

Lesson Plan

Course Code: CEPC201

Course Title: Construction Materials

Sem 3rd

Duration: 01 August 2026 – 28 November 2026

Week	Date	Unit	Topics to be Covered	Teaching Method	Learning Outcome
1	01 Aug 2026	Unit I	Course Introduction, Scope of Construction Materials in Civil Engineering	Lecture, PPT	Understand the importance and applications of construction materials.
2	08 Aug 2026	Unit I	Selection of Materials based on Strength, Durability, Economy and Sustainability	Lecture, Case Study	Select suitable materials for different civil engineering works.
3	16 Aug 2026	Unit I	Classification of Construction Materials: Natural, Artificial, Special, Finishing and Recycled Materials	Lecture, Discussion	Classify construction materials according to their characteristics.
4	22 Aug 2026	Unit II	Building Stones: Characteristics, Quarrying, Dressing Methods and Tools	Lecture, Samples	Identify properties and uses of building stones.
5	29 Aug 2026	Unit II	Timber: Structure, Properties, Seasoning, Preservation, Defects and Bamboo	Lecture, Demonstration	Explain timber properties and preservation techniques.
6	05 Sept 2026	Unit II	Bitumen, Asphalt, Tar; Lime; Types of Soil and Suitability in Construction	Lecture, PPT	Differentiate between binding materials and soil types.
7	12 Sept 2026	Unit II	Sand: Properties and Uses; Classification of Coarse Aggregates	Lecture, Specimen Study	Select aggregates and sand for construction works.
8	19 Sept 2026	Unit III	Brick Earth, Manufacturing of Bricks, Fly Ash Bricks, Aerated Concrete Blocks	Lecture, Video	Understand manufacturing and applications of bricks.

Week	Date	Unit	Topics to be Covered	Teaching Method	Learning Outcome
9	26 Sept 2026	Unit III	Characteristics and Field Tests of Bricks. Classification of Burnt Clay Bricks. Flooring Tiles	Lecture, Demonstration	Evaluate brick quality through field tests.
10	03 Oct 2026	Unit III	Cement: Manufacturing Process (Dry & Wet). Types of Cement and Field Tests	Lecture, Flow Charts	Identify cement types and perform field quality tests.
11	10 Oct 2026	Unit III	Precast Concrete Blocks, Plywood, Particle Board, Veneers and Laminated Boards	Lecture, Samples	Explain uses of engineered wood and concrete products.
12	17 Oct 2026	Unit III	Types of Glass, Ferrous and Non-Ferrous Metals and Their Uses	Lecture, Discussion	Differentiate between construction metals and glass types.
13	24 Oct 2026	Unit IV	Waterproofing, Termite Proofing, Thermal and Sound Insulating Materials	Lecture, PPT	Select protective construction materials.
14	31 Oct 2026	Unit IV	Fibres (Jute, Glass, Plastic, Asbestos), Geo-polymer Cement: Properties and Uses	Lecture, Case Study	Understand modern sustainable construction materials.
15	07 Nov 2026	Unit V	POP, POP Boards, Paints, Whitewash, Distemper, Oil Paints and Varnishes	Lecture, Demonstration	Select suitable finishing materials for buildings.
16	14 Nov 2026	Unit V	Industrial Waste Materials: Fly Ash, Blast Furnace Slag, Granite & Marble Waste	Lecture, Discussion	Understand reuse of industrial waste in construction.
17	21 Nov 2026	Unit V	Agro Waste Materials, Geo-synthetics, Ferrocete, Artificial Timber, Artificial Sand	Lecture, Case Study	Explain applications of processed and sustainable materials.
18	28 Nov 2026	Revision	Complete Revision, Question Discussion, Internal Assessment/Quiz	Interactive Session	Consolidate learning and prepare for semester examination.

