R.G. Government Polytechnic Banikhet, Distt. Chamba (H.P)-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Er. Abhishek Patial
Discipline	Civil Engineering
Semester	6th
Subject	Prestressed Concrete (L-4 Hrs./Week)
Lesson Plan Duration	January – May 2024

Week	Topic	Theory
1st (29 Jan. – 03 Feb.)	**1. Introduction**	Basic concept of prestressed concrete, advantages of prestressed concrete in comparison with RCC.
2nd (05 Feb. – 12 Feb.)	**1. Introduction**	Application of prestressed to various building elements, bridges, water tanks and precast elements.
3rd (13 Feb. – 19 Feb.)	**1. Introduction**	Application of prestressed to various building elements, bridges, water tanks and precast elements.
4th (20 Feb. – 27 Feb.)	**2. Materials**	Materials requirement for prestressing concrete – High strength concrete, Prestressing steel wires, strands and high strength bars.
5th (28 Feb. – 05 March)	**2. Materials**	Stresses in high strength steel and stress strain relationship, tend on profile.
6th (06 Mar. – 14 Mar.)	**2. Materials**	Stresses in high strength steel and stress strain relationship, tend on profile.
Class Test – 1		**In Third Week of March 2024.**
7th (15 Mar. – 21 Mar.)	**3. Prestressing Methods**	Introduction to prestressing methods–pre-tensioning and post-tensioning.
8th (22 Mar. – 30 Mar.)	**3. Prestressing Methods**	Introduction to prestressing methods–pre-tensioning and post-tensioning.
9th (01 Apr. – 06 Apr.)	**3. Prestressing Methods**	Forces due to pre-tensioning and post-tensioning; their suitability and comparison.

10th (08 Apr. – 18 Apr.)	**3. Prestressing Methods** **4. Bending and Shear Capacity**	Circular prestressing and its application. Concept of bending and shear capacity of prestressed members.
Class Test – 2		**In Third Week of April 2024.**
11th (19 April – 25 April)	**4. Bending and Shear Capacity**	Calculation of bending stresses in rectangular simply supported beams with straight and parabolic profile of tendons
12th (26 April – 02 May)	**4. Bending and Shear Capacity**	Calculation of bending stresses in rectangular simply supported beams with straight and parabolic profile of tendons.
13th (03 May-09 May)	**4. Bending and Shear Capacity** **5. Losses in Prestressing**	Calculation of bending stresses in rectangular simply supported beams with straight and parabolic profile of tendons. Types of losses in prestress–Elastic shortening, creep and shrinkage of concrete, frictionless and stress relaxation in prestress steel.
House Test		**In Third Week of May 2024.**
14th (13 May-18 May)	**5. Losses in Prestressing**	Computation of losses for simple beam problems.
15th (20 May- 25 May)	**5. Losses in Prestressing** **Revision and Doubt Clearance**	Computation of losses for simple beam problems. Revision and doubt clearance.

NOTE: - Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher
(Er. Abhishek Patial)

Signature of HOD/OIC
(Er. Sushil Kumar)

R.G. Government Polytechnic Banikhet, Distt. Chamba (H.P)-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Er. Sushil Kumar
Discipline	Civil Engineering
Semester	6th
Subject	Steel Structures Design and Drawing (L-4 Hrs./Week)
Lesson Plan Duration	January – May 2024

