LESSON PLAN

ProgramName	Diploma (Auto Engg., Civil Engg.,Computer Engg.(Th))
Course/SubjectName	Applied Chemistry
Course/SubjectCode	BS105(Th)&BS109Applied Chemistry Lab
Course/SubjectCoordinatorName	Mrs. Puja Verma

Evaluation scheme

S.No.	Subject Name	Studyscheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Applied Chemistry +Applied Chemistry Lab	3(Th)+1(DCS) +2(Pr)	40	40	60	60

Reference books	(i)	Dr.Vairam, S.,Engineering Chemistry,Wiley India Pvt.Ltd.,New Delhi, 2013
	(ii)	Jain & Jain, Engineering Chemistry,Dhanpat Rai,NewDelhi,2015
	(iii)	Text Book Of Chemistry for Class XI & XII(Part-I,Part-II);NCERT.,Delhi,2017-18
	(iv)	Dr.G.Hugar & Prof. A.N.Pathak Applied Chemistry Laboratory Practices,NITTTR
	(v)	Agnihotri, Rajesh, Chemistry for Engineers, Wiley India Pvt.Ltd.,2014

Course Outcomes: After the completion of the course the student will be able to

CO1	Solve various engineering problems by applying the basic concepts of atomic structure, chemical bonding and solution.
CO2	Understand and solve various engineering problems using concept of electrochemistry and corrosion.
CO3	Understand to analyze engineering materials, their properties and applications.
CO4	Understand the suitability of water source and use relevant water treatment for domestic and industria application.
CO5	Use relevant fuel and lubricant for domestic and industrial application.
CO6	Understand and analyze various polymers and their application.

Teaching Plan:

Lecture No.	Name of topic	Actual date	Remarks
1	**Unit-1 Atomic Structure:** Fundamental particles(electron,proton,neutron), Bohr's theory, successes & limitatations		
2	Heisenberg uncertainty principle, Hydrogen spectrum		
3	Quantum numbers		
4	orbital concept, difference between orbit and orbital Shapes of s, p orbitals		
5	Pauli's exclusion principle, Hund's rule of maximum multiplicity Aufbau rule, electronic configuration(Z=1 to 30)		
6	**Unit-1Chemical Bonding and Solutions:** Concept of chemical bonding – cause of chemical bonding, types of bonds: ionic bonding (NaCl example) , Lewis concept of covalent bond (H2, F2, HF). Electronegativity,		
7	Difference between sigma and pie bond , Electron sea model of metallic bond, Idea of solute, solvent and solution		
8	**Unit-3 Electrochemistry and Corrosion:** Faradays laws of electrolysis and simple numerical problems		
9	Industrial application of Electrolysis – • Electrometallurgy		
10	• Electroplating		
11	• Electrolytic refining.		
12	Primary Application of redox reactions in electrochemical cells – dry cell, • Secondary cell - commercially used lead acid storage battery.		
13	Introduction to Corrosion of metals – definition, types of corrosion (electrochemical), H2 liberation and O2 absorption mechanism of electrochemical corrosion		
14	Internal corrosion preventive measures – Purification, alloying and heat treatment		
15	External corrosion preventive measures: metal (anodic, cathodic) coatings.		
16	**Unit-4 Engineering Materials:** Natural occurrence of metals – minerals, ores of iron, aluminium and copper, gangue (matrix), flux, slag.		
17	metallurgy – brief account of general principles of metallurgy(a).Crushing and grinding (b) Concentration of ore (Levigation)		
18	Froth flotation		
19	Magnetic separation		
20	(c) Extraction(Roasting and calcinations & smelting)		
21	(d) Refining (Electro refining, zone refining)		
22	Extraction of - iron from haematite ore using blast furnace along with reactions.		
23	Alloys – definition, purposes of alloying, ferrous alloys (Invar steel) and non-ferrous (Simple Brass & Bronze,		

