Higher & Technical Education Department : Mizoram, Aizawl

Approved Skill Enhancement Courses

Skill Enhancement Courses Submitted by Different Colleges.

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SPOKEN HINDI *3 Credits (1-1-1)*

Course Objectives:

1. To enable students to grasp the differences and similarities of Hindi compared with other languages.
2. To train students to be able to indulge in daily conversations in Hindi comfortably.

Course Learning Outcomes:

1. Familiarize vowels and consonants in Hindi Language.
2. Learn the Hindi words used in day to day life.
3. Engage in conversations in Hindi.
4. Be fluent in the practice of speaking Hindi.

UNIT – I : Basics of Hindi Language:

Alphabets and Pronunciations (Vowels, Consonants and Phonetics); Basic Grammar and Greetings; Numbers and Numerals (Counting, Ordinal numbers, Quantitative numbers & Fractions); Combining Letters.

UNIT – II : General Conversation:

Verbs in daily use; Genders; Greetings, Invitation, Meeting and Parting; Gratitude, Congratulations and Good wishes; Request, Permission and Instructions; Encouragement and Consent; Anger and Quarrel; Apologies; Time and Weather; Education; Health; Some DOs and DON'Ts; Important Conversations (At the Shop, at Tourist Office, at Railway Station, Enquiry at station, at Bus Stop, as a Guest, on Arrival, with Taxi Driver, at a Hotel)

UNIT – III : Words in Daily Use:

Cereals and Foodstuff; Vegetables; Flowers, Fruits and Dry fruits; Spices; Trees and its parts/contents; Personality, Professions and Occupations; Relations; Dresses; Metals and Stones; Ornaments, Make-up and Jewels/Jewellery; Colours; Directions; Weekdays; Months; Seasons; Surroundings; Time denoting words; Animals (Land and Water); Birds; Worms and Insects; Younglings of Animals; Building and its parts; Household Articles and Utensils; Army and War; Stationery Items; Music Instruments; Tools.

Practicum:

1. Reciting and writing Hindi vowels and consonants.
2. Detail introduction of self, someone else and things in Hindi.
3. Pair and Group conversation/discussion in Hindi.
4. Field visit to Hindi speaking community/people and exercise conversation with them.

Suggested Readings:

1. Delacy R. and Joshi S. (2014) "Elementary Hindi: Learn to Communicate in everyday Situations" Tuttle Publishing, North Clarendon,Vermont.
2. Snell R. (2013) "Get Started in Hindi" Teach Yourself, London.
3. Snell R.(2010) "Complete Hindi: Beginner to Intermediate Course" Teach Yourself, London.

COMMUNICATION SKILL-SPOKEN ENGLISH *3 Credits (1-1-1)*

Course Objectives:

1. To equip the learners with effective spoken and listening skills in English
2. To train learners in spoken English necessary for essential communication for daily use/jobs/workplaces

Course Learning Outcomes:

1. Knowledge and understanding of English Grammar
2. An ability to understand English and to develop effective and fluent communication skill in English

Unit 1: BASIC GRAMMAR, COMMON EXPRESSIONS, GENERAL CONVERSATION

Greetings/Invitation/Meeting and Parting/Gratitude
Words in Daily Use
Idioms and Phrases
Parts of Speech, Tense

Unit 2: PHONETICS

Individual Sounds, Place of Articulation, Manner of Articulation
Description of Consonants, Diphthongs, Vowels

Unit 3: LISTENING, READING, COMPREHENSION

Reading practice, Test of Listening and Comprehension skills

Practicum:

1. Practice of Listening/Comprehension skills in English
2. Practice of Pronunciation, Spoken skills in English/ Language Laboratory Class

References:

Koneru, Aruna. *Professional Communication*. McGraw Hill Publication, 2017.
Kumar, Neeraj. *Spoken English.* NTC Publications, 2018.
Tiwari, Anjana. *Communication Skills in English*. Khanna Publishing, 2022.

ENGLISH PROFICIENCY COURSE (LEVEL 1 BASIC PHONETICS AND SYNTAX)

3 Credits (1-1-1)

Objectives:

1. To enable students to be able to articulate English phonemes correctly.
2. To instill confidence in using English daily.

Expected learning outcomes:

1. Students will familiarize themselves with the precise pronunciation of vowels and Consonants in English.
2. Students will be able to use English with the least grammatical error.
3. The learner will be able to understand the placement of stress in English.
4. International patterns in English will be more apparent after learning the course.
5. Students will be able to understand syllable structure and its importance in English.
6. The course will help the learner with fluency and comfort in speaking English.

UNIT – I: Vowels and Consonants

Articulation of English vowels, long and short vowels, diphthongs, diphthongs, rounded and unrounded vowels, tongue height, vowel backness and frontness, manners, and place of articulation.

UNIT – II: Basic Syntax

Sentence structure, parts of speech, grammatical rules, concept of concord.

UNIT – III: Syllable, Intonational, and stress pattern

Syllable structure, strong and weak syllables, form and functionality of intonation, nature of stress, level of stress, stress in simple words, and complex word stress.

Practicum:

1. Audio listening and practicing of articulation in the Language Lab.
2. Individual verbal assessment.
3. One-on-one interaction.

Suggested Readings:

1. Peter Roach (1983), *'English Phonetics and Phonology',* Cambridge University Press.
2. RP Sinha (2002), *'Current English grammar and usage with composition',* Oxford University Press.
3. Bansal R. K, Harrison J. B (1972), *'Spoken English'* , Orient Blackswan Private Limited.

SOFT SKILLS *3 Credits (1-1-1)*

Course Objectives:
To help the students build character, personality, and principle, as well as develop interpersonal skills.

Unit I: Introduction to Personality Development:
Basics of Personality Development and its importance.

Unit II: Grooming Personality:
Emotional Intelligence, Critical thinking, Motivation, Perseverance, Teamwork, Confidence.Body language and personality – art of public speaking – characteristics of a good speech.

Unit III: Communication Skills:
Verbal and non-verbal communication techniques. Overcoming communication barriers.

Practicum: Mock Interview

Suggested Readings:
1. Rajiv K Mishra: *Personality Development*, Rupa& Co.
2. Wallace and Masters: *Personal Development for Life Work*, 8th Edition, Thomson
3. Goodwill Publishing House: *All About Body Language*
4. *Professional Communication*. Koneru, Aruna. Tata Mc Graw Hill Publishing Company Limited, 2017

TEACHING SKILLS **(***3 Credits (1-1-1)*

Course outcomes:

To develop understanding of the concept of Teaching
To develop ability to teach by different methods of teaching.

Course learning outcomes:
Understanding the nature of teaching and good teaching skills.
Understanding the skills required for effective teaching
Understanding the different methods of teaching

UNIT-I: Concept of teaching and teaching skills

- Meaning of teaching skills and nature of teaching
- Levels of teaching at memory level
- Skills required for effective teaching

UNIT-II: Pedagogical skills

- Management Skills
- Content related skills

UNIT-III: Methods of teaching

- Lecture method of teaching
  Advantage and disadvantages
- Story telling method of teaching
  Advantages and disadvantages

Suggested readings:

Siddiqui, M.H. (2008) Models of Teaching. Guwahati: DVS Publishers and Distributions
Sharma, R.A (1991) Technology of Teaching, Meerut: Loyal Book Depot
AIEPA (1971) Modern Management Techniques in Educational Administration. New Delhi: Asian Ins. Of Ed. Planning and Administration
Kumar, K.L. (2003) Educational Technology. New Age International Publishers
Four Authors (1989) Technology of Teaching and Essentials of Teaching Learning (Educational Innovations). Delhi: DhanpatRai and Sons
Joseph, Mukalel C. (1998) Creative approaches to classroom Teaching. Discovery Publishing House, ND

LANGUAGE SKILLS *3 credits (1-1-1)*

Course Objectives: The course has been designed to address some basic concept of language skills i.e speaking, listening, reading and writing skills. The course will also heighten student's awareness of correct usage of English grammar in writing and composition.

Course Learning Outcomes: At the end of the course students are expected to acquire basic understanding of language skills to enhance their ability to communicate effectively. Students are expected to identify common grammatical errors in English to help avoid errors in writing as far as possible.

Unit I : Public Speaking Skills; Persuasive skill; audience awareness; tone; timing; body language. Listening Skills; barriers to listening; overcoming listening barrier; improving listening skills

Unit II: Reading skills, types of reading, desirable Reading Habits, Undesirable Reading Habits, Reading Speed (with exercises)

Unit III: Common grammatical errors in English

Recommended Texts:

1. Koneru, Aruna, English Language Skills -I. The ICFAI University Press.2007
2. Koneru, Aruna, Professional communication. Tata Mc Graw Hill Publishing company limited, 2017
3. ELTI (SCERT) Common Errors in English (with special reference to Mizoram) . Mizoram Govt Press.2008

CREATIVE WRITING SKILL **(***3 Credits (1-1-1)*

Course Objectives:

1. To help learners understand the principles of creative writing and the distinction between different literary genres.
2. To sharpen the creative and critical faculties of learners.
3. To enable learners to put into practice the various forms of creative writing that they have studied through the course.

Unit I: Fundamentals of Creative Writing:

Meaning and Significance of Creative Writing, Genres of Creative Writing: poetry, prose, fiction, non-fiction, drama and other forms. Literary terms, Literary Devices, Proof Reading and Editing.

Unit II: Traditional Forms of Creative Writing:

Fiction: short story, novella and novel, Poetry, Drama, Essay, Fable. Non-fiction: Biography, Memoire and Autobiography, Travelogues, Diaries, Self-Narrative Writing Unit.

Unit III: New Trends in Creative Writing:

Web Content, Writing and Blog Writing, Script Writing, Journalistic Writing, Copywriting, Graphic Novel, Flash Fiction

Practicum:

Creative writing session.

Suggested Readings:

1. Abrams, M.H. Glossary of Literary Terms. Boston: Wadsworth Publishing Company, 2005.
2. Atwood, Margaret. Negotiating with the Dead: A Writer on Writing. Cambridge: CUP, 2002.
3. Bell, James Scott. How to Write Dazzling Dialogue.CA: Compendium Press, 2014.
4. Bell, Julia and Magrs, Paul. The Creative Writing Course-Book. London: Macmillan, 2001.
5. Earnshaw, Steven (Ed). The Handbook of Creative Writing. Edinburgh: EUP, 2007.
6. Egri, Lajos. The Art of Dramatic Writing. NY: Simon and Schuster, 1960.
7. Gardner, John. The Art of Fiction. New York: Vintage, 1991.
8. Hamer, Enid. The Metres of English Poetry. Booksway, 2014. Sartre, Jean-Paul. What Is Literature? And Other Essays. Harvard: Harvard Univ. Press, 1988.
9. Turabian, Kate L. A Manual for Writers. Chicago: Univ. of Chicago Press, 2007.
10. Ueland, Brenda. If You Want to Write. India: General Press, 2019.
11. Zinsser, William. On Writing Well. New York: Harper Collins, 2006.

