GOVERNMENT OF ASSAM
DIRECTORATE OF TECHNICAL EDUCATION
ASSAM

FINAL DRAFT SYLLABUS OF 1st SEMESTER

1. Course Title: Communication in English-I

1. Course Title: **COMMUNICATION IN ENGLISH-I**

2. Course Code: **Hu/101**

3. Semester: I

4. **Aim of the course:**

The general aim of a course in English language and communication is aimed at the three domains of learning: knowledge, skills and attitudes. In keeping up with this aim, it is attempted to develop all the four skills of language learning in the learner – listening, speaking, reading and writing and also to enable the students to use the grammar of the English language correctly. Since, all these four skills are interrelated to each other, this course is aimed at achieving language proficiency in all the four skills so that at the end of the course the student is a confident user of the General Indian English (GIE), with the added knowledge of the other variants as British English and American English. This, it is attempted to achieve, by building a carefree, tension free classroom atmosphere in which the language classes incorporate activities related to these four skills. It is aimed that at the end of the course, the student can relate to the English language as a language of communication and conduct of everyday affairs.

5. Course outcome:

On completion of the course on Communication in English-I, student will be able to

- CO_1 = Comprehend basic sentences in English.
- CO_2 = Construct grammatically correct sentences in English.
- CO_3 = Use grammatically correct English sentences in everyday situations.
- CO_4 = Use varied English vocabulary in everyday situations confidently.
- CO_5 = Conduct themselves orally using simple English.

6. Teaching Scheme (in hours)

Lecture	Tutorial/Class Test	Practical	Total
39	3	0	42

7. Examination Scheme:

Evaluation Scheme								
Theory					Practical			Total Marks (Theory+ Practical)
	Sessional(SS)			Pass (ESE+SS)	Practical Test(PT)	Practical Assessment(PA)	Pass (PT+PA)	
ESE	TA	HA	Total (TA+HA)					
70	10	20	30	30/100	-	-	-	100

8. Detailed Course Content:

Chapter no.	Chapter Title	Content / area of focus	Intended Learning Outcome	Duration in hours
1.	Parts of Speech	1.1 Recognition and review of Nouns, Pronouns, Verbs, Adverbs, Adjectives, Prepositions, Conjunctions, Interjections 1.2 Knowledge of Subject, Object and Compliment of the Verb 1.3 Verbals –Infinitival, Gerund and Preposition	1. Explain the different parts of speech. 2. Describe the various parts of sentence.	3
2.	Prepositions of time and place	2.1 Contextual teaching of prepositions of time - on, in , at, since, for, ago, before, to, past, to, from, till/until, by 2.2 prepositions of place: in, at, on, by, next to, beside, near, between, behind, in front of, under, below, over, above, across, through, to, into, towards, onto, from	1. Explain prepositions of time and place.	5
3.	Clause, phrases and Relative Clauses	3.1 Basic definitions of clauses and phrases	1. Describe the various types of clauses and phrases	2

		3.2 Focus on Relative Pronouns and their use in sentences as relative clauses	with special reference to relative clauses.	
4.	Subject Verb Agreement	4.1 Rules that guide the agreement of the subject to its verb	1. Explain subject verb agreement.	5
5.	Sentence types and Transformation of sentences	5.1 Assertive sentences, Exclamatory sentences, Interrogative sentences, Negative sentences, Compound sentences, complex sentences, simple sentences, Degrees of Comparison	1. Describe the various types of sentences and their transformations.	5
6.	Voice	6.1 Change from Active Voice to Passive Voice and vice versa	1. Describe Voice.	3
7.	Punctuation	7.1 Use of the comma, semi-colon, colon, apostrophe, exclamation mark, question mark and quotation marks	1. Explain punctuation in different situations and sentences.	5
8.	Word formation	8.1 Change of one part of speech to the other: from Verbs to Nouns, Nouns to Verbs, Adjectives to Nouns, Nouns to Adjectives, Verbs to adverbs, and Adverbs to Verbs	1. Explain the conversion of one part of speech to the other.	2
9.	Affixation	9.1 Prefixes and Suffixes and new word formations	1. Explain the use of various Affixes and the change of meaning with it.	2
10.	Nominal Compounds	10.1 Common nominal compound	1. Describe how different nouns can come together to form a new word.	2
11	Paragraph Writing	11.1 Descriptive Paragraph on various related topics.	1. Describe how to write coherent paragraphs in related words.	5

BOOKS RECOMMENDED:

1. *Essential English Grammar with Answers* by Raymond Murphy (Cambridge University Press)
2. *English for Polytechnics* **by Dr Papori Rani Barooah (Eastern Book House Publishers)**
3. *English Grammar* **by Annie Brinda (Cambridge University Press)**

9. TABLE OF SPECIFICATIONS for Communication in English-I

Sl. No.	Topic (a)	Time allotted in hours (b)	Percentage Weightage (c)	Knowledge	Comprehension	Application	HA
1	Parts of Speech	3	7	2	1	1	0
2	Prepositions of time and place	5	13	5	2	1	2
3	Clause, phrases and Relative Clauses	2	5	3	3	2	2
4	Subject Verb Agreement	5	13	4	2	2	3
5	Sentence types and Transformation of sentences	5	13	4	2	2	2
6	Voice	3	8	2	2	1	1
7	Punctuation	5	13	3	2	2	2
8	Word formation	2	5	2	1	1	1
9	Affixation	2	5	1	1	1	0

10	Nominal Compounds	2	5	1	1	1	0
11	Paragraph Writing	5	13	2	3	3	3
	Total	39	100	29	20	17	16

K=Knowledge,   C=Comprehension,   A=Application,

HA=Higher Than Application(Analysis, Synthesis, Evaluation), $C=\dfrac{b}{\sum b}\times 100$

10. **Distribution of Marks:**

Detailed Table of Specifications for Communication in English-I

Sl. No.	Topic	Objective Type				Short Answer Type					Essay Type					Grand Total
		K	C	A	T	K	C	A	HA	T	K	C	A	HA	T	
1	Parts of Speech	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2	Prepositions of time and place	1	1	1	3	2	0	0	0	2	5	0	0	0	5	**10**
3	Clause, phrases and Relative Clauses	1	1	1	3	3	0	0	0	3	4	0	0	0	4	**10**
4	Subject Verb Agreement	1	1	1	3	2	2	2	1	7	0	0	0	0	0	**10**
5	Sentence types and Transformation of sentences	2	1	0	3	2	2	2	1	7	0	0	0	0	0	**10**
6	Voice	1	0	2	3	1	1	1	0	3	0	0	0	0	0	**6**
7	Punctuation	1	1	1	3	2	1	1	1	5	0	0	0	0	0	**8**
8	Word formation	0	0	2	2	1	1	1	0	3	0	0	0	0	0	**5**

9	Affixation	0	0	2	2	1	0	0	0	1	0	0	0	0	0	**3**
10	Nominal Compounds	0	1	1	2	0	0	0	0	0	0	0	0	0	0	**2**
11	Paragraph Writing	0	0	0	0	0	0	0	0	0	5	0	0	0	5	5
	Total	**8**	**6**	**11**	**25**	**14**	**7**	**7**	**3**	**31**	**14**	**0**	**0**	**0**	**14**	**70**

K=Knowledge   C=Comprehension   A=Application

HA=Higher Than Application   T=Total

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2. Course Title: Mathematics – I

1. **Course Title: Mathematics – I**

2. **Course Code : Sc – 102**

3. **Semester : First Semester**

4. **Aim of the course:**

    - To learn about Complex numbers and methods of simplifying fractions.

