessories of plane table and their use, Telescopic alidade.,Setting of plane table; Orientation of plane table - Back sighting and Magnetic meridian method.	
		Week-4	Methods of plane table surveys- Radiation, Intersection and Traversing,Merits and demerits of plane table survey.	
		Week-5	Types and uses of Theodolite, Components of transit Theodolite and their functions, Reading the Vernier of transit theodolite,Technical terms- Swinging, Transiting, Face left, Face right.	
2	March	Week-1	Fundamental axes of transit Theodolite and their relationship,Temporary adjustment of transit Theodolite.,Measurement of horizontal angle- Direct	
		Week-2	Measurement of magnetic bearing of a line, Prolonging and ranging a line, deflection angle	
		Week-3	Measurement of vertical Angle,Theodolite traversing by included angle method and Deflection angle method	
		Week-4	Traverse Computation-Latitude, Departure, Consecutive coordinates, independent coordinates.	Class Test-I
		Week-5	Principles of Tacheometry, Tacheometer, and its component parts, Anallatic lens	
3	April	Week-1	Tacheometric formula for horizontal distance with telescope horizontal and staff vertical.	
		Week-2	Field method for determining constants of tacheometer, determining horizontal and vertical distance with tacheometer by fixed hair method and staff held vertical, Limitations of tacheometry	
		Week-3	Types of curves used in roads. Designation of curves	
		Week-4	Setting simple circular curve by offsets from long chord and Rankine's method of deflection angles..	Class Test- II
		Week-5	Principle of Electronic Distance Motor (EDM), its component parts and their Functions, use of EDM., Use of micro-optic Theodolite and Electronic Digital Theodolite.	
4	May	Week-1	Use of Total Station, Use of function keys.	
		Week-2	Remote Sensing - Overview, Remote sensing system, Applications of remote sensing in Civil engineering, land use / Land cover, mapping, disaster management	
		Week-3	House Test	
		Week-4	Use of Global Positioning System (G.P.S.) instruments,Geographic Information System (GIS): Overview, Components, Applications, Software for GIS	
		Week-5	Introduction to Drone Surveying.	

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Lesson Plan for Advanced Surveying Lab (Semester-4th) Session: (Feb-June 2024)

S.No.	MONTH	WEEK	CONTENTS	REMARKS
1	February	Week-2	Use plane table survey to prepare plans of a plot of seven-sided closed traverse by Radiation Method.	
		Week-3	Use plane table survey to prepare plans, locate details by Intersection Method.	
		Week-4	Use plane table survey to prepare plans, locate details by Traversing Method.	
		Week-5	Use plane table survey to carry out Survey Project for closed traverse for minimum five sides around a building	
2	March	Week-1	Use transit theodolite to measure Horizontal and Vertical angle by Direct Method.	
		Week-2	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Theodolite Survey project	
		Week-3	Use Theodolite as a Tacheometer to compute reduced levels and horizontal distances.	
		Week-4	Set out a circular curve by Rankine's Method of Deflection Angles.	
		Week-5	Use micro-optic Theodolite to Measure Horizontal angle by Direct Method.	
3	April	Week-1	Use EDM to measure horizontal distance.	
		Week-2	Use Total station instrument to measure horizontal distances.	
		Week-3	Use Total station instrument to measure vertical angle.	
		Week-4	Use Total station instrument to carry out Survey Project for closed traverse for minimum five sides.	
		Week-5	Plot the traverse on A1 size imperial drawing sheet for the collected data from preceding Total Station survey project	
4	May	Week-1	Use GPS to locate the coordinates of a stat	
		Week-2		
		Week-3	House Test	
		Week-4		
		Week-5		

Dr. B.R. Ambedkar Govt. Polytechnic, Ambota Una (H.P.)

