CURRICULUM

FOR

FIRST SEMESTER OF

THREE-YEAR

DIPLOMA COURSES IN

POLYTECHNICS

OF

UNION TERRITORY OF

JAMMU AND KASHMIR

CONTENTS

INTRODUCTION

With the ever-changing Technology and Engineering processes, pass outs from the polytechnics have to be relevant to the requirements of the industry and user organizations. For this purpose, it is mandatory to update the curriculum as per the requirements of industry and user organizations.

The National Education Policy 2020 has made various changes and policy shifts in the educational processes. Polytechnics also have to implement the National Education policy 2020. The policy has made the teaching learning process more flexible and supports mobility between various qualification frame works. Besides the flexible vertical and horizontal mobility, it allows the flexible entry and exit system at each level with levels of knowledge and skill along with certification at each level of exit.

With all these requirements the design of curriculum has become more challenging as it must meet the requirements of industry and user organizations besides providing flexible entry, exit and mobility between various levels.

The Directorate of Skill Development and Board of Technical Education has also taken an initiative to design the curriculum for the polytechnics of UT of Jammu and Kashmir. For this purpose, the committee of Principals of Govt. Polytechnics and various subject level sub committees have been constituted vide Directorate of Skill Development Department order no: 353 of 2022 dated: 13-07-2022 to design the curriculum after taking suggestions from various stake holders, industry, and user organizations.

The draft curriculum prepared by subject level sub committees was reviewed by the curriculum development committee and the same was submitted to the Curriculum Development Center of NITTTR Chandigarh on 26/08/2022 for their expert opinion, observations, and suggestions for further modification so that curriculum as per NEP 2020 and relevant to the user organization is prepared.

The members of the curriculum development committee under the chairmanship of Director Skill Development Department, Mr. Sudershan Kumar (JKAS) along with the Secretary Board of Technical Education Mr. Firdoce Ahmad Itoo and officer on Special duty in the directorate of Skill Development Department Mr. Jatinder keser, held series of meetings with Professor A B Gupta, Professor and Head curriculum development center NITTTR Chandigarh. In every meeting, detailed discussions were held on the draft document and the expert opinion, suggestions, improvements were incorporated in the document. This process was continued till the satisfactory curriculum document was prepared. The final document is ready to be implemented in the fourth coming session i.e. Autumn 2022 for the Ist Semester in Polytechnics of J&K.

The curriculum of first semester Engineering and Technology branches has been designed as common so that student has the flexibility to slide between branches in second semester after getting the feel of polytechnic system.

We express our sincere thanks to Director Skill Development Department J&K for his keen interest and active participation in the meetings held for the development of this curriculum. Sincere thanks are also due to the Secretary Board of Technical Education, Principals of Polytechnics, officer on special duty in the Directorate of Skill Development Department, all subcommittee members and all Polytechnic faculty members for their sincere efforts in this endeavor.

We are highly thankful to Professor A B Gupta, Head Curriculum Development Center, NITTTR Chandigarh for reviewing this document, expert opinion, valuable suggestions and taking keen interest in designing the curriculum.

We are highly thankful to the Principal Secretary to Govt. Skill Development Department, Dr. Asgar Hassan Samoon (IAS) for his directions and keen interest to put in place the curriculum from the current session in accordance with the National Education Policy 2020.

It may not be out of place to mention here that the Honorable Advisor to Honorable Lt. Governor, Mr. Rajiv Rai Bhatnagar in series of meetings despite his over busy schedule, gave direction & advice to ensure the preparation & implementation of revised curriculum from the current session in accordance with the NEP 2020. We express our sincere thanks for the inspiration which helped in preparation of this curriculum.

We hope that this curriculum shall meet the requirements of NEP 2020, the aspirations of students, the human resource requirements of industry and user organizations in future.

Curriculum Development Committee

EVALUATION SCHEME

a. **For Theory Courses**: (The weightage of Internal assessment is 40% & for End Semester Exam is 60%) The student has to obtain at least 40 % marks individually in internal assessment and 40 % in end semester exams to pass.

*** Note: A student who obtains Grade O to E Will be considered as Pass.**

b. **For Practical Courses**: (The weightage of Internal assessment is 60% and for End Semester Exam is 40%) The student has to obtain at least 40% marks individually both in internal assessment and end semester exams to pass

c. The **internal assessment** shall be based on the student's performance in mid semester tests, assignments, attendance, viva-voce in practical, lab record etc.

For Theory Based Subjects: The total internal marks of 40 shall be distributed as below:

i) 20 Marks for Internal Exams which shall be computed as the average of best two internal tests out of 3 tests to be conducted in the session,
ii) 10 marks for Tutorial Sheets/Assignments
iii) 10 marks for Attendance.

For Practical Based Subjects, the total internal marks of 60 shall be distributed as

i) 20 Marks for internal viva
ii) 20 Marks for Internal Practical Conduction
iii) 10 Marks for Lab Record Maintenance
iv) 10 Marks for Attendance

d . **Mapping of Marks to Grades: -**Each course(Theory/Practical) is to be assigned a total of 100 marks (i.e. for Theory based Subject, 60 marks as External assessment and 40 marks as Internal assessment; and for Practical based Subject , 40 marks as External assessment and 60 marks as Internal assessment) , irrespective of the number of credit hours assigned to the subject and the mapping of marks into grades shall be done as follows

Percentage of Marks	Grade point	Grade
90-100	10.0	O
80-89	9.0	A
70-79	8.0	B
60-69	7.0	C
50-59	6.0	D
40-49	5.0	E
<40	0	F

Note: Multiplying factor for conversion of grade point to percentage Is **10.**

e. Credit Definition: - One credit means one theory/Tutorial class/hour per week or two practical classes/hours per week in a semester.

f. Calculation of Semester grade point Average (SGPA) :-The following formula shall be used to calculate SGPA:

$$SGPA = \frac{\text{Summation (Course credits X Grade Point) for all courses in a semester}}{\text{Summation of registered credits for all courses in a semester}}$$

g. The cumulative grade point average (CGPA): CGPA is calculated on the basis of grades obtained for all the courses for all semesters of entire diploma.

$$CGPA = \frac{\text{Summation (Course credits X Grade Point) for all courses for all semesters}}{\text{Summation of registered credits for all courses for all semesters}}$$

h. Maximum and minimum credits: - In every semester minimum of 16 credits and maximum of 26 credits may be offered. However with minimum of 135 credits , diploma will be awarded.

Note : The committee of the following members constituted by J&K DSD vide order no : 353 of 2022 dated: 13-07-2022 may be consulted for any clarification.

1: Mr. Mahmood Ahmad	Principal Govt Polytechnic Pulwama
2: Mr. Mohd Shafi Bhat	Principal Govt Polytechnic Shopian
3: Ms. Ritu Jamwal	Principal Govt Polytechnic Jammu
4: Mr. Vivek Mahajan	Principal Govt Polytechnic Reasi

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

ENGINEERING AND TECHNOLOGY

[Civil Engineering(CE), Electrical Engineering(EE), Mechanical Engineering(ME), Automobile Engineering(AE), Electronics & Communication Engineering(EC), Computer Engineering(CO), Instrumentation & Control Engineering(IC) ;
Architecture Assistantship(AA) ;
Leather Technology(LT), Wood Technology(WT), Information Technology(IT), Food Technology(FT) and Textile Technology(TT)]

SUBJECT STUDY SCHEME

		Time in Hours				Credits			
Course Code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3	----------	----------	3	3	0	----------	3
BS 102	Physics	3	----------	----------	3	3	0	----------	3
BS 103	Chemistry and Environmental Sciences	3	----------	----------	3	3	0	----------	3
BS 104	Applied Math-I	3	1	----------	4	3	1	0	4
ES 105	Engineering Graphics	----------	----------	4	4	0	0	2	2
ES 106	General Workshop Practice			4	4	0	0	2	2
BS 107	Physics Lab	----------	----------	2	2	----------	----------	1	1
BS 108	Chemistry Lab	----------	----------	2	2	----------	----------	1	1
HS 109	Language and Communication Skill Lab	----------	----------	2	2	----------	----------	1	1
HS 110	Self-Learning/Life Skills	2	----------	----------	2	2	0	----------	2
	Total	**14**	**1**	**14**	**29***	**14**	**1**	**7**	**22**

*** Note: The 4hrs in a week shall be utilized for sports and other activities like debates, seminars etc.**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: HS 101	Course Title: Language and Communication skills
Semester: **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at workplace, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written. Barriers to effective communication.
- 7 C's for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
- Art of Effective communication,
    - Choosing words
    - Voice o Modulation o Clarity
    - Time
    - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.
- Case Studies

UNIT 3: **READING COMPREHENSION** **(12 Hours)**

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personal,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal, Non-Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication.

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1. J.D. O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3. M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4. John Nielson. Effective Communication Skills. Xlibris, 2008.
5. Oxford Dictionary
6. Roget's Thesaurus of English Words and Phrases
7. Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code : BS 102	Course Title: PHYSICS
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives:

The objective of the course is to understand the concept of Physics and World around us. The course shall help the students in understanding the basic principles which shall help in solution of Engineering Problems.

Prior learning requirements: This is the Basic course of Physics and does not require much prior knowledge of physics. However, concepts of Matter and High School level physics will give better understanding of the subject.

COURSE CONTENT

UNIT 1: PHYSICAL WORLD, UNITS AND MEASUREMENTS (08 Hours)

Physical quantities; fundamental and derived, Units and systems of units (FPS, CGS and SI units),

Dimensions and dimensional formulae of physical quantities, Principle of homogeneity of dimensions, Dimensional equations and their applications (conversion from one system of units to other, checking of dimensional equations and derivation of simple equations), Limitations of dimensional analysis.

Measurements: Need, measuring instruments, least count, types of measurement (direct, indirect), Errors in measurements (systematic and random), absolute error, relative error, error propagation, error estimation and significant figures.

UNIT 2: FORCE AND MOTION (08 Hours)

Scalar and Vector quantities – examples, representation of vector, types of vectors. Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only), Scalar and Vector Product, Resolution of a Vector and its application to inclined plane and lawn roller.

Force, Momentum, Statement and derivation of conservation of linear momentum, its applications such as recoil of gun, rockets, Impulse and its applications.
Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period, Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical), Centripetal and Centrifugal forces with live example s, Expression and applications such as banking of roads and bending of cyclist

UNIT 3: ROTATIONAL MOTION (08 Hours)

Translational and rotational motions with examples, Definition of torque and angular moment um and their examples, Conservation of angular momentum (quantitative) and its applications. Moment of inertia and its physical significance, radius of gyration for rigid body, Theorems of parallel and perpendicular axes (statements only), Moment of inertia of rod, disc, ring and sphere (hollow and solid)

UNIT 4: WAVE MOTION AND ITS APPLICATIONS (08 Hours)

Wave motion, transverse and longitudinal waves with examples, definitions of wave velocity, frequency and wave length and their relationship, Sound and light waves and their properties , wave equation (y = r sin wt.) amplitude, phase, phase difference, principle of superposition of waves and beat formation.

Simple Harmonic Motion (SHM): definition, expression for displacement, velocity, acceleration, time period, frequency etc. Simple harmonic progressive wave and energy transfer, study of vibration of cantilever and determination of its time period, Free, forced and resonant vibrations with examples.

Acoustics of buildings – reverberation, reverberation time, echo, noise, coefficient of absorption of sound, methods to control reverberation time and their applications, Ultrasonic waves – Introduction and properties, engineering and medical applications of ultrasonic.

UNIT 5: **OPTICS** **(08 Hours)**

Basic optical laws; reflection and refraction, refractive index, Images and image formation by mirrors, lens and thin lenses, lens formula, power of lens, magnification and defects. Total internal reflection, Critical angle and conditions for total internal reflection, applications of total internal reflection in optical fiber.

Optical Instruments; simple and compound microscope, astronomical telescope in normal adjustment, magnifying power, resolving power, uses of microscope and telescope, optical projection systems.

UNIT 6: MODERN PHYSICS **(08 Hours)**

Lasers: Energy levels, ionization and excitation potentials; spontaneous and stimulated emission; population inversion, pumping methods, optical feedback, Types of lasers; Ruby, He-Ne and semiconductor, laser characteristics, engineering and medical applications of lasers.

Fiber Optics: Introduction to optical fibers, light propagation, acceptance angle and numerical aperture, fiber types, applications in; telecommunication, medical and sensors.

Nanoscience and Nanotechnology: Introduction, nanoparticles and nanomaterials, properties at nanoscale, nanotechnology, nano technology based devices and applications.

Course Outcome:

After completion of this course the student will be able to:

Unit1:

- Identify physical quantities, select their units for use in engineering solutions, and make measurements with accuracy by minimizing different types of errors.

Unit 2:

- Represent physical quantities as scalar and vectors and solve real life relevant problems.
- Analyze type of motions and apply the formulation to understand banking of roads/railway tracks and conservation of momentum principle to describe rocket propulsion, recoil of gun etc.

Unit 3:

- Compare and relate physical properties associated with linear motion and rotational motion and apply conservation of angular momentum principle to known problems.

Unit 4:

- Describe waves and wave motion, periodic and simple harmonic motions and solve simple problems. Establish wave parameters: frequency, amplitude, wavelength, and velocity and able to explain diffraction, interference, polarization of waves.
- Explain ultrasonic waves and engineering, medical and industrial applications of Ultrasonics. Apply acoustics principles to various ty pes of buildings for best sound effect.

Unit 5:

- State basic optical laws, establish the location of the images formed by mirrors and thin converging lens, design and assemble microscope using lenses combination.
- Describe refractive index of a liquid or a solid and will be able to explain conditions for total internal reflection.

Unit 6:

- Illustrate the conditions for light amplification in various LASER and laser-based instruments and optical devices.
- Appreciate the potential of optical fiber in fields of medicine and communication.
- Express importance of nanoscience and nanotechnology and impact of nanotechnology to the society.

Recommended Books:

1. Concepts in Physics by HC Verma, Vol. I & II, Bharti Bhawan Ltd. New Delhi
2. Text Book of Physics for Class XI& XII (Part-I, Part-II); N.C.E.R.T., Delhi
3. Applied Physics, Vol. I and Vol. II, TTTI Publications, Tata McGraw Hill, Delhi
4. A Textbook of Optics, N Subramanyam, Brij Lal, MN Avahanulu, S Chand and Company Ltd.
5. Introduction to Fiber Optics, Ajoy Ghatak and K Thyagarajan, Cambridge University Press India Pvt. Ltd, New Delhi.
6. Nanoscience and Nanotechnology, KK Choudhary, Narosa Publishing House, Pvt. Ltd. New Delhi.

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	08	17
02	08	17
03	08	16
04	08	17
05	08	16
06	08	17
TOTAL	**48**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: BS 103	Course Title: Chemistry and Environmental Sciences
Semester: **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:)**	

Course Objectives:

The objective of the course is to give the basic concepts of Chemistry and sensitize the students in understanding issues and solutions of Environmental Problems.

Prior learning requirements: High School Level Chemistry.

COURSE CONTENT

UNIT 1: CHEMICAL BONDING AND SOLUTIONS: (08 Hours)

Concept of chemical bonding – cause of chemical bonding, types of bonds: ionic bonding (NaCl example), covalent bond (H2, F2, HF hybridization in BeCl2, BF3, CH4, NH3, H2O), coordination bond in NH4+, and anomalous properties of NH3, H2O due to hydrogen bonding, and metallic bonding.

Solutions – idea of solute, solvent and solution, methods to express the concentration of solution- morality & Molality (M = mole per liter), ppm, mass percentage, volume percentage and mole fraction. Concept of pH

UNIT 2: CHEMISTRY OF FUELS AND LUBRICANTS (08 Hours)

Definition of fuel and combustion of fuel, classification of fuels, calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula. Proximate analysis of coal solid fuel, petrol and diesel - fuel rating (octane and cetane numbers),

Chemical composition, calorific values and applications of LPG, CNG, water gas, coal gas, producer gas and biogas.

Lubrication – function and characteristic properties of good lubricant, classification with examples, lubrication mechanism – hydrodynamic and boundary lubrication, physical properties (viscosity and viscosity index, oiliness, flash and fire point, could and pour point only) and chemical properties (coke number, total acid number saponification value) of lubricants.

UNIT 3: ELECTRO CHEMISTRY (10 Hours)

Electronic concept of oxidation, reduction and redox reactions. Definition of terms: electrolytes, non-electrolytes with suitable examples, Faradays laws of electrolysis and simple numerical problems.

