Govt. Polytechnic Kinnaur, Camp Rohru (HP)

Department: Applied Science & Humanities	**Subject:** Introduction to IT System
Course: Diploma	**Duration:** 14 Weeks
Total Periods: 28 Lecture	**Hours:** 28 hours
Name of Teacher: Er. Sandeep Kumar	**Session:** Aug/Dec-2024

Teaching Plan

Unit No.	Proposed Seclude	Course Content	Detailed Content	Assignment Dates
UNIT-1	1-6 (6-Lecture)	Basics of Computer System	Block Diagram of Computer System, General Understanding of various hardware components- CPU, Memory, Display Devices (CRT and LCD Monitors), Keyboard, Mouse, HDD.	Assignment-1 1st Week of September
UNIT-2	7-11 (5-Lecture)	Software Concepts	Software and its types, Operating System: Definition, types and function of Operating System, Booting the system (Cold and warm). **(CLASS TEST-I)**	
UNIT-3	12-17 (6-Lecture)	Internet Skills	Understanding the terminology of internet-web browser, search engine, world wide web, Types of Networks. Awareness about the government portals (state portals and national portals) and institute portals.	Assignment-2 2nd Week of October
UNIT-4	18-20 (3-Lecture)	Working with MS-Word	File Management (Creating new document, saving a document, printing a document), Editing a document, use of Home, Insert, Design Layout ribbons. **(CLASS TEST-II)**	
UNIT-5	21-24 (3-Lecture)	Working with MS-Excel	Working with spread sheets, entering data into the cells, merging cells, formula bar, usage of simple functions such as sum, average, min, max, percentage, round, floor, ceiling, conditional formatting of cells.	Assignment-3 3rd Week of November
UNIT-6	25-26 (2-Lecture)	Information Security	Concept of online frauds, threats of online crime, virus attacks and use of antivirus.	
27-28 (2-Lecture)		Doubt Clearing Session / Revision		

Reference Books:

- R.S. Salaria, Computer Fundamentals, Khanna Publishing House.
- Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi.
- Computers Fundamentals Architecture and Organization by B Ram, revised Edition, New Age International Publishers, New Delhi.
- Online resources and Wikipedia.

(Signature of Teacher)
Er. Sandeep Kumar

(Signature of HOD)

GOVT POLYTECHNIC KINNAUR (CAMP AT ROHRU, DISTT. SHIMLA)

PLANNED SYLLABUS COVERAGE

Engineering graphics 1st Sem ME/Civil

Sr. no	Period no.	Topic/practical	Details of topic/practical	Assignment details	Practical Details	Remarks
1	1-10	Basic elements of Drawing	Drawing Instruments and supporting materials: method to use them with applications. Convention of lines and their applications. Representative Fractions – reduced, enlarged and full size scales; Engineering Scales such as plain and diagonal scale. Dimensioning techniques as per SP-46:2003 – types and applications of chain, parallel and coordinate dimensioning.		---------	
2	11-20	Orthographic projections	Introduction of projections- orthographic, perspective, isometric and oblique: concept and applications. (No question to be asked in examination). Introduction to orthographic projection, First angle and Third angle method, their symbols. Conversion of pictorial view into Orthographic Views – object containing plain surfaces, slanting surfaces, slots, ribs, cylindrical surfaces. (use First Angle Projection method only)			
3	21-36	Isometric Projections:	Introduction to isometric projections. Isometric scale and Natural scale. Isometric view and isometric projection. Illustrative problems related to objects containing lines, circles and arcs shape only. Conversion of orthographic views into isometric view/projection.			

4	37-48	Free Hand Sketches of engineering elements:	Free hand sketches of machine elements: Thread profiles, nuts, bolts, studs, set screws, wash- er, Locking arrangements. (For branches other than mechanical Engineering, the teacher should select branch specific elements for free hand sketching). Free hand sketches of orthographic view (on squared graph paper) and isometric view (on isometric grid paper).			
5	49-56	Computer aided drafting interface	Computer Aided Drafting: concept. Hardware and various CAD software available. System requirements and Understanding the interface. Components of AutoCAD software window: Title bar, standard tool bar, menu bar, object properties tool bar, draw tool bar, modify tool bar, cursor cross hair. Command window, sta- tus bar, drawing area, UCS icon. File features: New file, Saving the file, opening an existing drawing file, Creating templates, Quit. Setting up new drawing: Units, Limits, Grid, Snap. Undoing and redoing action.			
		Computer aided drafting	Draw basic entities like Line, Circle, Arc, Polygon, Ellipse, Rectangle, Multiline, Polyline. Method of Specifying points: Absolute coordinates, Relative Cartesian and Polar coordinates. Modify and edit commands like trim, extend, delete, copy, offset, array, block, layers. Dimensioning: Linear, Horizontal Vertical, Aligned, Rotated, Baseline, Continuous, Diameter, Radius, Angular Dimensions. Dim scale variable. Editing dimensions. Text: Single line Text, Multiline text			