Department of Civil Engineering

LESSON PLAN

Program Name	Diploma in Civil Engineering
Course/Subject Name	Building Planning & Drawing
Course/Subject Code	N-2022 / CEPC206
Course/Subject Co-ordinator Name	Amandeep Singh

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. & Ext.)
		L	BS	Total	Internal Assessment			External Assessment			
1	Building Planning & Drawing	1	0	1 Hr./week	Th.	Pr.	T	Th.	Hrs.	T	100
					40	-	40	60	3	60	
Reference Books		Swamy, Kumara; Rao, N, Kameshwara, A ., Building Planning and Drawing. Charotar									
		Shah. M.G. Kale, CM, Patki, S.Y., Building Drawing, McGraw Hill Publishing									
		Malik and Mayo, Civil Engineering Drawing, Computech Publication Ltd									

Teaching Plan

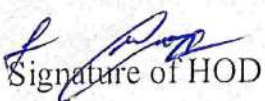
Unit No.	Name of Topic	Proposed Week	Actual Date	Remarks
1	Conventions as per IS 962, symbols for different materials such as earthwork, brickwork, stonework, concrete, woodwork, and glass. Graphical symbols for doors and windows, Abbreviations, symbols for sanitary and electrical installations. Types of lines-visible lines, centre line, hidden line, section line, dimension line, extension line, pointers, arrowhead, or dots. Appropriate size of lettering and numerals for titles, sub-titles, notes, and dimensions.	1 st Week (08/02/2024-15/02/2024)		
1	• Types of scale- Monumental, Intimate, criteria for Proper	2 nd Week (16/02/2024-22/02/2024)		

	<p>Selection of scale for various types of drawing.</p> <ul style="list-style-type: none"> Sizes of various standard papers/sheets. Reading and interpreting readymade Architectural building drawing (To be procured from Architect, Planning Consultants, Planning Engineer). 			
2	<p>Principles of planning for Residential and Public building- Aspect, Prospect, Orientation, Grouping, Privacy, Elegance, Flexibility, Circulation, Furniture requirements, Sanitation, Economy.</p> <p>Space requirement and norms for minimum dimension of different units in the residential and public buildings as per IS 962.</p> <ul style="list-style-type: none"> Rules and byelaws of sanctioning authorities for construction work. 	3 rd Week (23/02/2024-01/03/2024)		
2	<p>Plot area built up area, super built-up area, plinth area, carpet area, floor area and FAR (Floor Area Ratio).</p> <p>Line plans for residential building of minimum three rooms including water closet (WC), bath and staircase as per principles of planning.</p> <p>Line plans for public building-school building, primary health centre, restaurant, bank, post office, hostel, Function Hall and Library.</p>	4 th Week (02/03/2024-11/03/2024)		
3	<p>Drawing of Single storey Load Bearing residential building (2 BHK) with staircase.</p>	5 th Week (12/03/2024-18/03/2024)		
3	<p>Data drawing –plan, elevation, section, site plan, schedule of openings, construction notes with specifications, area statement, Planning and design of staircase- Rise and Tread for residential and public building.</p>	6 th Week (19/03/2024-26/03/2024)		
3	<p>Working drawing – developed plan, elevation, section passing through staircase or WC and bath.</p>	7 th Week (27/03/2024-03/04/2024)		
3	<p>Foundation plan of Load bearing structure.</p>	8 th Week (04/04/2024-10/04/2024)		
4	<p>Drawing of Two storeyed Framed Structure (G+1), residential building (2 BHK) with stair- case</p>	9 th Week (12/04/2024-22/04/2024)		

4	Data drawing – developed plan, elevation, section, site plan, schedule of openings, construction notes with specifications, area statement. Planning and design of staircase- Rise and Tread for residential and public building.	10 th Week (23/04/2024- 29/04/2024)		
4	Working drawing of Framed Structure – developed plan, elevation, section passing through staircase or WC and bath.	11 th Week (30/04/2024- 06/05/2024)		
4	Foundation plan of Framed Structure.	12 th Week (07/05/2024- 15/05/2024)		
4	Details of RCC footing, Column, Beam, Chajjas, Lintel, Staircase, and slab.	13 th Week (16/05/2024- 22/05/2024)		
4	Drawing with CAD- Draw commands, modify commands, layer commands.	14 th Week (24/05/2024- 30/05/2024)		
4	Drawing with CAD- Draw commands, modify commands, layer commands.	15 th Week (31/05/2024- 01/06/2024)		

House Test/Class Test

Name of Test	Contents of Syllabus Covered	Proposed Week	Actual Date	Remarks
Class Test 1	Unit 1- Conventions & Symbols, Unit 2- Planning of Building.	4 th Week of March		
Class Test 2	Unit 3- Drawing of Load Bearing Structure , Unit 4- Drawing of Framed Structure	4 th Week of April		
House Test	Unit 1- Conventions & Symbols, Unit 2- Planning of Building, Unit 3- Drawing of Load Bearing Structure , Unit 4- Drawing of Framed Structure	3 rd Week of May		