24	Nichrome, Duralumin, Magnelium with suitable examples, properties and applications.		
25	**Unit-5 Water:** Classification of soft and hard water based on soap test, salts causing water hardness, Cause of poor lathering of soap in hard water		
26	units of hardness(mg/L and ppm), simple numerical on water hardness		
27	Problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion.)		
28	water softening techniques- i) zeolite process		
29	ii). Municipal water treatment (in brief only) – sedimentation, coagulation, filtration, sterilization.		
30	Properties of water used for human consumption for drinking and cooking purposes from any water sources and Indian standard specification of drinking water		
31	**Unit-6 Fuels:** Definition of fuel and combustion of fuel, classification of fuels, Characteristics of good fuel		
32	calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula		
33	Petrol and diesel - fuel rating (octane and cetane numbers), Chemical composition		
34	Calorific values and applications of LPG, CNG, water gas, producer gas and biogas.		
35	**Unit-7 Lubrication:** Function and characteristic properties of good lubricant		
36	classification with examples		
37	Lubrication mechanism: hydrodynamic and boundary lubrication		
38	Physical properties (viscosity and viscosity index, oiliness, flash and fire point, cloud and pour point		
39	Chemical properties (coke number, total acid number, saponification value) of lubricants.		
40	**Unit-8 Polymer :**Monomer, homo and co polymers , degree of polymerization, simple reactions involved in preparation and their application of thermoplastics and thermosetting plastics (using Polythene, PVC,		
41	PS,PTFE, nylon-6,6 and Bakelite ,		
42	Vulcanization of rubber and properties of vulcanised rubber		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed	Actual date	Remarks
A-1	Atomic Structure, Chemical Bonding and Solutions.	4th week of August		
A-2	Electrochemistry and corrosion and Engineering Materials.	3rd week of September		
A-3	Water,Fuels ,Lubrication and Polymers	3rd week of October		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	2nd week of September		
CT-II	Next 30% of the syllabus	3rd Week of October		
House Test	80% of the syllabus	2nd Week of November		

Lab Plan:

Exp .No.	Name of experiment	Actual date G-A	Actual date G-B	Remarks
1	Preparation of standard solution of oxalic acid.			
2	To determine strength of solution by titrating against standard oxalic acid solution using phenolphthalein as indicator.			
3	Experimental verification of Faraday's first law of electrolysis using copper sulfate solution and copper electrode. OR To construct and measure emf of Electro Chemical Cell(Daniel cell)			
4	Iodometric estimation of Copper in the given Copper ore using standard Hypo solution. OR To determine the percentage of Iron present in the given Haematite ore by standard Potassium Permanganate solution.			
5	Estimation of total hardness of water using standard EDTA solution and using eriochrome black-T (solochrome black-T) indicator and approximately neutral buffer solution (pH range7-11). OR To estimate total alkalinity of given water sample by titrating it against standard Sulphuric acid.			
6	To estimate moisture in given coal sample gravimetrically.			
7	To estimate ash in given coal sample gravimetrically.			
8	To determine viscosity of given lubricating oil by Redwood viscometer.			

Signature of Teacher

HOD

LESSON PLAN

Program Name	DIPLOMA (Elect.,Auto, Civil. & Computer Engg.)
Course/ Subject Name	Communication Skills In English
Course/ Subject Code	HS 101
Course/Subject Coordinator Name	Vandna Chandel

Evaluation scheme

Sr. No.	Subject Name	Studv scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Communication Skills in English	2(Th)+1(DCS)+2(Pr.)	40	40	60	60
Reference books:			1.The Functional Aspects of Communication Skills			
			2.H. G Publications English Grammar			
			3.Comm. Skills in English by True Edu Publications			
			4.General English By Lucent			

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

CO1	Develop basic speaking and writing skills including proper usage of language and vocabulary so that they can become highly confident and skilled speakers writers.
CO2	Be informed of the latest trends in basic verbal activities such as presentation facing interviews and other forms of communication.
CO3	Also Develop Skill of group presentation and communication in team.
CO4	Develop Non-Verbal Communication such as proper use of body language and gesture.

