

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering

Hours/week -

LECTURER NAME - SHREYA GUPTA

Subject – WRE

Lab/week –

SEM :- 5th

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	Unit 1. Hydrology					
1	1.1 Definition, Hydrologic cycle, the water budget equation, catchment area.	02	29/9/24	29/9/24	All topic covered	
2	1.2 Precipitation, forms of precipitation, measurement of rainfall, rain gauge and types, rain gauge density as per IS and WMO, computation of average rainfall over a basin, mean annual rainfall.	03	27/9/24	27/9/24	— —	
3	1.3 Losses from precipitation, Evaporation, infiltration	01	4/10/24	4/10/24	— —	
4	1.4 Runoff, factor affecting run off, computation of runoff	01	8/10/24	8/10/24	— —	
5	1.5 Hydrograph, unit hydrograph, peak flow determination,	01	14/10/24	14/10/24	— —	
6	1.6 Stream flow measurement – area velocity method, weir method, stage discharge curve.	01	14/10/24	14/10/2024	— —	

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Course Completion unit plan

Department – Civil engineering
Hours/week -

Subject – WRE
Lab/week –

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	Unit-2 Water requirements of crops					
7.	2.1 IRRIGATION: Definition, necessity, advantages, disadvantages, types of irrigation, methods of irrigation – surface, sub surface, sprinkler and drip irrigation.	03	15/10/24	15/10/24	All topic covered,	
8.	2.2 Water requirements of crop: functions and quality of irrigation water, crop period/ base period, duty, delta. Importance of duty, factors on which duty depends, delta and duty for certain crops measures for improving duty of water, relationship between duty and delta, and numerical problems, principal crops and crop seasons, important terms.	03	16/10/24	22/10/24	— 11 —	
9.	2.3 Functions of irrigation water, classes and availability of soil water, soil moisture constants, limiting soil moisture conditions, consumptive use of water, estimating depth and frequency of irrigation on the basis of soil moisture regime concept irrigation efficiencies, crop rotation, assessment of irrigation water.	03	22/10/24	25/10/24	— 11 —	
10	2.4 Water logging: cause and control.	02	25/10/24	28/10/24	— 11 —	

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S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	Unit-3.0 Reservoir Planning					
11	3.1 Purposes of reservoir, classification of reservoir based on purpose, investigation for reservoir planning, Engineering surveys, area elevation	02	28/10/24	4/11/24	All topic covered	
12	curve, storage elevation curve, Geological investigation, Hydrological investigation, factors affecting selection of site for a reservoir.	02	4/11/24	5/11/24	— 11 —	
12	3.2 Zones of storages and various water levels, storage capacity and yield of reservoir.	02	5/11/24	8/11/24	— 11 —	
13	3.3 Dams: various types of dam, factors governing the selection of type of dam, factors for selection of site for a dam.	02	8/11/24	9/11/24	— 11 —	
14	3.4 Comparison of earthen and gravity dams with respect to foundation, seepage, construction and maintenance	22	9/11/24	11/11/24	— 11 —	

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S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	4. Dam and spillway					
16	4.1 Earthen Dams – Types of earth dam, causes of failure of earthen dams, criteria for safe design of earth dam	02	11/11/24	12/11/24	All topic Covered	
17	section of an earth dam, components and their function, seepage, control of seepage through embankment and foundation, construction of earth dam, equipments used in construction of earth dam.	02	12/11/24	18/11/24	— —	
18	4.2 Gravity Dams – identification and definition of forces acting on a gravity dam, modes of failure and criteria for structural stability of gravity dam, elementary and practical profile, typical cross section, drainage gallery, joints in gravity dam, control of cracking in concrete dams, construction of gravity dam.	03	18/11/24	19/11/24	— —	
19	4.3 Spillways-Definition, function, location, straight drop spillway, ogee spillway, side channel spillway, trough spillway, conduit spillway, shaft spillway, siphon spillway, spillway crest gates,	03	19/11/24	25/11/24	— —	