Industrial Application of Electrolysis:

- Electrometallurgy
- Electroplating
- Electrolytic refining.

Application of redox reactions in electrochemical cells
Primary cells – dry cell ,
Secondary cell - commercially used lead storage battery, fuel
and Solar cells.

Introduction to Corrosion of metals –
definition, types of corrosion (chemical and electrochemical), H2 liberation and O_2 absorption mechanism of electrochemical corrosion, factors affecting rate of corrosion.

Internal corrosion preventive measures –

Purification, alloying and heat treatment and External corrosion preventive measures: a) metal (anodic, cathodic) coatings, b) organic inhibitors

UNIT 4 : ECOSYSTEM (05 Hours)

Structure of ecosystem, Biotic & Abiotic components

Food chain and food web

Aquatic (Lentic and Lotic) and terrestrial ecosystem

Carbon, Nitrogen, Sulphur, Phosphorus cycle.

Global warming -Causes, effects, process, Green House Effect, Ozone depletion

UNIT 5: POLLUTION (09 Hours)

Air and, Noise Pollution

Definition of pollution and pollutant, Natural and manmade sources of air pollution and its prevention.

Water and Soil Pollution

Sources of water pollution, Types of water pollutants, Characteristics of water pollutants Turbidity,

pH, total suspended solids, total solids BOD and COD: Definition, calculation

Waste Water Treatment: Primary methods: sedimentation, froth floatation, Secondary methods: Activated sludge treatment, Trickling filter, Bioreactor, Tertiary Method: Membrane separation technology, RO (reverse osmosis).

Causes, Effects and Preventive measures of Soil Pollution:

Noise pollution: Sources, Measurement and Prevention of Noise Pollution. Noise Pollution Regulation and Control Rules.

UNIT 6: Solid Waste Management, ISO 14000 & Environmental Management (08 Hours)

Solid waste generation- Sources and characteristics of: Municipal solid waste, E-waste, biomedical waste.

Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.

Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill), Hazardous waste

Air quality act 2004, air pollution control act 1981 and water pollution and control act1996.

Structure and role of Central and state pollution control board.

Concept of Carbon Credit, Carbon Footprint.

Environmental management in fabrication industry.

ISO14000: Implementation in industries, Benefits.

Course Outcome:

After completion of this course the student will be able to:

Unit 1

- Understand the concept of Chemical boding and its types.
- Understand the concept of mole and solutions.

UNIT 2

- Understand the various types of fuels and their uses.
- Understand the importance of Lubrication in Engineering and other applications.

UNIT 3

- Understand the laws of Electrolysis and their Industrial applications.
- Understand the various preventive measures for corrosion

UNIT 4

- Understand the Structure of Ecosystem.
- Understand the causes of Global Warming

UNIT 5

- Understand the suitable air, extent of noise pollution, and control measures and acts.
- Understand the water and soil pollution, and control measures and acts.

UNIT 6

- Understand solid Waste Management, ISO 14000 & Environmental Management

Recommended Books:

1. Agarwal, & Shikha, Engineering Chemistry, Cambridge University Press; New Delhi
2. C.N. R. Rao, Understanding Chemistry, Universities Press (India) Pvt. Ltd., 2011
3. S.C. Sharma & M.P. Poonia, Environmental Studies, Khanna Publishing House ,New Delhi

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	08	17
02	08	17
03	10	20
04	05	10
05	09	19
06	08	17
TOTAL	**48**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code : BS 104	Course Title: MATHEMATICS -I
Semester : **1st**	Credits: **4**
Periods per week: **4 (L:3 T:1 P:0)**	

Course Objectives: The objective of the course is to give the concepts regarding Algebra, Trigonometry and Differential calculus, which shall be the basis for applications in Engineering Problem.

Prior learning requirements: The students shall have basic knowledge regarding

(I) principles and laws of algebra
(II) Polynomials
(III) Real Number System.

COURSE CONTENT

UNIT 1: ALGEBRA (24 Hours)

(I) **Partial fractions:** Definition of polynomial fraction proper & improper fractions and definition of partial fractions. To resolve proper fraction into partial fraction with denominator containing non-repeated linear factors, repeated linear factors and irreducible non-repeated quadratic factors. To resolve improper fraction into partial fraction. (06)

(II) **Permutations and Combinations:** Concept of permutations and Combinations: Value of ${}^{n}p_{r}$ ${}^{n}c_{r}$, addition and multiplication theorems, circular permutations. (06)

(III) **Binomial theorem:** 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 (06)

(IV) **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 com-
plex number, modulus, and amplitude of a complex number Addition, Subtract ion, Multiplication and Division of a complex number. De-movier's theorem, its application (06)

UNIT 2: TRIGONOMETERY (16 Hours)

Concept of angles, measurement of angles in degrees, grades and radians and their conversions, T-Ratios of Allied angles Sum, difference formulae and their applications Product formulae (Transformation of product to sum, difference and vice versa). T- Ratios of multiple angles , sub-multiple angles (2A, 3A, A/2). Graphs of sin x, cos x, tan x and e^x , Concept of Inverse Trigonometric functions.

UNIT 3: DIFFERENTIAL CALCULUS (24 Hours)

(I) Definition of function; Concept of limits.

Four standard limits

$$\lim_{x \to a} \frac{x^n - a^n}{x - a},$$

$$\lim_{x \to 0} \frac{\sin x}{x} \qquad \lim_{x \to 0} \frac{a^x - 1}{x} \qquad \lim_{x \to 0} (1+x)^{1/x}$$

(i) Definition of function; Concept of limits.

(II) Differentiation by definition of x^n , sin x, cos x, tan x, e^x, $\log_a x$ only

(III) Differentiation of trigonometric inverse functions. Logarithmic differentiation. Exponential differentiation Successive differentiation (excluding nth order).

(IV) Applications:

(a) Maxima and minima (b) Equation of tangent and normal to a curve (for explicit functions only)

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- Understand the Concept of functions and their splitting into simpler functions.
- Count without actual counting.
- Expand the higher degree algebraic polynomials.
- Learn the extended number line system and find roots of equations which do not have real solutions.

Unit 2:

- Learn alternative approach of measuring distances through angles.
- Study the sides and angles, and their relationship in triangles.

Unit 3:

- Have Notion of Nearness
- Learn instantaneous rates of changes.
- Learn to optimize the function**.**

Recommended Books:

1. B.S. Grewal, Higher Engineering Mathematics, Khanna Publishers, New Delhi, 40th Edition, 2007.
2. G. B. Thomas, R. L. Finney, Calculus and Analytic Geometry, Addison Wesley, 9th Edition, 1995.
3. Reena Garg, Engineering Mathematics, Khanna Publishing House, New Delhi (Revised Ed. 2018)

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	24	38
02	16	24
03	24	38
TOTAL	**64**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code : ES 105	Course Title: Engineering Graphics
Semester : **1st**	Credits: **2**
Periods per week: **4 (L:0 T:0 P:4)**	

Course Objectives:

(I) To understand the language of graphics, which is used to express ideas, convey instructions in the form of drawings, shapes.

(II) To develop skills to visualize actual object or a part of it on the basis of drawings. Also, to develop skills to translate ideas into sketches

Prior learning requirements: No Prior Learning is required. However, the basic skill of drawing lines and basic shapes shall be advantage to the student in this course.

COURSE CONTENT.

UNIT 1: BASIC ELEMENTS OF DRAWING. (08 Hours)

Introduction to drawing, drawing instruments and supporting materials. Method to use instruments and material with applications for neat and clean drawing. Types of drawing sheets. Concept of margin on sheet. Difference between painting and drawing. Introduction to latest instruments and software's for drawing.

Conventions of lines and their applications.

Representative fractions- reduced enlarged and full-size scales; engineering scales such as plain and diagonal scale. Letter writing.

Dimensioning techniques as per SP-46:2003- types and applications of chain, parallel and coordinate dimensioning. Dimensioning of various basic figures and shapes.

UNIT2: ORHTOGRAPHIC PROJECTIONS. (18 Hours)

Introduction of projections-orthographic, perspective, isometric and oblique: concept and applications.

Introduction to orthographic projection, First angle and Third angle method, their symbols.

Projection of points in all quadrants. Projection of lines and surface in 1st and 3rd angle only.

Projection of solid surface and thereby identification of surfaces.

Concept of sectioning, Sectional views and need for sectional views. Conventional sectioning of materials and conventional breaks of various basic shapes.

Conversion of pictorial view into Orthographic Views – object containing plain surfaces, slanting surfaces, slots, ribs, cylindrical surfaces.

(all drawings on sketch book)

UNIT3: ISOMETRIC PROJECTIONS (08 Hours)

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.

Isometric projections of prism cone, frustum, slab, Sphere, cylinder.

Conversion of orthographic views into isometric view/projection.

UNIT 4: FREE HAND SKETCH (06 Hours)

Free hand sketching of triangle, square, pentagon, hexagon, circles.

Ellipses, Parabola. Various methods of drawing of shapes. (Knowledge purpose only).

Free hand orthographic sketching on squared graph paper.

Free hand isometric sketching on isometric grid paper.

UNIT5: COMPUTER AIDED DRAFTING INTERFACE (06 Hours)

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, status 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

UNIT 6: COMPUTER AIDED DRAWING (AUTOCAD) (18 Hours)

Introduction to co-ordinate system.

Method of Specifying points: Absolute coordinates, Relative Cartesian, and Polar coordinates

.

Draw basic entities like Line, Circle, Arc, Polygon, Ellipse, Rectangle, Multiline, Polyline.

Modify and edit commands like trim, extend, delete, copy, offset, array, hatch, block, layers.

Drawing of objects which were drawn by free sketching in UNIT-III

Draw Orthographic Projections and isometric projections.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Understand the concept of Drawing and Drawing Instruments.
- Understand the Concept of scales and their selection.
- Use appropriate dimensioning techniques.

UNIT 2

- Understand Quadrant systems and Orthographic Projections.
- Draw and identify the solid Surfaces.
- Visualize hidden elements by concept of sectioning.
- Covert Isometric views into orthographic projections.

UNIT 3

- Convert Orthographic views into Isometric Views.

UNIT 4

- Sketch all basic shapes free handedly.

UNIT 5

- Learn the use of Computers and software's for Drawing

UNIT 6

- Acquire skills to use Auto Cad to draw various types of shapes, orthographic projections, and isometric projections. (2D and 3D).

RECOMMENDED BOOKS

1. Bhatt, N.D. Engineering Drawing. Charotar Publishing House, Anand, Gujrat 2010; ISBN: 978-93-80358-17-8
2. Bureau of Indian Standards. Engineering Drawing Practice for Schools and Colleges IS: Sp-46. BIS. Government of India, Third Reprint, October 1998; ISBN: 81-7061-091-2.
3. Jain & Gautam, Engineering Graphics & Design, Khanna Publishing House, New Delhi (ISBN: 978- 93-86173-478)
4. Jeyapoovan, T. Essentials of Engineering Drawing and Graphics using AutoCAD. Vikas Publishing House Pvt. Ltd, Noida, 2011; ISBN: 978-8125953005.
5. Autodesk. AutoCAD User Guide. Autodesk Press, USA, 2015

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	08	12
02	18	28
03	08	12
04	06	10
05	06	10
06	18	28
Total	**64**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: ES 106	Course Title: GENERAL WORKSHOP
Semester: **1st**	Credits: **2**
Periods per week: **4 (L:0 T:0 P:4)**	

Course Objectives:

- To understand basic engineering processes for manufacturing and assembly
- To understand, identify, select and use various marking, measuring, and holding, striking and cutting tools and equipment's
- To understand and interpret job drawings, produce jobs, and inspect the job for specified dimensions
- To understand the various types of wiring systems and acquire skills in house wiring
- To understand, operate, control different machines and equipment's adopting safety practices

COURSE CONTENT:

UNIT I : GENERAL WORKSHOP (02 Hours)

Introduction and Importance of Engineering Workshop.
Importance of safety and cleanliness
Safety measures and upkeep of tools and environmental shops
Types of workshops.
Introduction to Machinery and material used in Engineering Workshops.

UNIT 2: CARPENTRY SHOP (08 Hours)

i) Introduction to Carpentry shop ii) demonstration and introduction to various types of wood, an introduction to timber iii) seasoning of wood iv) Demonstration of different wood working tools / machines. iv) Demonstration and practicing of different wood working processes, like sawing, planning, marking, chiseling, grooving, turning of wood etc. iv) simple jobs involving any one joint like mortise and tenon dovetail, bridle, half lap etc. v) painting of wood by manual and machine.

UNIT3: FITTING SHOP (08 Hours)

I) Material used in fitting shop and Demonstration of different fitting tools (like bench vice, v-block with clamp, c clamp), marking & measuring tools (like surface plate, angle plate, scribing block, try square, combination set, calipers), finishing tool s (files, hand file, flat file, square file, triangular file, round files), machineries (like drilling machine, chop saw, grinder, their specifications and care), etc. ii) Demonstration and practicing of different operations like chipping, filing, drilling, tapping, sawing, cutting , punching etc. iii) some simple fitting jobs involving practice of chipping, filing, drilling, tapping, cutting, punching etc. iv) Paint job after fitting.

UNIT4: WELDING SHOP: (10 Hours)

i) Introduction to welding, Arc welding, gas welding, resistance welding, electron beam welding, laser beam welding ii) Safety precautions in welding shop iii) Introduction to ARC welding processes. iii) Machines used and filling material used for arc welding processes. Demonstration and practicing of Arc welding machine. iv) introduction to gas welding v) high pressure gas welding and low-pressure gas welding v) low pressured acetylene generation from calcium carbide vi) Demonstration and practice of oxy-acetylene gas welding (both high pressure and low-pressure gas welding) vii) Demonstration on MIG, TIG, SPOT welding, and rebuilding of broken parts with welding. viii) Quality weld and defects in welding. how to avoid defects in welding ix) Simple jobs involving butt and lap joint on both high-pressure gas welding and low-pressure gas welding. ix) Metal cutting by gas welding. painting after weld

UNIT 5: SHEET METAL SHOP (08 Hours)

i) introduction to sheet metal shop ii) metallic sheets (tin, copper, brass) &material used ii) Demonstration of different sheet metal tools / machines (like trammel, Wire Gauge, hammers, s takes, hand shearing machine, foot operated shearing and bending machine, soldering, and brazing machines. ii) Demonstration of different sheet metal operations like sheet cutting, bending, edging, end curling, lancing, soldering, brazing, and riveting. iii) simple jobs involving sheet metal operations, sheet metal joints, surface development, tray making, funnel making, cylinder, soldering & riveting. Iv) Introduction to Aluminum frame works. V) Painting of sheets.

UNIT 6: ELECTRICAL SHOP (08 Hours)

i)Material used in electrical workshop ii) safety precautions during AC and DC electrical wirings. iii) demonstration of tools used in electrical workshop iv) Practice on simple lamp circuits (iv) one lamp controlled by one switch by surface conduit wiring, (iv) Lamp circuits-connection of lamp and socket by separate switches, (vi) Connection of Fluorescent lamp/tube light

, (vii) simple lamp circuits-install bedroom lighting. And (v) Simple lamp circuits- install staircase wiring. viii) introduction to smart switches and lamps. Ix) identification of different types of batteries and their specifications. Series and parallel connection of batteries. Battery charging with manual charger and solar plate charging. Invertor connection with batteries. Demonstration and practice of digital and manual multimeters.

UNIT 7: ELECTRONIC SHOP (08 Hours)

i) Introduction to electronic workshop. ii)Familiarization/application of testing instruments and commonly used tools (like Multimeter, function generator, power supply, DSO, Soldering iron, pliers, cutters, wire strippers, tweezers, crimping tool, bread board, hot air soldering and desoldering station) iii) material used in electronic shop. iii) practicing of soldering and brazing. Iv) demonstration of soldering station and soldering guns. V) demonstration of electronic items like, PCB, led, transformers, capacitors, inductors, resistors, diodes, transistors etc.

UNIT8: PLUMBING SHOP (08 Hours)

I) introduction to plumbing. ii) piping material used and demonstration of tools/equipment's used for plumbing iii) threading of plastic and GI pipes. iv) demonstration of valves and meters, water geysers, installing water supply fitting on GI, PVC, PPR &, PEX pipes. v) Demonstration and practice of PPR pipe jointing welding machine. Simple jobs on water connection from tank to tap.