COURSE ON SERVING SKILL & FINE DINNING ETIQUETTE *3 Credits (1-1-1)*

Course Objectives:

1. To equip the student with the knowledge of basic information required for fine dining.
2. To equip the student with the knowledge of serving skills necessary to wait a table.
3. To equip the student with the knowledge and attribute vital for serving or hosting a formal dinner.
4. To provide the student the basic skill required for a job in service industry.

Unit- I Introduction to Service Industry& Job Opportunity

1. Service industry in India- Food & Beverage
2. Social skills-meeting, greeting, seating and presentation of menu.
3. Personal hygiene- importance of maintaining hygiene- hair, nails, teeth, etc.
4. Grooming- improve appearance, dress code, make up &jewellery.
5. Communication Skills and attention to details

Unit- II Knowledge in Food & Beverage Service

1. Basic knowledge in Cutleries and serving tools including salvers.
2. Basic knowledge in Crockeries and glass wares
3. Napkin and Service cloth
4. Food and beverage terminology
5. Laying of tables- American & Continental
6. Preparing for service- taking orders
7. Clearing the table

Unit- III Hosting & Dining etiquette

1. Importance of dining etiquette
2. Etiquette in dining
3. Basic knowledge in fine dining
4. Soup, main course, condiments, cheese platter
5. Tea & coffee, Cocktail &mocktail, Wines & Liquors

Practicum

1. Cutleries & crockeries identification
2. Setting a table
3. Clearing a table
4. Dining etiquette
5. Visit to local restaurant.

Suggested Readings

1. Fernandes, Cletus. (2016). *Food & Beverage service for students of Hospitality: For Hotel and Cruise line operations.* Notion Press
2. Prajapati, Kanchan. (2016). *Notes for Food and Beverage.* Notion Press

SPORTS AND PHYSICAL EDUCATION COURSES *3 Credits (1-1-1)*

Aims and Objectives:

- Promote physical fitness and health by providing opportunities for regular physical activity.
- Develop motor skills and moral development.
- Enhance social skills and teamwork.
- demonstrate knowledge of fitness concepts, principles, and strategies.
- Develop self-confidence and self-esteem.

Course Outcomes: A physically educated person is one who has mastered the necessary movement skills to participate confidently in many different forms of physical activity; one who values physical fitness and understands that both are related to health and well- being

- Improved understanding of the importance of maintaining a healthy lifestyle
- Improved knowledge of rules and strategies of particular games and sports
- Self-confidence and self-worth as they relate to physical education recreation programs
- Acquire comprehensive knowledge and sound understanding of fundamentals of physical education
- Develop practical, theoretical skills in physical education

UNIT I Physical Education, Physical Fitness, Health Wellness and Lifestyle –

1 Meaning, Aims & Objectives of Physical Education,

2 Meaning and Importance of Physical Fitness, Health, Wellness & Lifestyle

3 Growth and development of Physical Education in India

3. Contribution of H.C.Buck and Buchanan for promotion of Physical Education.

UNIT -2. Sports Training and Sports Training Cycle

1. Concept, aims and Principles of Sports Training,
2. Significance of Sports Training.

   Basic Principles of Sports Training. Definition of a coach, qualities of a good coach, duties and responsibilities of a good coach.
3. Physical fitness and its components, different exercises for developing the various components of physical fitness.
4. Types & Method to Develop Strength, Endurance and Speed,

UNIT 3 Sports & Nutrition, Psychology & Sports, Rehabilitation & Treatment

1. Concept/Importance of balance diet and nutrition,

2. Personal Health Programme: Personal cleanliness- care of mouth, teeth, eyes, ears, nose, skin, nails, clothing and its importance.
3. Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self Talk, Goal Setting
4. Food and Nutrition: Principles of nutrition, balance diet, diet for athletes, water and electrolyte balance.
5. Drug and Health: effect of tobacco, alcohol and drugs on health. Doping methods, effects on health.
6. Practical – Taekwondo

Suggested Readings

1. Prof. Ajmer Singh, Dr JagdishBains, Dr.Jagtar Singh Gill, Dr,R,SBrar – Essentials of Physical Education.
2. .Dr.AbhayN.Buchha - Contemporary Issues in Physical Education, Fitness and Wellness, Health Education & Sports Nutrition
3. .Dr. Ajay Vasant Rao Gulhane - Athletic Care & Rehabilitation
4. Dr M.L Kamlesh - Psychology in Physical education and Sport
5. Goel, R.G. and Goel, V.: Encyclopedia of Sports and Games. Vikas Publication.
6. Gangopadhaya, S.R.: Sports Psychology. S.R. Gangopadhaya.
7. Kamlesh, M.L.: Psychology in Physical Education and Sports. Metropolotan book Co. Pvt. Ltd.
8. Kirtani, R.: Physical Fitness. Khel Sahity Kendra, Delhi
9. Rai, B.C.: Health Education and Hygiene. Prakashan Kendra
10. Singh, H.: Sports Training, Kalyani Publication, Kolkata
11. Sreedhar, K.: Sports Training Method. Sowmi Publications. Chidambaram.
12. Wuest and Bucher: Foundations of Physical Education and Sports. B.I. Publication. Pvt. Ltd

BEAUTY AND WELLNESS *3 Credits (1-1-1)*

Course Objectives:

1. To understand the basic concept of Beauty and Wellness.
2. The students will be able to understand a comprehensive understanding of fundamentals of Beauty therapy and its management.
3. To understand Anatomy & Physiology with the particular functioning of system of the human body.
4. To practice Beauty therapy and physical wellness/fitness.

Learning Outcomes:

1. Understanding the relationship between physical Beauty and Wellness.
2. The course will enable the students to understand and practice the basic art of make-up.
3. Economic importance of beauty & wellness.
4. Role of skill in Art of physical beauty & wellness to promote the vocational career amongst the students.

Unit :I Introduction to Human Body Anatomy and physiology related to Human body:

- Skin
  Understand the basic structure and function of the skin and characteristics:- skin types, effect of the natural ageing process on skin and muscle tone, Identify allergies, common skin problems, root causes of skin problems, pH, Sun Protecting Factor.
- Hair
  Hair Structure, function of hair, hair growth cycle, types of hair, common hair problems.
- Nail
  Nail Structure, function, characteristics of nail and nail growth, nail diseases.
- Bones, Muscles and Circulatory System
  Brief description about the bones, muscles and blood circulation related to the hand, foot, lower arm and lower leg.

Unit : II Fundamentals of Beauty Therapy:

- Therapeutics skills:
  Yoga-therapy
  Spa-therapy
  Aroma-therapy

- Improve and maintain facial Skin Condition:
  Basics of skin care, brief introduction to facial massage, skin type analysis, client consultation, equipments and skin care products, preparing the client, Cleansing, Toning, Exfoliation, Moisturising, Mask treatment, basic and deep cleansing, Facial, Skin Treatments – Acne treatment, pigmentation treatment, skin brightening treatment, anti tanning treatment, under-eye dark circles treatment, anti-wrinkle treatment, safety precautions, after care & advice.

- Hair:
  Client consultation, hair care, head massage, shampooing, spa treatments, hair treatments, knowledge of face shapes, sectioning, tools knowledge, hair cutting techniques, hair styling techniques: straightening, perming, curling etc. Hair colorings, safety precautions, basics of blow dry, knowledge of hair styling products.

Unit :III The Art of Make-up:

- Removal of Superfluous Hair (Threading, Tweezing, Waxing):
  Superfluous hair-- definition and methods of epilation and depilation, preparation of the work area, product knowledge, allergy test, procedure, safety precaution. Brief concept and application of threading, tweezing & waxing.
- Eyelash Maintenance:
  Eyelash extension, eyelash lifting and tint etc.
- Applying the Make-up: Introduction to makeup products and their role, Day make up, Evening party make up, Bridal make up. Application of false eye lashes: techniques and care, after care & advice, air brush, artificial eyelashes, home care techniques, uses of products.
- Nail Art, Manicure and Pedicure:
  Manicure and pedicure significance, tools, equipments& product knowledge. Application process of gel polish, consultation, contra-indications, preparing the client, contra –action, safety precautions, after care & advice.

Practical

1. Demonstration of the processes of beauty therapies on human body.
2. Field Visit of beauty parlours to study salon management.
3. Demonstration of different make-ups, tools and application of different techniques of make-ups, hair-dressing, nail arts, removal of superfluous hair etc.
4. Identifying various electrical/electronic machines equipment for beauty service correctly.

Suggested Readings:

Anatomy and Physiology,"Human Anatomy" by Alice Roberts
Cosmetic Science and Technology: Theoretical Principles and Applications Mar 2017 by Kazutami Sakamoto (Editor)
TEXTBOOK of Cosmetics Paperback –2009 by Nema
Cosmetic Formulation of Skin Care Products (Cosmetic Science and Technology Series Vol.30) by Zoe Diana Draelos (Editor), Lauren A. Thaman (Editor)
The beauty book by Dr.BhartiTaneja
Miladys hair removal techniques
The world of skin care by Dr John Gray
Start hairdressing by Pat Dixon

PLUMBING *3 Credits (2-0-1)*

Course Objectives

The course aims to equip participants with a comprehensive understanding of plumbing systems, materials, and practices. It focuses on imparting the knowledge and skills necessary for safe and efficient installation, maintenance, and repair of plumbing systems, while emphasizing compliance with relevant codes and regulations in both residential and commercial settings.

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

- Develop the skills to plan and execute the installation of plumbing systems in compliance with industry standards and local regulations.
- Acquire the ability to diagnose and troubleshoot plumbing issues and apply problem-solving techniques to implement.
- Understand and adhere to plumbing codes, regulations, and safety practices.

UNIT I: Introduction to Plumbing
Importance and role of plumbing in construction and infrastructure, Historical development of plumbing systems. Overview of essential plumbing tools, Proper use, care, and maintenance of tools, Types of plumbing materials and its applications. Estimation and Costing Understanding local and national plumbing codes.