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S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	Unit- 5					
	Diversion Head works and Canal Irrigation System					
20	5.1 Diversion Head works – diversion headwork, weir, barrage, component parts of a diversion head works, diversion weir and its types, location of diversion head works, causes of failure of weirs and its remedy, types of regulation at head regulator, silt control at head works	02	25/11/24	26/11/24	All topic Covered	
21	5.2 Canal Irrigation System -					
	5.2.1 Canals -classification of canals, alignment of canal, general considerations for alignment, schedule of area statistics, cross section of canal, maintenance of irrigation channels, water logging-causes, ill effects and remedial measure, canal losses, canal lining –necessity and advantages,	02	26/11/24	29/11/24	— —	
22	5.2.2 Canal Outlets – requirements of canal outlets, types of outlets, non-modular pipe outlet, flexible pipe outlet, Gibb's rigid module.	02	29/11/24	4/12/24	— —	
23	5.2.3 Canal Regulation Works - canal regulation works, canal falls-necessity and location, head regulators and cross regulators, canal escapes.	02	4/12/24	5/12/24	— —	
24	5.2.4 Cross Drainage Works - Types of cross drainage works, selection of type of cross drainage work, aqueduct and siphon aqueduct	02	5/12/24	10/12/24	— —	

Reference

1.	Integration Engineering and hydraulics Structures . J.K. Gang.
2.	http://civiltoday.com .

Shreya Gupta श्रेया गुप्ता
Faculty Name and Sign

HOD

Principal

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering

Hours/week -

LECTURER NAME - SHREYAGURTA

Subject – Geotech engineering

Lab/week -

SEM :- 5th

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
1.	Unit1- Weight and Volume Relationships, Index Properties and Classification Of Soil	10	24/09/24	24/09/24	All topic Covered	
2.	1.1 Weight and Volume Relationships	07	29/9/24	28/09/24	— 71 —	
3.	1.1.1 Definition of soil and soil mechanics or Geotechnical Engineering, field application of Geotechnical Engineering	02	20/9/24	1/10/24	— 11 —	
4.	1.1.2 Soil as a three phase system, types of soil water, water content, Void ratio, porosity and degree of saturation, water content, density and unit weights, specific gravity, density index and relative compaction and functional relationship among them.	02	3/10/24	5/10/24	— 11 —	
5.	1.1.3 Determination of water content, specific gravity and bulk density	01	5/10/24	9/10/24	— 11 —	

	1.2 Index Properties And Soil Classification	01	9/10/24	15/10/24	All topic covered.	
7.	1.2.1 Particle size analysis, mechanical sieve analysis, sedimentation analysis, Stoke's law, pipette method and hydrometer method, particle size distribution curve and its interpretation	01	15/10/24	16/10/24	— 11 —	
8.	1.2.2 Consistency of soil, stages of consistency, Atterberg's limits relationship consistency of consistency, between limits, Determination of liquid limit, plastic limit and shrinkage limit.	01	16/10/24	18/10/24	— 11 —	
9.	1.2.3 Particle size classification of soils & IS classification of soil.	01	18/10/24	19/10/24	— 11 —	
10.	Unit 2-Permeability, Well Hydraulics and Seepage	— 9	19/10/24	6/11/24	All topic covered	
11.	2.1 Permeability					
12.	2.1.1 Definition of p permeability, Darcy's law of c permeability, coefficient of permeability, Factors affecting permeability.	01	19/10/24	22/10/24	— 11 —	
13.	2.1.2 Determination of coefficient of permeability by constant head and falling head permeability tests.	01	22/10/24	25/10/24	— 11 —	

14.	2.2 Well Hydraulics	01	24/10/24	24/10/24	All topic covered	
15.	2.2.1 Aquifer, aquiclude, aquifuge, coefficient of transmissibility	01	24/10/24	24/10/24	— —	
16.	2.2.2 Formulae for discharge through unconfined and confined aquifer for steady radial flow by Dupuit's Theory (no derivation), determination field of coefficient of permeability and coefficient transmissibility of	01	24/10/24	25/10/24	— —	
17.	2.3 Seepage	01	25/10/24	26/10/24	— —	
18.	2.3.1 Seepage through earthen structures, head, gradient and potential, seepage velocity, seepage pressure, quick condition. sand	02	21/10/24	5/11/24	— —	
19.	2.3.2 Flow net, characteristics of flow net, application of flow net (no numerical phreatic line. problems)	02	21/10/24	6/11/24	— —	
20.	Unit 3- Shear Strength of Soil	10	13/11/24	13/11/24	All topic - Covered.	
21.	3.1 Shear failure of soil, concept of shear strength of soil, components of shearing resistance of soil cohesion, internal friction	03	6/11/24	8/11/24	— —	
22.	3.2 Mohr-Coulomb failure theory, Strength envelope, strength equation	02	8/11/24	12/11/24	— —	