    - To learn ways of solving binomials, finite and infinite series .

    - To learn about Equations involving large number of unknowns.

    - To learn application of Trigonometry , Mensuration and plane figures.

5. **Course Outcome:**

    On completion of the course, students will be able to

    - Recognize and differentiate between Real and Complex numbers.

    - Separate and simplify complicated polynomial quotients by reducing them into simple partial fractions.

    - Determine values of large numbers having integral or non-integral powers.

    - Obtain solutions for finite and infinite series expressions.

    - Solve equations having large number of unknowns.

    - Obtain results for physical problems related to angles, area and volume.

6. **Teaching scheme:**

Teaching scheme(in hours)		
Lectures	**Tutorial**	**Total(per week)**
3	**1**	**4**

7. **Examination Scheme:**

Evaluation Scheme							
Theory					Practical		Total Marks (Theory+ Practical)
	Sessional(SS)			Pass (ESE+SS)	Practical Test(PT)	Practical Assessment(PA)	Pass (PT+PA)	
ESE	TA	HA	Total (TA+HA)					
70	10	20	30	30/100	-	-	-	100

8. **Detailed Course Content:**

Chapter No.	Chapter Title	Contents	Intended Learning Outcomes	hours
		GROUP – A: ALGEBRA **Hours: 24 Marks: 30**		
A1	**Complex Numbers**	**1.1. Definition, geometric representation, Modulus, amplitude, polar form of a complex number.** **1.2. Rationalisation, addition, multiplication, conjugate, square root of a complex number, cube root of unity.**	1. Recognise and define Cartesian and polar form of complex number. 2. Locate it in argand plane. 3. Carryout algebraic operations on complex nos.	4
A2	Partial Fractions	**2.1. Definition, proper and improper fractions** **2.2. To resolve proper fraction into partial fraction with non- repeated linear factors, repeated linear factors and irreducible non-repeated quadratic factors. Simple problems**	1. Identify different types of fractions. 2. Resolve and reduce improper fractions into simple partial fractions.	2

Chapter No.	Chapter Title	Contents	Intended Learning Outcomes	Hours
A3	Permutation and Combination	3.1. Factorial notation and basic principle of counting. 3.2. Deduction of formulae for Permutation and Combination.	1. Arrangement of elements (similar and unique). 2. Combination of elements.	3
A4	Binomial Theorem	4.1. Binomial Theorem for positive integral index, rational index (statement only), general term, middle term, specific terms. 4.2. Co-efficient of x^n, terms independent of x, problems with engineering applications.	1. Form and expand different types of binomial expressions. 2. Obtain values of large numbers having integral and rational powers.	2
A5	Logarithm	5.1. Definition, Laws of logarithm. 5.2. Problems related to Laws of Logarithm and application.	1. Convert product and quotient of large numbers into simple sums and differences.	2
A6	Series	6.1. Arithmetic Progression Series, arithmetic mean, sum to n-terms. 6.2. Geometric Progression Series, geometric mean, sum to n-terms. 6.3. Sum to infinity of a G.P.Series. 6.4. Exponential Series. 6.5. Logarithmic Series.	1.Use and solution of series expressions having equal intervals. 2. Use and solution of series expressions having a common ratio. 3. Calculation of the possible finite sum of an infinite series.	5
A7	Matrix	7.1. Definition, types of matrix - row matrix, column matrix, square matrix, diagonal matrix, unit matrix, symmetric matrix, skew-symmetric matrix. 7.2. Algebra of matrices: equality, addition, subtraction, scalar multiplication, multiplication.	1. Presentation of large data in an organised expression. 2.Applying algebraic operations on matrices under certain conditions	3

Chapter No.	Chapter Title	Contents	Intended Learning Outcomes	Hours
A8	**Determinants**	**8.1. Definition and expansion of determinants of third order, minors, co-factors.** **8.2. Properties of determinants and problems using properties.** **8.3. Solution of simultaneous equations using Crammer's rule.**	1. The expression of a square matrix as a determinant with a value. 2. Analysis and solution of systems of linear equations.	3
		GROUP – B: TRIGONOMETRY **Hours: 11 Marks: 20**		
B1	**Trigonometric Ratios**	**1.1. Compound Angles and Associated Angles.** **1.2. Transformation of sum or differences into products and products into sum or differences.** **1.3. Multiple and Sub multiple Angles.** **1.4. Solution of Trigonometric Equations (angle between 0 and 2π).** **1.5. Trigonometric Identities.**	1. To get a fair knowledge of Angle, distance, height with reference to different shapes, objects etc. 2. Uses of trigonometry in different fields..	6
B2	**Inverse Trigonometric Functions**	**2.1. Definition and basic concepts.** **2.2. Properties of Inverse Trigonometric Functions.**	Uses of inverse trigonometric functions to calculate angles and inclinations under different situations.	2
B3	**Properties of Triangles**	**3.1. Relation between the sides and angles of a triangle.** **3.2. Sine – Cosine formulae.**	Relations between different trigonometric functions.	3

Chapter No.	Chapter Title	Contents	Intended Learning Outcomes	hours
		GROUP – C: MENSURATION **Hours: 5 Marks: 10**		
C1	**Area of Curvilinear Figures**	**1.1. Area of Curvilinear Figures using Simpson's $\frac{1}{3}$ rule.**	Calculation of area of non-linear figures.	2
C2	**Volume and Surface Area**	**2.1. Volume and Surface area of prism, pyramid, Zone and sector of a sphere, Frustum of pyramid and cone.**	Calculation of volume and area of some three-dimensional objects.	3
		GROUP – D: CO - ORDINATE GEOMETRY OF TWO-DIMENSIONS **Hours: 5 Marks: 10**		
D1	**Co- Ordinates**	**1.1. Relation between Cartesian and Polar Co-ordinates, Distance formulae[only for concept]**	Concept and use of Cartesian and polar co-ordinates.	1
D2	**Straight line**	**2.1. Slope or gradient, different forms of straight lines: point-slope from, point-point form, slope-intercept form, intercept form, perpendicular form.** **2.2. Angle between two straight lines, equation of parallel and perpendicular straight lines.** **2.3. Distance of a point from a straight line, distance between two straight lines.**	To get a good knowledge of different forms of straight lines, there formation and some properties with respect to each other.	4

9. Distribution of Marks:

Chapter No.	Chapter Title	Type of Question			Total
		Objective Type (compulsory)	Short questions	Descriptive questions	
A1	Complex Numbers	1+1=2	2		
A2	Partial Fractions	1		3	
A3	Permutation and Combination	1+1=2	2		
A4	Binomial Theorem	1+1=2	2		
A5	Logarithm	1	2		
A6	Series			3	
A7	Matrix	1+1=2	2		
A8	Determinants	1		3	
B1	Trigonometric Ratios	1+1+1+1=4	2	3	70
B2	Inverse Trigonometric Functions	1+1=2	2	3	
B3	Properties of Triangles	1+1=2	2		
C1	Area of Curvilinear figures	1+1		3	
C2	Volume and Surface Area	1+1		3	
D1	Co-Ordinates	---	---	---	
D2	Equation of a straight line	1+1=2	2	3+3=6	
		25	18	27	70

10. Suggested implementation strategies: The syllabus can be completed by taking regular classes along with tutorial classes. Audio-Visual aids also can be used.