Teaching Plan:

Lecture No.	Name of topic	Actual date	Remarks
1.	**Unit-1 Communication: Theory and Practice** **Introduction** Basics of communication, Introduction meaning and definition, process of communication etc.		
2.	Types of Communication: Formal & Informal		
3	Verbal, Non-Verbal and written communication		

4	Barriers to effective communication		
5	7Cs for effective communication		
6	Art of effective communication, (Choosing Words, Voice Modulation, Clarity, time, Simplification of Words		
7	Technical Communication.		
8	**Unit-2 Soft Skills For Professional Excellence:** Introduction: Soft Skills and Hard skills Importance of soft skills		
9	Life Skills, Self Awareness and self analysis,		
10	Adaptability, resilience		
11	Emotional intelligence and empathy etc		
12	**Unit- 3 Reading Comprehension Section: Short Stories 1. The Gift Of Magi**		
13	The Gift Of Magi		
14	The Gift Of Magi		
15	2.Uncle Podger Hangs a Picture		
16	Uncle Podger Hangs a Picture		
17	**Section :2 Poetry** 1.Night Of the Scorpion		
18	Night Of the Scorpion		
19	2.Stopping By Woods On A snowy Evening		
20	3. Where the Mind Is without fear		
21	**Unit-4. Professional writing**		
22	Letters: Business and Personal		
23	Letters: Business and Personal		
24	Drafting e-mails		

25	Notices		
26	Minutes Of Meeting		
27	The Art of précis writing		
28	The Art of précis writing		
29	**UNIT:5 Vocabulary and Grammar** Glossary of administrative terms(Hindi and English)		
30	One-word substitution		
31	One-word substitution		
32	Idioms and phrases		
33	Idioms and phrases		
34	Parts of Speech		
35	Part of Speech		
36	Active and Passive voice		
37	Active and Passive Voice		
38	Active and Passive Voice		
39	Tenses		
40	Tenses		
41	Punctuation.		
42	Punctuation.		

Assignments:

Assignment serial	Contents of syllabus covered	Actual date	Remarks
A-1	Communication and Soft Skills& Reading comprehension		
A-2	Professional Writing And Vocabulary		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual date	Remarks
CT-I	30% of the syllabus			
CT-II	Next 30% of the syllabus			
House Test	80% of the syllabus			

Lab Plan (101):

Sr. No.	Name of Practical	Actual Date		Remarks
		G-A	G-B	
1	**Unit-1 listening Skills:** Listening process and practice, introduction to recorded lectures, poems, interviews and speeches, listening tests.			
2	**Unit-2 introduction to phonetics** 1. Sounds: Consonant, Vowel, Diphthongs etc. transcription of words(IPA) Syllable Division			
3	2. **Words , Stress, Intonation, Voice Modulation etc.**			
4	**Unit-3 Speaking Skills** **Standard and Formal speech**			
5	Group Discussion			
6	Oral Presentation			
7	Public Speaking, Business presentation etc.			
8	Conversation Practice			
9	Mock Interview			
10	Role playing			

Subject Teacher

Signature of HOD

Government Polytechnic Sundernagar

Lesson Plan for the Session August – December, 2025
Branch: Civil Engg. (1st Semester)

Subject Name: Introduction to IT Systems				Subject Teacher: Er. HEM RAJ	
Sr no	Month	Week	Name of Chapter	Contents to be taught	Remarks
1	August	3	UNIT 1: Basics of Computer System	Block Diagram of Computer System,	
2		4		General Understanding of various hardware components- CPU, Memory, Display Devices (CRT and LCD Monitors), Keyboard,	
3		5		Display Devices (CRT and LCD Monitors), Keyboard, Mouse, HDD Software and types	
4	September	1		Operating System: Definition, types and function of Operating	
5		2		System Booting the system (Cold and warm)	Class Test 1
6		3	UNIT 3: Internet Skills	Understanding the terminology of internet-web browser, search engine, world wide web, Types of Networks	
7		4		Awareness about the government portals (state portals and national portals) and institute portals	
8		5	UNIT 4: Working with MS- Word	File Management (Creating new document, saving a document, printing a document)	
9	October	1		Editing a document, use of Home toolbar, Insert, Design Layout ribbons.	
10		2	UNIT 5: Working with MS- Excel	Working with spread sheets, entering data into the cells, merging cells	
11		3		formula bar,	Class Test 2
12		4		usage of simple functions such as sum, average, min, max, percentage, round, floor, ceiling, conditional formatting of cells	
13	November	3,4,5	UNIT 6: Information Security	Concept of online frauds, threats of online crime, virus attacks and use of antivirus	House Test Nov 2nd week