23.	3.3 Effective stress principle-total pressure, effective pressure, neutral pressure, shear strength equation in terms of effective pressure, Mohr's stress circle.	02	12/11/24	13/11/24	All topic covered	
24.	3.4 Determination of shear strength- types of shear test depending upon drainage condition, Direct shear test, Tri-axial test Unconfined compression test, Vane shear test,.	03	13/11/24	19/11/24	— 11 —	
25.	Unit 4- Compaction of Soil and Earth Pressure	9	20/11/24	22/11/24	All topic covered	
26.	4.1 Compaction of Soil 4.1 Concept of compaction, purpose of compaction field situations where compaction is required.	01	19/11/24	20/11/24	— 11 —	
27.	4.2 Standard proctor test test procedure as per IS code, compaction curve, optimum moisture content, maximum dry density, zero air voids line.	02	20/11/24	22/11/24	— 11 —	

	4.3 Modified proctor test	07	21/11/24	23/11/24	All topic covered	
29.	4.4 Factors affecting compaction	07	23/11/24	26/11/24	— —	
30.	4.5 Field methods of compaction - rolling, ramming & vibration and suitability of various compaction equipments, placement water content, field compaction control.	07	23/11/24	26/11/24	— —	
31.	4.6 Difference between compaction and consolidation	07	26/11/24	27/11/24	— —	
32.	4.7 Earth Pressure -					
	4.7.1 Definition of active earth pressure, Neutral pressure and passive earth pressure,	07	27/11/24	28/11/24	— —	
33.	4.7.2 Structures subjected to earth pressure in the field.	07	28/11/24	30/11/24	— —	
	4.7.3 Rankine's theory					
34.	4.7.4 Calculation of active and passive earth pressure (simple cases).	07	30/11/24	2/12/24	— —	
35.	Unit 5-Bearing Capacity of Soils, Stabilization of soil and Site Investigation And Sub Soil Exploration	10	7/12/24	14/12/24	All topic covered.	

	5.1 Bearing Capacity of Soils				
37.	5.1.1 Concept of bearing capacity, ultimate bearing capacity, safe bearing capacity and allowable bearing pressure	01	2/12/24	3/12/24	All topic covered
38.	5.1.2 Terzaghi's analysis and assumptions made.	01	3/12/24	3/12/24	— —
39.	5.1.3 Effect of water table on bearing capacity	01	3/12/24	3/12/24	— —
	5.1.4 IS code method for computing bearing capacity.				
40.	5.1.5 Field methods for determination of bearing capacity Plate load test and standard penetration test. Test procedures as Per IS:1888 & IS:2131	01	6/12/24	6/12/24	— —
41.	5.1.6 Liquefaction(in brief)	01	6/12/24	6/12/24	— —
42.	5.2 Stabilization of soil	01	7/12/24	7/12/24	— —
43.	5.2.1 Concept of soil stabilization, necessity of soil stabilization, 5.2.2 Different methods of soil stabilization Mechanical stabilization, stabilization, stabilization, stabilization, stabilization soil lime cement bitumen fly-ash	01	7/12/24	7/12/24	— —

	<p>5.3 Site Investigation And Sub Soil Exploration</p> <p>5.3.1 Necessity of site investigation & sub-soil exploration.</p>	07	7/12/24	9/12/24	All topic covered	
45.	5.3.2 Method of site exploration open excavation & boring	07	9/12/24	12/12/24	— 11 —	

Reference

Shreya Gupta श्रेया गुप्ता
Faculty Name and Sign

Principal


HOD

Reference

1.	Soil mechanics and foundation B.C. Pundra.
2.	http://civiltoday.com .

Subant
HOD

Shreya gupta श्रेया गुप्ता
Faculty Name and Sign

Principal
Principal

DEPARTMENT - CIVIL ENGG.

SEM :- 5th

Name :- Shreya Gupta.

Detailed Teaching plan

Subject - ~~SI~~ ~~II~~

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
1.	Unit-1 Introduction to IS: 800-2007, Working Stress Method and Plastic Analysis	9				
2.	1.1 Introduction to IS: 800-2007	01	8/1/25	8/1/25	All topic covered.	
3.	1.1.1 Structural steel and properties of structural steel					
4.	1.1.2 Standard structural steel sections	01	11/01/25	11/01/25	- -	
5.	1.1.3 Permissible stresses in structural steel					
6.	1.2 Limit state design	01	14/01/25	14/01/25	- -	
7.	1.2.1 Limit state of strength					
8.	1.2.2 Limit state of serviceability.	01	15/01/25	15/01/25	- -	
9.	1.2.3 Action (loads)					
10.	1.2.4 Design strength	01	16/01/25	16/01/25	- -	
11.	1.2.5 Partial safety factor materials for					
12.	1.2.6 Loads, Load combination and partial safety factors for loads.	01	18/01/25	18/01/25	- -	