UNIT II: Residential Plumbing Systems
Design and layout of plumbing systems in residential buildings, Fixture placement and connections. Types of water supply systems, Installation of water supply lines, valves, and pressure regulators. Design and installation of drainage and venting systems, Proper sizing and placement of vents and traps. Connection to water supply and drainage systems

UNIT III: Commercial and Industrial Plumbing
Differences between residential and commercial plumbing, installation, and maintenance of water distribution systems in commercial buildings, Backflow prevention and water quality considerations. Design and installation of sanitary and storm drainage systems. Sustainable plumbing practices and technologies, Water conservation and environmental considerations in plumbing.

Practical Exercise:

- Hands-on training in plumbing techniques, including pipe cutting, soldering, and fitting installation.
- Practical exercises in designing and installing plumbing systems.
- Safety assessments and quizzes throughout the course.

Suggested Readings:

- "National Plumbing Code of India (NPC): 2016" by Bureau of Indian Standards (BIS) Plumbing Systems and Design" by Michael A. Joyce and Michael T. Kubal
- "Indian Plumbing Code (IPC)" by Indian Plumbing Association (IPA)
- "Modern Plumbing: In House and Industrial Installations" by Samuel J. Shapiro and William S. Lee
- "Plumbing: Theory and Practical" by A.C. Smith and R.L. Smith

- "Sustainable Plumbing Practices" by R. K. Ingersoll and S. J. Randel

BEEKEEPING *3 Credits (1-1-1)*

The Skill Enhancement Course on Beekeeping will blend classroom lectures, lectures by experienced beekeepers, hands-on demonstrations and field trips to give overall training and understanding of bee biology and behaviour, beehive management, and harvesting of honey.

Course Objective:
1. To understand the concept of Beekeeping.
2. To understand theoretical knowledge and practical skills necessary to start and maintain beehives and to practice it in an appropriate site.

Course Learning Outcome:
1. Awareness of Bee anatomy to sustainable beekeeping practices.
2. Understanding Beekeeping as a hobby and business venture.
3. Recognizing economic importance of Beekeeping.
4. Understanding benefits of Beekeeping for the environment.

Unit I: General Beekeeping
1. Introduction to Beekeeping.
2. Various species of bees and bee biology, different communication methods used by bees.
3. Identifying and managing Bee diseases and pests.

Unit II: Honey Bee Behaviour and biology
1. Honeybee anatomy and physiology.
2. Life Cycle of Honeybees, Social structure and roles in a hive.
3. Types of hives- pros and cons.

Unit III: Hive management, honey harvesting and beyond
1. Understanding the differences of traditional bee box and modern bee box and their productivity.
2. Benefits of beekeeping: economic, environment.
3. Honey production process: extracting, bottling, and storing.

Practical:
1. Field visits
2. Creating necessary beekeeping equipment and tools.
3. Installing bee boxes at the selected sites within the campus.

References:
1. Abrol, D.P. *Beekeeping: A Compressive Guide to Bees and Beekeeping*. Scientific Publishers (India). Jodhpur, 2010.
2. *"Apiculture". Handbook of Agriculture 6th ed.* ICAR. New Delhi; 2019.
3. Mishra, RC. *Honeybees and Their Management in India.* ICAR. New Delhi, 2013.
4. Morrow, Erin. *Beekeeping for Beginners The Beginning Beekeepers Guide on Keeping Bees Maintaining Hives and Harvesting Honey.*MihailsKonoplovs (Machwan, New Delhi), 2015.
5. Beekeeping, NSQF Level 4, National Institute of Open Schooling (A study material provided by NIOS)

TOUR GUIDE AND ESCORTS*3 Credits (1-1-1)*

Objectives: To provide students with the foundational knowledge and skills requiredforeffective tourist guides and escorts.

Outcome: At the end of the course, learners will be able to understandthe role of Tourist Guide and escort for promoting sustainable tourism while ensuring their safety, comfort and satisfaction.

UNIT- 1: Introduction

Meaning of Tourism,Tourism regulations and ethics, Understanding of Tourism industry. Meaning of Tourist Guide and Tour Escort.Types of Tourists Guiding Styles and Approaches. Similarity and dis-similarity of Guide and Tour Escort.

UNIT -2: Role and Responsibilities of Tour Guide

Types of Guiding. Roles and responsibilities of TourGuide. Qualities of a good Tour Guide. Tourist safety and well-being. Ethics of Guiding.Meaning and importance of communication skills

UNIT-3: Role and Responsibilities Tour Escorts

Roles and responsibilities of a Tour Escort. Good qualities of Tour Escort.Understanding local customs and traditions.Promoting responsible and sustainable tourism. Encouraging eco-friendly practices in tourism.First aid basics. Handling emergencies and crisis management.

Suggested Reading List:

1. *Tourism: Principles and Practices*bySampad Kumar Swani, Jitendra Mohan Mishra (2011), Oxford University Press, DaryaGanj, New Delhi.
2. *Travel and Tourism Management*Md. Abu Barkat Ali (2015), PHI Learning, Pvt. Ltd. Rimjhim House, New Delhi- 110092.
3. *The Ultimate Guide to Theory &Practices*CosmosSracooh&KwakuPassah (2021), Amazon Digital Services LLC-KDP, USA
4. *Tour Guiding"A training manual & Professional Approach of Guiding in Tourism"*byDr.Chiranjib Kumar (2016), CreateSpaceIndependent Publishing Platform. South Carolina, USA.

BASIC FASHION DESIGNING *3 Credits (1-1-1)*

Course Objectives

The course aims to introduce fundamental concepts of fashion design. It focuses on nurturing creativity, enhancing drawing and illustration skills, and imparting a basic understanding of garment construction. Students will develop the ability to ideate fashion concepts, create basic clothing designs, and comprehend key principles in fashion design, paving the way for further exploration in the field.

Course Learning Outcomes

After completion of the course, students will:

- Develop the ability to conceptualize and sketch fashion design ideas, demonstrating creativity and an understanding of design principles.
- Acquire foundational knowledge of garment construction techniques, including pattern making and sewing, to transform design concepts into tangible garments.
- Gain insight into the fashion industry, trends, and the importance of design aesthetics, fostering an appreciation for the multifaceted world of fashion design.

Unit I: Fundamentals of Fashion Design
Historical evolution of fashion, the role of a fashion designer in the industry. Colour theory in fashion, Basics of fabric selection and textile knowledge. Principles of design: balance, proportion, harmony, rhythm, etc. Introduction to fashion sketching techniques, creating fashion croquis (figure templates), Rendering fabrics and textures in sketches, Idea generation and concept development, Mood boards and inspiration gathering, Initial garment sketching and design iteration.

Unit II: Garment Construction and Pattern Making
Operating sewing machines safely, Basic sewing techniques (seams, hems, stitches), Overview of sewing tools and equipment. Understanding the importance of patterns, drafting basic patterns (e.g., skirts, tops), Making pattern alterations and adjustments. Cutting fabric and pattern layout, Stitching garments from patterns, Fitting and making necessary alterations. Adding closures (zippers, buttons, etc.), Hemming techniques and finishing touches, Quality control and garment inspection.

Unit III: Portfolio Development and Fashion Presentation
Creating a comprehensive fashion design portfolio, Selecting, and organizing design projects, Preparing digital and physical portfolios. Planning and organizing a fashion show. Preparing models and garments for presentation, Showcasing designs effectively.

Practical Exercise:
Completion of individual fashion projects. In-class critiques and peer feedback. Preparing for the final presentation.

Suggested Readings:

"Fashion Design Drawing Course: Principles, Practice, and Techniques: The Ultimate Guide for the Aspiring Fashion Artist" by Caroline Tatham and Julian Seaman
"Patternmaking for Fashion Design" by Helen Joseph Armstrong
"Portfolio Presentation for Fashion Designers" by Linda Tain
"The Fashion Designer's Textile Directory" by Gail Baugh

"Fashion Design Course: Principles, Practice, and Techniques: A Practical Guide for Aspiring Fashion Designers" by Steven Faerm

BASICS OF TAILORING *3 Credits (1-1-1)*

Course Objectives:

1. To introduce the basic techniques of tailoring.
2. To provide knowledge and training of basic tailoring skills.

Course Learning Outcomes:

1. Developing the basic skills of tailoring.
2. Be familiar with the use of tools & equipment used in tailoring trade.
3. Have knowledge of taking correct body measurements.
4. Learn basic hand stitching techniques.

UNIT I: Introduction to Tailoring

Tailoring as a trade; Utility and scope; Essential terminology: Fabric, Selvedge, Sloper, Bodice block, Pattern, Grain, On grain, Off grain, Bias, Arm scye, Crotch, Ease, Fit, Inseam.

UNIT II: Tools and Equipments Used in Tailoring

Measuring tools - Measuring tape, L-scale, Metre scale; Marking tools – Tracing wheel, Tailor's chalk; Cutting tools - scissors, dress maker's shears, electrical, Scissors.

UNIT III: Measurement taking and basic stitching

Measuring techniques; Importance of taking measurements; Definition of stitching; Types of stitches- temporary and permanent stitches.

Practicum:

1. Field visit to an established training centre.
2. Making sample pieces using hand stitching skills.
3. Observation of tailoring and garment making in local boutiques.

References:

Apparel Made-ups and Home Furnishing Sector Skill Council. (2016). *Self-employed tailor: Participant Handbook*. 1st edition. New Delhi: RachnaSagar Pvt. Ltd.

HAIR CUTTING COURSE(MEN & WOMEN) *3 Credits (1-1-1)*

Course Objectives:

1. To look beautiful, lovely and youthful.
2. To feel better and give us an extra boost of stress levels by looking and feeling good.
3. To keep the hair clean and healthy
4. To prevent hair loss and promote growth
5. To promote better scalp circulation, helping stimulate healthier hair growth.
6. To reduce damage from heat styling and other elements that contribute to unhealthy hair
7. To equip and improves student's abilities for their future career.

Course outcome:

After studying this course, students will gain knowledge on how to treat hair problems and cut hair in different style and students will understand the importance and value of taking good care of hair and they will be inspired to pursue careers in hair cutting and styling for those who are more interested to earn a living.

Unit I: Hair care:

Importance of hair cutting, Natural hair care and Medical care (trichology), Hair problems - hair fall and damage, Hair cosmetic: Hair damage, Shampoos, Surfactants, Conditioners, Mineral and vegetable oils, Spa and Keratin.