11. Suggested Learning Resources:

1. Applied Mathematics (vol. I&II) by R. D. Sharma

2. Engineering Mathematics by H .K. Das

3. Higher Trigonometry By Das and Mukherjee.

4. An Introduction to polytechnic mathematics Vol-I by Ajanta Choudhury, Parbin Ahmed, Geetali Das

Annexure-I

TABLE OF SPECIFICATIONS FOR THEORY

Sr. No	Topic (a)	Time allotted in hours (b)	Percentage Weightage (c)	K	C	A	HA
1	**ALGEBRA**	24	53.3	8	12	10	
2	**TRIGONOMETRY**	11	24.5	6	9	5	
3	**MENSURATION**	5	11.1	2	5	3	
4	**CO-ORDINATE GEOMETRY OF TWO-DIMENSIONS**	5	11.1	2	5	3	
Total		Σ b = 45	100	25	18	27	

K = Knowledge   C = Comprehension   A = Application

HA = Higher Than Application (Analysis, Synthesis, Evaluation) . $c = \frac{b}{\sum b} \times 100$

DETAILED TABLE OF SPECIFICATIONS FOR THEORY

Sr. No	Topic	OBJECTIVE TYPE				SHORT ANSWER TYPE					ESSAY TYPE				
		K	C	A	T	K	C	A	HA	T	K	C	A	HA	T
1	ALGEBRA	6	5		11	2	4	4		10		3	6		9
2	TRIGONOMETRY	4	4		8	2	2	2		6		3	3		6
3	MENSURATION	2	2		4							3	3		6
4	CO-ORDINATE GEOMETRY OF TWO-DIMENSIONS	2			2		2			2		3	3		6

K   =   Knowledge   C   =   Comprehension   A   =   Application

HA =   Higher Than Application (Analysis, Synthesis, Evaluation)

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3. Course Title: Chemistry – I (Theory)

1.	**Course Title**	: **Chemistry - I(Theory)**
2.	**Course Code**	: **Sc-103 T**
3.	**Semester**	: **1st Semester**

4. **Rationale of the Course:** Modern development of industries requires more understanding of the chemical substances used for engineering and industrial purposes. This part of Chemistry explains various fundamental aspects of chemical substances which will develop basic understanding and skill of engineering students.

5. CO : **After completion of the course, student will be able to**

1. Correlate different gas laws with respect to different parameters; estimate the amount of reactant and product using balanced chemical equation.
2. Apply concept of different types of acid and bases to estimate the strength of acid and bases and to use redox reactions for practical fields.
3. Explain atomic structure and its relation with the periodic table and chemical bonding.
4. Apply concept of pH and buffer solution to obtain high yield of industrially important products.
5. Utilize laws of electrolysis in industrial field and to construct various cells.
6. Design setup for removal and estimate of hardness of water .

6. Teaching Scheme (per week)

Lecture	Tutorial	Practical
3	0	3

7   **Teaching Scheme (in hours) :**

Theory (Hours)			Practical	Total
Lecture	**Tutorial**	**Class Test**	30	75
42	0	3		

8   Examination Scheme :

Evaluation Scheme							
Theory					Practical		Total Marks (Theory+ Practical)
	Sessional(SS)			Pass (ESE+SS)	Practical Test(PT)	Practical Assessment(PA)	Pass (PT+PA)	
ESE	TA	HA	Total (TA+HA)					
70	10	20	30	30/100	50	50	30/100	200

9   Distribution of Marks:

Chapter No	Chapter Title	Type of Question			Total Marks
		Objective Type (compulsory)	Short Questions	Descriptive Questions	
1	States of matter	1x3=3	2x1=2	4x1=4	9
2	Chemical equation	1x2=2	2x1=2	3x1=3	7
3	Acids, Bases, Salts, Acidimetry and Alkalimetry	1x4=4	2x1=2	3x1=3	9
4	Atomic Structure	1x2=2	2x1=2	4x1=4	8
5	Periodic classification of elements	1x2=2		3x1=3	5
6	Chemical bonding	1x4=4	2x1=2		6
7	Chemical equilibrium	1x2=2		3x1=3	5
8	Catalysis	1x2=2		3x1=3	5
9	Electrochemistry	1x2=2	2x1=2	4x1=4	8
10	Water	1x2=2	2x1=2	4x1=4	8
TOTAL		25	14	31	70

10   **Detailed Course Content:**

Chapter No	Chapter Title	Content	I.L.O	Duration (in Hours)	marks
1	States of matter	1.1 Properties of gases and their units of measurements. 1.2 Boyle's law 1.3 Charles's law 1.4 Avogadro's hypothesis 1.5 Ideal gas equation 1.6 Dalton's law of partial pressure 1.7 Graham's law of diffusion **1.8** Mole concept ,Numerical problems	**Students will be able to** 1. Explain the gas laws. 2. Derive Ideal gas equation. 3. Calculate different variables. 4. Solve numerical problems on mole concept.	5	9
2	Chemical equation	2.1 Definition of a chemical Equation, Qualitative and quantitative significance, Limitations 2.2 Balancing of chemical equation 2.3 Stoichiometric calculations 2.4 Oxidation and Reduction	Students will be able to 1. Balance chemical equations. 2. Perform stoichiometric culations. 3. Explain oxidation and reduction.	4	7
3	Acids,Bases, Salts,acidimetry and alkalimetry	3.1Theories of acids and bases-Arrhenius,Brosted-Lowry and Lewis theory 3.2 Strong acids and Strong bases, Conjugate acid –base pair 3.3 Classification of salts, Hydrolysis of salts. 3.4Equivalent weight of Acid, Bases and Salts 3.5 Standard solution, Normal solution and molar solution, concentration terms-normality,molarity,gm/l,ppm 3.6 Definition of acidimetry and alkalimetry, Principle of titration, Indicator 3.7 Determination of unknown strength of Acids and Bases ,Numerical Problems	Students will be able to 1. Explain the theories of acid base. 2. Prepare standard solutions. 3. Calculate the strength of acid –bases.	6	9

4	Atomic Structure	4.1 Subatomic particles 4.2 Rutherford model 4.3 Bohr's model 4.4 Dual nature of Electron, De-Broglie's hypothesis, Uncertainty Principle 4.5 Quantum number 4.6 Aufbauprinciple, Hundsrule, Pauli's exclusion principle, Electronic configuration.	Students will be able to 1. Explain the structure of atom using different models. 2. Explain the significance of quantum numbers. 3. Write electronic configuration.	5	8
5	Periodic classification of elements	5.1 Modern periodic law ,Groups and periods 5.2 Periodic properties and their variation along a group and period (Atomic &ionic radii, ionization energies, electron affinity, electro negativity) 5.3 Characteristics of transition elements.	Students will be able to 1.Explain the periodic properties. 2. Explain the characteristic of transitional elements.	2	5
6	Chemical bonding	6.1Electronic theory of valency ,Electrovalency,Covency,Co-ordinate covalency 6.2 Characteristics of Ionic and covalent compound 6.3 Hydrogen bonding and its effect 6.4 Metallic bonding and related properties - conductor, semi conductor and insulator.	Students will be able to 1. Explain different types of bondings. 2. Differentiate ionic and covalent compounds. 3. Identify conductor, insulator and semi conductor.	4	6
7	Chemical equilibrium	7.1 Laws of mass action 7.2 Ionic product of water, Concept of pH 7.3 Buffer solutions 7.4 Solubility product and its application 7.5 Common ion effect 7.6 Le –chatelier principle and its applications. 7.7 Hydrolysis of salts	Students will be able to 1.Derive equilibrium constant. 2. Explain buffer solution, common ion effect, solubility product. 3. Apply Le-chetalier principle.	4	5