14.	1.2.7 Maximum slenderness ratio effective 1.3 Introduction to Working Stress Method	01	19/01/25	21/01/25	All topic covered
15.	1.3.1 General design requirements of Working Stress Method	01	21/01/25	22/01/25	— —
16.	1.3.2 Permissible stresses as per section 11 of IS800-2007	01	22/01/25	29/01/25	— —
17.	1.4 Introduction to plastic Analysis	01	29/1/25	30/1/25	— —
18.	1.4.1 analysis. Assumptions in plastic	01	29/1/25	30/1/25	— —
19.	1.4.2 Plastic moment, shape factor for different common sections, load factor, concept of plastic hinge	01	29/1/25	30/1/25	— —
20.	1.4.3 Principle of virtual work and calculation of collapse moment for simple beams (simple numerical problems.)	01			
21.	Unit-2 Design of bolted and Welded Connections	9	19/2/25	29/2/25	All topic covered
22.	2.1 Bolted Connections	01	20/1/25	1/2/25	— —
23.	2.1.1 Types of bolts	01	1/2/25	4/2/25	— —
24.	2.1.2 Definition of general terms related to bolting, Permissible stresses in bolts	01	4/2/25	5/2/25	— —
25.	2.1.3 Types of bolted joints	01			

	2.1.4 Specifications as per IS 800-2007				All topic covered.
27.	2.1.5 Failure of bolted joints, strength and efficiency of bolted joint	01	5/2/25	6/2/25	— —
28.	2.1.6 Design of Bolted Connections (only axially loaded members)	01	6/2/25	13/2/25	— —
29.	2.2 Welded Connections				— —
30.	2.2.1 Definition of terms related to welded joints	01	13/2/25	15/2/25	— —
31.	2.2.2 Types of welded joints	01	15/2/25	18/2/25	— —
32.	2.2.3 Types of welds	01	18/2/25	19/2/25	— —
33.	2.2.4 Strength of welded joint	01	19/2/25	22/2/25	— —
34.	2.2.5 Design of welded joints				— —
35.	Unit-3 Design of Tension and Compression members	10			All topic covered
36.	3.1 Tension Members	01	22/2/25	1/3/25	— —
37.	3.1.1 Types of tension members				— —
38.	3.1.2 Sections used as tension members	01	2/3/25	3/3/25	— —
39.	3.1.3 Net sectional area, effective net area	01	3/3/25	4/3/25	— —
40.	3.1.4 Slenderness Ratio				— —

42.	3.1.5 Types of failures	01	5/3/25	8/3/25	All topic covered	
	3.1.6 Design of axially loaded tension members				— —	
43.	3.2 Compression Members	01	8/3/25	11/3/25	— —	
44.	3.2.1 Standard sections used as compression member				— —	
45.	3.2.2 Effective length and slenderness ratio	01	11/3/25	12/3/25	— —	
46.	3.2.3 Design compressive stress and strength	01	12/3/25	13/3/25	— —	
47.	3.2.4 Find design strength of strut	01	13/3/25	14/3/25	— —	
48.	3.2.5 Design of strut				— —	
49.	3.2.6 Design of simple columns and built up columns	01	18/3/25	19/3/25	— —	
50.	3.2.7 Design of lacings	01	19/3/25	20/3/25	— —	
51.	3.2.8 Design of battens				— —	
52.	UNIT-4	10			All topic cov	
53.	4.1 Design of column base	01	22/3/25	24/3/25	— —	
54.	4.1.1 Types of column bases Slab base and gusseted base	01	24/3/25	26/3/25	— —	
55.	4.1.2 Design of M.S. Slab base with concrete pedestal	01	26/3/25	28/3/25	— —	

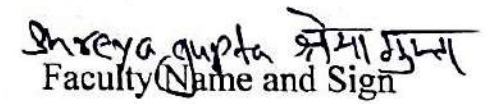
	4.1.3 Cleat angles, their use only	01	26/3/25	27/3/25	All topic covered	
57.	4.1.4 Sketch of gusseted base	01	28/3/25	29/3/25	— / —	
58.	4.2 Design of beams	01	28/3/25	8/4/25	— / —	
59.	4.2.1 Types of beams	01	8/4/25	9/4/25	— / —	
60.	4.2.2 Common sections used as beams	01	9/4/25	12/4/25	— / —	
61.	4.2.3 laterally supported and laterally unsupported beams	01	15/4/25	18/4/25	— / —	
62.	4.2.3 Web buckling and web crippling	01	15/4/25	17/4/25	— / —	
63.	4.2.4 Design of laterally supported beams for flexure, shear and deflection	01	17/4/25	19/4/25	— / —	
64.	4.2.5 Design of built up beams (plated beams)					
65.	UNIT-5 Roof trusses	10	1		All topic covered	
66.	5. 1 Types of Trusses	01	19/4/25	22/4/25	— / —	
67.	5.2 Definitions of terms related to truss	01	22/4/25	23/4/25	— / —	
68.	5.3 Combination of loads for design of truss	01	22/4/25	24/4/25	— / —	
69.	5.4 Selection of truss	01	24/4/25	25/4/25	— / —	
70.	5.5 Forces in the member	01	25/4/25	28/4/25	— / —	