Week	Topic	Theory
1st (29 Jan. – 03 Feb.)	**1. Structural Steel and Sections**	1.1 Terminology, Properties of structural steel as per IS Code, grades of steel 1.2 Designation of structural steel sections as per IS handbook and IS: 800. 1.3 Classification of sections in Limit State Method
2nd (05 Feb. – 12 Feb.)	**1. Structural Steel and Sections** **2. Bolted Connections**	1.4 Hollow Sections; Hot rolled and Cold Formed, advantages and applications. 2.1 Types of Bolts
3rd (13 Feb. – 19 Feb.)	**2. Bolted Connections**	2.2 Forces in Bolts 2.3 Types of Bolted joints with Sketches
4th (20 Feb. – 27 Feb.)	**2. Bolted Connections**	2.4 Design of bolted connections (limit state)
5th (28 Feb. – 05 Mar.)	**3. Welded Connections (LSM)**	3.1 Introduction, types of welds, defects in welds, Permissible stress in weld, strength of weld. 3.2 Advantages and disadvantages of welded joint.
6th (06 Mar. – 14 Mar.)	**3. Welded Connections (LSM)**	3.3 Types of welds and their symbols. 3.4 Design of fillet weld and butt weld subjected to axial load. (Descriptive No numerical on plug and slot welds)
Class Test – 1		**In Third Week of March 2024.**
7th (15 Mar. – 21 Mar.)	**3. Welded Connections (LSM)** **4. Tension Members (LSM)**	3.4 Design of fillet weld and butt weld subjected to axial load. (Descriptive No numerical on plug and slot welds) 4.1Types of section used, permissible stresses in axial tension.

8th (22 Mar. – 30 Mar.)	**4. Tension Members (LSM)**	4.2 Gross and net cross–sectional area of tension member. 4.3 Analysis and Design of tension member with welded and riveted connection. 4.4 Introduction to Lug Angle and Tension splice. (Theory only)
9th (01 Apr. – 06 Apr.)	**5. Compression Members (LSM)**	5.1 Types of sections used, Effective length, Radius of gyration, slenderness ratio and its limit, Permissible compressive stresses. 5.2 Analysis and Design of axially loaded angle struts with welded and riveted connection.
10th (08 Apr. – 18 Apr.)	**5. Compression Members (LSM)**	5.3 Stanchion and Columns Types of sections-simple and built-up sections, Effective length. 5.4 Introduction to lacing and battening (No numerical problem on Lacing and Battening)
Class Test – 2		**In Third Week of April 2024.**
11th (19 Apr. – 25 Apr.)	**6. Beams (LSM)**	6.1 Different steel sections used, Simple and built-up sections, Permissible bending stresses. 6.2 Design of simple I beam section, check for shear only.
12th (26 Apr.– 02 May)	**6. Beams (LSM)**	6.2 Design of simple I beam section, check for shear only.
13th (03 May-09 May)	**6. Beams (LSM)**	6.3 Introduction to Plate Girder: Various components and their functions. (No numerical Problem on Plate Girder)
House Test		**In Third Week of May 2024.**
14th (13May-18 May)	**7. Plate girder (Conceptual Knowledge)**	7.1 Parts of Plate Girder (a) Flange plate (b) Flange angle (c) Flange splice (d) Web splice (e) Vertical stiffener (f) Intermediate stiffener (g) Horizontal stiffener (h) Bearing stiffener
15th (20 May – 25 May)	**Revision and doubt clearance**	Revision and doubt clearance.

NOTE: - Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher
(Er. Sushil Kumar)

Signature of HOD/OIC
(Er. Sushil Kumar)

R.G. Government Polytechnic Banikhet, Distt. Chamba H.P-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Er. Sushil Kumar
Discipline	Civil Engineering
Semester	6th
Subject	Steel Structures Design & Drawing (P-4 Hrs./Week)
Lesson Plan Duration	January – May 2024

Week	Topic (Drawing)
1st (29 Jan. – 03 Feb.)	1. Details of splicing for steel columns.
2nd (05 Feb. – 12 Feb.)	1. Details of splicing for steel columns.
3rd (13 Feb. – 19 Feb.)	2. Column Beam Connection Drawings (a) Beam to beam connections (Seated and framed)
4th (20 Feb. – 27 Feb.)	2. Column Beam Connection Drawings (a) Beam to beam connections (Seated and framed)
5th (28 Feb. – 05 Mar.)	2. Column Beam Connection Drawings (b) Beam to column (Seated and framed)
6th (06 Mar. – 14 Mar.)	2. Column Beam Connection Drawings (b) Beam to column (Seated and framed)
Class Test-1	**In Third Week of March 2024**
7th (15 Mar. – 21 Mar.)	2. Column Beam Connection Drawings (c) Column bases (Slab base, and gusseted base)
8th (22 Mar. – 30 Mar.)	2. Column Beam Connection Drawings (c) Column bases (Slab base, and gusseted base)
9th (01 Apr. – 06 Apr.)	3. Detailed drawing showing plan and elevation for a riveted plate girder with the given design data regarding the sizes of its parts, with details at the supports and connections of stiffeners, flange angles and cover plates with the web
10th (08 Apr. – 18 Apr.)	3. Detailed drawing showing plan and elevation for a riveted plate girder with the given design data regarding the sizes of its parts, with details at the supports and connections of stiffeners, flange angles and cover plates with the web

