Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Nidhi Chauhan Subject :- Public Health Engineering Class:- 6th sem.
Session:- Jan-June 2025 Total Periods: Theory-42, Practicals-Nil

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-8	Unit I Sources, Demand and Quality of water	1. Water supply schemes - Objectives, components, 2.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. 3. 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. 4. Quality of water: Need for analysis of water, Characteristics of water-Physical, Chemical and Biological tests	
2	9-17	UNIT II Purification of water	1. 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. 2. 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.	
3	18-26	UNIT III Conveyance and Distribution of water	1. 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. 2. Distribution of water: Methods of distribution of water- Gravity, pumping, and combined system, Service reservoirs - functions and types, Layouts of distribution of Water-Dead end system, grid iron system, circular system,	1st Assignment 2nd week of March
4	27-35	UNIT IV Domestic sewage and System of Sewerages	1. 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. 2. 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	
5	36-42	UNIT V Characteristics and treatment of Sewage	1. 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. 2. 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	2nd Assignment 4th week of April

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Ajay Kumar Subject :- Design of Steel Structures Class:- 6th sem.
Session:- Jan-June 2025 Total Periods: Theory-56, Practicals-Nil

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-4	Unit I Structural Steel and Sections	- 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.	
2	5-15	Unit II Bolted Connections (LSM)	- 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). - Gross and net cross–sectional area of bolted members. Design of bolted connections & Efficiency of a joint. (Numerical problems on Ordinary Bolts only)	
3	16-26	Unit III Welded Connections (LSM)	- 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. - 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).	1st Assignment 2nd week of March
4	27-36	Unit IV Tension Members (LSM)	- Introduction to tension members, Types of section used in axial tension., Gross and net cross–sectional area of tension members (Numerical problems on Plate & Angles Sections only). - Analysis & Design of tension member with welded and bolted connections (Plate, Single & Double Angle Sections only). Introduction to Lug Angle and Tension splice. (Theory only)	
5	37-45	Unit V Compression 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).	2nd Assignment 4th week of April
6	46-54	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).	

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Nidhi Chauhan Subject :- Public Health Engineering Class:- 6th sem.
Session:- Jan-June 2025 Total Periods: Theory-42, Practicals-Nil

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-8	Unit I Sources, Demand and Quality of water	1. Water supply schemes - Objectives, components, 2.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. 3. 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. 4. Quality of water: Need for analysis of water, Characteristics of water- Physical, Chemical and Biological tests	
2	9-17	UNIT II Purification of water	1. 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. 2. 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.	
3	18-26	UNIT III Conveyance and Distribution of water	1. 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. 2. Distribution of water: Methods of distribution of water- Gravity, pumping, and combined system, Service reservoirs - functions and types, Layouts of distribution of Water-Dead end system, grid iron system, circular system,	1st Assignment 2nd week of March
4	27-35	UNIT IV Domestic sewage and System of Sewerages	1. 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. 2. 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	
5	36-42	UNIT V Characteristics and treatment of Sewage	1. 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. 2. 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	2nd Assignment 4th week of April

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Manoj Kumar
Session:- Jan-June 2025
Subject :- Entrepreneurship and Start-ups
Total Periods: Theory-56, Practicals-Nil
Class:- 6th sem.

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-6	UNIT 1 – Introduction to Entrepreneurship and Start–Ups	1. Definitions, Traits of an entrepreneur, Intrapreneurship, Motivation. 2. Types of Business Structures, Similarities/differences between entrepreneurs and managers.	
2	7-18	UNIT 2 – Business Ideas and their implementation	1. Discovering ideas and visualizing the business 2. Activity map 3. Business Plan	
3	19-28	UNIT 3 –Idea to Start-up	1. Market Analysis–Identifying the target market, 2. Competition evaluation and Strategy Development, 3. Marketing and accounting, 4. Risk analysis	1st Assignment 2nd week of March
4	29-38	UNIT 4 –Management	1. Company's Organization Structure, 2. Recruitment and management of talent. 3. Financial organization and management	
5	39-48	UNIT 5-Financing and Protection of Ideas	1. Financing methods available for start-ups in India 2. Communication of Ideas to potential investors–Investor Pitch	2nd Assignment 4th week of April
6	49-54	UNIT 6	1.Exit strategies for entrepreneurs, bankruptcy, and succession and harvesting strategy.	