Subject Teacher

H.O.D
Applied Science

GOVT. POLYTECHNIC SUNDER NAGAR

LESSON PLAN

SUBJECT : ENGINEERING GRAPHICS — SESSION:- AUG.2025 - DEC. 2025

TRADE: CIVIL ENGINEERING — SEMESTER :-1ST

S.NO.	MONTH	WEEK	DATE	CONTENT	SHEET NOS.	REMARKS
1	AUG	2nd	4,5	Draw horizontal, Vertical, 30 degrees, 45 degrees, 60 and 75 degrees lines, different types of lines, dimensioning styles using Tee and Set squares/drafter,Write alphabets and numerical in 7:4 scale (Vertical only) (do this exercise in sketch book).	1(6hrs)	
		3rd	11			
		3rd	12	Draw some problems on Engineering Plain and diagonal scale,Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots	2,3(6hrs)	
		4th	18,19			
		5th	25,26	Draw some problems on orthographic projections using first angle method of projection having plain and slantingand cylinderical surface, ribs, & slots.	4,5,6(8hrs)	
2	SEPT	1st	1,2			
		2nd	8,9	Draw some problems on Isometric view of simple objects having plain and slanting and cylindrical surface (e.g. Cube, Cone and cylinder etc.) by using natural scale	7,8(8hrs)	1st CLASS TEST
		3rd	15,16			
		4th	22,23	Draw free hand sketches/ conventional ,Problem based Learning: Given the orthographicviews of at least three objects with few missing lines, the student will try to imagine the corresponding objects, complete the views and draw these views in sketch bookrepresentation of machine elements in sketch book such as thread profiles, nuts,bolts,studs, set screws, washers, Locking arrangements.Problem based Learning: Given the orthographicviews of at least three objects with few missing lines, the student will try to imagine the corresponding objects, complete the views and draw these views in sketch book.	9,10(8hrs)	
		5th	29,30			
3	OCT	2nd	6,7	Problem based Learning: Given the orthographicviews of at least three objects with few missing lines, the student will try to imagine the corresponding objects, complete the views and draw these views in sketch book	11(6hrs)	2nd CLASS
		3rd	13			
		3rd	14	Draw basic 2D entities like: Rectangle, Rhombus, Polygon using AutoCAD (Print out should be a part of progressive assessment).Draw basic 2D entities like: Circles,Arcs,circular using AutoCAD (Printout should be a part of progressive assessment)	12(6hrs)	
		4th	20,21			
		5th	27,28	Draw basic 2D entities like: Circular and rectangular array using AutoCAD (Printout should be a part of progressive assessment),Draw blocks of 2D entities comprises of Rectangle,Rhombus, Polygon,Circles, Arcs, circular and rectangular array, blocks using AutoCAD (Print out should be a part of progressive assessment).	13(6hrs)	
4	NOV	1st	3			
		1st	4	Draw basic branch specific components in 2D usingAutoCAD (Print out should be a part of team work).	14,15(8hrs)	
		2nd	10,11			HOUSE TEST
		3rd	17			
		3rd	18	Draw complex branch specific components in 2D using AutoCAD (Print should be a part of progressive assessment)	16,17(6hrs)	
		4th	24,25			

VIRENDER PAUL
LECT. MECH. ENGG.

LOVE KISHORE
WORKSHOP SUPDT

H.O.D
(M.E)

LESSON PLAN

Program Name	DIPLOMA (Civil Engg.)
Course/Subject Name	Sports and Yoga
Course/Subject Code	HS103
Course/Subject Coordinator Name	Gopal Dass

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Sports & Yoga	2(Pr.)	--	40	---	60
Reference books			(i)	Modern Trends and Physical Education by Prof. Ajmer Singh.		
			(ii)	Light On Yoga By B.K.S. Iyengar.		
			(iii)	Health and Physical Education – NCERT (11th and 12th Classes).		