Unit II: Hair Cutting Tools and Techniques:

Different tools and methods of uses, Scissors, Comb, hair Iron, hair dryer, Razor, Hair roller, Hair clipper, hair cutting shears, straight razor, Brush. Four basic haircuts. Differences between a haircut and a hairstyle.

Unit III: Practical:

Hair cutting & treatment, Seminar or workshop by inviting resource person from Beautician/ related Institution. Exposer Visit to various hair cutting salon.

Suggested reading:

1. Wilfred L, (2021) '*The hair Bible': The Ultimate Guide to Hair Care*. Publisher, Zen Mastery Srl.
2. Fonceur La, (2019) '*Secret of healthy hair': Your Complete Food and Lifestyle Guide for healthy Hair with Season Wise Diet Plans and Hair Care Recipes,* Publisher Notion Press
3. Dr Mir MubhasarMashqoor (2023) '*A Concise Textbook of Trichology and Scalp dermatology,* Orange Book Publication
4. DrShivakumar K (2021) *'Hair Problems'* B. Jain Publishers Pvt Ltd.

Pope N, (2012), "*The Illustrated Guide to Professional Haircare & hairstyles" : With 280 Style Ideas and Step-by step Techniques,* Publisher HERMES HOUSE

CARPENTRY & MASONRY BASICS FOR COLLEGE STUDENTS *3 Credits (1-1-1)*

Course Description

A Skill Enhancement Course that introduces carpentry and masonry to college students, designed to give an overview of the various components of residential construction and building techniques used most commonly. The course aims to accomplish the above through:

a. the imparting of technical know-how through classroom interaction, and
b. the application of the technical know-how through demonstrations, videos, and hands-on practice.

Primary expected learning outcomes:

1. The course is intended for students to impart the basic skills and knowledge of construction as a valuable life skill or to be the first step to further pursue a career in the construction industry.

Secondary expected learning outcomes:

1. Aside from basic competency in construction, students are to learn the value of physically work, to learn the importance of teamwork, along with other soft skills, and to learn to take pride in their hard work.

Unit I (Concepts)

Topic 1: The uses and functions basic hand tools and power tools used in carpentry and masonry with emphasis on maintenance and safe operation. Student must understand and be able to use terminology used in construction.

Topic 2: The uses and characteristics of various lumber, engineered lumber, nails, fasteners, sheathing materials and various other building materials that are utilized in the carpentry.

Topic 3: Methods and application of RCC, including, wall layout principles, basic building with bricks and blocks, mixing and casting concrete, and finishing techniques for concrete flatwork.

Topic 4: Students must understand the various measurements of lengths and weights used in construction and must be able to comprehend technical drawing/blueprints. Basic residential house layout and construction techniques to do with the essential elements of buildings: drainage, septic tanks, flooring, fittings, tiling, stairways etc.

Unit II (Carpentry Practical Application)

Practical 1: Students will practice the use of carpentry tools and techniques. This may be done by repairing wooden furniture and wooden structures found on campus and/or by crafting new furniture.

Practical 2: In order to handle building materials and to be able to translate blueprints into physical constructions students may build a small structure on campus or a civic utility structure at the institute's Adopted Village of Luangpawl.

Unit III (Masonry Practical Application)

Practical 1: In order to use tools and practice masonry techniques students may build a small structure on campus or a civic utility structure at the institute's Adopted Village of College. In other words, this practical may be tied-in with the Practical 2 of Carpentry given above.

Practical 2: Students can be shown first-hand how the essential elements of buildings function and how their construction should be approached by instructors.

Suggested Readings:

1. E- book: MASON(Building construction Vol. 1 & 2) Trade Theory & Practical (http.//. Bharakskills.gov.in)

2. E- book: CARPENTER(Vol. 1 & 2) Trade Theory & Practical (http.//. Bharakskills.gov.in/Home/CTS)

ELECTRICAL HOUSE WIRING *3 Credits (1-0-2)*

Course Learning Outcomes: On completion of this course, student will be able:

1. To handle basic electrical and electronics equipment's.
2. To do staircase wiring.
3. To understand domestic wiring procedures practically.
4. To install inverter.
5. To install all the domestic electronics appliances.

Unit 1:

Electricity, Charge, Electric Potential, Potential Difference, Electric Current, Resistance and Resistivity, Electric Power, Electrical Energy, Ohm's Law, Kirchhoff's Laws, Direct Current (DC) and Alternating Current (AC), Types of Circuit, Why Parallel Connection is Mostly Preferred over Series Connection?

Basic Symbols of Electricity, Electrical Devices, Electrical Tools, Load, Type of breakers, Working Principle of MCB, Poly Vinyl Chloride (PVC) Wires, Choosing Electrical Wire Size, India Color Code for Electrical Wiring, Electrical Wire Joints and Soldering of Joints, Devices of measuring of Electricity.

Electricity Supply Specifications (Single and three phases), General Rules for Wiring, Types of Electrical Wiring Systems, Estimating and Costing of Electrical Installation,Calculation of Current and Selection of Items, Electricity Bill Calculation, Electrical Hazards, Earthing, Lightning protection, Safety precautions.

Unit 2:

1. Prepare electrical wire joints and carry out soldering.
2. Connect one bulb by one switch.
3. Connect three bulbs by three switches as a parallel.
4. Connect one switch and three bulbs by series connection.
5. Connect three bulbs with one switch by parallel.
6. Connect 5 amp four two-pin sockets with one switch.
7. Connect one ceiling fan with one switch.
8. Connect one bulb with one switch, one ceiling fan with one switch, two two-pin sockets with one switch.
9. Connect one calling bell controlled with one push switch.
10. Connect 15 Amp socket with 15 Amp switch and circuit breaker.
11. Connect one tube light with one switch and one bulb with bed switch.

Unit 3:

1. Prepare wiring for a stair case arrangement using a two-way switch.
2. Prepare extension board with 3 sockets (5A) and 3 switches (5A) - 4 meter long wire power strip with 5A 3 pin plug.
3. Prepare house wiring switch board connection.
4. Practice testing / fault detection of domestic wiring installation and repair.
5. Install single phase electrical house wiring for 5 rooms.
6. Install single phase with a number of sub-distribution boards having a common main switch fuse.

7. Install single phase with a number of sub-distribution boards each connected to the mains through a separate fuse.

8. Install inverter connection in board.

Recommended Books:

1. *Electrician, Craftsmen Training Scheme (CTS), NSQF Level-5*, Central Staff Training and Research Institute, Kolkata.

2. *Electrician, NSQF Level-5,* 2nd Semester, National Instructional Media Institute, Chennai.

3. M.V. Roa, *Text Book of Electrical Sciences*, Subhas Store.

4. K. Mehta and G.V. RamanaMurthy,*Electrician 3-In-1*, Computech Publications Limited.

5. *Guidelines for Electrical Wiring in Residential Buildings,*Suruhanjaya Tenaga.

6. Barrie Rigby, *Design of Electrical Services for Buildings,4th Edition,*Spon Press.

7. Darrell Locke IEng MIEE ACIBSE, Electrical Contractors' Association, *Guide to the Wiring Regulations,17th Edition IEE Wiring Regulations (BS 7671: 2008),* John Wiley & Sons, Ltd.

8. *Electrical Workshop Practice (3037)*, Ma'din Polytechnic College.

9. Lab-Volt Systems, Inc.Tech-Design Residential WiringModule Guide

10. *Electrical Installation Guide 2013 According to IEC International Standards,* Schneider Electric S.A.

MUSHROOM CULTIVATION *3 Credits (1-1-1)*

Course Objectives:

1. To provide knowledge to the students on mushroom cultivation, production and processing techniques.
2. To provide detailed hands-on training on mushroom cultivation, packing and marketing.

Course Outcome:

1. Students will be able to produce spawn on their own.
2. Learned the prospects and scope of mushroom cultivation in small scale industry.
3. They are aware of the identification of edible and poisonous mushrooms.
4. Understand the pest and disease of mushroom

Theory

Unit 1

- Scope and Importance
- Nutritional and Medicinal Value of edible mushrooms
- Edible and Non-edible mushrooms
- Morphology and characteristics of Button mushrooms (*Agaricusbisporus)* and Oyster mushroom (*Lentinussajorcaju*Synm. *Pleurotussajorcaju*)

Unit 2

- Mushroom farm layout and requirements
- Spore culture and preparation of spawn
- Cultivation procedure of Button mushrooms (*Agaricusbisporus)* and Oyster mushroom (*Lentinussajorcaju*Synm. *Pleurotussajorcaju*)
- Pest and disease of mushroom (pre and post-harvest)

Unit 3

- Harvesting
- Short- Term Storage (Refrigeration upto 24 hours)
- Long -Term Storage (Canning, pickling)- Drying, storage in salt solutions
- Marketing

Practical

1. Oyster Cultivation and demonstration of Button mushroom cultivation.
2. Spawn making, fruiting bags production and Processing.
3. Field Trip to commercial mushroom farm/any scientific institutions.

Suggested Readings:

1. Mushroom Cultivation in India. BC Suman, VP Sharma
2. A text book on mushroom cultivation- Theory and Practice.
   Ashok Agarwal, Yash Pal Shrama and EshaJangra.

PAINTING AND SKETCHING *3 Credits (1-1-1)*

Course Objectives:

1. The major focus on drawing and painting exercise from objects, nature, and human figure to study proportion.
2. To discover and enhance the hidden talents of the students.
3. To maintain and help focus on mental health through art.

Unit-I: Basic Sketching

1. Free hand drawing
2. Objects and nature study
3. Indoor and outdoor sketching.

Unit-II:

1. Free hand drawing from human figure to study proportion.
2. Eye level, source of light, tonal variation, composition, details about light and shades
3. Medium, Pencil, Charcoal, Pen, Ink, Acrylic colour, Oil colour.