	5.6 Design of members of truss	01	21/4/25	22/4/25	All topic covered	
72.	5.7 Design of purlin	02	22/4/25	26/4/25	— —	
73.	5.8 Detailing of different roof joints and purlin connection	02	26/4/25	30/4/25	— —	

Reference

1.	Limit State Design of Steel Structure S.K. Duggal.
2.	Swaram Postal
3.	Artel .a.e.in.


HOD


Faculty Name and Sign


Principal

Department - Civil engineering

Hours/week -

LECTURER NAME - SHREYA GUPTA

Subject - Construction Management

Lab/week -

SEM: - 6th

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
1.	UNIT-1 Execution of work by Govt. Departments	6	17/1/25	20/1/25	All topic covered	
2.	1.1 Organization-Major departments executing civil works, Structure of departments	01	6/1/25	6/1/25	— 11 —	
3.	1.2 Procedure of initiating the work-Detailed Project Report (DPR), administrative approval, technical sanction, budget provision, land acquisition	02	10/1/25	10/1/25	— 11 —	
4.	1.3 Methods used in for carrying out works-contract method and departmental method	01	17/1/25	17/1/25	— 11 —	
5.	1.4 Different types of accounting papers -Measurement Books, Nominal Muster Roll, Imprest Cash, indent, Invoice, Bills, Vouchers, Cash Book, Temporary advance.	02	17/1/25	20/1/25	— 11 —	
6.	Unit 2 Contract	6	3/2/25	3/2/25	All topic covered	
7.	2.1 Definition of contract objects of contract, requirements of valid contract, Class of contractor, Registration of contractor.	01	20/01/25	22/01/25	— 11 —	
8.	2.2 Classification of civil engineering contract-	01	22/01/25	27/1/25	— 11 —	
9.	2.2.1 Separated Contract-Lump sum contract, Measurement contract -item rate contract, percentage rate contract, cost plus percentage contract.	02	27/1/25	29/1/25	— 11 —	

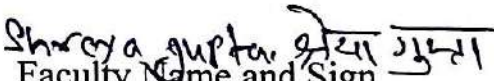
	2.2.2 Management Contract - construction management contract .Design, Management and construction Contract	01	29/1/25	3/2/25	All topic covered	
11.	2.2.3 Integrated Contract - Design-Build, Turnkey, BOT and BOOT contract. 2.3 Mode of payment to the contractor - Interim payment and its necessity, Advance payment, secured advance, on account payment, first and final payment, retention money, reduced rate payment, petty advance, mobilization advance.	02	3/2/25	5/2/25	- 11 -	
12.	Unit-3 Tender Process	8	14/2/25	17/2/25	All topic covered	
13.	3.1 Definition of Tender, necessity of Tender, Types of tenders, Tender Notice, points to be included while drafting Tender Notice.	01	5/2/25	10/2/25	- 11 -	
14.	3.2 Meaning of terms: Earnest money, security deposit, validity period, corrigendum to tender notice and its necessary.	02	10/2/25	11/2/25	- 11 -	
15.	3.3 Tender documents - Contract drawings, specifications, General Conditions of contract, Special conditions of contract, bill of quantities.	01	11/2/25	14/2/25	- 11 -	
16.	3.4 Bidding Process-Pre-qualification process, Notice inviting tender, Submission of bids, Analysis of submitted tenders, basis for evaluation and acceptance, Letter of Intent, Work Order, agreement, PWD contract conditions	02	14/2/25	17/2/25	- 11 -	
17.	Unit-4 Planning and Scheduling	7	5/3/25	8/3/25	All topic covered	
18.	4.1 Identifying broad activities in construction work & allotting time to it, Methods of Scheduling,	01	17/4/25	19/2/25	- 11 -	
19.	4.2 Development of bar charts, Merits & limitations of bar chart.	02	19/2/25	28/4/25	- 11 -	