RECOMMENDED BOOKS

1. S.K. Hajara Chaudhary, Workshop Technology, Media Promoters and Publishers, New Delhi, 2015
2. B.S. Raghuwanshi, Workshop Technology, Dhanpat Rai and sons, New Delhi 2014
3. K. Venkat Reddy, Workshop Practice Manual, BS Publications, Hyderabad 2014

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: BS 107	Course Title: PHYSICS LAB
Semester: **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

LIST OF PRACTICALS':

1. To measure length, radius of a given cylinder, a test tube and a beaker using a Vernier caliper and find volume of each object.
2. To determine diameter of a wire, a solid ball and thickness of cardboard using a screw gauge
3. To find the moment of inertia of a flywheel.
4. To investigate Simple Harmonic Motion using a Simple pendulum and an oscillating spring and to determine the spring constant of a spring.
5. To determine and verify the time period of a cantilever.
6. To determine velocity of ultrasonic in different liquids using ultrasonic interferometer.
7. To verify laws of reflection from a plane mirror/ interface.
8. To verify laws of refraction (Snell's law) using a glass slab.
9. To determine focal length and magnifying power of a convex lens.
10. To measure wavelength of a He-Ne/diode laser using a diffraction grating.
11. To measure numerical aperture (NA) of an optical fiber.

COURSE OUTCOME:

After undergoing this lab work, the student will be able to:

- Select right kind of measuring tools (Meter scale, Vernier caliper, Screw gauge etc.) for determining dimensions of physical quantities and make measurements with accuracy and precision.
- Understand rotational motion and determine M.I. of a rotating body (flywheel)
- Understand the basics of SHM and determine the spring constant also.
- Use of equipment for determining velocity of ultrasonics in different liquids.
- Verify optical laws; reflection, refraction from plane interfaces and surfaces.
- Apply knowledge of optics to determine focal length and magnifying power of optical lenses.
- Work with laboratory lasers and understand method to measure the wavelength of the light emitted from a laser.
- Handle optical fibers and determine numerical aperture of given optical fiber.

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: BS 108	Course Title: CHEMISTRY LAB
Semester: **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

LIST OF PRACTICALS:

Volumetric and Gravimetric analysis:

1. Preparation of standard solution of oxalic acid or potassium permanganate.
2. To determine strength of given sodium hydroxide solution by titrating against standard oxalic acid solution using phenolphthalein indicator.
3. Standardization of KMnO4 solution using standard oxalic acid and Determine the percentage of iron present in given Hematite ore by KMnO4 solution.
4. Volumetric estimation of
    a. Total hardness of given water sample using standard EDTA solution.
    b. Alkalinity of given water sample using 0.01M sulphuric acid
5. Proximate analysis of coal
    a. Gravimetric estimation moisture in given coal sample
    b. Gravimetric estimation ash in given coal sample

Instrumental analysis

6. Determine the conductivity of given water sample.
7. Determination of calorific value of solid or liquid fuel using bomb calorimeter.
8. Determination of viscosity of lubricating oil using Redwood viscometer.
9. Determination of melting point of Organic Compounds by Melting point apparatus.
10. To verify the first law of electrolysis of copper sulfate using copper electrode.
11. Construction and measurement of emf of elector chemical cell (Daniel cell).
12. To determine the PH of Fruit Juices.

COURSE OUTCOMES:

At the end of the course student will be able to:

- Express quantitative measurements accurately.
- Practice and adapt good measuring techniques.
- Use various apparatus for precise measurements.
- Understand and differentiate different methods of quantitative analysis.
- Know and understand principles of quantitative analysis using instruments.
- Construct different electrochemical cells used in developing batteries.

RECOMMENDED BOOKS

- Chemistry in Engineering by J.C. Kuricose And J. Rajaram, Tata McGraw Hill, Publishing Company Limited, New Delhi.
- Engineering Chemistry by P.C.Jain and Monika Jain, Dhanapat Rai Publishing Company New Delhi.
- Engineering Chemistry by Shashi Chawla.
- Modern's Abc of Chemistry Vol I and II by Dr. S.P.Jauhar, Modern Publishers, New Delhi
- A textbook of Biochemistry and Clinical Pathology by Sukhdev Singh and Om Parkash

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: HS 109	Course Title: Language and Communication skills Lab
Semester: **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary .

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018)

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN ENGINEERING AND TECHNOLOGY	
Course Code: HS 110	Course Title: - Self learning/Life skills
Semester: **1st**	Credits: **02**
Periods per week: **2 (L:2 T:0 P:0)**	

Course Objective: -

Self-Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports an d Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and skill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation: - At the start of the semester the HOD/Academic in-charge may register the student for course of life skill or may be given a choice to register for any online course activity . Such course and activity needs to be monitored, evaluated and shall be given credits as prescribed.

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

GARMENT TECHNOLOGY

(GT)

SUBJECT STUDY SCHEME

-

		TIME IN HOURS				CREDITS			
Course code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3			3	3	0		3
GT 101	Textile science Theory	2			2	2	0		2
GT 102	Textile science Practical			2	2		0	1	1
GT 103	Basic Design Theory	2			2	2			2
GT 104	Basic Design Practical			4	4	0	0	2	2
GT 105	Basic pattern making and style interpretation Theory	2			2	2	0		2
GT 106	Basic pattern making and style interpretation Practical			4	4			2	2
GT 107	Fashion illustration			4	4			2	2
GT 108	Garment construction practical			6	6			3	3
HS 109	Language and Communication Skill Lab			2	2			1	1
HS 110	Self Learning/Life Skills	2			2	2			2
	Total	**11**		**22**	**33**	**11**		**11**	**22**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : HS 101	Course Title: Language and Communication skills
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at workplace, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written Barriers to effective communication.
- 7 Cs for effective communication (considerate, concrete, concise, clear, complete,

correct, courteous).

- Art of Effective communication,
  - Choosing words
  - Voice o Modulation o Clarity
  - Time
  - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence, and empathy etc.
- Case Studies

UNIT 3: READING COMPREHENSION (12 Hours)

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personnel,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal, Non-Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication**.**

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1) J.D. O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2) Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3) M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4) John Nielson. Effective Communication Skills. Xlibris, 2008.
5) Oxford Dictionary
6) Roget's Thesaurus of English Words and Phrases
7) Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 101	Course Title : Textile Science(THEORY)
Semester :**1st**	Credits: **2**
Periods per week: **2 (L:2 T:0 P: 0)**	

Course Objectives:-

To understand the knowledge and skills related to textile science is essential to provide a comprehensive insight into the basic knowledge about fibers, yarns and relevant properties affecting the ultimate performance and use of fabrics by the consumer.

Prior learning requirements: The student shall have the basic knowledge regarding origin of fiber , yarn and fabric.

COURSE CONTENT

Unit 1 : Introduction to Textile fiber, yarn & fabric.

a) Classification of textile fibers
b) Important properties of fibers :- cotton, wool, silk, Polyester(Physical & chemical Properties)
c) Importance and need of identification of textile fibers
d) Care of – cotton ,silk ,Wool .

Unit 2: Yarn Processing.

a) Elementary knowledge of spinning of :-
   1) Cotton
   2) Wool
   3) Silk
b) Introduction of yarn and types of yarn –Single, Ply, Cord

Unit 3 : Introduction of weaving.

a) Preparation for weaving

b) Types of Looms - Conventional loom, automatic and shuttle less loom

c) Types of weaves

d) Weaving defects

Unit 4: Introduction of fabric count.

a. Determine the fabric count (thread count) balance of cloth

b. Introduction to Non-woven

i) felting
ii) Bonding

Course outcome:

After completion of this course the student will be able to:

Unit 1

- Understand the concept of fiber
- Identify the different fibers
- Visualize & identify the different fibers

Unit 2

- Understand the various systems of yarn spinning Process
- Understand the process of yarn making.

Unit 3

- Learn the process of weaving operation on loom .
- Learn the various weaving defects.

Unit 4

- Understand the fabric count.
- Identification of woven fabrics.

RECOMMENDED BOOKS

1. Understanding Textiles by Phyllis Tortora, Macmillan publishing co. New York
2. Modern Textiles by Rothy Siegert Lyle, Wiley, John & Sons, Incorporated (USA)
3. Encyclopedia of Textiles, Fibers and Non-woven Fabrics, Kohli Publishers, 34 Industrial Area, Phase –II, Chandigarh
4. Textiles Fiber to Fabric – P Corbman, A Wynne, Mac Milan Publishers, London
5. Fabric Science by Joseph Pizzuto, A&C Black Publishers Ltd. (New York)
6. Essentials of Textiles by Marjery Josphe; Holt, Rinehart and Winston, Inc, UBS Publishers Distributors Ltd. New Delhi

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	30
2	7	25
3	10	30
4	5	15
Total	**32**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 102	Course Title : Textile Science (Practical)
Semester :**1st**	Credits: **1**
Periods per week: **2 (L:0 T:0 P: 2)**	

Course Objectives:-

The understand the knowledge and skills related to textile science is essential to prov ide a comprehensive insight into the basic knowledge about fibers, yarns and relevant properties affecting the ultimate performance and use of fabrics by the consumer.

Prior learning requirements: The student shall have the basic knowledge regarding fiber, yarn and fabric.

COURSE CONTENT

Unit 1 : Introduction to Textile fiber, yarn & fabric

a) Physical analysis of fabrics composed of different fibers like cotton, wool, silk, polyester

b) Visual examination of fibers and yarns

Identification of fibers in a fabric sample through:

- Burning test
- Microscopic test
- Chemical test (Solubility Test)

c) Demonstration of washing of silk, wool and cotton

Unit 2: Yarn Processing

a) Visit to Spinning Mill or show relevant video films to understand the various systems of yarn spinning – staple, filament and spun filament yarns

b) Sample collection of :-
- Fabrics using simple yarns

Unit 3 : Introduction of weaving

a) The Basic weaving operations on basic loom- and the functions of same
b) Visit to Mill units producing, wovens and non-wovens to understand type of looms and processes or relevant video film may be shown

c) Prepare a sample of fabrics available under each category of weave.

Unit 4: Introduction of fabric count

a) To determine fabric count (thread count)

b) To identify the woven fabrics for: i) warp & weft

ii) Face & back

Course Outcome:

After completion of this course the student will be able to:

Unit 1

- Understand the concept of fiber
- Learn to identify the different fibers
- Learn To visualize the different fibers

Unit 2

- To understand the different spinning Process
- To understand the process of yarn making.

Unit 3

- Learn the weaving operation on looms
- To know about different types of weaves & their defects

Unit 4

- Learn to determine fabric count
- Learn to identify the woven fabrics

RECOMMENDED BOOKS

1. Understanding Textiles by Phyllis Tortora, Macmillan publishing co. New York
2. Modern Textiles by Rothy Siegert Lyle, Wiley, John & Sons, Incorporated (USA)
3. Encyclopedia of Textiles, Fibers and Non-woven Fabrics, Kohli Publishers, 34 Industrial Area, Phase –II, Chandigarh
4. Textiles Fiber to Fabric – P Corbman, A Wynne, Mac Milan Publishers, London
5. Fabric Science by Joseph Pizzuto, A&C Black Publishers Ltd. (New York)
6. Essentials of Textiles by Marjery Josphe; Holt, Rinehart and Winston, Inc, UBS Publishers Distributors Ltd. New Delhi
7. Textile Fibers and their Uses by KP Hes, Khanna Publishers, Delhi

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	30
2	7	25
3	10	30
4	5	15
Total	**32**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 103	Course Title : Basic Design (THEORY)
Semester :**1st**	Credits: **2**
Periods per week: **2 (L:2 T:0 P: 0)**	

Course Objectives :-

The knowledge and skill related to basic design is essential for the students of diploma program of Garment technology in order to develop the understanding regarding how to make a design using lines, dot, shape and color combination

Prior learning requirements: The students should know the basic Knowledge of elements of drawing and design

COURSE CONTENT

Unit 1 Lines – Introduction of lines

a) 1)Horizontal
2) vertical
3) Zigzag
4)diagonal, curve
5) wavy lines

b) Shape and Form

- Geometrical
- Realistic
- Stylized
- Abstract
- Different types of Silhouettes

Unit 2 Concept of Color

a) Concept of primary, secondary and tertiary colors
b) Color-wheel
c) Color Scheme – Mono-chromatic, complimentary and split complimentary Colors
d) Hue, value & Intensity
e) Tints & shades,
f)Achromatic Colors
g)Warm, cool, Transparent & opaque Colors

Unit 3 Textures

Different types of textures, identification and suitability of textures for different garments.

Unit 4 Principles of Design

Understanding the Principles of Design

a. Rhythm
b. Harmony
c. Proportion
d. Balance
e. Emphasis

Unit 5 Collage

Collage and its types – relief and flat

COURSE OUTCOME

After completion of this course the student will be able to:

Unit 1

- Understand the use of geometrical shapes and abstract designs

Unit 2

- understand the concept colors
- understand the different color schemes

Unit 3

- understand the concept of different types of textures
- identify different textures for different garments
- understand the use of lines

Unit 4

- understand the different principles of design.

Unit 5

- To understand how to make useful things from waste material

RECOMMENDED BOOKS

1. Fashion Drawing Designs; Magazine of Thailand, New Age Publishers, Delhi
2. Pattern Designs for Haute Couture, Volume 1, New Age Publishers, Delhi
3. Fashion Drawing – The Basic Principles by Anne Allen and Julion seaman, Haper & Row, New York
4. Latest Fashion Style by Winter Hiver, New Age Publishers, Delhi
5. Jasmine's New Look, On Indian Fashion Scene, Haper and Row, New York
6. Lifestyles: Fashion Styles by Katheryn Samuel, McGraw Hill Book Co. New York

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	20
2	10	30
3	7	20
4.	3	15
5	2	15
Total	**32**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 104	Course Title : Basic Design (Practical)
Semester :**1st**	Credits: **2**
Periods per week: **4(L: 0 T: 0 P: 4)**	

Course Objectives:-

The knowledge and skill related to basic design is essential for the students of diploma program of Garment technology in order to develop the understanding regarding how to make a design using lines, dot, shape and color combination

Prior learning requirements: The students should know the basic Knowledge of elements of drawing and design

COURSE CONTENT

Unit 1 Lines – Introduction of lines Illustrate different types of lines

1) Horizontal
2) Vertical
3) Zigzag
4) Diagonal, curve
5) Wavy lines

-Exercise on optical illusion created by different types of lines
- Sketching of different shapes and forms
- Different Silhouettes
- Exercise on Replica and Enlargement using basic Shapes

Unit 2 Concept of Color

Corresponding color exercises on color to be carried out for all topics

Unit 3 Textures

Exercises on different types of textures

Unit 4 Principles of Design

Corresponding exercises with rhythm, harmony, proportion, balance and emphasis, explaining, Principles of design

Unit 5 Collage

Making collage with waste material
Making collage with paper
Making collage with fabrics

Course Outcome:

After completion of this course the student will be able to:

Unit 1

- Understand the use of lines
- Understand the use of geometrical shapes and abstract designs

Unit 2

- Understand the concept colors
- Understand the different color schemes

Unit 3

- Understand the concept of different types of textures
- Udentify different textures for different garments

Unit 4

- Understand various styles of design

Unit 5

- Understand how to make useful designs from waste material

Note: The teacher should encourage the students to do market surveys, field visits, fairs and exhibition visits to understand the elements and principles of design.

All the Practical exercises should be done on Drawing Files of Large size (16x16 inches)

RECOMMENDED BOOKS

1 Fashion Drawing Designs; Magazine of Thailand, New Age Publishers, Delhi

2 Pattern Designs for Haute Couture, Volume 1, New Age Publishers, Delhi

3 Fashion Drawing – The Basic Principles by Anne Allen and Julion seaman, Haper & Row, New York

4 Latest Fashion Style by Winter Hiver, New Age Publishers, Delhi

5 Jasmine's New Look, On Indian Fashion Scene, Haper and Row, New York

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	20	20
2	20	30
3	10	20
4.	7	15
5	7	15
Total	**64**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 105	Course Title : Basic Pattern Making And Style Interpretation - I(THEORY)
Semester :**1st**	Credits: **2**
Periods per week: **2 (L:2 T:0 P: 0)**	

Course Objectives: -

The students should know various considerations in making of garments, in corporation of standard measurements, scope and importance of drafting and pattern making so that they are able to take measurements themselves, interpret the style of any given design and make the pattern.

Prior learning requirements: The Students shall have the basic knowledge regarding

1. Principles of taking Standard measurements
2. Methods of developing the paper pattern

COURSE CONTENT

Unit 1 Introduction to standard measurements

Standard measurement charts, methods of taking measurements (direct, indirect, landmarks)

Classification of measurements – circumference, horizontal and vertical measurements

Unit 2 Drafting and its importance

a) Drafting and its importance

b) Methods of developing pattern- working Pattern and Final Pattern

Unit 3 Pattern making tools

Pins and pin holders, scissors, measuring tapes, French curves, scales, notched, tracing wheel, pattern papers, markers etc.