Unit-III:

1. Types of brushes, use of spatula, knife, roller
2. Painting techniques (landscape)
3. Detail practice (portrait study, realistic figures, imaginary composition)

Practicum:

1. Project work on indoor and outdoor painting/sketching.
2. Life model painting.
3. Organising exhibition.

Suggested Readings:

1. Learn pencil drawing and shading -book-2 : Educational based art book : *by Nongdampaleitanthem,january 2019*
2. Beginner's guide to Sketching : Characters, Creatures and concepts : *by 3dtotal publishing, september 2015*
3. Oil painting: The ultimate beginners guide to mastering oil painting and creating beautiful homemade art in 30 minutes or less: *by Victoria G Bonsni.*

MIZO TRADITIONAL WEAVING *3 Credits (1-1-1)*

Unit I : (i) Introduction to Mizo traditional weaving
(ii)Tools (Thembu) Name and Utility
(iii)Loom (Thread) processing for weavering

Unit II : (i)Preparation of loom/thread for weavering
(ii)Starching loom/thread (la chum)
(iii) Drying loom/thread (la zar)
(iv) Combing loom/thread (la khuih)

Unit III: (i)Din let
(ii) Lal hlum
(iii) Puan ban lehthlan
(iv) Latlei

Unit IV: (i) Puantah
(ii) Puanzeh
(iii) Puankhirh
(iv) Puanzawh

SKILL COURSE IN MIZO FOLK DANCE *3 Credits (1-1-1)*

Introduction:
The paper is designed to familiarize the student the folk songs and dances of the Mizo and their significances in cultural identity ; and to learn in practical the various Mizo folk songs and dances.

Course Outcomes :

1.Knowledge and understanding of Mizo folk dance traditions, including its history, cultural significance, and various dance forms.
2. Development of technical skills and proficiency in performing Mizo folk dance steps, movements, and gestures.
3. Opportunities to showcase and perform Mizo folk dance at cultural events, festivals, or competitions.

Unit	Content	Method	Credit
1	Theory : a) Origin of various folk songs and dances in Mizoram b)Costumes relating to folk songs and dances c) Significances in cultural identity	Lecture	1
2.	Practical : a) Khuallam b) Chai c) Solakia d) Conglaizawn e) Zangtalam	Practical	1
3.	Practical: a) Cheraw b) Tlanglam c) Pawhlohthloh d) Chheih lam e) Sarlamkai	Practical	1

BASIC PHOTOGRAPHY *3 Credits (1-1-1)*

Course Duration	One Semester (6 months)
Full marks	100
Credits	3
Course Objectives	1. Understand the art and science of photography 2. Handle a DSLR (Digital Single Lens Reflex) camera and point and shoot cameras 3. Capture pictures in available lighting conditions 4. Appreciate the applications of photography
Course Content/ Syllabus	
Unit-1	• Definition and scope of Photography • History of Photography • Basic principles of film and digital photography • Photographic devices – DSLR/Mirrorless camera, Mobile
Unit-2	• The Exposure Triangle – Aperture, ISO, and Shutter speed • Orientation – Portrait and Landscape • Framing and Composition – Rule of thirds, Proportions, Leading lines, Point of view, Depth of FieldandBokeh • Camera Angles and Operations, Studio and Lights
Unit-3	**Genres of Photography** (The learners will be exposed to at least 5 genres from, but not limited to, the list below) • Photojournalism • Still Life and Product and Food Photography • Travel Photography • Nature and Wildlife Photography • Landscape photography • Street photography • Abstract photography • Macro photography • Event photography **Practical component (assignment)** The learners will be given a photo-assignment(s) to help them put into practice the theory component of the Course ➢ Handling of a mobile camera or DSLR/ Mirrorless camera ➢ Exposure, Composition, and Framing ➢ An assignment on any one of the genres
Suggested Reading	
1. Ang., T. (2008). Fundamentals of modern Photography. London, Mitchell. 2. Birnbaum (1995), How to take Good Pictures, USA, KodakCompany 3. Brayan Peterson(2010), Understanding Exposure, , New York,Amohoto Books 4. Bush David(2012), DSLR Photography for Dummise, New Jersey,John Wiley & Sons Publication. 5. Busselle Michael (1992), Photographic Assignments, London,David& Charles plc. 6. Freeman Patterson “The Art of Seeing” by Key Porter Books. 7. Kelby, S. (2012). The digital photography book. Peachpit Press. 8. Langford, M., Fox, A., and Smith, R.S. (2013). Langford basic photography:theguide for serious photographers. Amsterdam: Focal Press/Elsevier. 9. Lowe Jim (2007), Architectural Photography: Inside and Out, USA, Hippo Books	

10. MiotkeJim(2010), Better Photo Basics: Beginners Guide, NewYork, Crown Publishing Group.
11. Peterson, B. (2016). Understanding exposure: how to shoot great photographs with any camera. AmPhoto Books.
12. Scott Kelby (2014), Digital Photography, UK, Peachpit Press
13. Tim Fitzharris "Landscape Photography" Firefly Books.
14. Udemy. Photography Masterclass: A Complete Guide to Photography. https://www.udemy.com/course/photography-masterclass-complete-guide-to-photography/?matchtype=b

MUSIC : A LEARNER'S GUIDE *3 Credits (1-1-1)*

OBJECTIVES :

1. To impart basic knowledge in theory of Music.
2. To possess the knowledge of Music developments and practices in Mizoram
3. To acquaint the students with basic skills in Music.

UNIT I : MUSIC THEORY

1. Concept of Music.
2. Different kinds of Musical Instruments.
3. Melody, Harmony, Rhythm, Tone.
4. Musical Terms – Dynamic, Articulation, Colour, Tempo.

UNIT II : MUSIC PRODUCTION

1. Development of growth of Music in Mizoram.
2. .Stages and means of Music Production in Mizoram.

UNIT III :

Practical 1 : MUSICAL INSTRUMENTS

1. Guitar : Chord – major, minor, seventh, beat and bar.
2. Keyboard : Chord – major, minor, seventh, beat and bar.
3. Percussion – Beat and bar, Rudiments.

Practical 2 : TONIC SOLFA

1. Modulation.
2. Beat.
3. Bars.

Suggested books :

1. A Handbook Knowledge – James Brown.
2. The AB Guide to Music Theory – Part 1 - Eric Taylor.
3. The Arts of MUSIC – Alan Blackwood.
4. Rock School Popular Music Theory Guide Book Debut to Grade 5.
5. How to play Keyboard – Mystique Publication.
6. How to play Guitar – Mystique Publication.
7. Chord Book – Mystique Publication.

PIG FARMING *3 Credits (1-1-1)*

The Skill Enhancement Course on Pig Farming will blend classroom lectures, lectures by Veterinary Doctors and other Field Experts, hands-on demonstrations and field trips to give overall training and understanding of Pig Farming, management, and social significance of pigs which will provide students with fundamental skills and knowledge to start their own Pig Farming venture.

Course Objective:

1. To understand the concept of Pig Farming.
2. To have basic theoretical knowledge and practical skills necessary in raising pigs for subsistence and commercial purposes.

Course Learning Outcome:

1. Understanding Pig Farming as a hobby and business venture.
2. Basic comprehension of pig anatomy and physiology for a more productive pig rearing.
3. Understanding economic importance of Pig Farming.
4. Recognising cultural and social significance of Pig Farming in the society.

Unit I: Overview of Pig Farming

1. Introduction to Pig Farming and its role in Livestock farming system.
2. Understanding the role of a 'Piggery Farmer'.
3. Economic, cultural and social aspect of Pig Rearing.

Unit II: Nutrition, Health and Behaviour

1. Principles of Pig Nutrition and feeding.
2. Common diseases and prevention- Vaccination and deworming, Bio-security.
3. Behaviour and Reproduction

Unit III: Pig Housing and Management

1. Pig breeds and Selection Criteria.
2. Setting up Pig Pens and Environmental Considerations, Waste disposal.
3. Market evaluation, Loans and Subsidies from Government.

Practical:

1. Local Field Visit to Pig Farm at A.H. &Vety Farm Mampui.
2. Assisting Field experts from A.H. &Vety Department and KVK.
3. Hands-on demonstration on general safety and first aid, weaning and post-care of castrated pigs.

References:

1. Chakrabarti, Amalendu. *A Textbook of Preventive Veterinary Medicine*. Kalyani Pub. New Delhi, 2007.
2. Banerjee, G.C. *A Textbook of Animal Husbandry* 8th Ed. Oxford. New Delhi, 2019.
3. "PIGS" *Handbook of Animal Husbandry.* ICAR. New Delhi, 2008.
4. "Piggery".Vikaspedia.in.12/12/2021,https://vikaspedia.in/agriculture/livestock/pig-farming-1/piggery.
5. Reddy, D.V. *Principles of Animal Nutrition and Feed Technology*. Oxford & IBH Publishing. New Delhi, 2007.

GARDENING PRINCIPLES AND PRACTICE COURSE DESCRIPTION

3 Credits (1-1-1)

This course provides a comprehensive introduction to gardening, covering the fundamental principles and practices involved in cultivating and maintaining plants. Students will gain a solid foundation in horticulture, learning about plant biology, soil science, pest management, and sustainable gardening techniques. Through a combination of lectures, hands-on activities, and field visits, students will develop practical skills and knowledge to create and maintain beautiful and productive gardens.

Course Objectives

1. Understand the basic principles of plant/crop biology and physiology
2. Gain knowledge of different types of soil and their properties
3. Learn about the importance of water management and irrigation techniques
4. Familiarisation with different tools and equipments used in gardening works and safety precautions
5. Explore various gardening methods, including container gardening, raised bed gardening, and vertical gardening.
6. Understand the principles of pest and disease management in gardening
7. Learn about sustainable gardening practices including composting, organic fertilizers, and integrated pest management
8. Explore the role of gardening in environmental conservation and biodiversity
9. Develop practical skills in garden design including layout, plant selection, and maintenance.
10. Gain hands-on experience through field trips, practical exercises, and gardening projects

Assessment method:

• Written examination
• Practical assignment & projects
• Group discussion & presentation
• Field work reports

Unit I :Introduction to Gardening: Overview of gardening and its benefits, importance and basic principles; Historical overview of gardening practices; Sustainable gardener practices and its important Understanding different types of gardens (vegetables, flowers, herbs, etc. Introduction to basic gardening tools and equipment and their uses.

Unit II : Understanding the needs of garden: Assessing sunlight, soil type (Identifying and analysis) importance of soil health, techniques for improving soil fertility, Introduction to composting and its benefits, methods of composting.

Unit III : Plant selection : choosing plants suitable for the garden condition; selecting appropriate plants for different garden style; Understanding plant hardiness zones; Seed selection and starting seeds indoors ;planting techniques; proper planting depth spacing .

Suggested Readings:

1. “The garden primer” by Barbara Damrosch
2. “The well –designed Mixed Garden” by Tracy Disabato –Aust
3. “The well-tempered garden” by Christopher Lloyd
4. “Rodale’s Basic organic Gardening “ by Deborah L.Martin
5. The Essential Earthman” by Henry Mitchell

6. “The New Organic Grower” by Eliot Coleman
7. “The complete compost Gardening guide”by Barbara Pleasant and Deborah L.Martin.