	4.3 CPM networks, activity time estimate, Event Times by forward & backward pass calculation, start and finish time of activity, project duration, Floats: Types of Floats- Free, independent and total floats, critical activities and critical path, Purpose of crashing a network, Normal Time and Cost, Crash Time and Cost, Cost slope, Optimization of cost and duration.	02	28/2/25	5/3/25	All topic covered
21.	4.4 PERT-Introduction to PERT 4.5 Project Monitoring and Control System- Updating bar chart and CPM/PERT, Monthly progress report, stage wise completion cost.	02	5/3/25	7/3/25	— 11 —
22.	Unit-5 (a) Material Management	0			All topic covered
23.	5.1.1 Material Management- Ordering cost, inventory carrying cost, Economic Order Quantity	01	7/3/25	10/3/25	— 11 —
24.	5.1.2 Store management, various records related to store management, inventory control by ABC technique, Introduction to material procurement through portals	02	12/3/25	17/3/25	— 11 —
25.	(b) Safety and Labour Welfare		19/3/25	28/3/25	All topic covered.
26.	5.2.1 Safety in Construction Industry- Causes of Accidents, Remedial and Preventive Measures.	01	17/3/25	19/3/25	— 11 —
27.	5.2.2 Labour welfare and Laws, Acts pertaining to Civil construction activities- Building and other Construction Workers (Regulation of Employment and Conditions of Services) Act 1996 and Central Rules 1998 (Introduction only)	02	19/3/25	18/3/25 28	— 11 —

Reference

1.	Construction Engineering and management.
2.	AP tel. ac. in.


HOD


Faculty Name and Sign


Principal

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering

Hours/week -

LECTURER NAME - SHREYA GUPTA

Subject – Concrete Technology

Lab/week -

SEM:- 4th

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
1.	Unit-1.0 Introduction to Concrete	8	27/01/25	27/1/25	All topic covered	
2.	1.1 Introduction- Concrete and its ingredients and their functions				— —	
3.	1.1.2 Various mixes and grades	01	28/1/25	28/1/25	— —	
4.	1.1.3 Various types of concrete and their uses					
5.	1.1.4 Advantages disadvantages of concrete. and	01	1/2/25	1/2/25	— —	
6.	1.2 Ingredients of concrete					
	(A) Water: Requirements of quality of water in concrete as per IS:456-2000 and its function.	01	3/2/25	3/2/25	— —	
	(B) Cement					
7.	1.3.1 Function of cement in concrete					
8.	1.3.2 Ingredients of ordinary Portland cement and their function	01	4/2/25	4/2/25	— —	
9.	1.3.3 Bougue's compounds and its functions					
10.	1.3.4 test on cement: fineness, standard consistency, initial & final setting times, compressive strength soundness &	01	10/2/25	10/2/25	— —	
11.	1.3.5 Different types and Grades of					

	cement as per IS Codes				
12.	1.4 Aggregates	01	11/2/25	11/2/25	All topic covered
13.	1.4.1 Classification: According to size, shape, texture and source.				
14.	1.4.2 Characteristics of aggregates: Particle size and shape, surface texture, specific gravity of aggregate; bulk density, water absorption, surface moisture, bulking of sand, deleterious materials soundness	01	14/2/25	14/2/25	— —
15.	1.4.3 Grading of aggregates: coarse aggregate, fine aggregate; All-in-aggregate; fineness modulus; interpretation of grading charts	01	15/2/25	15/2/25	— —
16.	Unit-2 Fresh concrete	10			
17.	2.1.1 Fresh concrete and its properties water cement ratio, Workability, hardness, Segregation and bleeding	01	15/2/25	17/2/25	— —
18.	2.1.2 Factors affecting workability	01	17/2/25	18/2/25	— —
19.	2.1.3 Methods of measurement of workability Slump Test & Compaction Factor Test Vee Bee consistometer, flow table test	01	19/2/25	20/2/25	— —
20.	2.1.4 Recommended slumps for placement in various conditions as per IS:456- 2000/SP-23	01	24/2/25	3/3/25	— —
21.	2.1.5 Relation between workability and strength of concrete	01	28/2/25	4/3/25	— —