Signature of Teacher

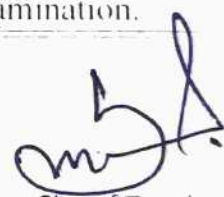
LESSON PLAN OF BASIC SURVEYING

Branch - Civil Engg.

SEM 3RD

Week	Date	Unit	Topics to be Covered	Teaching Method	Learning Outcome
1	01 Aug 2026	Unit 1	Course Introduction, Purpose and Uses of Surveying	Lecture, Discussion	Understand the importance and applications of surveying.
2	08 Aug 2026	Unit 1	Types of Surveying: Plane, Geodetic, Cadastral, Hydrographic, Photogrammetry, Aerial	PPT, Examples	Classify different surveying methods.
3	17 Aug 2026	Unit 1	Principles of Surveying, Scales: Engineer's Scale, RF, Diagonal Scale	Lecture, Numerical Problems	Apply surveying principles and scale conversions.
4	22 Aug 2026	Unit 2	Chain Survey Instruments: Chain, Tape, Arrow, Ranging Rod, Line Ranger, Offset Rod	Demonstration	Identify surveying instruments and their uses.
5	29 Aug 2026	Unit 2	Chain Survey Terminology, Ranging (Direct & Indirect), Methods of Chaining	Lecture, Illustration	Explain chain surveying procedures.
6	05 Sept 2026	Unit 2	Obstacles in Chaining, Errors in Length Measurement	Problem Solving	Identify and minimize surveying errors.
7	12 Sept 2026	Unit 2	Triangulation, Types of Offsets, Conventional Signs, Field Book Recording	Lecture, Field Sketch	CT-1 Record field observations correctly.
8	19 Sept 2026	Unit 3	Compass Traversing, Open & Closed Traverse, Meridians and Bearings	Lecture, Numerical	Understand traverse surveying concepts.
9	26 Sept 2026	Unit 3	WCB & RB Systems, Bearing Conversion, Fore Bearing & Back Bearing	Numerical Practice	Convert bearings and solve related problems.
10	03 Oct 2026	Unit 3	Prismatic Compass, Temporary Adjustments, Observing Bearings	Demonstration	CT-2 Operate a prismatic compass correctly
11	10 Oct 2026	Unit 3	Local Attraction, Bearing Corrections, Included Angles	Problem Solving	Correct observed bearings accurately
12	17 Oct 2026	Unit 4	Basic Levelling Terminologies, Benchmarks,	Lecture	Explain levelling concepts and

Week	Date	Unit	Topics to be Covered	Teaching Method	Learning Outcome
			Reduced Levels		terminology.
13	24 Oct 2026	Unit 4	Types of Levels, Components of Dumpy Level, Temporary Adjustments	Demonstration	Identify and use levelling instruments.
14	31 Oct 2026	Unit 4	Levelling Staffs, Reduction of Levels (HI & Rise-Fall Methods)	Numerical Practice	HOUSE TEST Compute reduced levels using standard methods.
15	07 Nov 2026	Unit 4	Types of Levelling, Contouring, Contour Characteristics and Applications	Lecture, Examples	Interpret contour maps effectively.
16	14 Nov 2026	Unit 5	Digital Planimeter, Measurement of Area	Demonstration	Measure areas using a digital planimeter.
17	21 Nov 2026	Unit 5	Measurement of Reservoir Volume from Contour Maps	Numerical Problems	Calculate earthwork and reservoir volume.
18	28 Nov 2026	Revision	Complete Course Revision, Question Discussion, Internal Assessment/Quiz	Interactive Session	Consolidate learning and prepare for examination.


