

Lesson Planning (Theory)

Branch : Civil Engineering

Semester: 6th

Subject : Entrepreneurship and Start-ups

Session : January-June 2026

Teacher: Sh. Virender Kumar

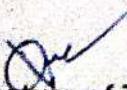
Class Room : A-201

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	3 WEEKS	UNIT 1 – Introduction to Entrepreneurs hip and Start-Ups	<ul style="list-style-type: none"> • Definitions, Traits of an entrepreneur, Intrapreneurship, Motivation. • Types of Business Structures, Similarities/differences between entrepreneurs and managers. 	R1,R2	
2	3 WEEKS	UNIT 2 – Business Ideas and their implementation UNIT 3 –Idea to Start-up	<ul style="list-style-type: none"> • Discovering ideas and visualizing the business • Activity map • Business Plan • Market Analysis–Identifying the target market, 	R1,R2	
3	3 WEEKS	UNIT 3 –Idea to Start-up UNIT 4 – Management	<ul style="list-style-type: none"> • Competition evaluation and Strategy Development, • Marketing and accounting, • Risk analysis, • Company's Organization Structure, • Recruitment and management of talent. • Financial organization and management 	R1,R2	
4	3 WEEKS	UNIT 5- Financing and Protection of Ideas	<ul style="list-style-type: none"> • Financing methods available for start-ups in India • Communication of Ideas to potential investors–Investor Pitch 	R1,R2	
5	2 WEEKS	UNIT 6	Exit strategies for entrepreneurs, bankruptcy, and succession and harvesting strategy.	R1,R2	

REFERENCE RESOURCES

R1- The Start up Owner's Manual: The Step-by-Step Guide for Building a Great Company by Steve Blank and Bob Dorf.

R2 – Demand: Creating What People Love Before They Know They Want It by Adrian J. Slywotzky With Karl Weber.


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Lesson Planning (Theory)

Branch : Civil Engineering

Semester: 6th

Subject : Public Health Engineering

Session : January-June 2026

Teacher: Er. Harish Kumar

Class Room : A-201

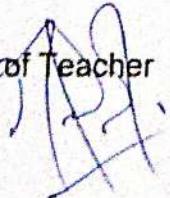
S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	3 WEEKS	Unit I Sources, Demand and Quality of water	<ul style="list-style-type: none"> • Water supply schemes - Objectives, components, • Sources of water: Surface and Subsurface sources of water, Intake Structures, Definition and types, Factors governing the location of an intake structure, Types of intakes. • Demand of water: Factors affecting rate of demand, Variations of water demands, forecasting of population, Methods of forecasting of population, (Simple problems on forecasting of population), Design period, estimating of quantity of water supply required for city or town. • Quality of water: Need for analysis of water, Characteristics of water- Physical, Chemical and Biological tests. 	R1,R2	
2	3 WEEKS	UNIT II Purification of water	<ul style="list-style-type: none"> • Purification of Water: Objectives of water treatment, Aeration- objects and methods of aeration, Plain sedimentation, Sedimentation with coagulation, principles of coagulation, types of coagulants, Jar Test, process of coagulation. • Filtration - mechanization of filtration, classification of filters: slow sand filter, rapid sand filter, pressure filter. Construction and working of slow sand filter and rapid sand filter, operational problems in filtration. Disinfection: Objects, methods of disinfection, Chlorination Application of chlorine, forms of chlorination, types of chlorination practices, residual chlorine and its importance, Flow diagram of water treatment plants. 	R1,R2	
3	3 WEEKS	UNIT III Conveyance and Distribution of water	<ul style="list-style-type: none"> • Conveyance: Types of Pipes used for conveyance of water, choice of pipe material, Types of joints & Types of valves- their use, location and function on a pipeline. • Distribution of water: Methods of distribution of water- Gravity, pumping, and 	R1,R2	

		combined system, Service reservoirs - functions and types, Layouts of distribution of Water-Dead end system, grid iron system, circular system, radial system; their suitability, advantages, and disadvantages.		
4	3 WEEKS	UNIT IV Domestic sewage and System of Sewerages	<ul style="list-style-type: none"> • Building Sanitation: Necessity of sanitation, Necessity to treat domestic sewage, Definitions - Sewage, Sullage, types of sewage. Definition of the terms related to Building Sanitation- Water pipe, Rainwater pipe, Soil pipe, Sullage pipe, Vent pipe. • Systems of Sewerage and Sewer Appurtenances: Types of Sewers, Systems of sewerage, self- cleansing velocity and non-scouring velocity, Laying, Testing and maintenance of sewers, Manholes and Drop Manhole-component parts, location, spacing, construction details, Sewer Inlets, Street Inlets. 	R1,R2
5	2 WEEKS	UNIT V Characteristics and treatment of Sewage	<ul style="list-style-type: none"> • Analysis of sewage: Characteristics of sewage, B.O.D., C.O.D. and its significance. Central Pollution Control Board Norms for discharge of treated sewage, Objects of sewage treatment and flow diagram of conventional sewage treatment plant. • Treatment of Sewage: Screening, Types of screens, Grit removal, Skimming, Sedimentation of sewage, Aerobic and anaerobic process, Sludge digestion, trickling filters, Activated sludge process, Disposal of sewage, Oxidation Pond, Oxidation ditch. Septic tank. 	R1,R2