Signature of Teacher
25/06/24
Rohit Tiwari & Pankaj Chatanta

Counter signed by HOD

Date: 25/06/2024

Lesson Plan

Session: August to December 2024

Subject : Applied Mathematics -I Class: ***Mech. Engg.***

Name of the teacher: Naresh Kumar

Sr. No.	Week	Name of the Chapter	Contents to be taught	Remarks
1	1st		Introduction & Discusson on the contents of the syllabus & Distribution of marks etc.	
2		Trigonometry	Concept of angles, measurement of angles in degrees, grades and radians and related Problems.	
3		Trigonometry	Conversions of angle from one unit system of measurement to another.	
4		Trigonometry	T-Ratios of Allied angles (without proof) and related problems	
5		Trigonometry	Sum, difference formulae and their applications (without proof).	
6		Trigonometry	Various micellaneous problems	
7		Trigonometry	Product formulae (Transformation of product to sum, difference and vice versa).	
8	2 nd	Trigonometry	Problems based upon Product formulae	
9		Trigonometry	T- Ratios of multiple angles & related problems	
10		Trigonometry	T- Ratios of sub-multiple angles (2A, 3A, A/2) & related problems.	
11		Trigonometry	Graphs of sinx, cosx	
12		Trigonometry	Miscellaneous problems of Trigonometry	
			Revision of Trigonometry	
	3 rd		Revision of Trigonometry	
			Revision of Trigonometry	
			Revision of Graphs	
			Revision of Graphs	
13	4th		Revision of Product formula	
14			Revision of chapter & Miscellaneous problems of the chapter	
16	5 th	Trigonometry	Preparation & Revision for Class Test-I	
17			Class Test-I	
18		Differential Calculus	Introduction, Definition of function and types of functions,function of function	
19		Differential Calculus	Concept of limits & problems of function & Limit	
20		Differential Calculus	Four standard limits formulae & problems based on these formulae	
21	6 th	Differential Calculus	Miscellaneous problems of Limits	
22		Differential Calculus	Differentiation by definition & related problems	
23		Differential Calculus	Problems related to find differentiation of a function by definition	
24		Differential Calculus	Differentiation of sum, product and quotient of functions	
25		Differential Calculus	Differentiation of function of a function.	
26	7 th	Differential Calculus	Problems related to find differentiation of a functions	
27		Differential Calculus	Differentiation of trigonometric functions & related problems	

28		Differential Calculus	Differentiation of inverse functions trigonometric & related problems	
29		Differential Calculus	Logarithmic differentiation & related problems	
30	8 th	Differential Calculus	Exponential functions & related problems.	
32		Differential Calculus	Miscellaneous problems of chapter	
34			Revision & Preparation for Class Test	
36			Class Test-II	
37	9 th	Complex Numbers	Complex Numbers: Definition, real and imaginary parts of a Complex number,Representation of a complex number ,i.e., Argand's Diagram and related problems.	
38		Complex Numbers	Conjugate of a complex number and related problems. Polar and Cartesian representation of a complex number and its conversion from one form to other	
39	10 th	Complex Numbers	Modulus and amplitude of a complex number & related Problems	
40		Complex Numbers	Addition, Subtraction of Complex numbers & their problems	
41		Complex Numbers	Multiplication and Division of a complex numbers & related Problems	
42	11th	Complex Numbers	De-movier's theorem, its application.Problems related to De-Movier's theorem	
43		Partial fractions	Problems related to resolve into partial fractions of those fractions having linear non -repeated factors as denominator.	
44		Partial fractions	Problems related to resolve into partial fractions of those fractions having linear repeated factors as denominator.	
45		Permutations and Combinations	Factorial Notation and Value of P(n,r) & related Problems	
46		Permutations and Combinations	Value of C(n,r) and related problems	
47	12th	Permutations and Combinations	Properties of P(n,r) & C(n,r) and related problems	
48		Permutations and Combinations	Problems on Permutations and Combinations	
50		Binomial theorem	Binomial theorem (without proof) for positive integral index (expansion and general form)	
51		Binomial theorem	Problems related to find the general term and middle term of an expansion	
52		Binomial theorem	binomial theorem for any index (expansion without proof) & related problems	
53		Binomial theorem	first and second binomial approximation with applications to engineering problems.	
54		Binomial theorem	first and second binomial approximation with applications to engineering problems.	
61	13th		House Test	
64	14th	Binomial theorem	Binomial theorem (without proof) for positive integral index (expansion and general form)	
65		Binomial theorem	Problems related to find the general term and middle term of an expansion	
66		Binomial theorem	binomial theorem for any index (expansion without proof) & related problems	
67		Binomial theorem	first and second binomial approximation with applications to engineering problems.	