Class Test-2	**In Third Week of April 2024**
11th (19 Apr. – 25 Apr.)	3. Detailed drawing showing plan and elevation for a riveted plate girder with the given design data regarding the sizes of its parts, with details at the supports and connections of stiffeners, flange angles and cover plates with the web
12th (26 Apr.– 02 May)	4. Preparation of drawing of a steel roof truss with details of joints for the given span, shape of the truss and the design data regarding the size of the members and the connections
13th (03 May-09 May)	4. Preparation of drawing of a steel roof truss with details of joints for the given span, shape of the truss and the design data regarding the size of the members and the connections
House Test	**In Third Week of May 2024**
14th (13May-18 May)	4. Preparation of drawing of a steel roof truss with details of joints for the given span, shape of the truss and the design data regarding the size of the members and the connections
15th (20 May – 25 May)	**Revision and doubt clearance.**

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Signature of Teacher
(Er. Sushil Kumar)

Signature of HOD/OIC
(Er. Sushil Kumar)

RAJEEV GANDHI GOVT. POLYTECHNIC BANIKHET (CHAMBA)

RECORD OF LECTURE OF LECTURE DELIVERED (THEORY/PRACTICAL)

BRANCH:- CIVIL ENGINEERING SEMESTER:- 6TH

SUBJECT:-IRRIGATION ENGINEERING

S.NO.	MONTH	WEEK	TOPICS COVERED	REMARKS
1	JAN	WEEK-1 (29JAN-3FEB)	1.Introduction: Definition of irrigation,Historical development of irrigation in India,Necessity of irrigation ,Advantages, Disadvantages and ill effect of irrigation	
2	FEB	WEEK-2 (5FEB-12FEB)	2. Water Requirement of Crops:Principal crops in India and their water requirements,Crop period or base period,Crop seasons – Kharif and Rabi,Duty, Delta ,Base Period and their relationship, Factor affecting duty	
3		WEEK-3 (13FEB-19FEB)	3. Hydrology and Run-off :Defination, importance of hydrology Hydrological cycle,Precipitation,Definition,Types of precipitation,Rain gauges, types with diagrams,Runoff , Factor affecting runof	
4		WEEK-4 (20FEB-27FEB)	4. Methods of Irrigation:Type of irrigation- Surface irrigation and sub-surface irrigation,methods of supplying water to the field (Brief description),Free Flooding,Border flooding,Check Flooding	
5		WEEK-5 (28FEB-5MAR)	Furrow irrigation method,Basin flooding ,Sprinkler irrigation with its suitability Drip Irrigation with its suitability	
6	MAR	WEEK-6 (6MAR-14MAR)	5. Canals :Alluvial andnon-alluvial canals,Alignment of canal- ridge canal, contour canal, side slope canal,Distribution system for canal irrigation- Main canal, Branch canal, Distributaries, water course,Cross section of canal showing- Side slope, Berm, Free board,	
7		WEEK-7 (15MAR-21MAR)	Service road, Spoil bank, Dowel and Borrow pit(with their definition & functions), Lining of canals and their types,Maintenance of irrigation canal,Closure of breaches	
8		WEEK-8 (22MAR-30MAR)	6. Well and Tube well Irrigation:Open well,Shallow well,Deep well,Construction of open well,Yield of open well (brief description , no derivation and numerical),Pumping test,Recuperating test,Tube well,	CLASS-TEST 1
9		WEEK-9 (1APR-6APR)	Types of tube well (Brief description with neat diagram) Cavity type tube well,Screen type tube well,Slotted Type tube well,Methods of boring tube wells,well development ,	
10	APRIL	WEEK-10 (8APR-18APR)	Advantages and disadvantages of tube well irrigation over canal irrigation 7. Diversion Head Works:Definition, object, general layout, functions of different parts of diversion head works.	
11		WEEK-11 (19APR-25APR)	Types of Weir,Difference between weir and barrage 8. Cross Drainage Works:Functions and necessity of the following types: aqueduct, super Passage, level crossing, inlet and outlet Sketches of the above cross drainage works	
12		WEEK-12 (26APR-02MAY)	9. Regulatory works:Introduction,Cross and head regulators,Outlets Canal Escapes,Falls 10. River Training Works:Control and river training,Objective of river training	CLASS-TEST 2
13	MAY	WEEK-13 (03MAY-09MAY)	Method of river training (Brief description),Marginal embankment Groynes,Pitched island,Guide banks 11. Water Logging, Definition,Causes,Preventive & remedial measures,Reclamation of water logged areas	
14		WEEK-14 (13MAY-18MAY)	HOUSE TEST	HOUSE TEST
15		WEEK-15 (20MAY-25MAY)	REVISION	