22.	2.2 Batching of materials, Methods concrete of mixing of Hand & Machine Mixing, mixing time Transportation and Placing of concrete.	07	28/2/25	6/3/25	All topic Covered
23.	2.3 Ready mixed concrete ,proportioning ready mixed concrete, production of ready mixed concrete	07	4/3/25	10/3/25	— —
24.	2.4 Methods of compaction of concrete and its suitability Factors compaction affecting	07	6/3/25	11/3/25	— —
25.	2.5 Finishing of concrete				
26.	2.6 Curing and its importance, its methods and suitability, Effect of curing on development of strength of concrete	07	10/3/25	13/3/25	— —
27.	2.7 Admixtures and its benefits Admixtures Types of Accelerator and Retarder Plasticizer and Super Plasticizer and Air entraining admixture, Utility of Admixtures	07	13/3/25	17/3/25	— —
28.	Unit03-Hardened Concrete	8			All topic Covered
29.	3.1 Hardened Concrete and its Properties	07	17/3/25	18/3/25	— —
30.	3.2 Compressive Strength Tensile Strength, Bond Strength, Flexure Strength Durability, impermeability	07	18/4/25	20/3/25	— —

	3.3 Factors affecting Compressive Strength	01	18/3/25	20/3/25	All topic covered.	
32.	3.4 IS Test Procedure to find Compressive & Tensile Strength of Concrete, Acceptance Criteria, Mean Strength & Standard Deviation	01	20/3/25	24/3/25	— —	
33.	3.5 Durability of Concrete & factors affecting it	01	22/3/25	24/3/25	— —	
34.	3.6 Economy of Concrete & factors affecting it	01	24/3/25	28/3/25	— —	
35.	3.7 Methods of Non Destructive Concrete Test of Rebound Hammer Test, Ultrasonic Pulse Velocity Test	01	28/3/25	2/4/25	— —	
36.	3.9 Introduction to Special concrete: Light weight concrete, Mass concrete, Fibre reinforced concrete, Polymer concrete, Highdensity concrete, No fines concrete, Ferro cement, Shortcrete	01	28/3/25	8/4/25	— —	
37.	Unit 04-Concrete Mix design				All topic covered	
38.	4.1 Factors causing variation in quality of concrete,	01	8/4/25	11/4/25		
39.	4.2 Field Control, Advantages of Quality control.	01	11/4/25	12/4/25	— —	
40.	4.3 Statistical Quality control.	01	12/4/25	15/4/25	— —	
41.	4.4.1 Concrete Mix Design and its importance.	01	15/4/25	21/4/25	— —	

42.	4.4.2 Nominal Mix and Design Mix.	01	21/4/25	24/4/25	All topic Covered
43.	4.4.3 Factors affecting concrete mix design.	01	24/4/25	26/4/25	— 11 —
44.	4.4.4 Different methods of Mix Design and its suitability.	01	26/4/25	28/4/25	— 11 —
45.	4.5 I.S. method to design a Concrete Mix As per IS 10262-2009.	01	26/4/25	29/4/25	— 11 —
46.	4.6 Example of Mix design as per I.S. method	01	29/4/25	21/5/25	— 11 —
47.	4.7 safety precautions observed	01	21/5/25	6/5/25	— 11 —
48.	Unit 05-Defects and Repair of concrete	07			All topic Covered
49.	5.1 Deterioration of concrete, Types of deteriorations and its effects, Prevention of concrete deterioration	01	6/5/25	8/5/25	— 11 —
50.	5.2 Corrosion reinforcement, of Effect of corrosion of reinforcement in concrete and remedial measures	01	8/5/25	9/5/25	— 11 —
51.	5.3 Types, causes and remedies of concrete cracks before hardening and after hardening	01	9/5/25	13/5/25	— 11 —
52.	5.4 Evaluation of cracks, methods of evaluation of cracks	01	13/5/25	18/5/25	— 11 —
53.	5.5 Prevention of cracks				

	Materials for repair of cracks Methods used for repair of cracked Concrete	07	13/5/25	13/5/25	— 11 —	
54.	5.6 Repair and strengthening of column, repair of concrete floor slab system, overlays and surface treatments, underwater repairs.	01	14/5/25	14/5/25	— 11 —	
55.	5.7 Strengthening of damaged structures, section enlargement, Strengthening of beams and slabs.	01	14/5/25	14/5/25	— 11 —	