8	Catalysis	8.1 Definition, Types of catalysis 8.2 Industrial applications – Synthesis of NH_3, Manufacture of H_2SO_4 by contact process.	Students will be able to 1.Classifycatalysis. 2. Use catalyst for synthesis of ammonia and sulphuric acid.	2	5
9	Electrochemistry	9.1 Faradays laws of electrolysis 9.2 Problems and industrial application-Electro plating, Electrotyping, Galvanization, extraction and purification of metals. 9.3 Electrolytic cell, Electrochemical cells, Primary cell, Dry cell, Secondary cell –Lead storage cell. 9.4 Electrochemical series.	Students will be able to 1.Apply Faraday's laws of electrolysis. 2. Prepare cells. 3. Use electrochemical series to explain chemical activity of elements.	5	8
10	Water	10.1 Soft water and hard water, causes of hardness, unit of hardness 10.2 Removal of hardness : Permutit process , Deionization of water 10.3 Bad effect of hard water in the boiler 10.4 Treatment of boiler –feed water 10.5 Treatment of municipal water 10.6 Estimation of hardness by EDTA method.	Students will be able to 1.Explain the causes of hardness. 2. Design set up to remove hardness of water. 3. Explain the treatment processes for boiler feed water and Municipal water. 4. Estimate hardness of water.	5	8

11   **Suggested Implementation Strategies**: By Theory and Practical classes.\

12   **Suggested learning Resources**:

   a.   Chemistry for Polytechnic, Volume –I, by JyotishmoyBorah,RajuOjah.
   b.   Simplified Polytechnic Chemistry, Vol-I, byVinayYadav.
   c.   Modern Approach to Chemistry –Part- I and Part-II, by Y.R Sharma,BaidyanathBhuyan, SudarsonBarua.
   d.   Senior Secondary Chemistry, Part-I and Part-II,byKamaleshChoudhury, Satyendra Kumar Choudhury.
   e.   Engineering   Chemistry,   by   Jain   and   Jain,   Dhanpatrai   publishing   company

CHEMISTRY-l   TABLE OF SPECIFICATIONS FOR THEORY

Annexure-I

Sr. No	Topic (a)	Time allotted in hours (b)	Percentage Weightage (c)	Modified Percentage Weightage (d)	K	C	A	HA
1	States of matter	5	10	12	2	3		4
2	Chemical equation	4	10	10	1	3	3	
3	Acids, Bases, Salts, Acidimetry and Alkalimetry	6	16	14	2	3	1	3
4	Atomic Structure	5	10	12	1	7		
5	Periodic classification of elements	2	10	4	1	1		3
6	Chemical bonding	4	10	10	2	1	3	
7	Chemical equilibrium	4	12	10	1	4		
8	Catalysis	2	5	4	1	4		

9	Electrochemistry	5	7	12	1	7		
10	Water	5	10	12	1	7		
Total		Σ b	100	100				

K = Knowledge   C = Comprehension   A = Application

HA = Higher Than Application (Analysis,   Synthesis, Evaluation) $C=\dfrac{b}{\sum b}x100$

DETAILED TABLE OF SPECIFICATIONS FOR THEORY

Sr. No	Topic	OBJECTIVE TYPE				SHORT ANSWER TYPE					ESSAY TYPE				
		K	C	A	T	K	C	A	HA	T	K	C	A	HA	T
1	States of matter	1 + 1	1		3		2			2				4	4
2	Chemical equation	1	1		2		2			2			3		3
3	Acid, Bases Salts, Acidimetry and Alkalimetry	1 + 1	1	1	4		2			2				3	3

No.	Topic														
4	Atomic Structure	1	1		2		2			2		4			4
5	Periodic classification of elements	1	1		2									3	3
6	Chemical bonding	1 + 1	1	1	4			2		2					
7	Chemical equilibrium	1	1		2							3			3
8	Catalysis	1	1		2							3			3
9	Electro chemistry	1	1		2		2			2		4			4
10	Water	1	1		2		2			2		4			4

K = Knowledge   C = Comprehension   A = Application

HA = Higher Than Application   T = Total

xxxxxXXXXXXXXXXXXXXXXXXXXXXXXxxxx

3. Course Title: Chemistry Practical – I

1. **Course Title**   : **Chemistry Practical – I**

2. **Course Code**   : **Sc-103**

3. **Semester**   : **1st Semester**

4. **Objective**: At the end of the program the student will be able to prepare Standard Solution and determine the strength of Acid and Bases.

5. **Teaching Scheme**:

Hours/Week	Hours/Semester
3	30

6. **Distribution of Marks:**

Units	Topics	Marks
1	Preparation of standard solution	**10**
2	Titration	**10**
3	EDTA method	**10**
4	pH determination	**10**
	Viva- Voce	**10**

7. **Detailed Course Content:**

Units	Topics	Duration (inhours)
1	1.1 Preparation of Standard Solution ofNa_2CO_3 1.2 Preparation of standard solution ofOxalic acid	**8**
2	2.1 Determination of strength of H_2SO_4 bytitration against N/10 Na_2CO_3 2.2 Determination of strength of NaOHbytitration against N/10 HCl 2.3 Redox titration : $KMnO_4$ Vs $H_2C_2O_4$	**12**

| 3 | 3.1 Determination of the total hardness ofwater by EDTA method | 8 |
| 4 | 4.1 Determination of pH of a solution byusing pH meter. | 2 |

8. Suggested learning Resources:

a. Higher Secondary Practical Chemistry.

b. Experiments in Applied Chemistry, Sunita Rattan, S.K. Khataria and Sons Publications.

c. Elementary Practical Chemistry by G.D. Sharma and Arun Baht.

d. Elements of Practical chemistry by SudarsanBarua.

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4. Course Title : Applied Physics – I

1. **Course Title**   **: Applied Physics - I**
2. **Course Code**   **: Sc-104**
3. **Semester**   **: 1st semester**
4. **Rationale of the subject:** Physics is a foundation of all core technology subjects. Study of Physics is essential for Diploma holders in engineering and technology to develop in them proper understanding of physical phenomenon, scientific temper and engineering aptitude. Curriculum of Applied Physics includes fundamental concepts used in industrial applications. So, physics is taught in the 1st and 2nd semester in all disciplines of Diploma Engineering.