Pandit

SIGNATURE OF TEACHER

Deepika Pandit

HOD/OIC

R.G. Government Polytechnic Banikhet, Distt. Chamba (H.P)-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Sh. Saibal Bharti
Discipline	Civil Engineering
Semester	6th
Subject	Construction management And Accounts (L-4 Hrs./Week)
Lesson Plan Duration	January – May 2024

Week	Topic	Theory
1st (29 Jan – 03 Feb)	**1. Introduction**	1.1 Significance of construction management 1.2 Main objectives of construction management and overview of the subject 1.3 Functions of construction management, planning, organising, staffing, directing, controlling and coordinating, meaning of each of these with respect to construction job. 1.4 Classification of construction into light, heavy and industrial construction 1.5 Stages in construction from conception to completion
2nd (05 Feb. – 12 Feb.)	**2. Construction Planning**	2.1 Importance of construction planning 2.2 Stages of construction planning - Pre-tender stage - Contract stage, construction contracts and specifications 2.4 Scheduling construction works by bar charts - Definition of activity, identification of activities though - Limitations of bar charts
3rd (13 Feb – 19 Feb)	**2. Construction Planning**	2.5 Scheduling by network techniques - Introduction to network techniques; PERT and CPM, differences between PERT and CPM terminology 2.6 CPM Network including critical activities, slack, floats & critical path.
4th (20 Feb – 27 Feb)	**3. Organization**	3.1 Types of organizations: Line, line and staff, functional and their characteristics
5th (28 Feb. – 05 Mar.)	**4. Site Organization**	4.1 Principle of storing and stacking materials at site 4.2 Location of equipment 4.3 Organizing labour at site

		4.4 Site layout of construction project
6th (06 Mar. – 14 Mar.)	**5. Construction Labour**	5.1 Conditions of construction workers in India, wages paid to workers 5.2 Important provisions of the following Acts: - Labour Welfare Fund Act 1936 (as amended) - Payment of Wages Act 1936 (as amended)
Class Test 1		**In Third Week of March 2024.**
7th (15 Mar – 21 Mar)	**5. Construction Labour** **6. Control of Progress**	Minimum Wages Act 1948 (as amended) 6.1 Methods of recording progress 6.2 Analysis of progress
8th (22 Mar – 30 Mar.)	**6. Control of Progress**	6.3 Taking corrective actions keeping head office informed 6.4 Arbitration and settlement.
9th (01 Apr. – 06 Apr.)	**7. Inspection and Quality Control**	7.1 Need for inspection and quality control 7.2 Principles of inspection
10th (08 Apr. – 18 Apr.)	**7. Inspection and Quality Control**	7.3 Stages of inspection and quality control for - Earthwork - Masonry - RCC
11th (19 Apr – 25 Apr)	**8. Accidents and Safety in Construction**	8.1 Accidents–causes and remedies 8.2 Safety measures for - Excavation work - Hot bituminous works - Scaffolding, form work 8.3 Safety campaign and safety devices
Class Test 2		**In Third Week of April 2024.**
12th (26 Apr – 02 May)	**ACCOUNTS** **9. Public Work Accounts**	9.1 Introduction 9.2 Necessities of accounts 9.3 Public works department system of account 9.4 Classification of transaction and head of account 9.5 Classification of works 9.6 Condition to be fulfilled before a work can taken in hand 9.7 work order 9.8 bill-first and final bill, running account bill, account of secured advances, running account bill "c", running account bill "D", final bill, Hand receipt, refund of security money, cash, debit and credit