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Department of Civil Engineering
Dr. B.R. Ambedkar Government Polytechnic Ambota, Distt. Una (H.P)

Lesson Plan for TRANSPORTATION ENGINEERING (Semester-4th) Session: (Feb-June 2024)

MONTH	WEEK	CONTENTS	REMARKS
February	Week-2	Role of transportation in the development of nation, Scope and Importance of roads in India and its Characteristics.	
	Week-3	Different modes of transportation – land way, waterway, airway. Merits and demerits of roadway and railway. General classification of roads	
	Week-4	Selection and factors affecting road alignment, Geometric Design of Highway, Camber: Definition, purpose, types as per IRC – recommendation, Kerbs: Road margin, road formation, right of way.	
	Week-5	Design speed and various factors affecting design speed as per IRC – recommendations. Gradient: Definition, types as per IRC – Recommendations. Gradient: Definition, types as per IRC – Recommendations.	
March	Week-1	Sight distance (SSD): Definition, types IRC – recommendations, simple numerical, Curves: Necessity, types: Horizontal, vertical curves, Super elevation: Definition,	
	Week-2	formula for calculating minimum and maximum Super elevation and method of providing super-elevation. Standards cross-sections of national highway in embankment and cutting.	
	Week-3	Construction of Road Pavement, Types of road materials and their Tests .	
	Week-4	Test on aggregates- Flakiness and Elongation Index tests, Angularity Number test, test on Bitumen-penetration, Ductility, Flash and Fire point test and Softening point test.	Class test-I
	Week-5	Pavement – Definition, Types, Structural Components of pavement and their functions, Construction of WBM road. Merits and demerits of WBM & WMM road	
April	Week-1	Construction of Flexible pavement / Bituminous Road, Types of Bitumen and its proper- ties, Emulsion, Cutback, Tar, Terms used in BR-prime coat, tack coat, seal coat, Merits and Demerits of BR.	
	Week-2	Cement concrete road methods of construction, Alternate and Continuous Bay Method, Construction joints, filler and sealers, merits and demerits of concrete roads. Types of joints.	
	Week-3	Basics of Railway Engineering, Classification of Indian Railways, zones of Indian Railways.	
	Week-4	Permanent way: Ideal requirement, Components; Rail Gauge, types, factors affecting selection of a gauge. Rail, Rail Joints - requirements, types.	Class test-II
	Week-5	Creep of rail causes and prevention. Alignment- Factors governing rail alignment. Track Cross sections – standard cross section of single and double line in cutting and embankment. Important terms- permanent land, formation width, side drains,	
May	Week-1	Railway Track Geometrics: Gradient, curves- types and factors affecting, grade compensation, super elevation, limits of Super elevation on curves, cant deficiency, negative cant, coning of wheel, tilting of Rail	
	Week-2	Branching of Tracks, Points and crossings, Turn out- types, components, functions and inspection. Track junctions: crossovers, scissor cross over, diamond crossing, track triangle. Station -Purpose, requirement of railway station, important technical terms, types of rail- way station	
	Week-3	House Test	
	Week-4	factors affecting site selection for railway station. Station yard: Classification- Passenger, goods, locomotive and marshalling yards. Function & drawbacks of marshalling yards	
	Week-5	Track Maintenance- Necessity, Classification, Tools required for track maintenance with their functions, Organization of track maintenance, Duties of permanent way Inspector, gang mate and Key man	

Department of Civil Engineering
Dr. B.R. Ambedkar Government Polytechnic Ambota, Distt. Una (H.P)

Lesson Plan for TRANSPORTATION ENGINEERING Lab G-II (Semester-4th) Session: (Feb-June 2024)

Sr. No.	MONTH	WEEK	CONTENTS	REMARKS
1	February	Week-2	Introduction	
		Week-3	Draw the sketches showing standard cross sections of Expressways, Freeways, NH/SH, MDR/ODR	
		Week-4	Flakiness and Elongation Index of aggregates	
		Week-5	Angularity Number of aggregates.	
2	March	Week-1	Files check & Viva	
		Week-2	Aggregate impact test	
		Week-3	Los Angeles Abrasion test	
		Week-4	Aggregate crushing test	
		Week-5	Softening point test of bitumen.	
3	April	Week-1	Penetration test of bitumen.	
		Week-2	Flash and Fire Point test of bitumen.	
		Week-3	Ductility test of Bitumen.	
		Week-4	Visit the constructed road for visual inspection to identify defects and suggest remedial measures.	
		Week-5	Prepare the photographic report containing details for experiment No. 11.	
4	May	Week-1	Files check & Viva	
		Week-2	Visit the hill road constructed site to understand its components.	
		Week-3	Prepare the photographic report containing details for experiment No. 13	
		Week-4	Files check & Viva	
		Week-5	Files check & Viva	