Sig. of Teacher

WEEK-WISE LESSON PLAN

Course: Strength of Materials / Mechanics of Materials

Duration: 01 August 2026 - 28 November 2026

Working Days: Excluding Sundays and Second Saturdays

Week	Dates	Unit	Topics to be Covered
Week 1	01-07 Aug	Unit-1	Introduction to Moment of Inertia; definition and significance; M.I. of plane lamina; radius of gyration; section modulus.
Week 2	10-15 Aug	Unit-1	Parallel and perpendicular axes theorems; M.I. of rectangle and square.
Week 3	17-22 Aug	Unit-1	M.I. of circle, semi-circle and quarter circle; M.I. of triangle section.
Week 4	24-29 Aug	Unit-1	M.I. of symmetrical and unsymmetrical I-sections; centroidal axes.
Week 5	31 Aug-05 Sep	Unit-1	M.I. of channel, T-section, angle and hollow sections; polar M.I. of solid circular sections.
Week 6	07-12 Sep	Unit-1	Numerical problems on M.I.; revision; tutorial and Unit-1 assessment.
Week 7	14-19 Sep	Unit-2	Rigid, elastic and plastic bodies; stress, strain, elasticity; Hooke's law; elastic limit; modulus of elasticity.
Week 8	21-26 Sep	Unit-2	Types of stress: normal, direct, bending and shear; tensile and compressive stresses.
Week 9	28 Sep-03 Oct	Unit-2	Standard stress-strain curve for steel bar; yield stress; proof stress; ultimate stress; critical strains.
Week 10	05-10 Oct	Unit-2	Percentage elongation; factor of safety; deformation due to axial force; intermediate loading.
Week 11	12-17 Oct	Unit-2	Maximum and minimum stress; composite sections under axial loading; temperature stresses and strains.
Week 12	19-24 Oct	Unit-2	Longitudinal and lateral strain; modulus of rigidity; Poisson's ratio; volumetric strain; bulk modulus.
Week 13	26-31 Oct	Unit-2	Relations between E , G and K ; numerical problems; revision and Unit-2 assessment.
Week 14	02-07 Nov	Unit-3	Types of supports, beams and loads; shear force and bending moment; relation between load, S.F. and B.M.
Week 15	09-14 Nov	Unit-3	S.F. and B.M. diagrams for cantilever beams with point and UDL loading.
Week 16	16-21 Nov	Unit-3 & 4	S.F. and B.M. diagrams for simply supported beams; combined loading; point of contra-flexure; introduction to pure bending.
Week 17	23-28 Nov	Unit-4 & 5	Flexural equation, bending stress and distribution, moment of resistance; introduction to shear stress equation and columns.

WEEK-WISE LESSON PLAN

Subject: Building Construction / Building Components

Duration: 01 August – 28 November

Class/Sem: _____ **Teacher:** _____

WEEK 1 – 01 Aug to 03 Aug Unit I – Overview of Building Components

- Classification of buildings as per NBC – **Group A to I** (applications only).

WEEK 2 – 04 Aug to 10 Aug Unit I

- Types of construction: Load Bearing Structure, Framed Structure, Composite Structure

WEEK 3 – 11 Aug to 17 Aug Unit I

- Building Components – functions in general.. Substructure: **Foundation, Plinth** – basic idea.

WEEK 4 – 18 Aug to 24 Aug Unit I (Superstructure)

- Walls, Partition wall, Cavity wall – meaning & function.. Sill, Lintel – purpose and location.

WEEK 5 – 25 Aug to 31 Aug Unit I (Completion)

- Doors and Windows – function and location.. Doors, Roof, Columns, Beams, Parapet – basic function.. Short recap / oral questions on Unit I.

WEEK 6 – 01 Sept to 07 Sept Unit II – Construction of Substructure (Job Layout)

- Site clearance.. Layout for load bearing structure & framed structure – **centre line** method.

WEEK 7 – 08 Sept to 14 Sept Unit II – Job Layout & Earthwork

- Layout by **face line method**, precautions, Earthwork for foundation – excavation, timbering & strutting.

WEEK 8 – 15 Sept to 21 Sept Unit II – Earthwork

- Earthwork for embankment..Material for plinth filling,Tools and plants used for earthwork.