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Shashank Sharma Subject :-Indian Constitution Class:- 6th sem.

Session:- Jan-June 2025 Total Periods: Theory-28, Practicals-Nil

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-7	Unit 1 Introduction to Constitution:	1. History of making of the Indian Constitution. 2. Meaning and importance of the Constitution. 3. Salient features and Preamble of Indian Constitution. 4. Fundamental rights- meaning and limitations. 5. Directive principles of state policy and Fundamental duties -their enforcement and their relevance.	
2	8-14	Unit 2 Union Government:	1. Structure of Union Government. 2. Union Executive- President, Vice-president, Prime Minister, Council of Ministers. 3. Union Legislature- Parliament and Parliamentary proceedings. 4. Union Judiciary-Supreme Court of India – composition and powers and function.	1st Assignment 2nd week of March
3	15-22	Unit 3 State and Local Governments:	1. Structure of State Government. 2. State Executive- Governor, Chief Minister, Council of Ministers. 3. State Legislature-State Legislative Assembly and State Legislative Council. 4. State Judiciary-High court. 5. Local Government-Panchayat raj system with special reference to 73rd and Urban Local Self Govt. with special reference to74th Amendment.	
4	23-28	Unit 4 Election provisions, Emergency provisions, Amendment of the constitution	1. Election Commission of India-composition, powers and functions and electoral process. 2. Types of emergency-grounds, procedure, duration and effects. 3. Amendment of the constitution- meaning, procedure and limitations.	2nd Assignment 4th week of March

Signature of Teacher

Code NO-ASOE304

PLANNED SYLLABUS COVERAGE (Theory)

G P Kinnaur	Department: Applied Science & Humanities Subject : Composites Science &Technology					
	Course - Diploma		Duration – 14 weeks			
SYLLABUS COVERAGE	Total Periods - 56 (42L+14DCS)		Theory – 56 (42L+14DCS) hours			
Sr. No	Period No.	Topic	Details	Instruction references	Additional Study Recommended	Remarks
1	1 TO 12 (L-9,DCS-3)	1. Introduction	Definition – Classification and characteristics of Composite materials. terminology used in fiber science, Advantages and application of composites. Introduction to composite materials: General characteristics of reinforcement- classification.	Material Science and Technology – Vol 13 – Composites by R.W.Cahn – VCH	Composite Materials Science and Applications – Deborah D.L. Chung	
2	13 TO 25 (L-10, DCS-3)	2. Polymer matrix composites	Thermoplastic and thermosetting resins; Commonly used matrix reinforcement system; Fibre, Flake and particulate reinforced composites, Reinforcements used in PMC'sglass, carbon, aramids, boron, Roving's, yarns, fabrics, etc.; Thermoset matrices for aerospace components- polyesters, epoxies, phenolics, vinyl esters, cyanate esters, etc.; **(Class Test- I)**			
3	26 TO 35 (L-7,DCS-3)	3. Specialty composites	Composites for satellites and advanced launch vehicles, Design considerations PMCfor structural composites, Silicon carbide composites, design, processing and properties Carbon-Carbon composites: Matrix precursors, Manufacturing considerations, Nanocomposites: Nano particle dispersion in polymer matrix, Polymer- nanoclay composites and polymer-carbon nanotubes composites. **(Class Test-II)**			
4	36 TO 48 (L-10,DCS-3)	4. Manufacturing techniques: Materials	Hand lay-up, Filament winding, Pultrusion, Resin transfer molding, Processing science of reactive polymer composites, Process steps for production, Selection of processing conditions toolings, Equipments, Carbon-carbon composites, Processing, Thermal and mechanical properties, Quality control.			
5	49 TO 56 (L-6,DCS-2)	5. Testing of composites	Raw material testing, Property evaluation at laminate level, NDT techniques.			