5. **Course outcome :** After completion of the course, students will be able to:

    C.O.1:   identify different systems of units and convert units from one system to
                another as well as conversant with practical units.
    C.O.2:   understand equations of motion and their applications.
    C.O.3:   differentiate between Centripetal and Centrifugal force.
    C.O.4:   select proper materials suitable for a specific purpose by studying properties
               of materials.
    C.O.5:   apply the knowledge of good and bad conductors of heat needed for different
               engineering tasks.
    C.O.6 :   identify different factors affecting acoustical planning of buildings.

6. **Teaching Scheme (in hours):**

Theory			Practical	Total
Lectures	**Tutorial**	**Class Test**		
42	**0**	**3**	**30**	**75**

7. **Teaching scheme(in hours)/ week**

Lectures	**Tutorial**	**practical**
3	**0**	**3**

8. Examination Scheme:

Study Scheme (Contact Hours)			Evaluation Scheme								Total Marks (Theory+ Practical)
			Theory					Practical			
L	T	P	ESE	Sessional (SS)			Pass (ESE + SS)	Practical Test (PT) #	Practical Assessment (PA) @	Pass (PT+PA)	
				TA	HA	Total (TA+ HA)					
3		3	70	10	20	30	30/100	50	50	30/100	200

9. DETAILED COURSE CONTENTS:

Chapter	Title of Chapter	Topics and Sub-topics	Hours
1	UNITS AND DIMENSIONS	1.1 Need of measurement and Unit in Engineering and Science, definition of Unit, fundamental and derived quantities and their units, different system of Units (CGS, MKS, FPS and SI), Illustrations.	1
		1.2 Definition of accuracy, precision and error, Estimation of Errors, absolute error, relative error and percentage error, rules and identification of significant figures with example.	1
		1.3 Explanation of Dimension of physical quantity Dimensional Equations of physical quantities and their uses with examples.	1

2	BASIC MECHANICS	2.1	Introduction to scalar and vector Quantities, representation of vector, addition, subtraction and multiplication of vectors, parallelogram law of vector addition, resolution of vector, dot and scalar product of two vectors (Details not required).	2
		2.2	Recapitulation of Equation of motions (Deduction not necessary) and associated numerical problems.	1
		2.3	Newton's Laws of motion: First law, explanation, definition of force, Concept of Inertia, types of inertia (inertia of rest and inertia of motion), Second law, explanation, measurement of force using Newton's second law, Momentum, impulse, gravitational force, mass & weight, simple problems, Third law, explanation and its examples, Principle of conservation of linear momentum, statement and simple examples.(e.g. recoil of a gun), numerical problems.	3
		2.4	Circular motion, time period and angular velocity, relation between angular velocity and linear velocity, Centripetal and centrifugal force, Bending of a cyclist on a curved path, banking of roads and railway track, angle of banking, super elevation, numerical problems.	2
		2.5	Rotational motion, torque, angular momentum, Moment of inertia, Relation between torque and angular acceleration.	1
		2.6	Work, power and energy, its concept, units and dimension, Potential and Kinetic energy, its mathematical relations, Principle of conservation of energy, its proof in case of a free falling body under gravity, numerical problems.	2
		2.7	Simple Harmonic Motion, its geometrical representations and derivation of its equations definition of amplitude, time period, frequency, phase etc., mathematical relations and units, Simple Pendulum & second's Pendulum, numerical problems.	1

3	GRAVITATION AND GRAVITY	3.1	Newton's law of gravitation, gravity, acceleration due to gravity, relation between 'G' and 'g', their units, variation of the value of g with altitude and depth, Centre of gravity and Centre of mass , Numerical problems.	3
			Escape velocity, orbital velocity, artificial satellite. (simple idea), Geo-stationery Satellite.	
4	PROPERTIES OF SOLID	4.1	Deforming force, restoring force, Elastic and plastic body, explanation of stress and strain with their types, Hook's law, elastic limit , Young's modulus, Bulk modulus, Rigidity modulus, Poisson's ratio, their units and numerical problems.	2
5	PROPERTIES OF LIQUID	5.1	Thrust & Pressure inside a liquid, Transmission of Liquid Pressure, Pascal's law, Principle of working of Hydraulic press.	2
		5.2	Buoyancy, Archimedes principle, density and specific gravity (relative density) their relation. Determination of Specific gravity, numerical problems.	1
6	PROPERTIES OF GAS	6.1	Atmospheric pressure, its unit, Torricelli's experiment, Barometer, Concept of pump and siphon.	2
7	HEAT AND THERMODYNAMICS	7.1	Concept of heat and temperature, thermometer, its interval and fixed point, different scales of temperatures and their conversion formulae, numerical problems.	1
		7.2	Thermal Expansion, Expansion of Solid, linear, Superficial and Cubical expansion of solid, their co-efficient & their relations, expansion of liquid, co-efficient of Real and Apparent expansion, their relation, Variation of density with temperature, Anomalous expansion of water (experimental determination not necessary). Concept of Absolute scale of temperature.	3
		7.3	Calorimetry: Unit of heat, Joule and calorie, Specific heat, thermal capacity and water equivalent, Principle of calorimetry, measurement of specific heat of a substance, numerical problems.	2
		7.4	Hygrometry, Absolute and relative humidity, dew point.	1

		7.5 Change of state of a body, Fusion/melting, laws of fusion, effect of pressure on melting point, Regelation, Vaporisation, boiling point, Laws of ebullition, latent heat, numerical problems. Evaporation, difference between vaporisation and evaporation, factors on which rate of evaporation depend.	2
		7.6 Transmission of heat, three modes of heat transfer, conduction, convection and Radiation, good and bad conductor of heat, coefficient of thermal conductivity, its S.I. unit and dimension.	1
		7.7 1st law and 2nd law of thermodynamics, Joule's law and Mechanical equivalent of heat.	1
8	WAVE AND SOUND	8.1 Wave motion, amplitude, period, frequency and wavelength, relation between velocity, frequency and wavelength. Transverse and longitudinal wave.	1
		8.2 Propagation of sound, Expression for velocity of sound, Newton's Formula for velocity of sound in air and Laplace's correction. Various factors affecting the velocity of sound.	2
		8.3 Audible range, Ultrasonic and infrasonic sound, application of ultrasonic sound to calculate the depth of ocean. Free and forced vibrations, Resonance.	1
		8.4 Reflection of sound and its application, Echo and reverberation of sound, Acoustic of building.	1
		8.5 Musical sound and Noise, Characteristic of musical sound, Doppler effect (Mathematical relation not necessary).	1

10. **Distribution of Marks:**

Chapter No	Chapter Title	Teaching Hours	Type of Question			Total Marks
			Objective type Compulsory	Short Question	Descriptive Question / Numericals	
1	Units and Dimension	3	3	1	3	7
2	Basic Mechanics	12	4	2	12	18
3	Gravitation and Gravity	3	2	-	3	5
4	Properties of Solid	2	3	1	3	7
5	Properties of Liquid	3	3	1	3	7
6	Properties of Gas	2	2	-	2	4
7	Heat	11	5	2	7	14
8	Wave and Sound	6	3	1	4	8
	Total	**42**	**25**	**08**	**37**	**70**

11. DETAILED TABLE OF SPECIFICATIONS FOR THEORY.

Sr. N O.	Topic	OBJECTIVE TYPE				SHORT ANSWER TYPE					ESSAY TYPE				
		K	C	A	T	K	C	A	HA	T	K	C	A	HA	T
1	Units and Dimensions	1	1	1	3	1	-	-	-	1	1	1	1	-	3
2	Basic Mechanics	2	1	1	4	1	-	1	-	2	4	4	4	-	12
3	Gravitation and Gravity	1	-	1	2	-	-	-	-	-	1	2	-	-	3
4	Properties of Solids	1	1	1	3	1	-	-	-	1	1	1	1	-	3
5	Properties of Liquids	1	1	1	3	-	-	1	-	1	1	2	-	-	3
6	Properties of gas	1	1	-	2	-	-	-	-	-	1	1	-	-	2

7	Heat and Thermodynamics	2	2	1	5	1	1	-	-	2	3	2	2	-	7
8	Wave and Sound	1	1	1	3	1	-	-	-	1	2	1	1	-	4

K=Knowledge,   C= Comprehension,   A= Application,

HA= Higher than application (analysis, synthesis, Evaluation) and T=Total.