WEEK 9 – 22 Sept to 28 Sept Unit II – Foundations (Shallow)

- Functions of foundations.Types of shallow foundations:Stepped footing, wall footing,Column footing – isolated & combined

WEEK 10 – 29 Sept to 05 Oct

Unit II – Foundations (Deep) & Revision

- Raft foundation, grillage foundation (concept).Deep foundations: **pile foundation, well foundation** (concept, use).

WEEK 11 – 06 Oct to 12 Oct Unit III – Construction of Superstructure (Stone Masonry)

- Terms in stone masonry: facing, backing, hearting, through stone, corner stone, cornice,Types of stone masonry – rubble & ashlar, their types (brief).
- **WEEK 12 – 13 Oct to 19 Oct Unit III – Stone Masonry (contd.)**
- Joints in stone masonry & their purpose.Selection of suitable stone masonry: precautions in construction.

WEEK 13 – 20 Oct to 26 Oct Unit III – Brick Masonry (Basics)

- Terms: header, stretcher, closer, quoins, course, face, back, hearting, bat, bond, joints, lap, frog, line, level, plumb.Bonds – header bond, stretcher bond (simple sketches).

WEEK 14 – 27 Oct to 02 Nov Unit III – Brick Masonry (Bonds & Practice)

- English bond & Flemish bond – in plan and elevation (theory/sketch).Requirements of good brick masonry.Junctions in brick masonry – purpose & procedure; precautions in brick masonry.

WEEK 15 – 03 Nov to 09 Nov Unit III – Comparison & Other Masonry, Scaffolding

- Comparison between stone and brick masonry.Tools and plants for stone & brick masonry.Hollow concrete block masonry & composite masonry – basic idea.Scaffolding: purpose, types, process of erection and dismantling.

LESSON PLAN

Program Name	DIPLOMA IN CIVIL ENGINEERING
Course/Subject Name	CONCRETE TECHNOLOGY
Course/Subject Code	CEPC303
Course/Subject Coordinator Name	Manoj Kumar

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Concrete Technology	2(Th.)+1(DCS)	40	-	60	-
Reference books:			1. Gambhir, M.L., Concrete Technology, Tata McGraw Hill Publishing Co. Ltd., Delhi. 2. Shetty, M.S., Concrete Technology, S. Chand and Co. Pvt. Ltd., Ram Nagar, Delhi. 3. Neville, A. M. and Brooks, J.J., Concrete Technology, Pearson Education Pvt. Ltd.			

Course Outcomes: After the completion of the course the students will:

CO1	Use different types of cement and aggregates in concrete
CO2	Prepare concrete of desired compressive strength.
CO3	Prepare concrete of required specification.
CO4	Maintain quality of concrete under different conditions.
CO5	Apply relevant admixtures for concreting.

Teaching Plan:

Lecture No.	Name of topic	Proposed Date	Actual Date	Remarks
1	Introduction to subject	03.08.2026		
2	Unit – I Cement, Aggregates and Water • Physical properties of OPC and PPC: fineness, standard consistency, setting time, soundness, compressive strength. Different grades of OPC and relevant BIS codes	04.08.2026		
3	Storage of cement and effect of storage on properties of cement.	06.08.2026		
4	BIS Specifications and field applications of different	10.08.2026		