FISH FARMING *3 Credits (1-1-1)*

Course Objectives

Fish farming is playing an important role in alleviation of poverty, human recourse development and sustainable developments. The course aims to provide basic knowledge of fish farming because it provides employability in the local area. The course offers students to get experience of fish cultivation and enriches them with diverse fisheries management and field experiences. Students will also have opportunities to conduct independent research on addressing new available technologies in fish farming.

Course Outcome :

After studying this course, students would be able to:

Know the importance of fish cultivation in India

Familiarize with cultural fish species of India

Design, construct and maintain fish farm

Aware on modern fish farming

UNIT – I : Fish Farming: General Overview

Status of fish in human diet

Meaning and Importance of fishery in India

History of fish farming

Recent trends and methods in fish farming

Systems and Types of farm fishes in Mizoram

UNIT – II: Preparation and Management of Fish Farm

Criteria for farm site selection

Preparation of fish farm - Designing, construction, liming and fertilization of fish pond

Properties of soil in fish farm

Water Management in fish farm

Good pond management practices

UNIT – III: Fish Raring and Marketing

Criteria for selection of fish species for farming

Food and feeding strategies

Integrated fish farming and its major models

Fish marketing problems and prospects

Problems of fish farming in Mizoram

Practical:- Identify different cultivable fresh water fishes

Identify the factors which influence fish seed price.

Recognize the different pond preparation methods in aquaculture systems

Identify alternate fish feeds –non-branded locally available fish feeds

Conduct a survey on fish cultivation

Fish cultivator – Information

Fish pond size

Expenditure on pond preparation and Maintenances

Prices of fish seeds

Expenditure on fish feeds

Total Expenditure

Fish catch quantity (In Kg)

Sale price

Total Income

Net Income

Conduct a survey on fish prices in the nearby markets/places

References :-

1. A text book of Fishery Science and Indian Fishery by Srivastava C.B.L Published by KitabMahal , Allahabad

2. A text book of Aquaculture by Arumugan N. Published by Saras Publication KanayaKumari

3. Fishery and Inland Fishery by Srivastava C.B.L Published by KitabMahal , Allahabad

FARM MANAGEMENT *3 Credits (1-1-1)*

Course Objective

The overall aim of the farm management course is to introduce fundamental principles and their application in farm management. The objective of this learning course is to provide an understanding on the basic principles and tools of economics and management for effective farm level decisions and thus improve the performance of farm business.

Course Outcome

1. Able to apply Management skills and economics tools to solve farm related problems
2. Analyse farm business investment opportunities for effective farm planning
3. Aware farm planning and budgeting techniques in farm management decision taking
4. Apply optimum recourse allocation and utilization
5. Prepare farm plan and recommend on the feasible alternate activities

UNIT – I : Concepts of Farm Management and Decision Making

Definition and concept of farm management

Nature and characteristics of farm management

Objective, scope and importance of farm management

Problems and role of farm management in India

Organic farming – concept, objectives and advantages and limitations

UNIT – II : Principles of farm management

Characteristics of a good farm plan

Information needed for planning and budgeting,

Factors determining farm decision making process

Farm records, accounts and budgeting

Farm planning and difficulties in farm planning

UNIT – III : Farm Financial Management and Marketing

Definition and financial management decisions

Role and Importance credit and lending agencies in farm management.

Problems of agricultural marketing and measures to solve

Principles of cooperation, farmer producer organization and other cooperative organization

Types of Risk and uncertainty in agriculture

Practical :-

Identification of crops, seeds, fertilizers, pesticides and tillage implements

Visiting some farms nearby the locality and documentation of activities in the farm

List five crops on the basis of their yields that can grow in selected area

References :-

Handbook of Farm Management in North-Eastern Hills of India by Rymbai, Dayohimi,K. K. Datta, Ram Singh & S. M. Feroze.
Polished by Rymbai, Dayohimi and sold by BookChor
Economics of Farm Production and Management 2017 Edition by Raju VT Published Oxford &Ibh Publishing
Modern Farm Management by Boss, Andrew & George A Pond ,Published by Biotech Books
Elements of Farm Management by Hopkins,J A, Published by AgriBiovet Press.

POULTRY FARMING *3 Credits (1-1-1)*

Course Objectives:

To develop the overall practical skill/knowledge on poultry in an operational farm for more profit management, feed requirements, etc.

To make the students of various professional well versed in their practical skills starting from hatching of chicks to the egg production stage.

To develop self-confidence among students from various professional to go for entrepreneurship on poultry.

Course Learning Outcomes:

The students having rigorous practical experience in an organised institutional poultry farm for a period of 4-5 months became self-confident to go for entrepreneurship on poultry. Be a good advisor, planner, policy maker.

Development of project involving small scale industries on poultry became easier.

Economics of the farm can be better assessed by these professional involved in skill course on poultry.

Unit I :Introduction to Poultry Farming

General introduction to poultry farming - Definition of Poultry; Past and present scenario of poultry industry in India.

Principles of poultry housing. Poultry houses. Systems of poultry farming.

Management of chicks, growers and layers.

Management of Broilers

Unit II :Feed and Livestock Health Management

Poultry feed management – Principles of feeding, Nutrient requirements for different stages of layers and broilers. Feed formulation and Methods of feeding.

Poultry diseases – viral, bacterial, fungal and parasitic (two each); symptoms, control and management; Vaccination programme

Unit III :Harvesting of Eggs and Sanitation): (PROJECT/PRACTICUM

Selection, care and handling of hatching eggs. Egg testing. Methods of hatching.

Brooding and Rearing. Sexing of chicks.

Farm and Water Hygiene, Recycling of poultry waste.

Prepare and Setting of Incubator

Field Visit to a poultry farm

Co-curricular Activities Suggested: (4 hrs)

Group discussion

Invited Lectures by Concerned officers of government or private farms

Cheap and Healthy Feed preparation by students based on government standards

Market study and Survey (Monitoring of daily price hike in poultry market and analysis)

Reference books:

Sreenivasaiah., P. V., 2015. Textbook of Poultry Science. 1st Edition. Write & Print Publications, New Delhi

Jull A. Morley, 2007. Successful Poultry Management. 2nd Edition. Biotech Books, New Delhi"

Hurd M. Louis, 2003. Modern Poultry Farming. 1st Edition. International Book Distributing Company, Lucknow.

Handbook of Poultry Production and Management by N.V. Jadhav and M.F. Siddiqui

http://www.asci-india.com/BooksPDF/Small%20Poultry%20Farmer.pdf

https://nsdcindia.org/sites/default/files/MC_AGR-Q4306_Small-poultry-farmer-.pdf

http://ecoursesonline.iasri.res.in/course/view.php?id=335

https://swayam.gov.in/nd2_nou19_ag09/preview

MANUFACTURE OF SOAPS *3 Credits (1-0-2)*

Course Learning Outcomes: At the end of the course, the student will be able to:

- Learn about the importance of soap as a luxury and hygiene product
- Know about different types of soap that are available in market
- Familiarize with the ingredients needed to manufacture soap
- Learn how to make soap with minimum equipment and tools
- Know the range of oil and colour that can be used to create soap
- Mould soaps into different colours and shapes
- Create their own formula and brand of soap
- Gain the skill to make specialized and customized soap
- Learn about the steps of establishing their own soap business

Unit I
Introduction of soaps, general principles of soap making, classification and chemistry of soaps, saponification reaction, raw materials and their selection

Unit II
Manufacture of different types of soap (cold, hot and semi boiled process), Ingredients of soap and its calculations

Unit III
Packaging of soaps, management of soaps, safety, pollution and effluents, conditioning

Practical:
Manufacture of soaps

Recommended Books:

1. *B.K Sharma*, Industrial Chemistry (Including Chemical Engineering), Goel Publishing House
2. *E.G Thomssen*, Soap-making Manual, The Project Gutenberg EBook (2010)
3. Complete Technology Book on Soaps, Detergents, Cleaners and Fragrance with Formulae, EIRI (2017)
4. *Ajay Kumar Gupta*, Soaps, Detergents and Disinfectants Technology Handbook, 3rd Revised Edition, NIIR Project Consultancy Services (2021)
5. *P. K. Chattopadhyay*, Modern Technology of Soaps, Detergents & Toiletries (with Formulae & Project Profiles), 4th Revised Edition, NIIR Project Consultancy Services (2016)
6. *K.S. Parsuram*, Soaps & Detergents

VERMITECHNOLOGY *3 Credits (1-1-1*

LEARNING OBJECTIVES
The objectives of the course are enabling the student

1) To gain knowledge of agro based small scale industries using vermin compost preparation.
2) To understand the environmental conservation process and its importance, pollution control, biodiversity and protection of earthworms through vermin culture.
3) To assure that Vermitechnologyis used to control environmental pollution and global warming.
4) To contribute their knowledge to develop organic fertilizer with rural and urban biodegradable wastes using the Earthworms.

COURSE OUTCOMES

On successful completion of the course the student will be able to

CO1: find out Vermicomposting is an eco-friendly, economically and socially acceptable technology.

CO2: illustrate that Vermitechnology is useful for stabilization and recycling of domestic organic waste.

CO3: utilize Vermitechnology to improve the soil texture, soil aeration, improve the water retention capacity in the soil.

CO4: apply Vermitechnology to covert garbage into nutrient rich eco-friendly organic manure.

CO5: apply the ethical principles and commit to pledge responsibilities to protect and save environment.

CO6: improve Vemitechnology to manufacture the vermicompost in small scale industry by which the economy of the farmer is improved. It provides the employment opportunity in rural and urban areas.

CO7: justify and prove that the Earthworms are having the capacity to observe heavy metals into their body tissues and converting the soil without heavy metals.

UNIT I

Native species – Mizoram species used in Vermicomposting – Collection and Preservation of earthworms for vermicomposting – Culture techniques of earthworms.

UNIT II

Different methods of Vermicomposting – Heap method – Pot method and Tray method – changes during Vemicomposting.

UNIT III

Use of Vermicompost for crop production – Use of earthworms in land improvement and land reclamation – Economics of Vermicompost and Vermiwash production. Earthworms as animal feed – Medicinal value of earthworm meal – Roles of Earthworms in Solid Waste, Sewage and faecal waste management and Vermifilters.Earthworms as bioreactor.Vermicompost, packaging of vermicompost and its marketing.

