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 Entrepreneurship and Start–Ups	• 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	• 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	• 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	• 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: TheStep-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**	• 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**	• 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**	• 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**	• 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**	• 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

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Govt. Polytechnic Talwar
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,	
2	February	1st week	2,3,4,5		Advantages and application of composites. Introduction to composite materials:	
3		2nd week	9,10,11,12		General characteristics of reinforcement-classification.	
4		3rd week	16,17,18,19	2 Polymer matrix composites:	Thermoplastic and thermosetting resins; Commonly used matrix reinforcement system;	
5		4th week	23,24,25,26		Fibre, Flake and particulate reinforced composites,	
6	March	1st week	2,3,5		Reinforcements used in PMC's glass, carbon, aramids, boron,	
7		2nd week	9,10,11,12		Roving's, yarns, fabrics, etc.; Thermoset matrices for aerospace components-polyesters,	class test 1
8		3rd week	16,17,18,19		epoxies, phenolics, vinyl esters, cyanate esters, etc.;	
9		4th week	23,24,25	3 Specialty composites:	Composites for satellites and advanced launch vehicles,	
10	April	1st week	30,31,2,2		Design considerations PMC for structural composites, Silicon carbide composites, design, processing and properties	
11		2nd week	6,7,8,9		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	4 Manufacturing techniques:	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	May	1st week	4,5,6,7		Equipments, Carbon-carbon composites, Processing, Thermal and mechanical properties, Quality control.	
16		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.	

Signature of HOD

Nidhi 27/01/26
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	February	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	March	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	Unit 3. Presentation Skills	1. Concept and Significance of Presentation skills	
10	April	1st week	30,31,4		2. Steps of a Effective Presentation	
11		2nd week	6,7,10		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	Unit 4. Speaking skills	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	May	1st week	2		4. Body Language Examples and their Meanings-Positive and Negative. Body language for interviews	PTM
16		2nd week		House Test		
17		3rd week	11,12,15,16	Unit 4. Speaking skills	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

Signature of Teacher

Lesson Planning (Theory)

Branch : **Civil Engineering** Semester : **6th**

Subject : **Design Of Steel Structures** Session : **January-June 2026**

Teacher: **Er. Saibal 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** **Unit II Bolted Connections (LSM)**	• 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 • 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)** **Unit III Welded Connections (LSM**	• Gross and net cross–sectional area of bolted members, Design of bolted connections & Efficiency of a joint. (Numerical problems on Ordinary Bolts only) • 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** **Unit IV Tension Members (LSM)**	• 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). • Introduction to tension members, Types of section used in axial tension., Gross and net	R1,R2	

			cross–sectional area of tension members (Numerical problems on Plate & Angles Sections only) • 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	**Unit V Compression Members (LSM)** **Unit IV Tension Members (LSM)**	• 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). • 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)**	• 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

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Lesson Planning (Practical)

Branch : **Civil Engineering** Semester: **6th**

Subject : **Design Of Steel Structures Lab** Session -**January-June 2026**

Teacher: **Er.Saibal 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			

Saibal Bharti
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Lesson Planning (Theory)

Branch : **Civil Engineering** Semester: **6th**

Subject : **Indian Constitution** 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 Constitution:**	• 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:**	• 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**	• 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**	• 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 to74th Amendment.	R1,R2	
5	2 WEEKS	**Unit 4 Election provisions, Emergency provisions, Amendment of the constitution**	• 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.

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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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