	types of cements: Rapid hardening, Low heat,			
5	Portland pozzolana, Sulphate resisting, Blast furnace slag, High Alumina and White cement.	11.08.2026		
6	Aggregates: Requirements of good aggregate, Classification according to size and shape.	13.08.2026		
7	Fine aggregates: Properties, size, specific gravity, bulk density, water absorption and bulking, fineness modulus	17.08.2026		
8	grading zone of sand, silt content and their specification as per IS 383. Concept of crushed Sand.	18.08.2026		
9	Coarse aggregates: Properties, size, shape, surface texture, water absorption, soundness	20.08.2026		
10	specific gravity and bulk density, fineness modulus of coarse aggregate	24.08.2026		
11	grading of coarse aggregates, crushing value	25.08.2026		
12	Impact value and abrasion value of coarse aggregates with specifications.	27.08.2026		
13	Water: Quality of water, impurities in mixing water and permissible limits for solids as per IS: 456.	31.08.2026		
14	Concrete: Different grades of concrete, provisions of IS 456.	01.09.2026		
15	Duff Abraham water cement (w/c) ratio law, significance of w/c ratio, selection of w/c ratio for different grades, maximum w/c ratio for different grades of concrete for different exposure conditions as per IS 456.	03.09.2026		
16	Properties of fresh concrete: Workability: Factors affecting workability of concrete. Determination of workability of concrete by slump cone,	07.09.2026		
17	Compaction factor, Vee-Bee Consistometer. Value of workability requirement for different types of concrete works. Segregation, bleeding, and preventive measures.	08.09.2026		
18	CLASS TEST - I	10.09.2026		
19	Properties of Hardened concrete: Strength, Durability, Impermeability.	14.09.2026		
20	Unit-III Concrete Mix Design and Testing of Concrete • Concrete mix design	15.09.2026		
21	Objectives, methods of mix design, study of mix design as per IS 10262 (only procedural steps).	17.09.2026		
22	Testing of concrete, determination of compressive strength of concrete cubes at different ages	21.09.2026		
23	Interpretation, and co-relation of test results.	22.09.2026		
24	Non- destructive testing of concrete: Rebound hammer test, working principle of rebound hammer and factor affecting the rebound index	24.09.2026		
25	Ultrasonic pulse velocity test as per IS 13311 (part 1 and 2), Importance of NDT tests.	28.09.2026		
26	Unit- IV Quality Control of Concrete • Concreting Operations: Batching, Mixing, Transportation, Placing,	01.10.2026		
27	Compaction, Curing and Finishing of concrete.	05.10.2026		
28	Forms for concreting: Different types of form works for beams, slabs, columns	06.10.2026		
29	CLASS TEST – II	08.10.2026		

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	Geotechnical Engineering
Course/Subject Code	N-2022 / CEPC211
Course/Subject Co-ordinator Name	Aman Deep Singh

Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. & Ext.)
1	Geotechnical Engineering	L	BS	Total	Internal Assessment			External Assessment			
		3	1	4 Hrs./week	Th.	Pr.	T	Th.	Hrs.	T	
					40	-	40	60	3	60	
Reference Books		Punmia, B.C., Soil Mechanics and Foundation Engineering, Laxmi Publication, Delhi									
		Arora K R, Soil Mechanics and Foundation Engineering, Standard Publisher.									
		Ramamurthy, T.N. & Sitharam,T.G., Geotechnical Engineering(Soil Mechanics), S Chand and Company LTD., New Delhi									

Teaching Plan

Unit No.	Name of Topic	Proposed Week	Actual Date	Remarks
1	Introduction of Geology, Branches of Geology, Importance of Geology for civil engineering structure and composition of earth, Definition of a rock:	1 st Week (01/08/2026-07/08/2026)		
1	Classification based on their genesis (mode of origin), formation, Classification, and engineering uses of igneous, sedimentary, and metamorphic rocks. □ Importance of soil as construction material in Civil engineering structures and as foundation bed for structures.	2 nd Week (10/08/2026-17/08/2026)		
1	Field application of geotechnical engineering for foundation design, pavement design, design of earth retaining structures, design of earthen dam.	3 rd Week (18/08/2026-24/08/2026)		
2	Soil as a three-phase system, water content, determination of water content by oven drying method as per BIS code, void ratio, porosity and degree of saturation, density index. Unit weight of soil mass – bulk unit weight, dry unit weight, unit weight of solids, saturated unit weight, submerged unit weight.	4 th Week (25/08/2026-31/08/2026)		
2	Determination of bulk unit weight and dry unit weight by core cutter and sand replacement method, □ Consistency of soil, Atterberg limits of consistency: Liquid limit, plastic limit and shrinkage limit. Plasticity index.	5 th Week (01/09/2026-08/09/2026)		
2	Particle size distribution test and plotting of curve, Determination of effective diameter of soil, well graded and uniformly graded soils, BIS classification of soil.	6 th Week (09/09/2026-16/09/2026)		
3	Definition of permeability, Darcy's law of permeability,	7 th Week		