Practical

1. Field visit and collection of endemic earthworm species.
2. Vermicomposting methods: Pot method and heap method.
3. Application of vermicompost as soil fertiliser and study of soil sample.

Suggested Readings:

Invertebrate Zoology – EkambaranathaAyyar.

Earthworm in Agriculture – S. C. Talashikar and Dosani, Agrobios Publications, Near Nasarani Cinema, Jodhpur, 342 002.
Vermicompost for sustainable Agriculture – P. K. Gupta Agrobios 2nd Edition.
Organic Farming for sustainable Agriculture – A. K. Dahama, Agrobios.
A Hand book of Organic farming – A. K. Sharma. Agrobios publication.
Earthworm ecology – Clive A. Edwards St. Lucie press – CRC Press Washington DC.
Biology of Earthworm - Edward and Lofti – Chapman and Hall Publication.
Vermicology – Sultan A. Ismail – Orient Longman Press.
Vermiculture Biotechnology – U.S. Bhawalkar BERI, PUNE.

SECRETARIAL PRACTICES*3 Credits (1-1-1)*

Course Objectives:

1. To understand the Concept of secretarial functions.
2. To familiarize students to practical functioning of a secretary in various organisations.

Course Learning Outcomes:
1. Theoretical understanding of concept of secretary.
2. Understanding role of a secretary in contemporary organisations.
3. Acquiring potential knowledge on working of a secretary.
4. Acquainting students with role of a secretary for efficient management of an organisation.
5. Practical experience in understanding functioning of a secretary.

UNIT – I : Introduction:
Introduction to the term Secretary; Origin and Concept; Definition and Meaning; Main Features of a Secretary; Types of Secretary.

UNIT – II : Importance, Qualifications and Qualities:
Introduction; Importance and Role of a Secretary; Qualifications of a Secretary Educational, Professional and Training; Qualities of a Secretary.

UNIT – III : Functions of a Secretary:
Introduction; Factors on which Secretary's Functions Depend; Secretary's Functions Statutory Functions, Administrative Functions and Co-ordinating functions; Basic Principles of Secretarial Correspondence.

Practicum:
1. Field visit to study role and functions of secretarial staff in local organisations (NGOs).
2. Field visit to study role and functions of secretarial staff in local Gov't establishments.
3. Study of various functions of secretarial staff in the institute.
4. Drafting of General letters, Meeting Notice, Office Circular/Notification, Meeting Minutes

Suggested Readings:
Shukla M. C. &Gulshan S. S. (1986) "Secretarial Practice and Office Management" S.Chand, New Delhi.
Jain D. P. (1990) "Secretarial Practice" Konark Publisher Pvt. Ltd., New Delhi.
Sahai I. M. (2019) "Office Management and Secretarial Practice" SahityaBhawan Publications, Agra.
Subhash G. D. (2021) "Secretarial Practice" Neeraj Publications, Delhi.

ENTREPRENEURSHIP *3 Credits (1-1-1)*

Course Objectives

The course aims to equip participants with essential entrepreneurial skills and knowledge, fostering the ability to identify business opportunities, develop viable business plans, and effectively navigate the entrepreneurial landscape. Through practical exercises and case studies, learners will gain insights into key aspects of entrepreneurship, enabling them to launch and manage successful ventures.

Course Learning Outcomes

After completion of the course, students will:

- Cultivate critical problem-solving and innovation skills essential for success in the entrepreneurial landscape.
- Apply insights gained from case studies to make informed decisions and adapt strategies in various entrepreneurial scenarios.

UNIT I: Idea Generation

Techniques and methods for generating innovative business ideas, including brainstorming, problem identification, and trend analysis.
Case Studies: Airbnb, Uber, Instagram, Two-Wheeler Taxi in Mizoram.

UNIT II: Risk-Taking and Failure

Understanding the role of risk in innovation and how to manage it effectively, as well as learning from failure as a valuable aspect of the entrepreneurial process.
Case Studies: Space-X and Reusable Rockets, Netflix's Shift to Streaming, Tesla's Electric Vehicles, IBM's Investment in the PC Market.

UNIT III: Technology and Innovation

Role of emerging technologies, such as AI, blockchain, and IoT, as a leverage to drive innovation in entrepreneurial ventures.
Case Studies: AI-Powered Healthcare, Apple's iPhone, Tesla's Autopilot, 3D Printing Advancements.

Suggested Reading:

"Creative Confidence: Unleashing the Creative Potential Within Us All" by Tom Kelley and David Kelley
"Fail Better: Design Smart Mistakes and Succeed Sooner" by Anjali Sastry and Kara Penn

"Failing Forward: Turning Mistakes into Steppingstones for Success" by John C. Maxwell
"Stay Hungry Stay Foolish" by Rashmi Bansal
"The Digital Tsunami: Succeeding in a World Turned Upside Down" by AbhijitBhaduri and Dr.Harpreet Singh Grover

"The Entrepreneurial Instinct: How Everyone Has the Innate Ability to Start a Successful Small Business" by Monica Mehta
"The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail" by Clayton M. Christensen.
"The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses" by Eric Ries
"Where Good Ideas Come From: The Natural History of Innovation" by Steven Johnson
"You Can Win: A step by step tool for top achievers" by Shiv Khera

"Zero to One: Notes on Startups, or How to Build the Future" by Peter Thiel.

Students are recommended to explore case studies from various sources beyond textbooks.

AGRIPRENEURSHIPBASIC COURSE (ABC) *3 Credits (1-1-1)*

CourseObjectives:

Agribusiness&EntrepreneurshipisthecoreclassesfortheAgribusinessPathway.Financial successinbusinessoperationsoftendependsuponthemanagerialskillsoftheindividual owner/operator.AgribusinessandEntrepreneurshipisdesignedtogivestudentsabackground in thedecision-makingprocessandday-to-dayfinancialmanagementskillsrequiredto effectivelyoperateabusiness.

CourseOutcome:
Studentswill understandandabletoapply:
•Throughexploringbusinesstypes,economics,marketing,andbusinessplanningmanagement. Studentswillbeintroducedtobusinesscommunications,alongwith ethics&socialresponsibility.

•Studentsthenmoveintomarketing,investigatinghowtopersuadeotherstobuytheir productsandservicesandlearninghowtomanageanexisting business.

•Businessfactsandconcepts usedintheagricultureindustryfrom production to retail Investigativemethodsandtechniques usedtostarta business.

•Adaptationstoemergingchangesintechnology, economics,societalinfluences,andcommunication to haveadramaticimpactontheagribusiness/entrepreneurship industry.

•The whole businesscycle,from productionto pricingto policy.

UNIT–I
Introduction:EntrepreneurshipandEntrepreneur;Concept&ScopeofAgriculturalEntrepreneursh ip(Agripreneurship) –Agriculturalinputs;Agripreneur Development;Farmer groups,cooperativesandassociations;ConceptofFarmersProducersOrganization(FPO); Role of FPOinAgricultureBusiness.

UNIT–II
ExtensionisttraditionalmethodvsAgripreneurship:Meritsandroles;Roleofextension agents onAgripreneurshipDevelopment;AgribusinessServiceProviders–TypesofAgriprenuer Clients;EvaluatingEntreprenuerclients–IdentifyingMarketOpportunities–Designing individualplansforfarmer-Designinggroupplansforfarmersandcooperatives;Defining businessidea-Outliningthekeyactivitiesinvolvedinanagri-business.

UNIT–III
Identifyingsourcesoffinance–Savings–SavingoptionsandServices:Self-helpsavings groups,Savingsandcreditcooperatives(SACCOs),Localmoneylendersandtraders,Micro-financeinstitutes;Investorsintheagriculturalsector.

UNIT-IV
SchemesinAgricultureEntrepreneurshipinIndia-RashtriyaKrishiVikasYojana(RKVY);AgripreneurshipOrientationprogram;AgriClinicandAgri

businessCentresScheme(ACABC);NewAgriculturalMarketingInfrastructure(AMI)Sub-Scheme ofIntegrated
SchemeForAgriculturalMarketing(ISAM).

Practicum:

1.Fieldvisittofirmsofpracticinglocalentrepreneursengaginginagriculturalrelated activities.
2.FieldVisittoMZUBio-NESTIncubationCentre,MZU on thepurposeofevaluative assessmentontheirincubatesdealingwithagriculturalentrepreneurship.
3.StudyingtheworkingsofFOCUS,Mizoram,andrelatedAgentsofAgriculture Business.

SuggestedReadings:

Clark, B., &Commers, J. (2021, December 20). *Entrepreneurship*. Goodheart-Wilcox Publisher.

AftabAnwar,&Kaushar. (2021). *Management of AgriBusiness and AgriExports*. Success Publications.

KadamM.M,&Ranjit S. (2018). *A Textbook of Agribusiness Management* (1st ed.). KALYANI.

Singh, R., Panigrahy, S., & Kumar, S. (2019, February 19). *Objective Agribusiness Management 3rd Ed*. Scientific Publishers.

DIGITAL MARKETING COURSE (DMC) *3 Credits (1-1-1)*

General Objective:

1. Get introduced to the basics of Marketing.
2. Understand different digital marketing channels.

Specific Objectives:

1. Understand the importance of being a customer centric brand.
2. Understand the motivations of the customer in the buying process
3. Understand the search engine marketing, what are the different objectives which can be achieved through SEM campaigns.
4. Role of email marketing, types of emails, email marketing objective.

Course Outcome:

1. Students will be able to develop and execute a marketing plan, incorporating all elements of the marketing mix, and other elements.
2. Students will have an understanding of the role of both digital and traditional media in marketing, and the intersection of online and offline strategies and tactics.
3. Students will be able to guide the development of a digital presence from a marketing point of view.

UNIT I

Definition of digital marketing; origin of digital Marketing, Traditional VS Digital Marketing; Benefits of Digital marketing e.g. reach, scope, immediacy, interactivity; Digital marketing mix; Digital marketing tools/e-tools; Interactive order processing: choosing a supplier; selecting a product; check stock ;Availability; placing order; authorization of payment; input of data; data transfer; Order processing; online confirmation and delivery information; tracking of order; Delivery; data integrity and security systems.