REFERENCE RESOURCES

- R1-Garg, S.K., Environmental Engineering Vol. I and Vol. II, Khanna Publishers.
- R2 –Punmia, B C, Environmental Engineering, vol. I and II, Laxmi Publishers

Signature of Teacher



Signature of H.O.D/OIC



Govt. Polytechnic Tehwar
Department of Civil Engineering
LESSON PLAN

Name of Teacher :- Nidhi Katoch Subject: Composites, Sciences & Technology (OE) Class: 6th Semester

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	January	5th week	27,28,29	1. Introduction:	Definition – Classification and characteristics of Composite materials. terminology used in fiber science, Advantages and application of composites. Introduction to composite materials:	
2		1st week	2,3,4,5		General characteristics of reinforcement-classification.	
3		2nd week	9,10,11,12			
4		3rd week	16,17,18,19		Thermoplastic and thermosetting resins; Commonly used matrix reinforcement system;	
5		4th week	23,24,25,26		Fibre, Flake and particulate reinforced composites,	
6	February	1st week	2,3,5	2 Polymer matrix composites:	Reinforcements used in PMC's glass, carbon, aramids, boron, Roving's, yarns, fabrics, etc.; Thermoset matrices for aerospace components-polyesters,	
7		2nd week	9,10,11,12		epoxies, phenolics, vinyl esters, cyanate esters, etc.;	class test 1
8		3rd week	16,17,18,19			
9		4th week	23,24,25		Composites for satellites and advanced launch vehicles,	
10		1st week	30,31,2,2		Design considerations PMC for structural composites, Silicon carbide composites, design, processing and properties	
11	March	2nd week	6,7,8,9	3 Specialty composites:	Carbon-Carbon composites: Matrix precursors, Manufacturing considerations, Nanocomposites: Nano particle dispersion in polymer matrix,	2nd class test
12		3rd week	13,16		Polymer- nanoclay composites and polymer-carbon nanotubes composites.	
13		4th week	20,21,22,23		Hand lay-up, Filament winding, Pultrusion, Resin transfer molding,	
14		5th week	27,28,29,30		Processing science of reactive polymer composites, Process steps for production, Selection of processing conditions toolings,	
15		1st week	4,5,6,7		Equipments, Carbon-carbon composites, Processing, Thermal and mechanical properties, Quality control.	
16	April	2nd week		House Test		
17		3rd week	18,19,20,21	5 Testing of composites:	Raw material testing, Property evaluation at laminate level,	
18		4th week	25,26		NDT techniques.	

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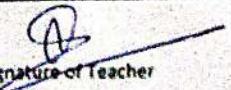
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Signature of Teacher

Govt. Polytechnic Talwar
Department of Civil Engineering
LESSON PLAN

Name of Teacher :- Parveen Kumari Subject: Technical Communication (OE) Class: 6th Semester