	coefficient of permeability, factors affecting permeability, determination of coefficient of permeability by constant head and falling head tests, simple problems to determine coefficient of permeability.	(17/09/2026-23/09/2026)		
3	Seepage through earthen structures, seepage velocity, seepage pressure, phreatic line, flow lines, application of flow net, (No numerical problems). □ Shear failure of soil, concept of shear strength of soil. Components of shearing resistance of soil – cohesion, internal friction.	8 th Week (24/09/2026-30/09/2026)		
3	Mohr-Coulomb failure theory, Strength envelope, strength equation for purely cohesive and cohesion less soils. Direct shear and vane shear test – laboratory methods.	9 th Week (01/10/2026-08/10/2026)		
4	Bearing capacity and theory of earth pressure. Concept of bearing capacity, ultimate bearing capacity, safe bearing capacity and allowable bearing pressure.	10 th Week (09/10/2026-16/10/2026)		
4	Introduction to Terzaghi's analysis and assumptions, effect of water table on bearing capacity. Field methods for determination of bearing capacity – Plate load and Standard Penetration Test. Test procedures as per IS:1888 & IS:2131.	11 th Week (17/10/2026-24/10/2026)		
4	Definition of earth pressure, Active and Passive earth pressure for no surcharge condition, coefficient of earth pressure	12 th Week (27/10/2026-02/11/2026)		
5	Concept of compaction, Standard and Modified proctor test as per IS code, Plotting of Compaction curve for determining: Optimum moisture content (OMC), maximum dry density (MDD), Zero air voids line. Factors affecting compaction, field methods of compaction – rolling, ramming and vibration	13 th Week (03/11/2026-09/11/2026)		
5	Suitability of various compaction equipment -smooth wheel roller, sheep foot roller, pneumatic tyre roller, Rammer and Vibrator, Difference between compaction and consolidation. Concept of soil stabilization, necessity of soil stabilization, different methods of soil stabilization. California bearing ratio (CBR) test - Meaning and Utilization in Pavement Construction	14 th Week (10/11/2026-17/11/2026)		
5	Necessity of site investigation and soil exploration: Types of exploration, criteria for deciding the location and number of test pits and bores. Field identification of soil – dry strength test, dilatancy test and toughness test.	15 th Week (18/11/2026-25/11/2026)		
-	Revision	16 th Week (26/11/2026-28/11/2026)		

Assignments

Assignment Serial	Contents of Syllabus Covered	Proposed Week	Actual Date	Remarks
A-1	Unit 1- Overview of Geology and Geotechnical Engineering, Unit 2- Physical & Index Properties of Soil.	6 th Week		