Teaching Plan:

Practical Hrs.	Name of topic	Actual date
1-2	Introduction to Physical Education:, Meaning & definition of Physical Education. Aims & Objectives of Physical Education. Changing trends in Physical Education. units, Olympic Movement o Ancient & Modern Olympics (Summer & Winter.) Olympic Symbols, Ideals, Objectives & Values. Awards and Honours in the field of Sports in India (Dronacharya Award, Arjuna Award, Dhayanchand Award, Rajiv Gandhi Khel Ratna Award etc.)	
3-4	Physical Fitness, Wellness & Lifestyle, Meaning & Importance of Physical Fitness & Wellness. Components of Physical fitness. Components of Health related fitness. Components of wellness. Preventing Health Threats through Lifestyle Change. Concept of Positive Lifestyle	
5-6	Fundamentals of Anatomy & Physiology in Physical Education, Sports and Yoga, Define Anatomy, Physiology & Its Importance. Effect of exercise on the functioning of Various Body Systems. (Circulatory System, Respi- ratory System, Neuro-Muscular System etc.).	
7-8	Kinesiology, Biomechanics & Sports Meaning & Importance of Kinesiology & Biomechanics in Physical Edu. & Sports. Newton's Law of Motion & its application in sports. Friction and its effects in Sports.,	
9-10	Postures o Meaning and Concept of Postures. Causes of Bad Posture. Advantages & disadvantages of weight training. Concept & advantages of Correct Posture. Common Postural Deformities – Knock Knee; Flat Foot; Round Shoulders; Lordosis, Ky- phosis, Bow Legs and Scoliosis. Corrective Measures for Postural Deformities.	
11-12	Yoga Meaning & Importance of Yoga. Elements of Yoga. Introduction - Asanas, Pranayama, Meditation & Yogic Kriyas Yoga for concentration & related Asanas (Sukhasana;	

	Tadasana; Padmasana & Sha-shankasana). Relaxation Techniques for improving concentration Yognidra	
13-14	Yoga & Lifestyle Asanas as preventive measures. oHypertension: Tadasana, Vajrasana, Pavan Muktasana, Ardha Chakrasana, Bhujangasana,Sharasana. Obesity: Procedure, Benefits & contraindications for Vajrasana, Hastasana, Trikonasana, Ardh Matsyendrasana. Back Pain: Tadasana, Ardh Matsyendrasana, Vakrasana, Shalabhasana, Bhujangasana. Diabetes: Procedure, Benefits & contraindications for Bhujangasana, Paschimottasana, Pavan Muktasana, Ardh Matsyendrasana	
15-16	Asthema: Procedure, Benefits & contraindications for Sukhasana, Chakrasana,Gomukhasana, Parvatasana, Bhujangasana, Paschimottasana, Matsyasana.	
17-18	Training and Planning in Sports Meaning of Training. Warming up and limbering down. Skill, Technique & Style. Meaning and Objectives of Planning. Tournament – Knock-Out, League/Round Robin & Combination.	
19-20	Psychology & Sports Definition & Importance of Psychology in Physical Edu. & Sports. Define & Differentiate Between Growth & Development Adolescent Problems & Their Management. Emotion: Concept, Type & Controlling of emotions. Meaning, Concept & Types of Aggressions in Sports. Psychological benefits of exercise. Anxiety & Fear and its effects on Sports Performance. Motivation, its type & techniques. Understanding Stress & Coping Strategies.	
21-22	Doping Meaning and Concept of Doping. Prohibited Substances & Methods. Side Effects of Prohibited Substances.	
23-24	Sports Medicine First Aid – Definition, Aims & Objectives. Sports injuries: Classification, Causes & Prevention. Management of Injuries: Soft Tissue Injuries and Bone & Joint Injuries.	
25-26	Sports / Games Following sub topics related to any one Game/Sport of choice of student out of: Athletics, Badminton, Basketball, Chess, Cricket, Kabaddi, Lawn Tennis, Swimming, Table Tennis, Volleyball, Yoga etc. History of the Game/Sport. Latest General Rules of the Game/Sport	
27-28	Specifications of Play Fields and Related Sports Equipment. Important Tournaments and Venues. Sports Personalities. Proper Sports Gear and its Importance.	

Signature of Teacher

Signature of HOD