13th **(03 May-09 May)**	**9. Public Work Accounts**	9.9 cashbook-procedure for maintain the cash book, cash found surplus or deficient, subsidiary cash Book 9.10 contract ledger 9.11 completion report and completion certificate 9.12 Imprest 9.13 temporary advance or temporary Imprest 9.14 Cheques 9.15 Remittance transfer receipts 9.16 Advise of transfer debit/credit 9.17 Receipt of money 9.18 Treasury challan9.19 Treasury remittance book 9.20 Work abstract 9.21 Register of works 9.22 Transfer entries
House Test		**In Third week of May 2024**
14th **(13 May-18 May)**	**9. Public Work Accounts**	9.23 Appropriation and re-appropriation 9.24 Deposit works 9.25 Stores 9.25.1 Necessity of stores 9.25.2 Unstamped receipt 9.25.3 Accounting procedure for store 9.25.4 Suspense head 9.25.5 Suspense sub-head 9.25.6 Reserve limit of stock 9.25.7 Indent 9.25.8 Stock taking and shortage and surplus 9.25.9 Classification of store
15th **(20 May -25 May)**	**9. Public Work Accounts**	9.26 Road metal 9.27 materials charged to work 9.28 issue of material to contractor 9.29 Issue of machinery and equipment 9.30 bincard 9.31 stock register 9.32 write off

		9.33 Handing over taking over charge on transfer 9.34 voucher 9.35 Establishments in P.W.D. 9.36 Cash payment to labourers 9.37 Tools and plant

NOTE: - Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Saibal Bharti

Signature of Teacher
(Er. Saibal Bharti)

Signature of HOD/OIC
(Er. Sushil Kumar)

R.G. Government Polytechnic Banikhet, Distt. Chamba (H.P)-176303

Department of Civil Engineering

Lesson Plan

Name of Faculty	Er. Sushil Kumar
Discipline	Civil Engineering
Semester	6th
Subject	Railways, Bridges and Tunnels (L-4 Hrs./Week)
Lesson Plan Duration	January – May 2024

Week	Topic	Theory
1st (29 Jan. – 03 Feb.)	**1. Railways**	1. Introduction to Indian Railways 2. Railways surveys: Factors influencing the railways route, brief description of various types of railway survey 3. Classification of permanent way describing its component part
2nd (05 Feb. – 12 Feb.)	**1. Railways**	4. Rail Gauge; Definition, types, practice in India 5. Rail – types of rails 6. Rail Fastening: Rail joints, types of rail joints, fastening for rails, fish plates, bearing plates
3rd (13 Feb. – 19 Feb.)	**1. Railways**	7. Sleepers: Functions of sleepers, types of sleepers, requirements of an ideal material of Sleepers. 8. Ballast: Function of ballast, requirements of an ideal material of ballast.
4th (20 Feb. – 27 Feb.)	**1. Railways**	9. Crossing and signaling: Brief description regarding different types of crossing/signaling 10. Maintenance of track: Necessity, track fixtures; maintenance and boxing of ballast, maintenance gauges, tools.
5th (28 Feb. – 05 Mar.)	**1. Railways**	11. Drains, methods of construction. 12. Introduction Bridge–its function and component parts, difference between a bridge and a culvert
6th (06 Mar. – 14 Mar.)	**2. Bridges**	13. Classification of Bridges Their structural elements and suitability: 13.1 According to life-permanent and temporary 13.2 According to deck level–Deck, through and semi-through 13.3 According to material–timber, masonry, steel, RCC, pre-stressed 13.4 IRC classification