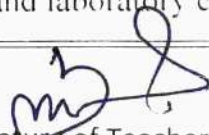
Lesson Plan

Course Code: CEPC213

Course Title: Construction Materials Laboratory
Sem 3rd

Week	Date	Practical No.	Practical / Experiment	Learning Outcome
1	01 Aug 2026	1	Course Introduction, Laboratory Safety, Identification of Various Construction Materials Based on Their Sources	Understand laboratory rules and identify commonly used construction materials.
2	08 Aug 2026	2	Identify Various Sizes of Coarse Aggregates (60, 40, 20, 10 mm) from a 10 kg Sample and Prepare Report	Classify coarse aggregates according to size.
3	15 Aug 2026	3	Study Grain Distribution Pattern in Teak Wood (Along and Perpendicular to Grains) and Prepare Sketches	Identify timber grain patterns and relate them to engineering properties.
4	22 Aug 2026	4	Preparation of Lime Putty by Slaking Lime and Report Preparation	Understand slaking process and properties of lime.
5	29 Aug 2026	5	Construction Site Visit – Identification of Soil Layers and Types (Part I)	Identify soil strata in foundation excavations.
6	05 Sept 2026	6	Construction Site Visit – Identification of Soil Layers and Types (Part II) with Photographs and Samples	Prepare field report based on site observations.
7	12 Sept 2026	7	Selection of First-Class, Second-Class and Third-Class Bricks and Report Preparation	Differentiate brick classes based on physical characteristics.
8	19 Sept 2026	8	Measurement of Brick Dimensions, Weight and Field Tests (Dropping, Striking and Scratching Test)	Evaluate brick quality using field tests.
9	26 Sept 2026	9	Identification of Flooring Tiles (Vitrified, Ceramic, Glazed, Mosaic, Anti-skid, Checkered, Paving Blocks)	Identify flooring materials and their applications.
10	03 Oct 2026	10	Application of Termite Chemical on Damaged Timber Sample	Learn timber preservation techniques.
11	10 Oct 2026	11	Identification of Different Types of Glass from Given Samples	Distinguish different glass types used in construction.

Week	Date	Practical No.	Practical / Experiment	Learning Outcome
12	17 Oct 2026	12	Surface Preparation and Application of Paint on Wall Surface (Part I)	Prepare wall surface and understand painting procedures.
13	24 Oct 2026	13	Application of Second/Final Coat of Paint on Wall Surface (Part II)	Apply paint using safe construction practices.
14	31 Oct 2026	14	Preparation of Cement Mortar (1:3 or 1:6) Using Artificial Sand	Prepare cement mortar with processed construction material.
15	07 Nov 2026	15	Preparation of Cement Mortar Using Fly Ash or Granite/Marble Polishing Waste	Understand utilization of industrial waste in mortar.
16	14 Nov 2026	16	Demonstration of Construction Material Samples and Viva-Voce	Reinforce practical understanding of materials.
17	21 Nov 2026	17	Submission of Practical Records. Journal Checking and Practical Assessment	Complete documentation and evaluate practical skills.
18	28 Nov 2026	18	Final Practical Examination / Viva-Voce / Record Verification	Assess practical knowledge and laboratory competence.


 Signature of Teacher

LESSON PLAN

Program Name	DIPLOMA IN CIVIL ENGINEERING
Course/Subject Name	CONCRETE TECHNOLOGY LAB
Course/Subject Code	CEPC219
Course/Subject Coordinator Name	Manoj Kumar

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Concrete Technology Lab	2(Pr.) Each group	40	-	60	-
Reference books:			1. Sood, H., Kulkarni P. D., Mittal L. N., Laboratory Manual in Concrete Technology, CBS Publishers, New Delhi. 2. Gambhir, M.L., Concrete Technology, Tata McGraw Hill Publishing Co. Ltd., Delhi. 3. Shetty, M.S., Concrete Technology, S. Chand and Co. Pvt. Ltd., Ram Nagar, Delhi.			

Course Outcomes: After the completion of the course the students will:

CO1	Identify different types of cement by performing laboratory tests.
CO2	Know the physical properties of fine and coarse aggregates.
CO3	Prepare concrete of required specification.
CO4	Maintain the quality of concrete applying scientific principles.