Surya Negi
Lecturer Chemistry

APPROVED	SIGN HOD
DATE:-	

Planned Syllabus Coverage (Theory)						
Govt. Polytechnic Kinnaur		Subject: Technical Communication (Open Elective) Sem:6th Civil Engg.				
		Course: Diploma		Duration: 14 Weeks		
		Total Periods - 56				
Sr. No.	Period No.	Topic	Details	Instruction References	Additional Study Recommended	Remarks
1	1 to 15	Fundamentals of Techical Writing	Language as a tool of Communication, Features of Technical Communnication, Distinction between General and Technical Communication			
			Channels of Communication - Upward, Downwards, horizontal, Diagonal, Grapevine, Consensus			
			Barriers to Communication, Overcoming Barriers			
2	16 to 36	Technical Writing	Types of Technical Writing, Drafting Skills- Minutes of Meeting, Official and Business Correspondence			
			Different formats of Report Writing			
			Basic Grammar: Noun, Pronoun, Verb, Adverb, Adjective, Preposition, Conjunction, Articles, Modals, Tenses, Punctuation			
			Resume Writing and Covering Letter			
3	37 to 44	Presentation Skills	Concept and Significance of Presetation Skills, Steps of Effective Presentation			
			Elements of Effective Presentation Skills			
			How to Improve Presentation Skills			
4	45 to 56	Speaking Skills	Speaking Skills and Characteristics of a Good			
			Panel Discussion and its procedure			
			Job Interview Skills, Body Language -Positive and negative Body Language for interview			
			Etiquettes and Manners - Table, Buisness, Telepohone, Dressing, Workplace. Getting along with opposite gender			
			Elements of Voice Modulation - (Quality,Pitch, Rhythm, Pitch, Volume); Intonation; Pronunciation, Articuation, Stress, Accent			

Monika (Lecturer English)

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Nidhi Chauhan Subject :- Public Health Engineering Lab Class:- 6th sem.
Session:- Jan-June 2025 Total Periods: Theory-Nil, Practicals-28

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-2		1. Determine pH value of given sample of water.	
2	3-4		2. Determine the turbidity of the given sample of water.	
3	5-6		3. Determine residual chlorine in a given sample of water	
4	7-8		4. Determine suspended, dissolved solids and total solids of given sample of water.	
5	9-10		5. Determine the dissolved oxygen in a sample of water	
6	11-14		6. Undertake a field visit to water treatment plant and prepare a report.	
7	15-16		7. Determine the optimum dose of coagulant in a given raw water sample by jar test.	
8	17-20		8. Draw sketches of various valves used in water supply pipeline	
9	21-26		9. Draw a sketch of one pipe and two pipe system of plumbing	
10	27-28		10. Prepare a report of a field visit to sewage treatment plant	

Signature of Teacher

Deptt. of Civil Engg.
Govt. Polytechnic Kinnaur
Lesson Plan

Name of teacher :- Puneet Sharma/ Nidhi Chauhan Subject :- Design of Steel Structures Lab Class:- 6th sem.
Session:- Jan-June 2025 Total Periods: Theory-Nil, Practicals-56

S.No	Period No.	Topic/Practical	Details of topic/practical	Remarks
1	1-4	Types of Sections	1. Draw any five commonly used rolled steel sections and five built up sections.	
2	5-15	Column Splicing	2. Details of splicing for steel columns of - Same width - Different widths	
3	16-26	Beam to Beam Connection	3. Beam to beam connections - Seated Connections - Framed Connections	
4	27-36	Beam to Column Connection	4. Beam to column	
5	37-45	Column Basis	5. Column bases - Seated Connections - Framed Connections - Slab base - Gusseted base	
6	46-54	Steel Roof Truss	6. Steel roof truss with details of joints - Heel Joint - Ridge Joint	

Signature of Teacher