Unit 4 Pattern making terms

Pattern drafting, flat pattern making, basic pattern set, templates, working pattern, production pattern, design specification sheet, pattern chart, cost sheet, grain, warp, weft, selvedge, bias, true bias, apex, dart, dart legs, dart intake, truing and blending, plumb line, vertical, horizontal and perpendicular lines, symmetrical and asymmetrical lines, style no., pattern size, pivotal point, pattern manipulation

Unit 5 Introduction to style interpretation

Meaning of style interpretation, Method and benefits of style interpretation.

Course Outcome:

After completion of this course the student will be able to:

Unit 1

- understand the use of standard measurement chart
- take measurements

Unit 2

- understand the procedure of pattern making

Unit 3

- Use different pattern making tools

Unit 4

- understand the different terminology while making the pattern

Unit 5

- understand the style and design on a given theme

RECOMMENDED BOOKS

1. Pattern Making for Fashion design by Helen Joseph Armstrong, Harper & Row, New York
2. System of cutting by Zarapkar, Navneet Publications India limited

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	20
2	10	20
3	3	15
4	7	30
5	2	15
Total	**32**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 106	Course Title : Basic Pattern Making And Style Interpretation - (Practical)
Semester :**1st**	Credits: **2**
Periods per week: **4 (L: 0 T: 0 P: 4)**	

Course Objectives: -

The students should know various considerations in making of garments, in corporation of standard measurements, scope and importance of drafting and pattern making so that they are able to take measurements themselves, interpret the style of any given design and make the pattern.

Prior learning requirements: The Students shall have the basic knowledge regarding

1. Principles of taking Standard measurements
2. Methods of developing the paper pattern

COURSE CONTENT

Unit 1 Introduction to standard measurements

Taking measurements directly from body
- Taking measurements from the garments
- Care while taking the body measurements
- Introduction and demonstration of:

a) Equipment used
b) Grain
c) Seam allowances/ease
d) Preparation of fabric
e) Landmarks on a dress form – for Draping
f) Squares and scales
g) French curve – for arm hole, necklines etc.

Unit 2 Drafting and its importance

Drafting of:- Child's bodice block and sleeve block from (Age =3- 10 years

Unit 3 Pattern making tools

Drafting of Child's :-

a) Different types of sleeves
b) Different types of collars
c) Different types of necklines

Unit 4 Pattern making terms

Adaptation of

a) Apron
b) Bloomer
c) Romper
d) Drafting of baby Frock with yoke of age 3 years

Course Outcome.

After completion of this course the student will be able to:

Unit 1

- Understand the use of standard measurement chart
- Take measurements

Unit 2

- Understand the procedure of making Childs block

Unit 3

- Understand the procedure of making on given topics

Unit 4

- Adept on given topics

Note:

The students may be taken to the nearby manufacturing organizations to demonstrate various pattern making and style interpretation processes

RECOMMENDED BOOKS

1 Pattern Making for Fashion design by Helen Joseph Armstrong, Harper & Row, New York

2 System of cutting by Zarapkar, Navneet Publications India limited

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	10	10
2	20	30
3	14	30
4.	20	30
Total	**64**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT 107	Course Title : Fashion Illustration - (Practical)
Semester :**1st**	Credits: **2**
Periods per week: **4(L: 0 T: 0 P: 4)**	

Course Objectives: -

The skill in fashion illustration is essential for the students of garment technology so as to develop in them the creativity and ability to illustrate different types of figures and dresses in different color media. After going through this subject, the student of garment technology will be able to illustrate different types of figures and dresses.

Prior learning requirements: -The Students shall have the basic knowledge regarding the principles of making basic normal figures and fashion figures

COURSE CONTENT

1. a) Introduction of drawing equipments and tools
   b) Drawing of stick figure – (9 1/2 head, 10 1/2 head and 12 1/2 head , 14 1/2 head)
   c) Drawing of stick figures in different poses.
2. a) Practice of Child figures from 6 - 10 years
   b) Drawing of block figure (7 1/2 & 8 1/2 head),
3. a) Drawing of block fashion figure (9 ð head, 10 1/2 head and 12 1/2 head , 14 1/2 head)
   b) Drawing of fashion block figure (side view, 9 1/2 head, 10 ½ head)
4. a) Drawing of fashion block figure in 4/3th view (Oblique View)
   b) Drawing of Flesh Figure (1) front Pose (2) side Pose (3) Oblique pose
5. a) Practice on sketching of child's hands, foot, shoes, face shape, hair style.
   b) Practice on sketching of Adults arms, hands, legs, foot, shoes, face shape, hair style
6. Sketch drawing of the following:
   a) Collars ,sleeves, necklines.

COURSE OUTCOME:

After the completion of the course, the student will be able to:

- understand drawing tools and equipment
- understand drawing of basic figures
- understand various styles of designs

RECOMMENDED BOOKS:

1. Design Ideas & accessories by Ritu Bhargav
2. Fashion Illustration & rendering by Ritu Bhargav
3. Figure drawing for fashion design by Elisabetta Drudi
4. Fashion Sketch Book by Bina Abling
5. Indian fashion designs by K Prakash
6. Illustrating Fashion by Kathryn McKelvey & Janine Munslow
7. Fashion Design drawing & Presentation by Patrick John Ireland

Note:- The teacher should encourage the students to do market surveys, field visits ,fairs and exhibitions.

All the Practical exercises should be done on Drawing Files Of Large size(16"x16")

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	14	20
2	10	20
3	10	15
4.	10	15
5	10	15
6	10	15
Total	**64**	**100**

PROGRM: THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : GT108	Course Title : Garment Construction- (Practical)
Semester :**1st**	Credits: **3**
Periods per week: **6 (L: 0 T: 0 P: 6)**	

Course Objectives:-

The diploma holders in garment technology are supposed to fabricate various components of garments such as pleats and gather, darts, tucks etc., as per measurements and go for mass production for all ages and size. The subject deals with basics of garment construction technology.

Prior learning requirements: The students shall have basic knowledge regarding

1) Tools and equipments for cutting
2) Operation of sewing machine

COURSE CONTENT

1) a)Tools and equipment used in measuring, marking, cutting, sewing and finishing of garments

- Practice of various tools and equipments used in measuring, marking, cutting, sewing and finishing of garments

b) Parts of sewing machine and its operation

-Practice of sewing machine and its maintenance

c) Sewing machine- its defects and remedies

d) Straight line, square, concentric square, curved, circle

- Machine control exercises on speed control, paper exercises, fabric exercises

2) a) Basic Hand stitches e.g. basting, tacking, hemming, button hole

- Making samples of basic hand stitches/Seams (Make a file of samples for Presentation

b) Basic Machine stitches/ Seams-Different types of machine stitches and seams

- Practice on various samples of machine seam – plain, run and fell, French, lapped seam, top seam, slot seam, beading(Make a file of samples for Presentation)

3) Gathers, pleats, Shirring, darts, tucks and its variations

- Preparation of gathers pleats darts, shirring, tucks variations and make samples of all the exercises

4) Finishing different necklines – bias binding, bias facing, shaped facing

- Preparation of samples of different necklines using bias binding, bias facing and shaped facing

5) Attaching fasteners – hooks, snapes, loops, button, Velcro

- Practice on various types of fasteners

6) Types of Plackets-Two-Piece, continuous and Kurta Placket

- Preparation of samples of different Plackets (Make a file of samples for presentation)

COURSE OUTCOME:

After the completion of this course, the student will be able to :-

- Handle and maintain sewing machine.
- Understand the use of different trims.
- Fabricate the garments

RECOMMENDED BOOKS

1. Clothing Construction by Doongaji, Raj Parkashan, New Delhi
2. System of Cutting by Zarapkar, Navneet Publications (India) Ltd.
3. Basic Processes and Clothing Construction by Sherie Doongaji and Raushini Despand e. McGraw Hill Book Co. Inc. New York
4. Simplicity Revised ABC of Short-Cut Sewing, UBS Publishers & Distributors Pvt. Ltd.New Delhi.
5. Stitch by Stitch by Tarstar Books, UBS Publishers Distributors Ltd. New Delhi
6. Complete Guide to sewing by Reader's Digest, Pitman Publishing Corporation, New York.

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	12	13
2	12	13
3	12	13
4.	20	20
5	20	20
6	20	21
Total	**96**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN GARMENT TECHNOLOGY	
Course Code : HS 109	Course Title: Language and Communication skills Lab
Semester : **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary.

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018)

PROGRAM : THREE YEARS DIPLOMA in GARMENT TECHNOLOGY	
Course Code : HS 110	Course Title: - Self learning/Life skills
Semester : **1st**	Credits: **02**
Periods per week: **2 (L:2 T:0 P:0)**	

Course Objective:-

Self Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports and Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and s kill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation: - At the start of the semester the HOD/Academic in-charge may register the student for course of life skill or may be given a choice to register for any online course activity . Such course and activity need to be monitored, evaluated, and shall be given credits as prescribed.

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

MEDICAL LAB TECHNOLOGY

(ML)

SUBJECT SCHEME

		Time in Hours				Credits			
Course code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3			3	3	0		3
ML 101	Basic Chemistry	3			3	3	0		3
ML 102	Anatomy and physiology-I	3			3	3	0		3
ML 103	Clinical Microbiology-I	3			3	3			3
ML 104	Haematology-I	3			3	3	0		3
ML 105	Clinical Biochemistry-I	3			3	3			3
HS 109	Language and Communication Skill Lab	–		2	2			1	1
ML 106	Basic Chemistry Practical	–		2	2			1	1
ML 107	Anatomy and physiology-I practical	–		2	2			1	1
ML 108	Clinical Microbiology-I Practical	–		2	2			1	1
ML 109	Haematology-I Practical	–		2	2			1	1
ML 110	Clinical Biochemistry-I Practical	–		2	2			1	1
HS 110	Self-Learning/Life Skills	2		–	2	2			2
	Total	**20**		**12**	**32***	**20**		**6**	**26**

***Note: one class per week shall be utilized for sports, seminars, debates etc.**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course Code : HS 101	Course Title: Language and Communication skills
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at workplace, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written. Barriers to effective communication.
- 7 C's for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
- Art of Effective communication,
    - Choosing words
    - Voice o Modulation o Clarity
    - Time
    - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.
- Case Studies

UNIT 3: **READING COMPREHENSION** **(12 Hours)**

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personal,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal, Non Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication.

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1) J.D.O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2) Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3) M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4) John Nielson. Effective Communication Skills. Xlibris, 2008.
5) Oxford Dictionary
6) Roget's Thesaurus of English Words and Phrases
7) Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code :**ML 101**	Course Title : Basic Chemistry
Semester : **1st**	Credits: 03
Periods per Week: 3 (L:3 T:0 P:0)	

Course Objective

The role of chemistry and chemical products in every field of life is expanding greatly. Now a days various products of chemical industries are playing important role in the medical field and the number of such products is increasing. Chemistry is one of the important subjects for diploma students in Medical Lab. Technology for developing in them scientific temperament and understanding other subjects in their profession Efforts should be made to teach the subject through demonstration and with the active involvement of students.

Prior learning requirements:

The students shall have basic knowledge regarding

i) **Basic concepts of Chemistry**
ii) **S.I units**
iii) **Bio Molecules**

COURSE CONTENTS

1. Basic concepts (08 hrs)

S.I units of pressure, volume, temperature, density, specific gravity

Atomic mass (A), molar mass, mole concept and its applications, molar volume of gases

Solution, strength of solutions, molarity (M), molality (m), normality (N), mass fraction, mole fraction and parts per million.

2. Equilibrium, Acids and Bases. (08 hrs)

Concept of pH and pH scale

Various concept of acids/bases; strong acids/bases, weak acids/bases, dissociationconstants of acids/bases. Neutralization, acid base titration, choice of indicators for acid basetitration

Hydrolysis of salts, common ion effect, buffer solutions (acidic and basic),

buffer action of a buffer solution, applications of buffers

3. **Carbohydrates** (10 hrs)

Definition

Optical Activity and mutarotation

Composition and sources

Classification

Reactions

Important monosaccharides, disaccharides, polysaccharides

Breakage of glucose, fructose, galactose, lactose, maltose

Importance of carbohydrates

4. **Lipids** (08 hrs)

Definition

Classification

Introduction to fatty acids, phospholipids, triglycerides, sterol, ergosterol,

Cholesterol

Reactions of fats

Importance of lipids

5. **Proteins** (07 hrs)

Definition

Classification

Composition, molecular weight and hydrolysis

Name of various amino acids

Structure and properties of proteins

Importance of proteins

6. Enzymes (07 hrs)

Definition
Classification
Chemical nature of enzymes
Properties of Enzymes
Factors affecting enzyme activity
Enzyme Inhibitors
Enzymes of Diagnostic Importance

Course outcome

After completion of this course the student will be able to:

Unit 1 students shall be able to ;

- Understand and describe the expression of S.I units
- Understand the basic concepts of Normality, Molarity, Molality, Percent solutions (W/V,V/V) and its applications.

Unit -2

- Understand the concept of pH, pH Value and pH indicators
- Understand and describe the Acidic /Basic reaction
- Understand use and preparation of buffer solutions and buffering capacity
- Understand use of pH meter and Ph Indicators for measurement pH

Unit-3

- Understand and define Carbohydrates ,their reaction and breakdown of various sugars .

Unit-4

- Understand and define lipids and their importance

Unit-5

- Understand and define proteins, their properties and importance

Unit-6

- Understand and define Enzymes, their properties and diagnostic importance

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	08	15
2	08	15
3	10	25
4	08	15
5	07	15
6	07	15
Total	**48**	**100**

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : ML 102	**Course Title : Anatomy and Physiology-I**
Semester : 1st	**Credits: 03**
Periods per Week: 3 (L:3 T:0 P:0)	

Course Objective

The students are supposed to have basic knowledge of structure of body, their anatomical parts, physiological functions. After studying this subject, the students shall be able to understand various parts of body and their anatomical positions along with functions.

Prior learning requirements:

The students have basic knowledge regarding

i) Human Body
ii) Various systems of human body

COURSE CONTENTS

1. Introduction to human body, its anatomy and physiology (04 hrs)
2. Elementary tissues of body and their classification along with brief description (06 hrs)
3 Skeletal system (06 hrs)
The skeleton, important bones and their brief description
Articulation of bones – joints

4. **Digestive system** (14 hrs)
Various organs of digestion and their functions (stomach, small intestine) and accessory organs (liver, pancreas and salivary glands)
Process of digestion of food
Absorption and assimilation of food
Vitamins and minerals

5. **Respiratory system** (07 hrs)
Organs of respiration and their histology
Respiration (definition and mechanism)
Gas exchange in the lungs
Regulation of respiration
Basal metabolic rate

6. **Excretory System** (07 hrs)
Organs of excretion (kidneys, ureter, bladder)
Formation of urine and its composition

Course outcome:

After completion of this course the student will be able to:

Unit-1

- Understand the Anatomy and Physiology of Human body

Unit-2

- Understand the Elementary tissues

Unit-3

- Understand the importance of bones and joints

Unit-4

- Understand the function of various important organs of digestive system
- Understand the importance of Vitamins and minerals

Unit-5

- Understand and describe the organs of respiratory system and its regulations

Unit-6

- Understand the organs of excretory system

RECOMMENDED BOOKS

1) Basic Anatomy and Physiology by N Murugesh; Sathya Publishers, Madurai
2) Ross and Wilson Anatomy and Physiology by Anne Waugh and Kathleen JW Wilson; Curchill Living Stone; London
3) Anatomy and Physiology by Pears; JP Brothers, New Delhi
4) Anatomy and Physiology by Sears; ELBS, London

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time allotted (Hrs)	Marks Allotted (%)
1	07	10
2	07	10
3	06	10
4	12	35
5	08	20
6	08	15
Total	**48**	**100**

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 103**	Course Title : Clinical Microbiology-I
Semester : **1st**	Credits: 03
Periods per Week: 3(L:3 T:0 P:0)	

Course Objective

The students undergoing training of medical laboratory technology are given the knowledge of basic morphological features of bacteria, their staining characters, sterilization methods, preparation of culture media. They are also taught safety measures in microbiology.