Teaching Plan:

Lecture No.	Name of Practical	Proposed Date (G-I & G-II)	Actual Date (G-I & G-II)	Remarks
1	Determine fineness of cement by Blaine's air permeability apparatus or by sieving.	07.08.26		
2	Determine specific gravity, standard consistency, initial and final setting times of cement. File checking & Viva.	14.08.26		
3	Determine compressive strength of cement. File checking & Viva.	21.08.26		
4	Determine silt content in sand. File checking & Viva.	28.08.26		
5	Determine bulking of sand. File checking & Viva.	11.09.26		
6	Determine bulk density of fine and coarse	18.09.26		

	aggregates. File checking & Viva.			
7	Determine water absorption of fine and coarse aggregates. File checking & Viva.	25.09.26		
8	Determine Fineness modulus of fine aggregate by sieve analysis. File checking & Viva.	09.10.26		
9	Determine elongation and flakiness index of coarse aggregates. File checking & Viva.	16.10.26		
10	Determine workability of concrete by slump cone test. File checking & Viva.	23.10.26		
11	Determine workability of concrete by compaction factor test. File checking & Viva.	30.10.26		
12	To prepare concrete mix of a particular grade and determine compressive strength of concrete for 7 and 28 days. File checking & Viva.	13.11.26		
13	Demonstration of NDT equipment. File checking & Viva.	20.11.26		
14	File checking & Viva.	27.11.26		


Signature of Teacher


Signature of HOD

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	Geotechnical Engineering Lab.
Course/Subject Code	N-2022 / CEPC221
Course/Subject Co-ordinator Name	Aman Deep Singh

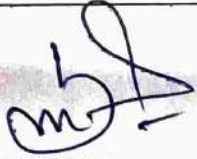
Evaluation Scheme

Sr. No.	Subject Name	Study Scheme			Evaluation Scheme						Total Marks (Int. & Ext.)
1	Geotechnical Engineering	P	BS	Total	Internal Assessment			External Assessment			
		2	0	2 Hrs./week	Th.	Pr.	T	Th.	Hrs.	T	
					40	-	40	60	3	60	
Reference Books		Punmia, B.C., Soil Mechanics and Foundation Engineering, Laxmi Publication, Delhi									
		Arora K R, Soil Mechanics and Foundation Engineering, Standard Publisher.									
		Ramamurthy, T.N. & Sitharam,T.G., Geotechnical Engineering(Soil Mechanics), S Chand and Company LTD., New Delhi									

Lab. Plan

Unit No.	Name of Topic	Proposed Week	Actual Date	Remarks
1	Identification of rocks from the given specimen	1 st Week (01/08/2026-07/08/2026)	G1- G2-	
2	Determine water content of given soil sample by oven drying method as per IS: 2720 (PartII).	2 nd Week (10/08/2026-17/08/2026)	G1- G2-	
3	Determine specific gravity of soil by pycnometer method as per IS 2720 (Part- III).	3 rd Week (18/08/2026-24/08/2026)	G1- G2-	
4	Determine dry unit weight of soil in field by core cutter method as per IS 2720 (Part- XXIX).	4 th Week (25/08/2026-31/08/2026)	G1- G2-	
5	Determine dry unit weight of soil in field by sand replacement method as per IS 2720 (Part XXVIII).	5 th Week (01/09/2026-08/09/2026)	G1- G2-	
6	Determine Plastic and Liquid Limit along with Plasticity Index of given soil sample as per IS 2720 (Part- V).	6 th Week (09/09/2026-16/09/2026)	G1- G2-	
7	Determine Shrinkage limit of given soil sample as per IS 2720 (Part- V).	7 th Week (17/09/2026-	G1- G2-	

		23/09/2026)		
8	Determine grain size distribution of given soil sample by mechanical sieve analysis as per IS 2720 (Part- IV).	8 th Week (24/09/2026-30/09/2026)	G1- G2-	
9	Use different types of soil to identify and classify soil by conducting field tests-through Visual inspection, Dry strength test, Dilatancy test and Toughness test.	9 th Week (01/10/2026-08/10/2026)	G1- G2-	
10	Determine coefficient of permeability by falling head test as per IS 2720 (Part- XVII).	10 th Week (09/10/2026-16/10/2026)	G1- G2-	
11	Determine MDD and OMC by standard proctor test of given soil sample as per IS 2720 (Part VII).	11 th Week (17/10/2026-24/10/2026)	G1- G2-	


Signature of HOD


Signature of Teacher