Annexure-1

12. TABLE OF SPECIFICATIONS FOR THEORY

Sr. No:	Topics (a)	Time allotted in hours (b)	Percentage Weightage (c) %	K	C	A	HA
1	Units and Dimensions	3	7.14	3	2	2	
2	Basic Mechanics	12	28.6	7	5	6	
3	Gravitation and Gravity	3	7.14	2	2	1	
4	Properties of Solids	2	4.8	2	3	2	
5	Properties of Liquids	3	7.14	2	3	2	
6	Properties of gas	2	4.8	2	2	0	
7	Heat and Thermodynamics	11	26.2	5	5	4	
8	Wave and Sound	6	14.3	3	3	2	
	TOTAL	42 Σ b	100%				

K=Knowledge, C= Comprehension, A= Application,

HA= Higher than application   (analysis, synthesis, Evaluation)

$$C = \frac{b}{\Sigma b} \times 100$$
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4. Course title: Applied Physics-I Practical

Course title: Applied Physics-I

Course Code: Sc-104

Total Marks: 100

Practical Examination   : 50 Marks

Practical sessional Marks : 50 Marks

Chapter Title	Content

Unit & measurements	1. Linear measurement by Vernier Calipers to determine:
	    a. Volume of a Wooden/ metallic Cube
	    b. Volume of a Wooden/ metallic cylinder
	    c. Volume of a Wooden/ metallic sphere
	2.
	    d. Thickness of a metallic washer

	3. Linear measurement by Screw Gauge to determine: a. Cross sectional area of a wire

	4. Linear measurement by Spherometer to determine:
	    a. Thickness of glass piece
	    b. Radius of curvature of concave mirror
	    c. Radius of curvature of convex mirror

Simple Harmonic Motion	5. To determine the value of acceleration due to gravity (g) of a place with Simple pendulum.
Wave & Sound	6. To measure the velocity of sound in Resonance tube. 7. To determine the frequency of a tuning fork using a Sonometer.
Properties of Liquid	8. Measurement of Specific gravity of solid, liquid, using Nicolson hydrometer, Hare's apparatus and specific gravity bottles etc.
Heat	9. To determine the atmospheric pressure by using Boyle's law apparatus. 10. To determine water equivalent of a calorimeter by method of mixture.

13.   **Suggested learning Resource:**

A.   **Book list:**

Sl. No.	Title	Author	Publisher
I	Modern Approach To Physics Part I & II	Dilip Sarma, N G Chakraborty, K N Sharma	Kalyani Publishers- New Delhi
2	Applied Physics Part I	Manpreet Singh, Dr. Major Singh, Mrs. Hitashi Gupta	S K Kataria & Sons- New Delhi
3	Applied Physics Part II	Manpreet Singh, Dr. Major Singh, Mrs. Hitashi Gupta	S K Kataria & Sons- New Delhi
4	Basic Applied Physics	R K Gaur	Dhanpat Rai Publication- New Delhi
5	Physics- Std XI, Std XII	-	HSC board/CBSE Board

B.   **Websites:**

I.   http://hyperphysics.phy-astr.gsu.edu/

II.   http://physics.info

C.   By using Models, Video etc.

5. Course Title: Engineering Drawing

ENGINEERING DRAWING

1st Semester   Subject ref   Me - 101

Total contact hours = 90   Exam. Full marks = 100

(Including 3 class test)   Sessional Marks = 100

Prerequisite: None

Aim of the subject : Engineering Drawing is the subject which is the base of all the engineering branches and one of the mode of communications. The aim of the subject is to let the students know about the basics of the engineering drawing , need of the drawing in their respective branches for future applications. After studying the subject the students will be able to know the use and applications of different instruments in drawing, how these instruments are used in right from simple lettering to orthographic projection then to isometric projection.

CO---- Course Objective (Outcome based)

After studying the subject the students will be able to

1. Know the use the drawing instruments
2. Draw the simple geometrical drawings with the help of drawing instruments
3. Appreciate the lettering graphical process
4. Construct reducing scale, diagonal scale
5. Draw the projection of a point
6. Draw the projection of a straight line
7. Represent the orthographic projection (including side and sectional views)
8. Draw isometric projection
9. Know the use of rivets and screws

TOPIC WISE MarksDisribution

SL.No	Major Topics	Hours Allotted	Weightage of Marks	No of marks		
				Obj	Short	Long
1	Introduction Chapter	12	20	4	4	12
2	Geometrical Constructions	12	20	4	4	12
3	Lettering and Scales	9	14	2	2	10
4	Projection of points	6	12	2	1	9
5	Projection of lines	9	14	2	2	10

6	Orthographic projection	15	24	4	4	16
7	Rivets heads and joints	6	10	2	1	7
8	Isometric Projection	9	14	2	4	8
9	Thread Profiles	3	4	1	3	0
10	Screwed fastenings	6	8	2	0	6
Total Hours		**90**	**140**	**25**	**25**	**90**

Unit Topic/ Sub Topic

1.   INTRODUCTION [Total Hours: 12 Hrs]   **SHEET NO-1**

   1.1   Drawing as a medium of communication

   1.2   Use and care of Drawing Instruments   Assignments:

          Such as Drawing of Horizontal and Vertical Lines, Square, Rectangle,

          Mosaic   Pattern, Angular Pattern, Stamping with circular pattern.

   1.3   Types of Lines and Dimensioning as per 15696/72

2.   GEOMETRICAL CONSTRUCTIONS   [TOTAL HRS = 12 HRS.]   **SHEET NO-2 & 3**

   2.1   Freehand curves, free hand Drawing

   2.2   Construction of triangles, Perpendicular and angles of 30^0, 45^0, 60^0, 90^0

   2.3   Construction of Regular Polygons.

   2.4   Regular Polygons inscribed in circles.

   2.5   Regular figures by using T – square and Set – square.

3.   LETTERING, SCALES   [Total Hours = 9 Hrs.]   **SHEET NO-4**

   3.1   Single Stroke Lettering Straight and Inclined by graph and Free hand   Letters and   digits as per 15696/72.

   3.2   Scale- Representative Fraction, Types or Scales.

   3.3   Simple problems on Plain and Diagonal Scale. Assignments.

4.   PROJECTION OF POINTS [Total Hrs. = 6 Hrs.]   **SHEET NO-5**

   4.1 Position / location of Points, Horizontal plane, Vertical plane .

   4.2 Assignments of Simple problems on different quadrants and Find the distance between   two   points.

   4.3 Position/ Location of Points.

        Assignments of Line inclined with one or both the reference plane.