Prior learning requirements:

The students have basic knowledge regarding

- **Microorganisms in general and bacteria in particular**
- **Concept of sterilization and disinfection.**

COURSE CONTENTS

1. Introduction to Microbiology (02 hrs)

Definition, history, importance of microbiology

2. Morphology of bacteria (06 hrs)
   Anatomical structure of a bacterial cell including spores, flagella and capsules
3. Bacterial growth and nutrition of bacteria (03 hrs)
   Bacterial growth curve and bacterial nutrition
4. Classification of bacteria (04 hrs)

   Morphology
   Oxygen Requirement
   Gram's Reaction

5. Microscopy - principle and care, working of compound microscope (05 hrs)

Principle of (i)dark field microscope(ii) fluorescent microscope (iii) phase contrast microscope and (iv) electron microscope

6. Sterilization (08 hrs)

- Definition
- By dry heat,
- Moist heat,
- Autoclave & hot air oven- their structure, functioning, controls and sterilization indicators,
- By filtration

7. Antiseptics and disinfectants (03 hrs)

Definitions, types, use of disinfectants and antiseptics

8. Bacterial culture and culture techniques (05 hrs)

Inoculations of culture media, aerobic culture, isolation of pure and mixed cultures..

9. Culture media (08 hrs)

Ideal culture media and its types (Liquid and Solid media, Defined and Synthetic media, Basal, Enriched, Selective, Enrichment, Indicator, and Transport media)

10. Staining techniques (04 hrs)

Methods of smear preparation, Gram stain, Ziehl-Neelson's (Z-N) stain, India Ink Preparation

Course Outcome:

After completion of this course the student will be able to:

Unit-1

- Know historical background of Microbiology, Inventions and discoveries
- Develop understanding and importance of Microbiology

Unit-2

- Understand and describe the bacterial cell, including cell wall and its appendages, Morphological features of bacteria.

Unit-3

- Understand bacterial growth and minimum nutrition required for the growth of bacteria

Unit-4

- Understand the types of bacteria ,based on morphology, oxygen requirements ,Staining characters and nutritional requirements .

Unit-5

- Understand the sterilization process, purpose and different methods of sterilization by physical means.

Unit-7

- Understand sterilization by Chemical means .

Unit-8

- Understand and perform various bacterial culture techniques .

Unit-9

- Understand and describe the various culture media used for growth and study of bacteria.

Unit-10

- Understand and perform the various staining procedures for the identification of bacteria.

RECOMMENDED BOOKS

1. Textbook of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
2. Practical Book of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
3. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworth – Heinemann; Oxford
4. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
5. Medical Laboratory Technology by Kanai Lal Mukherjee; Tata McGraw Hill, New Delhi
6. Medical Laboratory Manual for Tropical Countries Vol. I and II by Monica Cheesbrough; Cambridge University Press; UK
7. Text Book of Microbiology by Ananthanarayan and Paniker; Orient Longman, Hyderabad
8. Text book of Medical Microbiology by Cruckshiank Vol. I and II

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time allotted (Hrs)	Marks Allotted (%)
1	02	04
2	06	10
3	03	05
4	04	10
5	05	10
6	08	17
7	03	05
8	05	12
9	08	15
10	04	12
Total	**48**	**100**

PROGRAM: THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 104**	Course Title : Haematology-I
Semester : **1st**	Credits: 03
Periods per Week: 3 (L:3 T:0 P:0)	

Course Objective

The training in Haematlogy is imparted to enable the students to know the principle of tests, methodology of routine as well as advanced procedures being carried out in the laboratory by using routine as well as sophisticated instruments. Stress is also given in use of safety measures in the laboratory.

Prior learning requirements:

The students have basic knowledge regarding

- **Cells (Erythrocytes ,Leukocytes and Thrombocytes)**

COURSE CONTENTS

Theory

.1 Introduction to Haematology (06 hrs)

- Various glassware/plasticware used in Haematology labs.(Hbtube, Hb pipette, RBC pipette, WBC pipette, ESR pipette/Tube)

.2 Haemopoeisis (16 hrs)

- Erythropoiesis, leucopoiesis, thrombopoiesis
- Definition, composition, and functions of blood
- Factor effecting/Contributing haemopoeisis

.3 Anticoagulants (05 hrs)

- Definition and various types of anticoagulants
- Color coded Blood collection tubes

.4 Collection and preservation of blood (9hrs)

- Collection of blood venous and capillary
- Various equipment used for collection of blood samples
- Safety measures at the time of sampling and collection
- Preservation / Transportation of blood samples in Haematology

.5 Diluting fluids of (Hb, WBC , Platelets, RBC) (05 hrs)

- Uses and composition.

.6 Romanow-sky stains (07hrs)

- Theory and preparation
- Choice of slide and spreader
- preparation of blood film, Characteristics of good film preparation
- Staining procedure, Effects of pH on staining

Course Outcome:

After completion of this course the student will be able to:

Unit-1

- understand the role of Haematology lab in the diagnostic field .
- know the use of various glasswares , plastic wares and pipettes etc.

Unit-2

- understand and describe the formation of blood ,RBC'S,WBC'S and platelet s .
- understand the composition and function of blood .

Unit -3

- understand and define the various anticoagulants , their mechanism of action and uses.

Unit-4

- Know the procedure for collection ,preservation and transportation .
- Understand the safety measures while collecting blood

Unit-5

- Understand the composition and use of various diluting fluids .

Unit-6

- Understand and describe the preparation of Romanowsky stains and blood films.

RECOMMENDED BOOKS

1. Medical Laboratory Technology Vol. 1 by KL Mukherjee; Tata McGraw Hill Publishers, New Delhi
2. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworth Heinmann, Oxford
3. Medical Laboratory Manual for Tropical Countries by Monica Cheesbrough; Cambridge University Press, UK
4. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
5. Practical Haematology by JV Decei; ELBS with Curchill Living Stone; UK
6. Medical Laboratory Science Theory and Practical by J Ochei and A Kolhatkar, Tata McGraw Hill Publishing Company Ltd., New Delhi 2000 Ed.
7. Medical Lab. Technology by Satish Gupte, JP Publishers

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time allotted (Hrs)	Marks Allotted (%)
1	06	10
2	16	28
3	05	10
4	09	22
5	05	10
6	07	20
Total	**48**	**100**

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 105**	Course Title : Clinical Biochemistry-I
Semester : **1st**	Credits: 03
Periods per Week: 3 (L:3 T:0 P:0)	

Course Objective

The students are imparted basic training of theoretical and practical aspects in the field of clinical biochemistry. The students are made to learn the technique of collection of clinical samples and their processing along with recording of data. The student will also obtain the basic knowledge of chemistry and metabolism of various metabolites which are routinely estimated in different diseases so that a clear understanding of the different tests is obtained. The students are also given basic training in safety measures, quality control and automation.

Prior learning requirements:

The students shall have basic knowledge regarding

- Chemistry and metabolism of various metabolites

COURSE CONTENTS

.1 Introduction to biochemistry (04 hrs)

- Definition
- Importance of biochemistry
  - SI Units and their use
  - Volumetric apparatus and their calibration

.2 Important instruments; principle, working, handling and care of (16hrs)

- Balance (Analytical, electrical/electronic)
- Centrifuge
- Colorimeter
- Spectrophotometer
- Ion specific electrolyte analyzer
  - Glucometer
  - Distillation Plant/Deionizer apparatus

- Water bath
- Mixers (Roller mixer, Rotator mixer, Vortex mixer, combined magnetic stirrer/hot plate)

.3 Blood fractions (05hrs)

- Separation of Serum
- Separation of Plasma
- Different protein precipitating reagents
- Preparation of protein free filtrate (PFF)

.4 Blood glucose/ sugar estimation, screening test and glucose tolerance test (GTT) (11hrs)

- Metabolism of Glucose
- Principle and methods of estimation
- Reference values
- Renal threshold
- Importance and Performance of ST/GTT
- Clinical importance of blood sugar, ST/GTT

.5 Blood urea (8 hrs)

- Formation and excretion of urea
- Principle and procedures of different methods of urea estimation
- Reference values
- Clinical Importance

.6 Serum Creatinine (4 hrs)

- Principle and procedure of various estimation methods
- Reference values
- Clinical importance

.7 Uric Acid (4 hrs)

- Principles and procedures various estimation methods
- Reference values
- Clinical Importance

Course Outcome:

After completion of this course the student will be able to:

Unit-1

- Understand and define the cl.biochemistry and its importance
- Develop understanding regarding calibration of various apparatus also the us e of S.I units in clinical biochemistry .

Unit-2

- Understand the principle ,working ,handling and care of various important instruments

Unit -3

- Develop understanding of blood fractions and their separation techniques .

Unit-4

- Understand the metabolism of glucose .
- Understand the principle , procedure and clinical importance of Glucose Estimation.

Unit-5

- Understand the formation and excretion of urea .

Unit-6

- Understand the principle ,procedure and clinical importance of Creatinine .

Unit -7

- Understand the principle ,procedure and clinical importance of uric acid

RECOMMENDED BOOKS

1. A Procedure Manual for Routine Diagnostic Tests Vol. I by KL Mukherjee; Tata McGraw Hill Publishers, New Delhi

2. Biochemistry Estimations by F.J.Baker

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time allotted (Hrs)	Marks Allotted (%)
1	04	09
2	12	25
3	05	11
4	11	22
5	08	11
6	04	11
7	04	11
Total	**48**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course Code : HS 109	Course Title: Language and Communication skills Lab
Semester : **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary.

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018)

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 106**	Course Title : Basic Chemistry Practical
Semester : **1st**	Credits: 01
Periods per Week: (L: T:0 P:2)	

LIST OF PRACTICALS

.1 Preparation of standard solutions.
.2 To prepare N Sodium carbonate
.3 To prepare M oxalic acid solution
.4 To prepare 5N HCl from given 12 N HCl, HCl
.5 To determine strength of given solution of sodium hydroxide by titrating against standard solution of oxalic acid using phenolphthalein indicator
.6 To determine strength of given solution of sulphuric acid by titrating against standard solution of sodium carbonate using methyl orange indicator.
.7 Preparation of 20% H2 SO4 solution.
.8 Preparation of 10% KOH solution.
.9 Preparation of 1% Ammonium Oxalate from 10% solution.
.10 Detection of carbohydrates.
.11 Detection of protein.
.12 Detection of Enzymes

Course Outcome

After completion of this course the student will be able to:

- Prepare all the solutions with clear understanding

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 107**	Course Title : Anatomy and Physiology Practical -I
Semester : **1st**	Credits: 01
Periods per Week: 2(L:0 T:0 P:2)	

LIST OF PRACTICALS

1. Study of various parts of body through demonstration
2. Study of tissues of body through demonstration
3. Study of various parts of skin (demonstration from models
4. Study of various bones and joints through demonstration
5. Study of parts of digestive system through demonstration
6. Study of parts of respiratory system through demonstration
7. Study of parts of excretory system through demonstration

Course Outcome:

After completion of this course the student will be able to:

- Understand the human Anatomy and physiology with clear understanding .

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 108**	Course Title : Clinical Microbiology Practical -I
Semester : **1st**	Credits: 01
Periods per Week: 2(L:0T:0 P:2)	

LIST OF PRACTICALS

1. Demonstration of safety rules (universal precautions) in a microbiology laboratory
2. Preparation of cleaning agents and techniques of cleaning of glass and plastic ware.
3. Sterilization by autoclave and hot air oven
4. Sterilization by filtration (Seitz)
5. Handling and use of compound microscope
6. Staining techniques: Gram, Albert's, Ziehl – Neelson's
7. Demonstration of motility (Hanging drop method)
8. Preparation and sterilization of various culture media (Nutrient agar, Nutrient broth, Blood agar, Chocolate agar, Mac-Conkey agar, Lowenstein-Jensen Media
   Aerobic and anaerobic culture methods

Course Outcome:

After completion of this course the student will be able to:

- Perform various culture techniques, Media preparation and staining procedures with clear understanding with appropriate safety measures .

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 109**	Course Title : Heamatology Practical -I
Semester : **1st**	Credits: 01
Periods per Week: 2 (L:0 T:0 P:2)	

LIST OF PRACTICALS

1. Demonstration of color-coded blood collection tubes
2. Collection of venous and capillary blood
3. Preparation of the stains (Giemsa ,Leishmans etc)
4. Preparation of peripheral blood film (PBF)
5. To stain a peripheral blood film by Romanowsky stain

Course Outcome:

After completion of this course the student will be able to:

- Perform blood collection ,blood film preparation and staining procedures with clear understanding.

PROGRAM : THREE YEAR DIPLOMA PROGRAM IN MEDICAL LAB TECHNOLOGY	
Course code : **ML 110**	Course Title : Clinical Biochemistry Practical -I
Semester : **1st**	Credits: 01
Periods per Week: 2 (L:0 T:0 P:2)	

LIST OF PRACTICALS

- Cleaning of glass ware
- Handling and maintenance of Balance, Centrifuge, Colorimeter, Ion Selective electro de and glucometer , distillation plant/deionizer
- Collection of blood by various methods including vacutainer system
- Separation of serum and plasma
- Preparation of different protein precipitating agents, PFF preparation
- Estimation of blood glucose/sugar (O-toluidine method and enzymatic method)
- Performance of ST/GTT
- Serum urea estimation
- Serum creatinine estimation
- Serum uric acid estimation

Course Outcome

After completion of this course the student will be able to:

- Operate with proper care and handling of various instruments and glassware .
- Perform all the basic preliminary tests like Glucose, urea , creatinine and uric acid with clear understanding and their Cl.importance.

PROGRAM : THREE YEARS DIPLOMA IN MEDICAL LAB TECHNOLOGY	
Course Code : HS 110	Course Title: - Self learning/Life skills
Semester : **1st**	Credits: **02**
Periods per week: **2(L:2 T:0 P:0)**	

Course Objective:-

Self Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports and Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and s kill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation:- At the start of the semester the HOD/Academic in-charge may register the student for course of life skill or may be given a choice to register for any online course activity . Such course and activity needs to be monitored, evaluated and shall be given credits as prescribed.

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

OFFICE MANAGEMENT &COMPUTER

APPLICATIONS

(OM)

SUBJECT SCHEME

		Time in Hours				Credits			
Course code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3			3	3	0		3
OM 101	Business Correspondence	5			5	5	0		5
OM102	Desktop Publishing			4	4			2	2
OM103	Typing English			8	8			4	4
OM 104	Office management	4			4	4	0		4
OM 105	Office Management Practical			2	2			1	1
HS 109	Language and Communication Skill Lab			2	2			1	1
HS 110	Self Learning/Life Skills	2			2	2			2
	Total	**14**		**16**	**30***	**14**		**8**	**22**

***Note: Three classes per week shall be utilized for sports, seminars, debates etc.**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS	
Course Code : HS 101	Course Title: Language and Communication skills
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at workplace, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written. Barriers to effective communication.
- 7 C's for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
- Art of Effective communication,
    - Choosing words
    - Voice o Modulation o Clarity
    - Time
    - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.
- Case Studies

UNIT 3: **READING COMPREHENSION** **(12 Hours)**

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personal,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal, Non Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication.

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1) J.D.O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2) Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3) M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4) John Nielson. Effective Communication Skills. Xlibris, 2008.
5) Oxford Dictionary
6) Roget's Thesaurus of English Words and Phrases
7) Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS	
Course Code : **OM 101**	Course Title: **Business Correspondence**
Semester : **1st**	Credits: **5**
Periods per week: **(L 5 T 0 P 0)**	

COURSE OBJECTIVE

A diploma holder in Office Management and Computer Applications has to work as Private Secretary to the executives, managers and office executive in the organizations. To handle his/ her job well, knowledge about techniques of correspondence is a must. In fact he/she has to acquire the skills of effective correspondence as he/she has to manage the office and has to provide help to his/her seniors and chief executives.

COURSE OBJECTIVES The students shall have basic knowledge about Formal Correspondence.

DETAILED CONTENTS

1. **Introduction to Correspondence**

Meaning and importance

Process of Correspondence.

Functions

2. **Essential of a good business letter**

Parts of a letter

Formats/styles of a business letter

Special terms used in business letters

3.Enquiry letters

Meaning and importance of business inquiries

Quotation

Catalogues

Replies of enquiries

4.Order letters

Placing of an order

Follow up letters

Acceptance and refusal of an order

Cancellation of an order

5.Complaints, Claims and Adjustments

Complaint of late delivery

Complaint of partial delivery, delivery of defective goods of inferior quality, etc.