S. No.	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	January	5th week	27,30,31	Unit 1: Fundamentals of Technical Communication	1. Language as a tool of Communication 2. Features of Technical Communication	
2		1st week	2,3,6,7		3. Distinction between General and Technical Communication, Channels of Communication	
3		2nd week	9,10,13		4. Channels of Communication at workplace: Downward, Upward, Lateral or Horizontal, Diagonal, Grapevine, Consensus 5. Barriers to Communication and overcoming barriers	
4		3rd week	16,17,20,21		1. Types of Technical writing	1st Assignment
5		4th week	23,24,27,28		2. Drafting skills: Agenda and Minutes of Meetings, Official and Business Correspondence	
6	February	1st week	2,3,6,7	Unit 2. Technical Writing	3. Different formats of Report writing	
7		2nd week	9,10,13		4. Basics of Grammar: Spotting errors in sentences (Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction, Article, Modals, Tenses, Punctuation)	class test 1
8		3rd week	16,17,20		5. Resume Writing and Covering letter	
9		4th week	23,24,27,28		1. Concept and Significance of Presentation skills	
10		1st week	30,31,4		2. Steps of a Effective Presentation	
11	March	2nd week	6,7,10	Unit 3. Presentation Skills	3. Elements of Effective Presentation skills, including public speaking Clarity of substance; Emotion, Humour, Overcoming Fear, Confident speaking, Audience Analysis and Retention of audience interest	
12		3rd week	13,17,18		4. How to improve Presentation Skills	2nd class test
13		4th week	20,21,24,25		1. What are Speaking Skills and Characteristics of a Good Speech 2. What is Panel Discussion and its procedure	
14		5th week	27,28		3. Job Interview Skills: What to do Before, After and During Interview	3rd Assignment
15		1st week	2		4. Body Language Examples and their Meanings-Positive and Negative. Body language for interviews	
16	April	2nd week		Unit 4. Speaking skills	House Test	PTM
17		3rd week	11,12,15,16		5 Difference between Etiquettes and Manners ,Table Etiquettes , Business Etiquettes, Telephone Etiquettes,	
18		4th week	18,19,22,23		5. Dressing Etiquettes and Workplace Etiquettes, How to get along with opposite Gender	
19		5th week	25,26		6. What are the elements of Voice Modulation	

Signature of HOD


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Lesson Planning (Theory)

Branch : Civil Engineering

Semester : 6th

Subject : Design Of Steel Structures

Session : January-June 2026

Teacher: Er. Salbal Bharti

Class Room : A-201

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	3 WEEKS	Unit I Structural Steel and Sections	<ul style="list-style-type: none"> Terminology, Properties of structural steel as per IS Code, grades of steel, Designation of structural steel sections as per IS handbook and IS: 800. Classification of sections in Limit State Method 		
		Unit II Bolted Connections (LSM)	<ul style="list-style-type: none"> Types of Bolts (Theory only), Forces in Bolts, Types of Bolted joints with Sketches (Butt Joint and Lap Joint), Terminology & IS 800 Provisions for Gauge, Pitch, End & Edge Distance, Patterns of Bolting (Chain, Diamond, Staggered). 	R1,R2	
2	3 WEEKS	Unit II Bolted Connections (LSM)	<ul style="list-style-type: none"> Gross and net cross-sectional area of bolted members, Design of bolted connections & Efficiency of a joint. (Numerical problems on Ordinary Bolts only) 		
		Unit III Welded Connections (LSM)	<ul style="list-style-type: none"> Introduction, advantages, and disadvantages of welded joint, defects in welds, Types of welds and their symbols, Terminology & IS 800 provisions for Size, Throat Thickness, End Returns etc. Longitudinal, Transverse & Intermittent welds. 	R1,R2	
3	3 WEEKS	Unit III Welded Connections (LSM)	<ul style="list-style-type: none"> Design of fillet weld (Plate section, Single & Double Angle Section) and butt weld subjected to axial load. (Descriptive No numerical on plug and slot welds). 		
		Unit IV Tension Members (LSM)	<ul style="list-style-type: none"> Introduction to tension members, Types of section used in axial tension., Gross and net 	R1,R2	

			<p>cross-sectional area of tension members (Numerical problems on Plate & Angles Sections only)</p> <ul style="list-style-type: none"> • Analysis & Design of tension member with welded and bolted connections (Plate, 40 Single & Double Angle Sections only). Introduction to Lug Angle and Tension splice. (Theory only) 		
4	3 WEEKS	<p>Unit V Compression Members (LSM)</p> <p>Unit IV Tension Members (LSM)</p>	<ul style="list-style-type: none"> • Types of sections used, Effective length, Radius of gyration, slenderness ratio and its limit, Buckling Class, Effective length. • Analysis and Design of axially loaded welded and bolted connections using tables and Equations of IS 800 (I-Section, Double Angle Section and Single angle section). <ul style="list-style-type: none"> • Types of sections used, Effective length, Radius of gyration, slenderness ratio and its limit, Buckling Class, Effective length. • Analysis and Design of axially loaded welded and bolted connections using tables and Equations of IS 800 (I-Section, Double Angle Section and Single angle section). 	R1,R2	
5	2 WEEKS	Unit VI Beams (LSM)	<ul style="list-style-type: none"> • Introduction, Different steel sections used, Simple and built-up sections, Plastic Hinge, Plastic section Modulus, Class of Section. • Design of simple I section -Check for shear only (Low Shear & High Shear). 	R1,R2	

REFERENCE RESOURCES

- R1- Duggal, S. K., Limit State Design of Steel Structures, McGraw - Hill Publications.
- R2 Shah, V. L., and Gore, V., Limit State Design of Steel Structures, Structures Publishing