   5.   PROJECTION OF LINES [Total Hrs. = 9 Hrs.]   **SHEET NO-6**

      5.1 Position / location of Points, Horizontal plane, Vertical plane .

      5.2 Assignments of Simple problems on different quadrants and Find the distance   between   two points.

      5.3 Position/ Location of Lines.

Assignments of Line inclined with one or both the reference plane.

6.   ORTHOGRAPHIC PROJECTION   [Total Hours = 15 hrs]   **SHEET NO-7&8**

6.1   Top View, Front View and Side View of Simple objects, block and machine parts with dimensional scale. Assignments.

6.2 Sectional Front ,Top and Side Views As per IS – 696 for simple parts and blocks.

7.   Rivet Heads and Joints :   [Total Hrs = 6 Hrs]   **SHEET NO-9**

7.1   Different types of Rivet Heads and Joints.

Top and Sectional Front views of Lap and Butt Joints with single double cover plates.

8.   Isometric Projection [Total Hrs. = 9 Hrs]   **SHEET NO -10**

a.   Isometric Projection to true scale and isometric scale.

9.   Thread Profiles (REF IS 2043 IS – 554 ETC.) 3hrs   **SHEET NO-11**

10.   Screwed Fastenings [Total Hrs. = 6 Hrs.]   **SHEET NO-12**

10.1 Representation of external and internal threaded assembly symbolic .

Representation of threads.

10.2   Representation of Screws, Bolts, Nuts and Cutter.

11. Three (3) Class Tests   [Total Hrs. = 9 Hrs.]

Reference Books :

1.   Elementary Engineering Drawing [Plane and Solid Geometry]
            By N.D. Bhatt, V.M. Panchal.

2.   Geometrical and Machine Drawing   By   N.D. Bhatt

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6. Course Title: Basic Workshop Practice-I

Basic Workshop Practice

1st and 2nd semester for all branches Course code Ws -101, Ws- 201

There are 12 nos of shop out of which 6 shops are to be completed in each semester.

Total Marks 150 in each semester (Viva includes 50 , Sessional 100 in each semester)

Total Contact hours 90 in each semester

Course Content

1. **Carpentry shop (12hrs)(Theory and Practice)**
   1.1 Introduction with the shop
   1.2 Various structure of wood and types of wood
   1.3 Different types of tools , machine and accessories used in Carpentry shop
   1.4 Safety Precautions in workshop
   Details of Practical Contents(3+3 hrs)
   Demo of different wood working tools and machines
   Demo of different wood working processes
   Simple joints like T joints
   One simple utility job so that it helps the institution also like name plate, switch boards etc.

2. **Fitting Shop(12hrs) (Theory and Practice)**
   2.1 Introduction with the fitting shop
   2.2 Various marking . measuring, cutting, holding and striking tools
   2.3 Different Operations like chipping, filing, marking drilling etc.
   2.4 Working principle of drilling machine, lapping dies etc
   Details of Practical Contents(3+3 hrs)
   Demo of different fitting tools and machines and power tools
   Demo of different processes in fitting shop
   Squaring of a rectangular metal piece
   One simple utility job so that it helps the institution

3. **Plumbing Shop (12hrs) (Theory and Practice)**
   3.1 Introduction
   3.2 Various marking , measuring ,cutting, holding and striking tools
   3.3 Different G.I. Pipes, PVC pipes, flexible pipes used in practice
   3.4 GI pipes, PVC pipes fittings and accessories adhesive solvents, pipe layout
   Details of Practical Contents (3+3 hrs)

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Demo of Different Plumbing tools

Demo of Different operations

Cutting thread , using socket , elbow and tee etc.

Prepare a nipple of 6 inch or a 12 inch

Advised to prepare utility job

4. **RCC shop (12hrs)(Theory and Practice)**

   4.1 Common Materials used in RCC shop

   4.2 Various tools and equipment used in RCC shop

   4.3 Different types of bonds and their details

   4.4 Bending and binding of MS rods in RCC structures(cap., hook, crank up bar)

   4.5 Lay out of Building Plinth

   Details of Practical Contents(3+3 hrs)

   Demo on binding of the RCC structure

   Demo of reinforced cement concrete beam or slab with given proportion, curing process   for floor, wall on RCC castings

   Tiles fitting with special surface made in floors, modern bathrooms

5. **Painting Shop (12hrs)(Theory and Practice)**

   5.1 Introduction

   5.2 Various tools and equipment, machines used in Painting shop

   5.3 Preparation of Ingratiation of paint

   5.4 Types of Resin and its uses

   5.5 Preparation of Varnishes and uses

   5.6 Safety and precautions to be taken

   Details of Practical Contents(3+3 hrs)

   To prepare a wooden surface for painting , apply wooden surface and polish the other side

   To prepare metal surface for painting , apply primer and paint the same

   To prepare a metal surface for spray painting, 1st spray primer and paint the same by spray painting gun and compressor system

6. **Welding Shop (12hrs) (Theory and Practice)**

   6.1 Introduction

   6.2 Types of Welding, Arc Welding, Gas Welding, Gas Cutting

   6.3 Welding of dissimilar materials, selection of welding rod material, size of rod and work piece

   6.4 Different types of flames

   6.5 Elementary symbolic Representation

   6.6 Safety and precautions

   Details of Practical Contents(3+3 hrs)

   Demo of different welding tools and machines

   Demo of Arc Welding, Gas Welding, Gas Cutter and rebuilding of broken parts with welding

Any one Composite job involving lap joint welding process from the following utility job like grill, door, window frame, supporting frames etc.

7. Machine Shop(12hrs)(Theory and Practice)

7.1 Introduction

7.2 Study of Different types of Lathe machine , grinding Machine, shaping machine, Drilling machine,

7.3 Study of Different types of hand tools and machine tools and parts

7.4 Safety & precautions

Details of Practical Contents(3+3 hrs)

Demo of different machines and their operations

Slot cutting by shaping machine (Horizontal and vertical)

The Preferably prepare a utility job

8. Turning shop(12hrs)(Theory and Practice)

8.1 Introduction

8.2 Various marking, measuring, cutting, holding, and string tools

8.3 Working principle of Drilling machine, tapping, dies, its uses

8.4 Safety precautions

Details of Practical Contents(3+3 hrs)

Demo of lathe machine, drilling machine

One job related to plane and taper turning , threading and knurling

One job related to drilling and tapping

9. Blacksmithy shop(12hrs)(Theory and Practice)

9.1 Introduction

9.2 Study of different processes involved in blacksmithy shop

9.3 Study of forging, hammering tools and their uses

9.4 Study of anvils its parts

9.5 Safety precautions

Details of Practical Contents(3+3 hrs)

Demo of different processes in black smithy

One job related to forging

One job related to cold working process

Preferably utility jobs to be prepared

10. Electrical Shop(12hrs)(Theory and Practice)

10.1 Introduction

10.2 Various terms and instruments used in electrical wiring

10.3 Study of different tools used in simple house wiring

10.4 Difference between ac and dc line

10.5 Safety precautions

Details of Practical Contents(3+3 hrs)

Demo of simple house wiring and use of tools

One job related to simple house wiring

Fittings of cut outs, fuses and other simple fittings etc.