Adjustment in reference to the different complaints

6.Miscellaneous letters

Letter of Introduction

Letter of Credit

letter of status Enquires

COURSE OUTCOME:

After completion of this course the student will be able to:

Unit 1: Draft a letter independently.
Unit 2&3: Draft enquiry letters, quotations etc.

Unit 4: Place an order, accept and cancel an order.

Unit 5: Draft a complaint letter and reply a complaint letter as she has to work in an office

Unit 6: Draft letter of introduction, letter of credit and letter of status enquires and will know how to introduce a person in some other concern.

RECOMMENDED BOOKS

1. Business Communication by Pradhan Bhende and Thakur; Himalaya Publishers
2. Commercial Correspondence by Mazumdar
3. Essentials of Business Communication by Reddy Appannaiah and Raja Rao; Himalaya Publishers
4. Communication Management Theory and Practice by P. Rathnaswamy; Deep and Deep Publications
5. Communication Management by Parag Diwan; Deep and Deep Publications

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	15	19
2	15	19
3	15	19
4	15	19
5	10	12
6	10	12
Total	80	100

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS	
Course Code : OM 102	**Course Title: Desktop Publishing-I**
Semester: 1st	**Credits: 02**
Periods per week: L 0: T 0: P 4	

Course Objectives:

Desktop Publishing, a student is trained on Professional Skill and Professional Knowledge related to learning outcomes. The student learn about basic tools, identifies computer peripherals, internal components, Windows interface and its related software, installation process. Students will work with MS Office package to create word document

. They will use internet to search information using browser along with official/ social communication process., the trainees also learn to use scanner and to scan documents

Prior learning requirements:

The students shall have basic knowledge regarding Use of Computer.

COURSE CONTENTS:

1. Install and set up operating system and related software in a computer following safety precautions. (8 Hrs)

- Identify different parts of computer and attached different input and output devices with the system.
- Install and configure Windows OS and application software.
- Manipulate folder/files.
- Use printer, scanner and their peripheral devices.
- Saving Data of different storages devices
- Identify different icons of Windows and use the icons to operate the machine.
- Customize Windows by using control panel.

2. Create, format, edit text file, document file and BMP file by using different Accessories of Windows. (8 Hrs)

- Create text file by Notepad and edit file by using different menu.
- Create Document file in Word and edit and format it by different tools.
- Draw basic symbols by using MS-Paint and control mouse.

3. Create, edit, format and enhance document using word processing application software. (16hrs)

- Identify Word tools in the ribbon.
- Create a resume using various tools.
- Design and print magazine covers using various tools.
- Demonstrate the use of shortcut keys, autocorrect for formatting.
- Perform Mail merge in MS Word.
- Practice typing using typing tutor.

4. Create, edit, format and enhance document using spreadsheet application software. (14 hrs)

- Introduction to Microsoft Excel
- Excel Basic Formulas — Add, Subtract, Multiply & Divide
- Excel Data Validation — Filters & Grouping in Excel
- Basic Excel Formulas & Functions — Learn with Basic Examples
- Logical Functions in Excel — IF, Nested IF
- Create Charts in Excel — Types & Examples

5. Create, edit, format and enhance document using presentation application software. (10 hrs)

- Presentation Basics- Creating and Saving a Presentation, Add Slide, Apply Themes, Change Color in Themes, Background of a Theme
- Text Basics- Delete Text, Format Font Size, Format Font Style, Format Text Color, Change Text Alignment, Insert a Text Box
- Inserting Picture- Insert Picture and Clip Art, Edit Picture and Clip Art, Numbered lists
- Working with Tables- Insert Table, Format Table, Word or Excel
- Working with Charts-Insert Chart, How to Enter Chart Data, Chart Data
- Slide Effects- Animation Effect, Custom Animation Effect, Slide Transition Effects, Set Slide Transition Sound, Set Slide Transition Speed, How to Sort Slides, Viewing Slides

6. Introduce the Networking concept including sharing of different resources, use of Internet, accessing/ browsing, downloading and e-mailing. **(8 Hrs)**

- Share a printer with Network.
- Share data and file among different nodes.
- Practice web browsing, create email id, and sending-receiving mails with attachment.
- Perform text chat and video chat using social network sites.
- Download relevant documents, images & font.

Course Outcome:

After completion of this course the student will be able to:

Unit-1

- Install and set up operating system and related software,
- identify different parts of computer, configure Windows OS and application software and Save &Manipulate folder/files.

Unit-2

- create file, edit and format it by different tools and control mouse.

Unit-3

- Identify different MS-Word tools, create a resume, Design and print magazine covers, Perform Mail merge and recall basic shortcuts.

Unit-4

- use of basic formulas in excel and prepare basic case study of the results of the institution.

Unit-5

- Create Presentation, Insert and Modify Text, Work with Graphics and Media, Final Preparations and Deliver a Presentation

Unit-6

- print , search and download web resources viz., documents, images, audio & video files, create email id, and sending-receiving mails& using different social media platforms.

RECOMMEND BOOKS:

1. Computer Fundamentals by PK Sinha; BPB Publication, New Delhi
2. A First Course in Computer by Sanjay Saxena; Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	8	13
2	8	13
3	16	24
4	14	22
5	10	15
6	8	13
Total	**64**	**100**

PROGRAM :THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS	
Course Code : OM 103	**Course Title: Typing (English)**
Semester : 1st	Credits: 4
Periods per week: (L0 T0 P8)	

Course objectives:

The main objective of this subject is to enable the students to acquire a speed of 30 wpm on a computer keyboard, using correct technique.

Prior Learning requirements:

Basic awareness of Computer System.

COURSE CONTENT:

1. Home row key practice
2. Shift key plus home key
3. Upper row key practice
4. Shift key plus upper row keys
5. Simple word practice by home and upper keys
6. Bottom row key practice
7. Shift key and bottom row keys
8. Simple word practice by all rows
9. Fourth row numbers, symbol key, punctuation mark practice
10. Shift key plus fourth row numbers and symbol key
11. Paragraph practice
12. Application, letter writing
13. Practicing exercise for speed building, calculation speed and errors
14. Practicing typing draft for advertisement, notice, legal document, literary matter, minutes
15. Practicing paragraph, letter, speed building.

COURSE OUTCOME:

After completion of this course the student will be able to:

- type at a speed of at least 30wpm

RECOMMEND SOFTWARE.

Software Type Master or similar typing application software.

DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1-15	128	100
Total	**128**	**100**

PROGRAM:-**THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS**	
Course Code: OM 104	**Course Title: Office Management**
Semester:1st	Credits:4
Periods per week:**(L4: T 0: P 0)**	

COURSE OBJECTIVES:

To make the students understand the concept and principles of office method and procedures and develop skills in performing various office operations. This subject on office management aims at making the students well conversant with the services provided by a modern office and help them to perform efficiently and effectively.

COURSE PREREQUISITE:

To make students well conversant with services to perform efficiently and effectively.

COURSE CONTENT:

1. INTRODUCTION

- Meaning and Importance of office.
- Functions of Modern office.
- Changing scene: paperless office and virtual office.
- Centralization and decentralization of office service with merits and demerit.

2. OFFICE ACCOMMODATION AND LAYOUT

- Office building.
- Sections and subsections of office.
- Office location.
- Office furniture and fixtures.
- Office accommodation.
- Office layout-objectives, principles, private/s open office.

3. MODERN OFFICE APPLIANCES AND MACHINERY

- Objective, Advantage and importance of office appliances and machines
- Types of office appliances and machines i.e. computer, printer, laptop, Wi-Fi system, Internet facility, scanner, video conferencing, telephone facility, photocopier, laminating machine. over-head projector

4. HANDLING OFFICE CORRESPONDENCE: -

- Incoming correspondence procedures.
- Outgoing correspondence procedures
- Ordinary Post, Registered Post, Parcel, Speed Post Courier, Airmail and email etc.

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- Get concept about office and how the work is done with current digital aspects. Also to get work done by distributing services.

Unit 2:

- Know about office accommodation, layout, regarding office furniture so as to get workable atmosphere.

Unit 3:

- Use modern technology regarding office oriented work. They are made well versed with new equipment so as handle efficiently.

Unit 4:

- Handle office correspondence.

RECOMMEND BOOKS:

1. Office Management:-R.S.NPillai & Bagavathi
2. Office Management:-RK Chopra and AnkitaBhati

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	16	25
2	16	25
3	16	25
4	16	25
Total	**64**	**100**

PROGRAM:-THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATIONS	
Course Code: OM 105	**Course Title: Office Management Practical**
Semester:1st	Credits:1
Periods per week:**(L: T 0: P 2)**	

PRACTICAL:

- Handling of mail, sorting, recording of inward mail and its distribution, record in dispatch book, preparation of parcel
- Preparation of hand book of all equipment and materials available in the department, helping the librarian in preparing cards for books. Assembling paper, punching, use of tags and binding machine. Appointment diary and message book. Folded letter, addressed envelopes, stamped envelopes, use of stapler, u-clip, pins ,other office stationery
- Use of modern office equipment like computer, laptop, scanner, Photostat, equipment regarding video conferencing, other equipment related to office activities.

COURSE OUTCOME:

. To perform general administrative tasks with well-versed knowledge about the topics

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATION	
Course Code : **HS 109**	Course Title: Language and Communication skills Lab
Semester : **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary.

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN OFFICE MANAGEMENT AND COMPUTER APPLICATION	
Course Code : **HS 110**	Course Title: - Self learning/Life skills
Semester : **1st**	Credits: **02**
Periods per week: **2 (L:2 T:0 P:0)**	

Course Objective:-

Self Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports and Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and s kill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation:- At the start of the semester the HOD/Academic in-charge may register the student for course of life skill or may be given a choice to register for any online course activity . Such course and activity needs to be monitored, evaluated and shall be given credits as prescribed.

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

TEXTILE DESIGN

(TD)

SUBJECT SCHEME

		Time in Hours				Credits			
Course code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3			3	3	0		3
TD 101	Elements and properties of Graphic Design	2			2	2	0		2
TD 102	Textile processes-I	4			4	4			4
TD 103	Color and Texture			6	6			3	3
HS 109	Language and Communication Skill Lab			2	2			1	1
TD 104	Elements and properties of Graphic design Lab			4	4			2	2
TD 105	Textile processes-I Lab			4	4			2	2
HS 110	Self Learning/Life Skills	2			2	2			2
	Total	**11**		**16**	**27***	**11**		**8**	**19**

***Note: Six classes per week shall be utilized for sports, seminars, debates etc.**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGN	
Course Code : HS 101	Course Title: Language and Communication skills
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at work place, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written. Barriers to effective communication.
- 7 C's for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
- Art of Effective communication,
    - Choosing words
    - Voice o Modulation o Clarity
    - Time
    - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.
- Case Studies

UNIT 3: **READING COMPREHENSION** **(12 Hours)**

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personal,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal Non Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication.

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1. J.D.O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3. M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4. John Nielson. Effective Communication Skills. Xlibris, 2008.
5. Oxford Dictionary
6. Roget's Thesaurus of English Words and Phrases
7. Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : **TD 101**	Course Title : ELEMENTS AND PRINCIPLES OF GRAPHIC DESIGN
Semester : **1st**	Credits: **2**
Periods per week: **2 (L: 2 T: 0 P: 0)**	

Course Objectives:

Textile Designing students are supposed to know the concepts of construction of designs in various styles by using various techniques according to the suitability of various kinds of fabrics on paper with colors. Students are given understanding of all elements and concepts of design through various exercises. They are also taught use of different tools and art-materials.

Prior learning requirements: The students shall have basic knowledge regarding

(I) Various elements of Designing
(II) Tools of drawing

COURSE CONTENT

Unit I: Basic elements of drawing and design; and understanding of principles of Designs 07 hrs

- Rhythm, balance, harmony, unity, emphasis, proportion, color combination etc. to form a good design.
- Elements like Shape, Color, space, form, line, value and textures.
- Image in design: meaning, representation, abstraction.

Unit II Introduction to tools and art-material 05 hrs

- Introduction to Design tools like T-square, set-square, scale, liner, compass liner etc. with black pencils of various numbers (HB, 2B, 4B, 6B) and black ink
- Introduction to art materials with black pencils of various numbers (HB, 2B, 4B, 6B) and black ink.

Unit III. Understanding of construction of graphic designs 10 hrs

- Construction of designs by using basic elements of drawing i.e., `dot' and `line'
- Various types of liner, horizontal, vertical, diagonal, zigzag, curve, spiral, etc. in various styles – (thick, thin, dashed, dotted etc.) with Black pencils (HB, 2B, 4B, 6B), Colored Inks (Sketch pens), Poster colors and their graphic reduction in different scales
- Make motifs with the help of basic geometrical shapes – circle, square, triangle, rectangle, etc. and their graphic reduction in different scales.

Unit IV. Understanding of 3-dimensional effects in design 05 hrs

- Understanding of 3-dimensional effects in design by using basic shapes with tonal effects with Black pencils (HB, 2B,4B, 6B), Pencil colors/Postal colors.

Unit V. Understanding of Texture Effects and Understanding of various styles of designs 05 hrs

- Natural (Realistic) - Abstract - Traditional - Folk – Symbolic along with their graphic reduction. Change of one style of design to another and Construction and placement of designs on various basis - Drop designs (Unit repeating designs) - Half drop designs - Drop reverse designs.

Course Outcome:

After completion of this course the student will be able to:

UNIT I

- Understand basic elements of drawing and design
- Understand various principle of design

UNIT II

- Understand various drawing tools
- Understand various art materials

UNIT III

- Understand construction of graphic designs
- Understand construction of geometrical shapes

UNIT IV

- Understand 3- dimensional effect in design
- Understand tonal effects

UNIT V:

- Understand various styles of design
- Drop design Technique
- Half drop design

Recommended Books

1. The Encyclopedia of Patterns and Motifs by Dorothy Bosomworth; Studio London
2. Designer's Guide to Color 3 by Jeanne Alen; Chronicle Books, San Francisco
3. Fabric Painting by Jill Kennedy and Jane Varsall; BT Batsford Ltd., London
4. Designer's Guide to Japanese Patterns by Jeanne Allen; Chronicle Books, San Francis co
5. Handwoven Fabrics of India by Jasleen Dhamija and Jyotindra Jain; Mapin Publishing Pvt. Ltd., Ahmedabad

SUGGESTED WEBSITES

1. https://onlinecourses.nptel.ac.in/
2. https://swayam.gov.in/

INSTRUCTIONAL STRATEGY

This is hands on practice-based subject for development of required skills in the students. Students should be taken for field visits, museums, exhibitions, market, etc. for clarity of concepts and principles of this course as per requirement.

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	07	22
02	05	16
03	10	32
04	05	15
05	05	15
TOTAL	**32**	**100**

PROGRAM: THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : **TD 102**	Course Title: TEXTILE PROCESS - I
Semester : **1st**	Credits: **4**
Periods per week: **4 (L: 4 T: 0 P: 0)**	

Course Objectives:

The students of textile design are supposed to have introductory knowledge and s kill related to various fibers, yarns, and fabrics. Learn source of different natural and manmade fibers. Students should know the physical and chemical properties of fibers . This subject will give knowledge of different fibers, yarns and fabrics and their manufacturing techniques along with process flow.

Prior learning requirements: The students shall have basic knowledge regarding

(I) Basic Textile fibers
(II) Source of fibers

COURSE CONTENT

UNIT I **(09 hours)**

Definition of fiber, filament, yarn, fabric, classification of textile fibers and physical and chemical identification of textile fibers.

UNIT II (14 hours)

Source and production of cotton, wool, jute, silk fibers, their end uses and physical and chemical properties. Grading of cotton and wool.

UNIT III (18 hours)

Viscose rayon, nylon, polyester, acrylic Polypropylene fibers; their uses and their method of production, physical and chemical properties, and introduction to mixing and blending

UNIT IV (14 hours)

Principles of blow room, carding, drawing/gilling, speed frame, ring frame and doubling and process flow of cotton, woolen, and worsted systems of yarn manufacture.