Nmgta

Teacher

(NARESH KUMAR)

HOD

Applied Sci. & Hum.

Code NO-BS 105

PLANNED SYLLABUS COVERAGE (Theory)

G P Kinnaur	Department: Applied Science & Humanities	Subject : Applied Chemistry			
	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 8 (L-6,DCS-2)	1. Atomic Structure	Fundamental particles of atoms : Electron, proton, neutron (Definitions) 1.2 Atomic Structure: Bohr's theory, successes and limitations(expression of energy and radius to be omitted), and Hydrogen spectrum explanation based on Bohr's model of atom.	Text book of Chemistry for class XI & XII (Part I & II) NCERT Delhi, Applied Chemistry by Eagle Prakashan	Engineering Chemistry by P.C Jain & Monica Jain	
2	9 TO 16 (L-6, DCS-2)	2. Chemical bonding and Solutions	2.1Concept of chemical bonding – cause of chemical bonding, types of bonds: ionic bonding (NaCl example) 2.2 Lewis concept of covalent bond (H2, F2, HF). Electronegativity, Difference between sigma and pie bond 2.3 Electron sea model of metallic bond.**(Class test-I)**			
3	17 TO 24 (L-6,DCS-2)	3. Electro Chemistry and Corrosion	3.1 Electronic concept of oxidation, reduction and redox reactions. Definition of terms: electrolytes, non-electrolytes with suitable examples, 3.2 Faradays laws of electrolysis and simple numerical problems. 3.3 Industrial application of Electrolysis – • Electrometallurgy • Electroplating • Electrolytic refining. 3.4 Application of redox reactions in electrochemical cells – • Primary cells – dry cell, • Secondary cell - commercially used lead acidstorage battery.			
4	25 TO 32 (L-6,DCS-2)	4. Engineering Materials	4.1Natural occurrence of metals – minerals, ores of iron, aluminium and copper, gangue (matrix), flux, slag, metallurgy – brief account of general principles of metallurgy(a).Crushing and grinding (b) Concentration of ore (Levigation, Froth flotation, Magnetic separation) (c) Extraction(Roasting and calcinations & smelting) (d) Refining (Electro refining, zone refining).4.2 Extraction of iron from haematite ore using blast furnace along with reactions. 4.3 Alloys – definition, purposes of alloying, ferrous alloys (Invar, steel) and non-ferrous(Simple Brass & Bronze, Nichrome, Duralumin,Magnelium) with suitable examples, properties and applications.**(Class Test-II)**			

5	33 TO 40 (L-6,DCS-2)	5. Water	5.1Classification of soft and hard water based on soap test, salts causing water hardness, units of hardness(mg/L and ppm) and simple numerical on water hardness. Cause of poor lathering of soap in hard water, 5.2 Problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion.) 5.3 i) water softening techniques-zeolite process ii). Municipal water treatment (in brief only) – sedimentation, coagulation, filtration, sterilization. 5.4 Properties of water used for human consumption for drinking and cooking purposes from any water sources and Indian standard specification of drinking water.	Text book of Chemistry for class XI & XII (Part I & II) NCERT Delhi, Applied Chemistry by Eagle Prakashan	Engineering Chemistry by P.C Jain & Monica Jain	
6	41 TO 46 (L-5,DCS-1)	6. Fuels	6.1 Definition of fuel and combustion of fuel, classification of fuels 6.2 calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula. Characteristics of good fuel 6.3 Petrol and diesel - fuel rating (octane and cetane numbers) 6.4 Chemical composition, calorific values and applications of LPG, CNG, water gas, producer gas and biogas			
7	47 TO 50 (L-3,DCS-1)	7. Lubrication	7.1Function and characteristic properties of good lubricant, 7.2 classification with examples 7.3 Lubrication mechanism – hydrodynamic and boundary lubrication 7.4 Physical properties (viscosity and viscosity index, 18 oiliness, flash and fire point, cloud and pour point only) and chemical properties (coke number, total acid number, saponification value) of lubricants. **(House Test)**			
8	51 TO 56 (L-4,DCS-2)	8. Polymers	8.1 Monomer, homo and co polymers , degree of polymerization 8.2 simple reactions involved in preparation and their application ofthermoplastics and thermosetting plastics (using Polythene, PVC, PS, PTFE, nylon-6,6 and Bakelite only) 8.3 Vulcanization of rubber and properties of vulcanised rubber.			