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Dr. B.R. Ambedkar Government Polytechnic Ambota, Distt. Una (H.P)

Lesson Plan for TRANSPORTATION ENGINEERING Lab G-I (Semester-4th) Session: (Feb-June 2024)

MONTH	WEEK	CONTENTS	REMARKS
February	Week-3	Introduction	
	Week-4	Draw the sketches showing standard cross sections of Expressways, Freeways, NH/SH, MDR/ODR	
	Week-5	Flakiness and Elongation Index of aggregates	
March	Week-1	Angularity Number of aggregates.	
	Week-2	Aggregate impact test	
	Week-3	Los Angeles Abrasion test	
	Week-4	Aggregate crushing test	
	Week-5	Softening point test of bitumen.	
April	Week-1	Penetration test of bitumen.	
	Week-2	Flash and Fire Point test of bitumen.	
	Week-3	Ductility test of Bitumen.	
	Week-4	Visit the constructed road for visual inspection to identify defects and suggest remedial measures.	
	Week-5	Prepare the photographic report containing details for experiment No. 11.	
May	Week-1	Files check & Viva	
	Week-2	Visit the hill road constructed site to understand its components.	
	Week-3	Prepare the photographic report containing details for experiment No. 13	
	Week-4	Files check & Viva	
	Week-5	Files check & Viva	


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Dr. B.R. Ambedkar Govt. Polytechnic, Ambota Una (H.P.)

Department of Civil Engineering

LESSON PLAN

Program Name	Diploma in Civil Engineering
Course/Subject Name	Construction Management
Course/Subject Code	N-2022 / CEPE210 – (I)
Course/Subject Co-ordinator Name	Amandeep Singh

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. & Ext.)
		L	BS	Total	Internal Assessment			External Assessment			
1	Construction Management	3	0	3 Hrs./week	Th.	Pr.	T	Th.	Hrs.	T	100
					40	-	40	60	3	60	
Reference Books		Sharma S C and Deodhar S V, Construction Engineering and Management, Khanna Gahlot, P.S. and Dhir, B.M Construction planning and management New Age Shrivastava, U.K., Construction planning and management, Galgotia Publication Pvt Ltd.									

Teaching Plan

Unit No.	Name of Topic	Proposed Week	Actual Date	Remarks
1	Organization-objectives, principles of organization, types of organization: government/public and private construction industry, Role of various personnel in construction organization.	1 st Week (08/02/2024- 15/02/2024)		
1	Agencies associated with construction work- owner, promoter, builder, designer, architects.	2 nd Week (16/02/2024- 22/02/2024)		
1	Role of consultant for various activities: Preparation of	3 rd Week (23/02/2024-		

1	Detailed Project Report (DPR), Monitoring of progress and quality, settlement of disputes.	01/03/2024)		
2	Principles governing site layout, Factors affecting site layout.	4 th Week (02/03/2024-11/03/2024)		
2	Preparation of site layout, Land acquisition procedures and providing compensation	5 th Week (12/03/2024-18/03/2024)		
3	Identifying broad activities in construction work & allotting time to it, Methods of Scheduling, Development of bar charts, Merits & limitations of bar chart	6 th Week (19/03/2024-26/03/2024)		
3	Elements of Network: Event, activity, dummy activities, Precautions in drawing Network, Numbering the events.	7 th Week (27/03/2024-03/04/2024)		
3	CPM networks, activity time estimate, Event Times by forward & backward pass calculation, start and finish time of activity,	8 th Week (04/04/2024-10/04/2024)		
3	Project duration. Floats: Types of Floats-Free, independent, and total floats, critical activities and critical path,	9 th Week (12/04/2024-22/04/2024)		
3	Purpose of crashing a network, Normal Time and Cost, Crash Time and Cost, Cost slope, Optimization of cost and duration.	10 th Week (23/04/2024-29/04/2024)		
3	Material Management- Ordering cost, inventory carrying cost, Economic Order Quantity Store management, various records related to store management,	11 th Week (30/04/2024-06/05/2024)		
3	Inventory control by ABC technique, Introduction to material procurement through portals (e.g. www.inampro.nic.in)	11 th Week (30/04/2024-06/05/2024)		
4	Types of Construction contracts	12 th Week (07/05/2024-15/05/2024)		
4	Contract documents, specifications, general special conditions	12 th Week (07/05/2024-		