UNIT V (09 hours)

Process flow of fabric manufacturing Basic principles of weft and warp knitting and use of knitted fabrics

Course Outcome:

After completion of this course the student will be able to:

UNIT I:

- Understand various textile fibers
- Find chemical and physical identification of textile fibers

UNIT

- Understand sources of Textile Fibers
- Understand production of Textile Fibers

UNIT III

- Understand various synthetic fibers

- Understand mixing and blending

UNIT IV

- Understand principle of yarn manufacturing
- Understand difference in cotton, worsted and woolen yarn manufacture

UNIT V

- Understand process of fabric manufacturing
- Understand Warp and weft Knitting

RECOMMENDED BOOKS

1. E P G Gohl and L D Vilensky, "Textile science" by CBS Publisher & Distributors, 2nd edition, 1984.
2. Bernard P. Corbman, "Fiber to Fabric" by McGraw Hill Education, 6th edition, 1985.
3. Parul Bhatnagar, "Elementary Textile" by Abhishek Publisher, Chandigarh, 1st edition 2015.
4. Max M. Houck, "Identification of textile fibers" by Wood head Publishing India in Textile, 1st edition 2009.
5. Kaplan, "Textile fibers" Abhishek Publisher, Chandigarh, 1st edition, 2019

SUGGESTED WEBSITES

1. https://onlinecourses.nptel.ac.in/
2. https://swayam.gov.in/

INSTRUCTIONAL STRATEGY

This is skill based subject and topics taught in the class should be practiced in the Lab regularly for development of required skills in the students. This subject contains five units of equal weight age with hands on practice.

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	09	14
02	14	22
03	18	28
04	14	22
05	09	14
TOTAL	**64**	**100**

PROGRAM : PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DE SIGNING	
Course Code : **TD 103**	Course Title: COLOR AND TEXTURE
Semester : **1st**	Credits: **3**
Periods per week: **6 (L: 0 T: 0 P: 6)**	

Course Objectives:

Textile Design students are supposed to know the concepts of construction of designs in various styles by using various techniques according to the suitability of various kinds of fabrics on paper with colors. This subject will provide knowledge of different types of light theory and pigment theory of colors. It will help in understanding of all elements and concepts of design through various exercises.

COURSE CONTENT

Unit I: Introduction and demonstration of Color Theory 35 hrs

Rainbow Colors: Make a chart of VIBGYOR colors Prepare Charts of classification of following colors

i. To construct a design based on primary colors of light theory and pigment theory : (red, yellow and blue) in various geometrical shapes
ii. To construct a design based on secondary colors: Orange, green and violet in circles/ geometrical shapes.
iii. To construct a design based on sub secondary / tertiary colors: by mixing secondary and primary colors in geometrical shapes.
iv. Color Schemes: Color Wheel (chromatic circle): Make a wheel showing primary, secondary, sub –Secondary and intermediate colors.

UNIT II: **Color Terminology** 26 hrs

Achromatic Colors

i. Make a composition of different geometrical shapes in 12″x12″ and paint it with achromatic colors giving it as many colors as possible.

Monochromatic Colors

ii. Make a composition of floral designs in different blocks using as many shades of monochromatic colors as possible.

Methods of Modification of Colors

iii. Make various colors by mixing different colors in different ratios e.g. yellow+ blue=green.

Unit III: Color Schemes **35 hrs**

i. Contrast Color Scheme: Introduction to various color harmonies Achromatic Color Scheme: Arrange different geometrical shapes in 12″x12″ and paint it with achromatic color

ii. Prepare Monochromatic and Polychromatic color scheme Analogous colors chime: Transparent and opaque colors

iii. Warm and cool color

Texture: Texture file with 25 different textures: Use of texture on cloth.
b) Marble b) Spray c) Rubber d) Vegetable e) Brushes f) Coin g) Smoke texture, etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT I

- Understand Rainbow colors
- Color wheel
- Primary , Secondary and tertiary colors
-

UNIT II

- Understand Achromatic colors
- Understand Monochromatic colors
- Changing hue of colors

UNIT III;

- Understand Contrast color Scheme
- Understand Warm and cool colors
- Create various texture effect

Recommended Books:

1. Dorothy Bosomworth, "The Encyclopedia of Patterns and Motifs" by Studio London, 1st edition, 1955.
2. Jeanne Alen,"Designer's Guide to Color 3" by Chronicle Books, San Francisco, 1st edition, 1986.
3. Jill Kennedy and Jane Varsall,"Fabric Painting" by BT Batsford Ltd., London, 2nd edition, 1994.
4. Jeanne Allen, "Designer's Guide to Japanese Patterns" by Chronicle Books, San Francisco, 1st edition, 1988.
5. Michael and Pat Rogondino, "Computer Color-10,000 computer - Generated Process colors" by Angus and Robertson Publishers (Practical reference of colors Processed by Mixing), 1st edition, 1989.

SUGGESTED WEBSITES

3. https://onlinecourses.nptel.ac.in/
4. https://swayam.gov.in/

INSTRUCTIONAL STRATEGY

This is hands on practice based subject for development of required skills in the students. This subject contains five units of equal weight age. Mixing and developing of different color shades may be shown on computer so that the students are able to appreciate the importance of the subject.

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	35	40
02	26	20
03	35	40
TOTAL	**96**	**100**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : HS 109	Course Title: Language and Communication skills Lab
Semester : **1st**	Credits: **01**
Periods per week: **2 (L:0 T:0 P:2)**	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary.

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018)

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : **TD 104**	Course Title : ELEMENTS AND PRINCIPLES OF GRAPHIC DESIGN PRACTICAL
Semester : **1**	Credits: **2**
Periods per week: **4 (L: 0 T: 0 P: 4)**	

LIST OF PRACTICALS

i. Construction of geometrical designs by using dots
ii. Construction of geometrical designs by using lines.
iii. Construction of horizontal lines with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
iv. Construction of vertical lines with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
v. Construction of diagonal lines with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
vi. Construction of zigzag lines with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
vii. Construction of curves with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
viii. Construction of spirals with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
ix. Construct at least 10 different motifs by using geometrical shapes with Black pencils (HB, 2B, 4B, and 6B), sketch pens and poster colors along with their graphic reduction in different scales.
x. Create 3-dimensional effect by using geometrical shapes with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
xi. Construct half drop design on different motifs shapes with Black pencils (HB, 2B, 4B, 6B), sketch pens and poster colors
xii. Construct drop reverse design on different motifs with Black pencils (HB, 2B, 4B, and 6B), sketch pens and poster colors.

COURSE OUTCOME:

After completion of this course the student will be able to:

- Make drawings and designs by dots.
- Make drawings and designs by lines.
- Construct horizontal, vertical lines with different types of pencils and colors.
- Gain competency on creative designs by using geometrical shapes
- Make 3-dimensional in drawings and designs.
- Make half drop and drop reverse design techniques.

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : **TD 105**	Course Title: TEXTILE PROCESS – I LAB.
Semester : **1st**	Credits: **2**
Periods per week: **4 (L: 0 T: 0 P: 4)**	

LIST OF PRACTICALS

1. Physical and chemical identification of cotton.
2. Physical and chemical identification of, wool.
3. Physical and chemical identification of silk.
4. Physical and chemical identification of nylon.
5. Physical and chemical identification of acrylic.
6. Physical and chemical identification of polyester.
7. Physical and chemical identification of viscose.
8. Study of fiber cross section of cotton, wool, nylon, polyester, silk.
9. Qualitative and quantitative analysis of fibers and their blends.
10. Understanding different spinning process by textile mill visit.
11. Estimation of fiber diameter by projection microscope.
12. Estimation of yarn diameter by projection microscope.
13. Understanding different processes of weaving through textile mill visit.
14. Understanding process of knitting through textile mill visit.

COURSE OUTCOME:

After completion of this course the student will be able to:

- Physically identify different types of natural and synthetic textile fibers.
- Know the fiber cross-section and longitudinal view.
- Understand spinning process
- Understand weaving process
- Understand knitting process
- Study the fiber/ filaments under projection microscope.

RECOMMENDED BOOKS

1. E P G Gohl and L D Vilensky, "Textile science" by CBS Publisher & Distributors, 2nd Edition, 1984.
2. Physical properties of Fibers by Morton and J W S Hearle by Woodhead Publishing.

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TEXTILE DESIGNING	
Course Code : HS 110	Course Title: - Self learning/Life skills
Semester : **1st**	Credits: **02**
Periods per week: **2 (L:2 T:0 P:0)**	

Course Objective:-

Self Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports and Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and s kill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation: - At the start of the semester the HOD/Academic in-charge may register the student for course of life skill or may be given a choice to register for any online course activity. Such course and activity need to be monitored, evaluated and shall be given credits as prescribed.

CURRICULUM

FOR

FIRST SEMESTER

DIPLOMA IN

TOURISM AND HOSPITALITY

ADMINISTRATION

(TH)

SUBJECT SCHEME

		Time in Hours				Credits			
Course code	**Subjects**	**Theory**	**Tutorial**	**Practical**	**Total**	**Theory**	**Tutorial**	**Practical**	**Total**
HS 101	Language and Communication Skill	3			3	3	0		3
TH 101	Basics of Tourism	3			3	3			3
TH 102	Basics of Tourism Lab			2	2			1	1
TH 103	Personality Development	3			3	3			3
TH 104	Personality development Lab			2				1	1
TH 105	Indian History	4			4	4			4
TH 106	Indian History Lab			2	2			1	1
TH 107	Geography of Tourism	4			4	4			4
TH 108	Geography of Tourism Lab			2	2			1	1
TH 109	Basics of information Technology			4	4			2	2
HS 109	Language and Communication Skill Lab			2	2			1	1
HS 110	Self Learning/Life Skills	2			2	2			2
	Total	**19**		**14**	**33**	**19**		**7**	**26**

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TOURISM AND HOSPITAL ADMINISTRATION	
Course Code : HS 101	Course Title: Language and Communication skills
Semester : **1st**	Credits: **3**
Periods per week: **3 (L:3 T:0 P:0)**	

Course Objectives: This course is designed to introduce students to various kinds of technical and professional communication. During the course, you will become familiar with technic al communication, receive feedback from and provide feedback to others on writing drafts and revisions, discover the role good listening, speaking, reading, and writing skills plays in effective technical communication. The students will learn and experience ways to communicate effectively, particularly audience awareness and communication through technology and also learn ways to groom their personality. The students will find these vignettes beneficial for keening and honing learning skills in their interpersonal communication as well as communication at work place, and dispose them of wallowing in unhappy isolation. Above all, it will develop requisite skills among the students which in turn will enhance the employability of students. We hope the students will enjoy it with facility and felicity

Prior learning requirements: NIL

COURSE CONTENT

UNIT 1: COMMUNICATION: THEORY AND PRACTICE (12 Hours)

- Basics of communication: Introduction, meaning and definition, process of communication etc.
- Types of communication: formal and informal, verbal, non-verbal and written. Barriers to effective communication.
- 7 C's for effective communication (considerate, concrete, concise, clear, complete, correct, courteous).
- Art of Effective communication,
    - Choosing words
    - Voice o Modulation o Clarity
    - Time
    - Simplification of words
- Technical Communication

UNIT 2: SOFT SKILLS FOR PROFESSIONAL EXCELLENCE (12Hours)

- Introduction: Soft Skills and Hard Skills.
- Importance of soft skills.
- Important types of soft skills : Interview skills, Presentation skills, Group Discussion
- Life skills: Self-awareness and Self-analysis, adaptability, resilience, emotional intelligence and empathy etc.
- Case Studies

UNIT 3: **READING COMPREHENSION** **(12 Hours)**

Comprehension, vocabulary enhancement, and grammar exercises based on reading of the following texts:

Section-1

Malgudi Days: R.K. Narayan
The Room on Roof: Ruskin Bond
"The Gift of the Magi" by O. Henry "
The Cock –fight by Amin Kamil

Section-2

Night of the Scorpion by Nissim Ezekiel,
Stopping by Woods on a Snowy Evening by Robert Frost,
Where the Mind is Without Fear by Rabindranath Tagore,
Ode to Tomatoes by Pablo Neruda,

UNIT 4: **PROFESSIONAL WRITING** **(12 Hours)**

- The art of precis writing,
- Letters: business and personal,
- Drafting e-mail, notices, minutes of a meeting, Job Application, CV/Resume writing etc.
- Filling-up different forms such as banks and on-line forms for placement etc.

Course Outcome:

After completion of this course the student will be able to:

UNIT 1

- Develop Verbal Non Verbal Communication such as proper use of body language and gestures.
- Develop the latest trends in basic verbal activities such as presentation and other forms of oral communication.

UNIT 2

- Learn Soft as well as hard skills.
- Master their life skills.

UNIT 3

- Comprehend different words in the context which in turn will enhance their Vocabulary and grammar.
- Read Correctly.

UNIT 4

- Develop writing skills including proper use of Language, & Vocabulary.
- Learn different formats of writing skills.

Recommended Books:

1. J.D.O'Connor. Better English Pronunciation. Cambridge: Cambridge University Press, 1980
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Edition 2018)
3. M. Ashraf Rizvi. Effective Technical Communication. Mc-Graw Hill: Delhi, 2002.
4. John Nielson. Effective Communication Skills. Xlibris, 2008.
5. Oxford Dictionary
6. Roget's Thesaurus of English Words and Phrases
7. Collin's English Dictionary

UNIT WISE TIME AND MARKS DISTRIBUTION

UNIT NO	TIME (HOURS)	MARKS
01	12	25
02	12	25
03	12	25
04	12	25
TOTAL	**48**	**100**

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 101**	Course Title: Basics of Tourism
Semester:1st	Credits: 3
Periods per week: 3(L-3 T-0 P-0)	

COURSE OBJECTIVES

A diploma holder in travel and Tourism must have a thorough knowledge of the phenomenon of tourism. This subject will prepare a base for the students for better understanding of core concepts of tourism and activities of travel and tourism industry.

DETAILED CONTENTS

THEORY

1. Tourism: Meaning, nature, concept, Components and elements; Typology and classifications of Tourism. Tourist: Types of Tourist. (08hrs)
2. Tourism terminology- (Tours, Tourist, visitors, excursionists, travelers, resources, attractions, Itinerary) and tourism abbreviations. (08 hrs)
3. Basic reasons and motivators for travel and deterrents. (06hrs)
4. Tourist behavior and psychology (06hrs)
5. Push and Pull forces in Tourism. (06hrs)
6. History of travel and tourism (07hrs)
7. Tourism in modern period - India and abroad (07hrs.)

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- understand the phenomenon of tourism.
- understand the main components of tourism
- understand the types of tourism

Unit 2:

- understands the meaning of various terms pertaining to tourism.
- distinguish between a traveler and a tourist.

Unit 3:

- understand the basic reasons underlying tourism
- understand the basic travel motivators

Unit 4:

- understand the reasons of people undertaking various activities in tourism.
- understand the buying decisions of tourists
- understand why tourists go to particular destinations.

Unit 5:

- understand the factors affecting tourism

Unit 6:

- understand the evolution of tourism
- comprehend the factors that led to growth and development of tourism industry

Unit 7:

- understand the evolution of mass tourism.
- The status of Tourism industry in contemporary world

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	08	17
2	08	17
3	06	12
4	06	12
5	06	12
6	07	15
7	07	15
Total	**48**	**100**

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 102**	Course Title: Basics of Tourism Practical/project work
Semester:1st	Credits: 1
Periods per week: 2(L-0 T-0 P-2)	

LIST OF PRACTICALS

1. To conduct a case study of a nearby tourism place .
2. Visit to a nearby tourist organization (Hotel / Travel Agency / Airports) and enquire about the changes occurred in Tourism business .
3. Write a travelogue of your last tour (with friends / classmates / family)

OUTCOMES:

After completion of these practicals students will be able to understand the basic concept of tourism and basic elements related to tourism.

RECOMMENDED BOOKS

1. An introduction to Tourism by N. Jaypalan ; Atlantic Publishers and Distributors , New Delhi .
2. International Tourism Management A.K. Bhatia , Sterling Publishers - New Delhi .
3. Tourism and Travel - Concepts and principles by Negi , J.M.S , Gitanjali Publishing House , New Delhi

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code : **TH 103**	Course Title: Personality Development
Semester:1st	Credits: 3
Periods per week:3(L-3 T-0 P-0)	

Course Objectives

Personality is one of the essential traits for diploma holder in travel and tourism as he / she has to deal with variety of customers all the time . This subject will enable them to take better care of their physical health, grooming and enhance their creativity, self – confidence, communication skills and interpersonal skills .

DETAILED CONTENTS

1. Concept of personality-dimensions of Personality. Significance of personality Development. Health and hygiene. Professional Grooming (08hrs)
2. Attitude- concept and types, Creativity-Techniques for building self-confidence. (06 hrs)
3. Interpersonal behavior Skills - Communication , Gesture , Posture and Body Language (07hrs)
4. Stress management ; concept , reasons for stress and techniques for coping with stress (06 hrs)
5. Time Management – concept, causes of time wastage , Techniques of time Management. (06 hrs)
6. Self awareness ; Johari window , Emotional intelligence. (05hrs)
7. Leadership- Character Building, Team work. Employability quotient. Art of group Discussion and interview skills. (06hrs)
8. Negotiation skills ; concept , techniques for negotiation ; Ego - concept ,work Ethic (04hrs)

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- understand the importance of Health and Hygiene and professional grooming .