Difference between Single phase wiring and three phase wiring

11. **Pattern making shop(12hrs)(Theory and Practice)**

11.1 Introduction

11.2 Tools used in Pattern making shop

11.3 Various Processes perfomed in the shop

11.4 Material used in the shop

11.5 Process of Casting

11.6 Study of pattern, its types

11.7 Cope, drag, risers etc

11.8 Green sand moulding etc

Details of Practical Contents(3+3 hrs)

Demo of pattern making

Different types of allowances provided

One job for pattern making from wood(so that students can practically prepare

in moulding shop

12. **Moulding Shop(12hrs)(Theory and Practice)**

12.1 Introduction

12.2 Materials used in moulding process

12.3 Tools used in moulding shop

12.4 Terms related with cope and drag , Green sand moulding etc.

12.5 Different types of moulding

12.6 Moulding sand composition and its properties

12.7 Safety precaution

Details of Practical Contents(3+3 hrs)

Demo of various moulding process like in moulding machine, casting

One job related to moulding preferably which is prepared in pattern making

With low melting point materials like wax etc. so that student can

practically understand the moulding process.

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7. Course Title: Development of Life Skill-I

DEVELOPMENT OF LIFE SKILL -I

L	T	P		
1	*0*	*2*		**Curri. Ref. No.: LS-I(comm.)110**

Total Contact hrs :   **Total marks: 50**   Practical: 50

Theory: 15   *End Term Exam:* 0

Tutorial: 0   *PA :* 25

Practical: 30   PT:25

Credit :

Aim:-This subject is kept to

- Conduct different session to improve students memory Power
- Conduct different session to improve time management skills
- Motivate student to face realistic problem with confidence and positive approach

Objective: - This course will enable the students to:

- Develop reading skills
- Use techniques of acquisition of information from various sources
- Draw the notes from the text for better learning.
- Apply the techniques of enhancing the memory power.
- Develop assertive skills.
- Prepare report on industrial visit.
- Apply techniques of effective time management.
- Set the goal for personal development.
- Enhance creativity skills.
- Develop good habits to overcome stress.
- Face problems with confidence

DETAILED COURSE CONTENT

THEORY:

UNIT	TOPIC/SUB-TOPIC	TOTAL HRS.	REMARKS
Unit -1 **Importance of DLS** Introduction to subject, importance in present context, application.		01(T)	
Unit -2 **Information Search** Information source –Primary, secondary, tertiary Print and non – print, documentary, Electronic Information center, Library, exhibition, Government Departments. Internet Information search – Process of searching, collection of data –questionnaire, taking Interview, observation method.		02(T)	
Unit – 3 **written communication** Method of note taking Report writing –Concept, types and format.		01(T)	
Unit – 4 **Self Analysis** Understanding self— Attitude, aptitude, assertiveness, self esteem, Confidence buildings. Concept of motivation.		02(T)	

*__Report on self assessment to be submitted as P.A(Practical aAssignment)__   **06(Pr)**

Unit – 5 **Self Development** Stress Management –Concept, causes, effects and remedies to Avoid / minimize stress. Physical fitness – Importance, dietary guidelines and exercises. Time management- Importance, Process of time planning, Urgent Vs importance, Factors leading to time loss and ways to handle it, Tips for effective time management.			
Emotion-concept, Types, Controlling, Emotional intelligence, Creativity-concept, Factors enhancing creativity Goal setting-concept, setting smart goal		06(T)	3 days×2 hours

Unit – 6 **Study habits**

Ways to enhance memory and concentration,

Developing reading skill,

Organization of knowledge,

Model and methods of learning.   **03(T)**

*Seminar by students, by any lecturer which will   PA=5 Nos,   06(Pr)

be marked for practical assessment.

SUGGESTED LEARNING RESOURCES

Reference Books:

1.   Personality Development & Soft Skills - B. K. Mitra, Oxford University Press

2.   Basic Managerial Skills for All - E.H. McGrath, S.J., Prentice Hall of India Pvt Ltd

3.   Body Language - Allen Pease, Sudha Publications Pvt. Ltd.

4.   Creativity and problem solving - Lowe and Phil, Kogan Page (I) P Ltd

5.   Decision making & Problem Solving - Adair, J, and Orient Longman

6.   Develop Your Assertiveness - Bishop, Sue, Kogan Page India

7.   Time management - Chakravarty, Ajanta, Rupa and Company

8.   Life Skills Activities for Secondary Students with Special Needs - Darlene Mannix, Kindle Edition

Internet Assistance:

1) http://www.mindtools.com

2) http://www.stress.org

3) http://www.ethics.com

4) http://www.coopcomm.org/workbook.htm

5) http://www.mapfornonprofits.org/

6) http://www.learningmeditition.com http://bbc.co.uk/learning/courses/

7) http://eqi.org/

8) http://www.abacon.com/commstudies/interpersonal/indisclosure.html

9) http://www.mapnp.org/library/ethics/ethxgde.htm

10)http://www.mapnp.org/library/grp_cnfl/grp_cnfl.htm

11)http://members.aol.com/nonverbal2/diction1.htm

12)http://www.thomasarmstron.com/multiple_intelligences.htm

13)http://snow.utoronto.ca/Learn2/modules.html

14)http://www.quickmba.com/strategy/swot/

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Practical:

Suggested List of activities:

- Conduct Guest Lectures.
- Conduct Industrial visits.
- Conduct Seminar/Group Discussions.   **3Nos,**   **06 (Pr.)**

Suggested List of Assignments/Tutorial:

The Term Work Will Consist Of Following Assignments.   **5 Nos,**   **06(Pr.)**

1 Library search:- Visit your Institute's Library and enlist the books available on the topic given by your teacher. Prepare a bibliography consisting name of the author, title of the book, publication and place of publication.

2 Enlist the magazines, periodicals and journals being available in your library. Select any one of them and write down its content. **Choose a topic for presentation.**

3 Attend a seminar or a guest lecture, listen it carefully and note down the important points and prepare a report of the same.

4   Visit to any one place like historical/office/farms/development sites etc. and gather information through observation, print resources and interviewing the people.

5. **Prepare your individual time table for a week   PA=5Nos,   06(Pr.)**
(a) List down your daily activities.
(b) Decide priorities to be given according to the urgency and importance of the activities.
(c) Find out your time wasters and mention the corrective measures.

6 Keep a diary for your individual indicating- planning of time, daily transactions, collection of good thoughts, important data, etc

7 Find out the causes of your stress that leads tension or frustration .Provide the ways to Avoid them or to reduce them.

8   Undergo the demonstration on yoga and meditation and practice it. Write your own views, feeling and experiences on it.
    NOTE: - THESE ARE THE **SUGGESTED ASSIGNMENT**FOR GUIDE LINES TO THE SUBJECT TEACHER. HOWEVER THE SUBJECT TEACHERS CAN SELECT, DESIGN ANY ASSIGNMENT RELEVANT TO THE TOPIC, KEEPING IN MIND THE OBJECTIVES OF THIS SUBJECT.
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