Class Test – 1		**In Third Week of March 2024.**
7th **15 Mar. – 21 Mar.)**	**2. Bridges**	14. Bridge Foundations: Introduction to open foundation pile foundation, well foundation
8th **(22 Mar. – 30 Mar.)**	**2. Bridges**	15. Piers, Abutments and Wing walls 15.1 Piers–definition, parts; types–solid (masonry and RCC), open 15.2 Abutment sand wing walls–definition, types of abutments (straight and tee), abutment with wing walls (straight, splayed, return and curved)
9th **(01 Apr. – 06 Apr.)**	**2. Bridges**	16. Bridge bearings Purpose of bearing; types of bearing–fixed plate, rocker and roller
10th **(08 Apr. – 18 Apr.)**	**2. Bridges**	17. Maintenance of Bridges 17.1 Inspection of bridges 17.2 Routine maintenance
Class Test – 2		**In Third Week of April 2024.**
11th **(19 Apr. – 25 Apr.)**	**3. Tunnels**	18. Definition and necessity of tunnels 19. Typical section of tunnels for a national highway and single and double broad gauge railway track.
12th **(26 Apr.– 02 May)**	**3. Tunnels**	20. Ventilation-necessity and methods of ventilation, by blowing, exhaust and combination of blowing and exhaust
13th **(03 May-09 May)**	**3. Tunnels**	21. Drainage method of draining water in tunnels 22. Lighting in tunnels & lining of tunnels
House Test		**In the Third Week of May 2024**
14th **(13May-18 May)**	**3. Tunnels**	21. Drainage method of draining water in tunnels 22. Lighting in tunnels & lining of tunnels
15th **(20 May – 25 May)**	**Revision and doubt clearance**	Revision and doubt clearance.

NOTE: - Lesson Plan is Tentative, subject to availability of Time, Students & Faculty.

Signature of Teacher
(Er. Sushil Kumar)

Signature of HOD/OIC
(Er. Sushil Kumar)

LESSON PLAN

Name of Faculty	DeepaKapoor
Department	Civil Engg.
Semester	6th
Subject	Practices in communication skills
Lesson Plan for the Duration	Feb - May2024

Week	PRACTICALS	
1st (29 Jan-3Feb.)	Exercises on phonetics	Identifications of English phonemes.
2nd (5Feb-12Feb)	Exercises on phonetics	Stress and Intonation
3rd(13Feb- 19 Feb)	Group Discussion	Group Discussion
4th(20 Feb- 27 Feb)	3 Exercises on	Exercises on - Self-assessment using tools like SWOT analysis
5th(28 Feb-5March)	3 Exercises on	- Listening skills
6th(6March-14 March)	Internet communication and Correspondence	Resume writing
7th(15March-21 March)	. Internet communication and Correspondence	Covering letter
8th(22 March- 30 March)	Internet communication and Correspondence	Agenda and Minutes of meeting
9th(1April-6April)	Internet communication and Correspondence	Business Correspondence
10th(8April-18April)	5. Exercises on	Exercises on Body language and Dress sense
11th(19 April-25 April)	Exercises on	Etiquettes and mannerism in difficult situations like business meetings, Table manners,Telephone etiquette.
12th(26 April -2May)	Exercises on	Manners related to opposite gender Cross-cultural Communication
13th(3May-9May)	Exercises on	Mock interviews (telephonic/personal)
14th(13May-18May)	7 Role plays for effective Communication	Role plays for effective Communication
15th(20May-25May)	7 Role plays for effective Communication	Role plays for effective Communication

Deepa
Signature of Sub.Teacher

Signature of HOD