Unit 2:

- understand attitude and creativity.

Unit 3:

- understand interpersonal behavior and how to deal with customers and colleagues.

Unit 4:

- understand about stress management.

Unit 5:

- understand how to get work done in time.

Unit 6:

- understand the awareness about self and knowledge of work.

Unit 7:

- understand about how to face the interview and leadership qualities.

Unit 8:

- understand about negotiation skills.

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	08	16
2	06	13
3	07	14
4	06	13
5	06	13
6	05	10
7	06	13
8	04	8
Total	**48**	**100**

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code : **TH 104**	Course Title: Personality Development Practice/Project
Semester:1^{sT}	Credits: 1
Periods per week:2(L-0 T-0 P-2)	

LIST OF PRACTICALS

1. Physical exercises / Yoga
2. To hold group discussion for marketing strategies for tourism promotion and practice assertiveness
3. To conduct role - play exercises in negotiations / To enact the role of a travel agent in the class room and negotiate with a party
4. To enact the role of a travel guide for a chosen tourism spot .
5. Resume Building /FAQ'S

COURSE OUTCOME:

After completion of this course the student will be able to:

- Develop overall personality
- Develop confidence in facing interviews.

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 105**	Course Title: Indian History
Semester:1st	Credits: 4
Periods per week:(L-4T-0 P-0)	

Course Objectives

The subject aims to cover the basic history of India with emphasis on the architecture, arts crafts, culture and religion. Content will help in understanding the importance of our history, culture and heritage which is one of the basic components in tourism. This subject will develop a sense of belonging among students so as to feel pride in our rich Heritage.

DETAILED CONTENTS

THEORY

1. Civilizations- Indus valley civilization (town planning, arts & crafts, culture and tradition (12 hrs)
2. Vedic age- Vedas, Society, religious beliefs (10 hrs)
3. Religions- Buddhism and Jainism (08 hrs)
4. Mauryan Empire- Arthshastra, Ashokan Inscription Gupta Empire-Art and Architecture (10 hrs)
5. Rajputs –Art , Architecture and Astronomy (10hrs)
6. Vijay Nagar Kingdom-Art and Architecture , (06hrs)
7. Art and Architecture- Delhi Sultanat , Marathas and Mughals (08hrs)

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- Examine institutional basis of Ancient India
- Understand Civilization and culture

Unit 2:

- Learn about the Vedic age.

Unit 3:

- Understand religious impacts on tourism.

Unit4:

- Understand the establishment and growth of empires and the cultural heritage as it evolved in the millennia.

Unit5:

- Understand the contributions of Rajputs in Art, Architecture and Astronomy

Unit6:

- Acquire knowledge of particular historical contexts of Vijay Nagra Kingdom

Unit 7:

- understand the contributions of Empires in art, architecture, sciences and administration.
- understand the religious movements and teachings of spiritual leaders over the millennia

RECOMMENDED BOOKS

1. NCERT-Themes in Indian History Vol.1,2 &3 .
2. Ancient India by RC Majumdar
3. Indians Ancient Past by Ram Sharan Sharma.
4. Discovery of India by Pt. J.L.Nehru
5. The wonder that was India by A.L. Basham
6. History of Medieval India by R.S. Chaurasia
7. A textbook of Medeival Indian History by Sailender Nath Sen

SUGGESTED DISTRIBUTION OF MARKS

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	12	19
2	10	16
3	08	12
4	10	16
5	10	16
6	06	09
7	08	12
Total	**64**	**100**

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 106**	Course Title: Indian History practical/project work
Semester:1st	Credits: 1
Periods per week:2(L-0 T-0 P-2)	

LIST OF PRACTICALS

1. To conduct a case study of a nearby Heritage sites.
2. Visit to a nearby Historical monuments, Palaces, Forts, and other places of Historical Importance.
3. Visit to Museum and Archeological sites.

COURSE OUTCOME:

After completion of this course the student will be able to:

Understand the importance of Historical monuments, Archaeological sites and Museums in Tourism Industry.

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 107**	Course Title: Geography of Tourism
Semester:1st	Credits: 4
Periods per week:4(L-4T-0 P-0)	

Course Objectives

In this subject the students study the concept of tourism with special emphasis on the place of origin , place of destinations and the route through which the transportation takes place . It provides a thorough knowledge about the characteristics of tourist markets , the attractions of destinations and the accessibility of the world which is essential for the operation of tourism .

DETAILED CONTENTS

THEORY

1. Geography , Meaning , Types and relevance in tourism. (08 hrs)
2. General idea of natural geographical regions , continents and oceans , latitudes , Longitudes , Time, Time differentials , International date line , climate and geography (10 hrs)
3. Physiographic features of India including mountains , rivers , deserts , plains , coastal area , climatic conditions , forests and wildlife (with special reference to J&K) (10 hrs)
4. Tourism in major tourist states of India with special reference to their important tourist destinations (Rajasthan ,Himachal Pradesh , Kerala , Goa, Uttarakhand, Madhya Pradesh) (10 hrs)
5. Tourism in USA ,France , Egypt , Thailand , Brazil , China , Australia , with special reference to their important tourist destinations . (10hrs)
6. Detailed study of tourist map of India (08 hrs)
7. World map reading . World air and surface routes (road ,rail and sea routes) (08 hrs)

Course Outcome:

After completion of this course the student will be able to:

Unit 1:

- understand the basic concept of Geography.

Unit 2:

- understand about the structure of earth, location and time of different destinations.

Unit 3:

- understand about the various physical natural existing structures on the surface of Earth.

Unit 4:

- understand about the various tourist destinations of various states of India.

Unit 5:

- understand about the various tourist destinations of different countries of the world .

Unit 6:

- understand the basics of itinerary.

Unit 7:

- understand the overview of different international surface, Air and water routes.

RECOMMENDED BOOKS

1. The Geography of Travel and Tourism by Boniface , B.G. and Christopher Cooper , Heinmann Publication , London , .
2. Tourism Today - A geographical Analysis , by Douglas Pearce , Longman Publication , London
3. Atlas - The Orient Longman School Atlas ,Published by Orient Longman Limited .
4. International Tourism Management by A.K. Bhatia , Published by Sterling publishers Pvt . Ltd. , New Delhi .

Topic No.	Time Allotted (Hrs)	Marks Allotted (%)
1	08	12
2	10	16
3	10	16
4	10	16
5	10	16
6	08	12
7	08	12
TOTAL	**64**	**100**

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 108**	Course Title: Geography of Tourism Practical/project work
Semester:1st	Credits: 1
Periods per week:2(L-0T-0 P-2)	

LIST OF PRACTICALS

1. Exercises in local and state map readings
2. Exercises in national map reading
3. Exercises in reading route map and trekking maps.
4. Exercise in referring to Rail, Bus, Air Tables. 5. Exercise in world map about major tourist generating/receiving countries(US A, UK, Australia, Singapore, Thailand, Japan, France, Spain).

COURSE OUTCOMES:

After completion of this course the student will be able to:

- prepare itineraries by knowing the locations of various places of touristic importance.

Program: THREE YEARS DIPLOMA IN TOURISM AND HOSPITALITY ADMINISTRATION	
Course code: **TH 109**	Course Title: Basics of Information Technology
Semester:1st	Credits: 2
Periods per week:4(L-0 T-0 P-4)	

Course Objectives

Information technology has great influence on all aspects of our life . Primary purpose of using computer is to make the life easier. Almost all work places and living environment are being computerized . The subject introduces the fundamentals of computer system for using various hardware and software components. In order to prepare diploma holders to work in these environments , it is essential that they are exposed to various aspects of information technology such as understanding the concept of information technology and its scope ; operating a computer ; use of various tools of MS Office / Open Office using internet etc. form the broad competency profile of diploma holders . This exposure will enable the students to enter their professions with confidence , live in a harmonious way and contribute to the productivity .

Note :

Explanation of Introductory part should be dovetailed with practical work . Following topics may be explained in the laboratory along with the practical exercises . There will not be any theory examination .

TOPICS TO BE EXPLAINED THROUGH DEMONSTRATION

1. Information Technology its concept and scope , applications of IT , ethics and future with information technology

2. Impact of computer and IT in society .-- Computer application in office , book publishing , data analysis , accounting , investment , inventory control , graphics , air and railway ticket reservation , robotics , military , banks , Insurance financial transact ions and many more

3. Generations of computer , block diagram of a computer , CPU , memory , data numeric data , alpha numeric data ; program , processing of data .

4. Computers for information storage , information seeking , information processing and information transmission , computer organization , computer hardware and software ; primary and secondary memory : RAM , ROM , PROM etc. Input devices ; keyboard , mouse , scanner , etc. output devices ; VDU and Printer (Impact and non -Impact printers) , Plotter etc. Primary and Secondary Storage (Auxiliary Storage) , Secondary storage ; magnetic disks tracks and sectors , optical disk (CD , CD - RW an d DVD Memory)

5. Introduction to Operating Systems such as MS - DOS and Windows , difference between DOS and Windows

6. Basics of Networking - LAN , MAN , WAN , Topologies

LIST OF PRACTICALS

1. Identify and list functions of various components and peripherals of given computer
2. Installation of operating system viz . * Windows XP , Windows 2007 etc.
3. Installing a computer system by giving connection and loading the system - Software and application software and various sources to install software
4. Exercises on entering text and data (Typing Practice) Features of Windows as an operating system,Start , shutdown and restore Creating and operating on the icons,Opening , closing and sizing the windows.Using elementary job commands like creating , saving , modifying , renaming , finding and deleting a file , creating and operating on a folder
5. Word Processing (MS Office / Open Office)

File Management :

Opening , creating and saving a document , locating files , copying contents in some different file (s) ,

Editing a document :

Entering text , Cut , copy , paste using tool- bars

Formatting a document :

Using different fonts , changing font size and color , changing the appearance through bold / italic / underlined , highlighting a text , changing case , using subscript and superscript , using different underline methods

Introduction to all properties such as changing settings like , date , time , color (back ground and fore ground)

Using short cuts

Aligning of text in a document , justification of document , Inserting bullets and numbering

Formatting paragraph , inserting page breaks and column breaks , line spacing

Use of headers , footers : Inserting footnote , end note , use of comments Inserting date , time , special symbols , importing graphic images , drawing tools

Tables and Borders :

Creating a table , formatting cells , use of different border styles , shading in tables , merging of cells , partition of cells , inserting and deleting a row in a table

Print preview , zoom , page set up , printing options Using Find, replace options

4. Spread Sheet Processing (MS Office / Open Office)

Starting Excel

open worksheet , enter , edit , data , formulae to calculate values , format data , create chart , printing chart , save worksheet , switching between different spread sheets

Menu Commands

Create, format, organize, manage data, solving problem by analyzing data, creating graphs

Work books

Managing workbooks (Create ,Open, close, save),working in work books, editing a work sheet. copying , moving cells , pasting , inserting , deletion cells , rows , columns , find and replace text , numbers of cells , formatting worksheet

Creating a chart :

Working with chart types, changing data in chart, formatting a chart, use chart to analyze data

Using a list to organize data , sorting and filtering data in list

Formulas :

Addition , subtraction , division , multiplication , percentage and auto sum

5. PowerPoint Presentation (MS Office / Open Office)

a) Introduction to PowerPoint

How to start PowerPoint

Working environment : concept of toolbars , slide layout , templates etc. Opening a new / existing presentation

Different views for viewing slides in a presentation : normal , slide sorter

etc.

b) Addition , deletion and saving of slides

c)Insertion of multimedia elements

Adding text boxes , importing pictures , movies and sound , tables and charts etc.

d) Formatting slides

Text formatting , changing slide layout , changing slide color scheme Changing back ground , Applying design template

e)How to view the slide show ?

Viewing the presentation using slide navigator , Slide transition

Animation effects etc.

6. Working with Data Processing (MS Office / Open Office)

a)Understanding different data types

b) Creation of table , entering data in a table and modify it .

c) Retrieve data with query :

Create a pivot table , customizing a pivot table , statistical analysis of data

Exchange data with other application : embedding objects , linking to other applications , import , export document .

7. Internet and its Applications

a) Log - in to internet , introduction to search engine

Browsing and down loading of information from internet

b) Creating E - Mail Account

Log in to e - mail account and Log out from e - mail account

c) Managing E mail

- creating a message
- sending , receiving and forwarding a message
- attaching a file
- deleting a message

INSTRUCTIONAL STRATEGY

Since this subject is practice oriented, the teacher should demonstrate the capabilities of computers to students while doing practical exercises . The students should be mad e familiar with computer parts, peripherals , connectors etc. and proficient in making use of MS Office / Open Office in addition to working on internet . The student should be made capable of working on computers independently. This subject should by taught with the help of LCD projector, while teaching a group.

RECOMMENDED BOOKS

1. Fundamentals of Computer by E Balagurusamy , Tata McGraw Hill Education Pvt Ltd , New Delhi

2. Fundamentals of Computer by V Rajaraman ; Prentice Hall of India Pvt . Ltd. , New Delhi

3. Computers Fundamentals Architecture and Organisation by B Ram , revised Edition , New Age International Publishers , New Delhi

4. Fundamentals of Computer by Sumita Arora by Dhanpat Rai and Co , New Delhi

5. Computers Today by SK Basandara ,Galgotia Publication Pvt ltd . Daryaganj , New Delhi .

6. Internet for Every One by Alexis Leon and Mathews Leon ; Vikas Publishing House Pvt . Ltd. ,Jungpura , New Delhi

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TOURISM AND HOSPITALITY ADMINISTARTION	
Course Code : **HS 109**	Course Title: Language and Communication skills Lab
Semester : 1st	Credits: 01
Periods per week: 2 (L:0 T:0 P:2)	

Course Content:

Unit 1: Listening Skills

Listening Process and Practice: Introduction to recorded lectures, poems, interviews and speeches, listening tests.

Unit 2: Introduction to Phonetics

Sounds: Consonant, Vowel, Diphthongs. Syllable division, word stress, intonation, voice etc.

Unit 3: Speaking Skills

Introducing oneself and others

Standard and formal speech: Group discussion, oral presentations, public speaking etc. Conversation practice and role playing, mock interviews etc.

Unit 4: Building vocabulary

Antonyms and Synonyms, Prefix and Suffix, Phrasal verbs, idioms and phrases. Word exercises and word games to enhance self-expression and vocabulary.

Recommended Books:

1. James Hartman& et al. Ed. English Pronouncing Dictionary. Cambridge: Cambridge University Press, 2006.
2. Kulbhushan Kumar, Effective Communication Skills, Khanna Publishing House, New Delhi (Revised Ed. 2018)

PROGRAM : THREE YEARS DIPLOMA PROGRAM IN TOURISM AND HOSPITALITY ADMINISTARTION	
Course Code : **HS 110**	Course Title: - Self learning/Life skills
Semester : **1st**	Credits: **02**
Periods per week: **2 (L:2 T:0 P:0)**	

Course Objective:-

Self Learning /Life skills :- The self-learning plays a very important role in the learning process and needs due credit Extra learning outside Institutional timing and online/digit al learning needs encouragement. Apart from this participation in debates, seminars, sports and Extra- co curricula activities shall be given due importance and credit. Participation by student in such activities needs to be given due importance and credit. Apart from knowledge and s kill, developing right attitude is of great significance in the real life situations. This can be better achieved by introducing the life skills and capability of handling the real life future challenges and situations. Activities in sports, Yoga and other activities plays a role in physical and psychological development and must form a part in the institutional processes. Prior learning of the student also needs to be given due credit.

The introduction of this course is to introduce these activities and award them on choice of student.

Contents of the Course:

- Concept and need of life skills
- Self-awareness
- Decision making
- Problem solving
- Effective communication
- Interpersonal relations
- Stress management
- Empathy
- Critical thinking

Course Outcome:

After completion of this course the student will be able to:

- Identify different skills required in personal and professional life.
- Develop Consciousness of self.
- Use critical thinking and decision-making skill to solve problems.
- Communicate effectively with others.
- Establish interpersonal relations
- Apply techniques to cope with emotions and stress.

Implementation:- At the start of the semester the HOD/Academic in charge may register the student for course of life skill or may be given a choice to register for any online course activity . Such course and activity needs to be monitored, evaluated and shall be given credits as prescribed.