		15/05/2024)		
4	Contract Management, procedures involved in arbitration and settlement (Introduction only)	13 th Week (16/05/2024- 22/05/2024)		
5	Safety in Construction Industry— Causes of Accidents, Remedial and Preventive Measures.	14 th Week (24/05/2024- 30/05/2024)		
5	Labour Laws and Acts pertaining to Civil construction activities (Introduction only)	15 th Week (31/05/2024- 01/06/2024)		

Assignments

Assignment Serial	Contents of Syllabus Covered	Proposed Week	Actual Date	Remarks
A-1	Unit 1- Construction Industry & Management, Unit 2- Site Layout.	6 th Week		
A-2	Unit 3- Planning & Scheduling , Unit 4- Construction Contracts & Specifications, Unit 5- Safety in Construction.	13 th Week		

House Test/Class Test

Name of Test	Contents of Syllabus Covered	Proposed Week	Actual Date	Remarks
Class Test 1	Unit 1- Construction Industry & Management, Unit 2- Site Layout.	4 th Week of March		
Class Test 2	Unit 3- Planning & Scheduling , Unit 4- Construction Contracts & Specifications	4 th Week of April		
House Test	Unit 1- Construction Industry & Management, Unit 2- Site Layout, Unit 3- Planning & Scheduling , Unit 4- Construction Contracts & Specifications	3 rd Week of May		


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Department of Civil Engineering
Dr. B.R Ambedkar Govt. Polytechnic Ambota Distt Una (H.P)

Lesson Plan for Railways Bridges and Tunnels (Semester-4th) Session: (Feb-June 2024)

S.No.	MONTH	WEEK	CONTENTS	REMARKS
1	February	Week-2	Introduction to Indian Railways ,Railways surveys: Factors influencing the railways route, brief description of various types of railway survey Classification of permanent way describing its component part	
		Week-3	Rail Gauge; Definition, types, practice in India Rail – types of rails Rail Fastening: Rail joints, types of rail joints, fastening for rails, Fish plates, spikes bearing plates Sleepers: Functions of sleepers, types of sleepers, requirements of an ideal material of Sleepers. Ballast: Function of ballast, requirements of an ideal material of ballast	
		Week-4	Crossing and signalling: Brief description regarding different types of crossing/signalling	
		Week-5	Maintenance of track: Necessity, track fixtures; maintenance and boxing of ballast, maintenance gauges, tools.Drains, methods of construction.	
2	March	Week-1	Introduction □ Bridge–its function and component parts, difference between a bridge and A culvert	
		Week-2	Classification of Bridges Their structural elements and suitability:	
		Week-3	According to life-permanent and temporary According to deck level–Deck, through and semi-through According to material–timber, masonry, steel, RCC, pre-stressed	
		Week-4	IRC classification	Class Test-I
		Week-5	Bridge Foundations: Introduction to open foundation pile foundation, Well foundation Piers, Abutments and Wing walls Piers–definition, parts; types–solid (masonry and RCC), open	
3	April	Week-1	Abutment sand wing walls–definition, types of abutment (straight and tee), abutment with wing walls 47 (straight, splayed, return and curved)	
		Week-2	Bridge bearings Purpose of bearing; types of bearing–fixed plate, rocker and roller	
		Week-3	Maintenance of Bridges Inspection of bridges	
		Week-4	Routine maintenance	Class Test- II
		Week-5	Definition and necessity of tunnels	
4	May	Week-1	Typical section of tunnels for a national highway and single and double broad gauge railway track.	
		Week-2	Ventilation-necessity and methods of ventilation, by blowing, exhaust and combination of blowing and exhaust	
		Week-3	Drainage method of draining water in tunnels	
		Week-4	Lighting in tunnels	
		Week-5	lining of tunnels	

Signature of Teacher
(Er Munish Kumar)

Signature of H.O.D