Surya Negi
Lecturer Chemistry

APPROVED	SIGN HOD
DATE:- 26/06/24	

GOVT. POLYTECHNIC KINNAUR, CAMP. AT ROHRU

LESSON - PLAN

SESSION : AUG. - DEC. 2024

SUBJECT: COMMUNICATION SKILLS IN ENGLISH

CLASS 1st SEM CIVIL ENGG. / MECH. ENGG.

NAME OF THE TEACHER : AMONIKA

Sr. No	Month	Week	NAME OF THE CHAPTER	COURSE CONTENT TO BE TAUGHT
1	Aug.	1st	**Communication: Theory and Practice**	1. Basics of communication: Introduction, meaning and definition, process of communication etc.
2		2nd	Communication: Theory and Practice	2. Types of communication: formal and informal, verbal, non verbal and written Barriers to effective communicaton
			Communication: Theory and Practice	3. 7 Cs for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
3		3rd	Communication: Theory and Practice	4. Art of Effective communication
			Communication: Theory and Practice	5. Technical Communication
4	Sep.	4th	Soft Skills for Professional Excellence	Introduction to Soft Skills
			1st Class Test	
5		5th	Soft Skills for Professional Excellence	1. Introduction to Soft Skills
			Soft Skills for Professional Excellence	2. Importance of soft skills.
6		6th	Soft Skills for Professional Excellence	3. Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy
			Soft Skills for Professional Excellence	4. Applying soft skills across cultures
7		7th	**Reading Comprehension Short stories**	1. "The Gift of Magi" by O Henry
8	Oct.	8th	Short - Stories	2. "Uncle Podger Hangs a Picture" Jerome K. Jerome
9			**2nd Class Test**	
10		9th	**Reading Comprehension**	1. "Night of the Scorpion' by Nissim Ezikeil
			Poetry	2. Stopping by Woods on a Snowy Evening byRobert Frost
11		10th	Poetry	3. Where the Mind is Without Fear byRabindranath Tagore
			Professional Writing	1. The Art of precIs Writing
12		11th	Professional Writing	2. Letters: business and personnel
			Professional Writing	3. Drafting e-mail, notices, minutes of a meeting etc.
13	Nov.		**House Test**	
14	Dec.	12th	Vocabulary and Grammar	1. Glossary of administrative terms (English and Hindi)
15			Vocabulary and Grammar	2. One-word substitution, Idioms and phrases etc.
16		13th	Vocabulary and Grammar	3. Parts of speech, active and passive voice, tenses etc.,Punctuation.
17		14th	**Revision**	

HOD

AMONIKA (LECT. ENGLISH)

PLANNED SYLLABUS COVERAGE (Theory)

G P Kinnaur	Department: Applied Science	Subject : Mathematics-I	
	Course - Diploma	Duration – 14 weeks	
SYLLABUS COVERAGE	Total Periods - 70 (42L+28DCS)	Theory – 70 (42L+28DCS) hours	

Sr. No	Period Nos	Topic	Details	Instruction references	Additional Study Recommended	Remarks
1	1 TO 22 (L-13,DCS-9)	1.Trigonometry	1.1 Concept of angles, measurement of angles in degrees, grades and radians and their conversions andT-Ratios of Allied angles (without proof). 1.2 Sum, difference formulae and their applications (without proof). 1.3 Product formulae (Transformation of product to sum, difference and vice versa). T-Ratios of multiple angles, sub-multiple angles (2A, 3A, A/2). 1.4 Graphs of Sinx, Cosx.	Applied Mathematics by Dr. RD Sharma , & Engineering Mathematics by N.Ch.S.N Iyengar .	Reena Garg, Engineering Mathematics, Khanna Publishing House, New Delhi (Revised ED.2018)	
2	23 TO 44 (L-13, DCS-9)	2. Differential Calculus	2.1 Definition of function; Concept of limits. Four standard limits 2.2 Differentiation by definition of Sinx,Cosx, tanx. 2.3 Differentiation by definition Differentiation of sum, product and quotient of functions.. 2.4 Differentiation of function of a function 2.5 Differentiation of trigonometric and inverse trigonometric functions			
3	45 TO 70 (L-16,DCS-10)	3. Algebra	3.1 Complex Numbers: Definition, real and imaginary parts of a Complex number, polar and Cartesian representation of a complex number and its conversion from one form to other, conjugate of a complex number, modulus and amplitude of a complex number, Addition, Subtraction, Multiplication and Division of a complex numbers. 3.2 De-movier's theorem, its application. 3.3 Partial fractions (linear factors, repeated and non-repeated linear Factors) 3.4 Permutations and Combinations, Value of nPr nCr. 3.5 Binomial theorem (without proof) for positive integral index (expansion and general form); binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems			

Ravinder Singh
Lecturer Maths

APPROVED	SIGN HOD
DATE:- 25/6/24.	