Reference

1.	Concrete technology	M.S. Shetty.
2.	npht.ac.in	

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Faculty Name and Sign

J. D. Ph. HOD

Principal

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering

Hours/week -

LECTURER NAME - SHREYA GUPTA

Subject –BD&CAD

Lab/week -

SEM 1- 3rd

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	UNIT-1	12				
	Introduction to building drawing					
01	Size of Drawing, Layout of drawing, Title block, Scale, Dimensioning	02	24/09/24	24/9/24	All topic covered	
02	Symbols for Doors & Windows, Drain sand Pipes, Sanitary and Plumbing, Electrical Fittings as per IS962	02	26/09/24	26/09/24	A 11 —————>	
	Building Bye-laws					
03	Building Bye-laws for Residential Building	02	27/9/24	27/9/24	— 11 —————>	
	1.2.2 Building Byelaws for Commercial Building					
04	1.2.3 Plot area, built up area, plinth area, carpet area and Floor Area Ratio (FAR)	02	28/9/24	28/9/24	— 11 —————>	
	Principles of Planning					
05	General principles of architecture :Function, Economy, Safety, Aesthetics, Economy Basic elements of planning residential building: living area, sleeping area, service area, other areas. Principles of planning of residential building: Orientation, Privacy, Grouping, Circulation, Sanitation, Flexibility, Elegance, Landscaping	02	30/9/24	30/9/24	— 11 —————>	

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering
Hours/week -

Subject –BD&CAD
Lab/week –

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
06	Dimensions for different types of rooms, height, Size of door sand windows.	02	09/09/24	11/10/24	All topic covered	
	Unit2.0 Computer Aided Drawing (CAD)	12				
07	2.1 Graphical input devices Drawing primitives, Text and editing (move, copy rotate, mirror) Scale, filters and round, Grouping of entities ,Layers ,Grid, Snap Ortho ,PEDIT, display and zoom, pan, fill redraw, region, Q Text, offset, Annotate ,Sectioning, hatching styles, Block and its creation ,Extrude, Subtract and union ,Shading	5	4/10/24	07/10/24	— 11 —	
8	2.2 Application of AutoCAD Enquiry commands, plotting of drawing, Uses of plotters ,changing plot specification ,Application of Civil Engineering	5	14/10/24	16/10/24	— 11 —	
9	2.3 Editing and Changing Properties of Objects Filtering, Selecting, Accessing, Understand the property list ,Changing property list	3	17/10/24	19/10/24	— 11 —	

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering
Hours/week -

Subject –BD&CAD
Lab/week –

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
	3.1 Layout plan, detailed plans of residential buildings/campus	13				
10	Types of plan, Site plan ,location plan Line Plan, foundation plan, layout plan Line plan of residential building. Development of plan from line plan of residential building.	9	6/11/24	9/11/24	All topic covered	
11	Area statement and other details. 3.1.5 Submission drawing 3.1.6 Working drawing	4	9/11/24	13/11/24	— —	
12	Section, Elevation and other detailed drawings Elevation of building. Sectional elevation of building. Steel truss, Lean to roof.	3	13/11/24	14/11/24	— —	
13	4.1 Doors, Windows and Staircase Doors and Windows	13				
14	4.1.1 Types of doors and windows according to material.	01	14/11/24	16/11/24	— —	
15	4.1.2 Detailed drawing of panel doors and windows.	02	14/11/24	18/11/24	— —	
16	4.1.3 Detailed drawing of metal framed windows.	02	15/11/24	19/11/24	— —	
17	4.1.4 Detailed drawing of aluminum framed window	02	19/11/24	22/11/24	— —	
18	4.1.5 Detailed drawing of building elements	02	22/11/24	23/11/24	— —	

Govt. Polytechnic Korea
Course Completion unit plan

Department – Civil engineering
Hours/week -

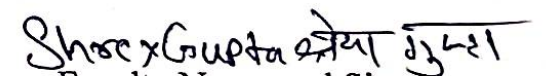
Subject –BD&CAD
Lab/week –

S No	Topic to taught	No. Of lectures Required	Date of delivery	Actual date of delivery	Topic Covered	Remarks
19	Staircase 4.1.6 Types of staircase.	02	25/11/24	25/11/24	All topic covered	
20	4.1.7 Detailed drawing of straight staircase. Detailed drawing of dog- legged staircase. Detailed drawing of open newel staircase	02	25/11/24	26/11/24	— ii —	
21	Perspective Drawing 5.1 Isometric projection- drawing an isometric view	3	6/12/24	10/12/24	All topic covered	
22	5.2 Perspective drawing Terms used in perspective drawings: Station point, picture plane, axis of vision, vertical plane, horizontal plane, ground plane, eye level, line of vision, centre of vision vanishing points One point, two point and three point perspective Perspective drawing of single room Perspective drawing of two roomed building.	10	12/12/24	16/12/24	— ii —	

Reference

1.	Civil Engineering Drawing	V.R. Sikka.
2.	Civil Engineering Drawing	S. Agar.


HOD


Faculty Name and Sign


Principal