Sanket Thakur
Signature of Teacher

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Lesson Planning (Practical)

Branch : Civil Engineering

Semester: 6th

Subject : Design Of Steel Structures Lab

Session -January-June 2026

Teacher: Er.Salbal Bharti

Class Room : Drawing Hall

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Remarks
1	Week 1	Practical 1	1. Draw any five commonly used rolled steel sections and five built up sections	
2	Week 2			
3	Week 3	Practical 2	2. Details of splicing for steel columns of • Same width • Different widths	
4	Week 4			
5	Week 5	Practical 3	3. Beam to beam connections • Seated Connections • Framed Connections	
6	Week 6			
7	Week 7	Practical 6	4. Beam to column • Seated Connections • Framed Connections	
8	Week 8			
9	Week 9			
10	Week 10	Practical 9	5. Column bases • Slab base • Gusseted base	
11	Week 11			
12	Week 12			
13	Week 13	Practical 10	6. Steel roof truss with details of joints • Heel Joint • Ridge Joint	
14	Week 14			

Salbal Bharti
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Lesson Planning (Theory)

Branch : Civil Engineering

Subject : Indian Constitution

Teacher: Sh. Virender Kumar

Semester: 6th

Session : January-June 2026

Class Room : A-201

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Reference Resources	Remarks
1	3 WEEKS	Unit 1 Introduction to Constitution:	<ul style="list-style-type: none"> • History of making of the Indian Constitution. • Meaning and importance of the Constitution. • Salient features and Preamble of Indian Constitution. • Fundamental rights- meaning and limitations. 	R1,R2	
2	3 WEEKS	Unit 1 Introduction to Constitution Unit 2 Union Government:	<ul style="list-style-type: none"> • Directive principles of state policy and Fundamental duties -their enforcement and their relevance. • Structure of Union Government. • Union Executive- President, Vice-president, Prime Minister, Council of Ministers. 	R1,R2	
3	3 WEEKS	Unit 2 Union Government Unit 3 State and Local Governments	<ul style="list-style-type: none"> • Union Legislature- Parliament and Parliamentary proceedings. • Union Judiciary-Supreme Court of India – composition and powers and function. • Structure of State Government. • State Executive- Governor, Chief Minister, Council of Ministers. 	R1,R2	
4	3 WEEKS	Unit 3 State and Local Governments	<ul style="list-style-type: none"> • State Executive- Governor, Chief Minister, Council of Ministers. • State Legislature-State Legislative Assembly and State Legislative Council. • State Judiciary-High court. • Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special reference to 74th Amendment. 	R1,R2	
5	2 WEEKS	Unit 4 Election provisions, Emergency provisions, Amendment of the constitution	<ul style="list-style-type: none"> • Election Commission of India- composition, powers and functions and electoral process. • Types of emergency-grounds, procedure, duration and effects. • Amendment of the constitution- meaning, procedure and limitations. 	R1,R2	

REFERENCE RESOURCES

- R1- "Introduction to the Constitution of India" by M.V.Pylee, 4th Edition, Vikas publication, 2005.
R2 – 4. "Introduction to the constitution of India" by Durga Das Basu (DD Basu), (Student Edition), 19th edition, Prentice-Hall EEE, 2008.


Signature of Teacher


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Lesson Planning (Practical)

Branch : Civil Engineering

Semester: 6th

Subject : Public Health Engineering Lab

Session -January-May 2026

Teacher: Er. Harish Kumar

S.No.	No. of WEEKS	Chapter/ Unit Description	Detail of Contents	Remarks
1	Week 1	Practical 1	1. Determine pH value of given sample of water.	
2	Week 2			
3	Week 3	Practical 2	2. Determine the turbidity of the given sample of water.	
4	Week 4	Practical 3	3. Determine residual chlorine in a given sample of water	
5	Week 5	Practical 4	4. Determine suspended, dissolved solids and total solids of given sample of water.	
6	Week 6	Practical 5	5. Determine the dissolved oxygen in a sample of water.	
7	Week 7	Practical 6	6. Undertake a field visit to water treatment plant and prepare a report.	
8	Week 8			
9	Week 9	Practical 7	7. Determine the optimum dose of coagulant in a given raw water sample by jar test.	
10	Week 10	Practical 8	8. Draw sketches of various valves used in water supply pipeline.	
11	Week 11	Practical 9	9. Draw a sketch of one pipe and two pipe system of plumbing.	
12	Week 12			
13	Week 13	Practical 10	10. Prepare a report of a field visit to sewage treatment plant.	
14	Week 14			

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