UNIT II

Search engine marketing (SEM): definition of SEM, definition of search engine; Optimization (SEO); advantages and disadvantages of SEO; best practice in SEO; Paid search engine marketing, pay per click advertising (PPC); landing pages; long Tail concept; geo-targeting e.g., Google Ad Words; opt in email and email Marketing; Market research; Customer relationship Marketing Internet communities; Content creation in digital marketing- Generate ideas and enhance creativity - Generate text, image, audio and video content using digital tools and techniques for website, social media, email, WhatsApp, search and paid channels.

UNIT III

Design digital marketing plan, SWOT, situational analysis, key performance Indicators in internet marketing, Digital Landscape, P-O-E-M Framework; Segmenting and Customising Messages; Digital Advertising Market in India.

Practicum

- Deep dive into different social media ad platforms such as Facebook, Instagram, LinkedIn, Twitter, Quora etc.
- Work on a project involving customer segmentation and targeting with the project guided by an expert.

Suggested Readings:

Seema Gupta (2022).*Digital Marketing.* Third edition. India, McGraw Hill Education.

Dave Chaffey & Fiona Ellis Chadwick (2016). *Digital Marketing Strategy, Implementation & Practice.* Sixth edition. United Kingdom, Pearson Education Limited.

Ryan, D. (2014). *Understanding digital marketing: marketing strategies for engaging the digital generation*. Third edition. London; Philadelphia, Kogan Page.

SMALL BUSINESS ENTREPRENEURSHIP COURSE *3 Credits (1-1-1)*

Course Objectives:

To institute entrepreneurial skills in the students by giving an overview of entrepreneurship and the competences that are needed to become an entrepreneur

To educate students to know the basic tools or techniques required for starting one owns business.

To let the students in understanding the nuances involved in creativity & innovation and to get hands-on experience in applying creative and innovative ideas and solutions towards problem solving.

Course Learning Outcomes:

After completing this course, students will be able to –

Recognize the entrepreneurial potential within themselves and others in their environment.

Understand the process nature of entrepreneurship, and ways to manage the process.

Identify the many ways in which entrepreneurship manifests itself, including start-up contexts, corporate contexts, social contexts, public sector contexts, and others.

Understand the basic financial implications, funds and schemes involved in starting a business.

Prepare a formal Project Proposal statement as well as prepare a Detailed Project Report as when necessary.

UNIT – I

Introduction: Concept and Definitions of Entrepreneurship; Entrepreneurship process; Factors impacting emergence of entrepreneurship; Entrepreneurial attributes and characteristics; Traits/ Qualities of Entrepreneurs; Classification and Types of Entrepreneurs; Women Entrepreneurs; Characteristics of entrepreneur: Leadership; Risk taking; Decision-making and business planning.

UNIT – II

Introduction: Need for Creative and innovative thinking for quality – Essential theory about directed creativity, components of Creativity, methodologies and approaches, individual and group creativity, organizational role in creativity; Creating Entrepreneurial Venture: Generating Business idea – Sources of Innovation, generating ideas, Creativity and Entrepreneurship; Challenges in managing innovation; Entrepreneurial strategy, Business planning process; Drawing business plan; Business plan failures.

UNIT – III

Understanding Capital Budgeting; Payback Analysis (Payback Period); Discounted Cash Flow

Analysis; Net Present Value Analysis; Internal Rate of Return; Profitability Index; Capitalization of Small Business; Types of Small Business Capital – Equity Funding, Debt Funding, Schemes for Start- Ups.

UNIT – IV

Project Development Cycle; process of business idea generation; Identifying data requirements and analysing their suitability for preparation of feasibility studies; project formulation; screening for pre- feasibility studies; stages of feasibility report preparation; Project Analysis

including Market Analysis, Technical Analysis & Financial Analysis; Creation of Detailed Project Report (DPR).

Practicum:
Field Visit to Mizoram Incubation Centre, Mizoram University
Field Visit to MZU BioNEST – BEM (Bio incubator Nurturing Entrepreneurship for Scaling Technologies in the field of Bioprospecting and Environmental Management), Mizoram University.
Study on the effects and functions of EDS (Entrepreneurship Development Scheme) an initiative of MEDMOC, Mizoram under the Government of Mizoram.

Suggested Readings:

Dwivedi, A.K(2005).: *Industrial Project and Entrepreneurship Development,*Vikas Publishing House
Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A(2003).: *Entrepreneurship,* Tata McGraw Hill
Andriopoulos, C. and Dawson, P(2001).: *Managing Change, Creativity and Innovation,* Sage Publications
Leach, C.J. and Melicher, RW(2020).: *Entrepreneurial Finance,* Thomson.
Rogers, S(2014)., *Entrepreneurial Finance,* McGraw Hill
Katz, J. and Green, R(2022).: *Entrepreneurial Small Business,* Tata McGraw Hill

HOSPITALITY MANAGEMENT COURSE *3 Credits (1-1-1)*

General Objectives:

To create a comprehensive under graduation in the emerging field of Tourism Education.
To blend the Tourism and Hotel Management Subjects appropriately.To develop more job opportunities to the wards through the provision of a double major course

Specific Objectives:
To impart professionalism in Tourism Service through appropriate Tourism Education.
To inculcate administrative orientation through Tourism Management Subjects.
To inculcate service orientation through Hotel Management Subjects.
In short, every aspect of the requirement in tourism as well as in the Hotel sector have been taken into account while framing the syllabus. This course being a job-oriented course will be welcomed widely.

Course Outcome:
Identify and apply business concepts and skills relevant to the operational areas of hospitality management.

Describe and apply the fundamental principles of leadership and model the behavior of effective leaders.

Demonstrate effective communication skills.

Unit I
Basic Concepts Definition of Tourism, Components of Tourism- Nature and Importance of Tourism – Motivations for Travel – Typology and Forms of Tourism, Sectors of Tourism. Hospitality Industry Introduction to Hotel Industry – Structure of Hotel Industry – Classification of Hotels – Types of GUESTS - Introduction to Front Office – Organisation set up of Front Office – Duties and Responsibilities.

Unit II
Managerial Personality: Definition of personality - Basics of personality - Determinants of personality - Development of personality — Theories of personality.

Unit III
The House Keeping Department: Importance of Housekeeping, Responsibilities of Housekeeping Department, Organisational Structure, Housekeeping Personnel, Personal Attributes of Housekeeping Staff, Layout of the Department, Coordination with Other Departments.

Suggested Readings
Bhatia.A.K (1982), *Tourism Development-Principles and Practices,*Sterling Publishers, New Delhi
Chris Cooper, et.al(1993), *Tourism-Principles and Practice,* Pitman Publishing, London
Mathieson.A., and Wall.G.(1982), *Tourism: Economic, Ph*Longman, Harlow
MukeshRanga,Devesh Nigam (2003 Ed), *New Approaches In Tourism Management*, Abhijeet Publications, Delhi
PranNath Seth (2006): *Successful tourism Management* , Sterling, New Delhi (Vol. 1 2)
Ahmed, I. (2002) ―*Front Office Operations and Management",* Thompson & Delmar.

BASIC HOME NURSING *3 Credits (1-1-1)*

Course Objective:
To create awareness among students and broaden their perspective in the discipline.

To offer viable option for students in pursuing job oriented training after graduation.

To enlighten and equip students with palliative skill sets and knowledge in the wake of another pandemic.

Course Outcome:
The course will provide practical expertise and knowledge to handle basic health care.

Students will be adept at providing basic home nursing to near and dear ones.

The course will generate earnings for students as they can serve as basic private health attendant.

I. Unit I: Health Basics
Nutrition
Human body and hygiene
Environmental Sanitation

II. Unit II: Primary Health Care
Infection and Immunization
Communicable disease
Midwifery

III. Unit III: Health Care Management
Primary Medical Care
First Aid and Referral
Child Health Nursing

Practical:
Students opting for the course will undergo hands-on practical training at Synod Hospital.

REMOTE SENSING AND APPLICATION OF GIS - ArcGIS and QGIS

3 credits (1-1-1)

Course Objectives: Remote Sensing andGeographic Information Systems (GIS) is a technology that has revolutionized the way we understand and analyse our world. It provides a

platform to store, manage, and analyse geospatial data to help make informed decisions in a variety of fields. The course will provide students the knowledge of Remote Sensing & GIS, its importance and functioning and improve strategic decision making.

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

- Understand and visualize Geospatial Data
- Optimize Planning and decision making
- Enhance Emergency Response and Disaster Management
- Improve Environmental management

UNIT I : Remote Sensing Definition, Types of Remote Sensing, Aerial photography, Google Earth Engine, Latitude and Longitude, Map Projection, Map Scale, Principles of Image Interpretation

UNIT II : Introduction to GIS, GIS Projection, GIS- Raster & Vector Data, Point and line representation, Area representation, Georeferencing and rectification of images, Creation of shape files, Creating features using feature template

UNIT III: Installation of QGIS software, Downloading Topographical sheet, Satellite Image and Vector Data, QGIS Plugins, Georeferencing in QGIS, Creating shape files- point, line & polygon, add or delete in attribute table, Symbology& Data classification, Preparation of location map & layout

Suggested readings:

Bhatta, B. (2008): Remote Sensing & GIS, Oxford Press University

Chipman, L.K. (2011): Remote Sensing & Image Interpretation, Wiley India Pvt Ltd

Pandey, S. (2020): Basic Concepts of Remote Sensing, GPS & GIS, Sankalp Publication

Samanta, S. (2023): A textbook of Remote Sensing, GIS & GNNS, Notion Press

COURSE ON COMPUTER CONCEPT & TALLY *3 Credits (1-1-1)*

Course Objectives:

To familiarize students with fundamental computer hardware and its peripherals.

To equip students with essential skills in word processing and spreadsheet applications, particularly focusing on MS Word and MS Excel.

To introduce the concepts of accounting software and provide hands-on experience in Tally.

Course Learning Outcomes:
Upon successful completion of this course, students will be able to:
Identify and describe the components of a computer system and their roles.

Use MS Word to create, edit, format and manage documents effectively.

Employ various features of MS Excel, including formulas, functions, and charts for data management and analysis.

Understand the key features and applications of Tally in accounting and financial management.

Prepare and manage final accounts using Tally, incorporating vouchers, journals, and ledgers.

Unit 1: Computer Hardware & MS Word
Computer Hardware: Computer system as information processing system; Types of computer system, Computer hardware peripherals - CPU, input devices, output devices, storage devices, Memory, communication devices, Factors influencing PC performance.
MS Word: Meaning and features of word processing – Advantages and applications of word processing in Business - Parts of MS Word application window – Toolbars – Creating, Saving and closing a document – Opening and editing a document - Moving and copying text – Text and paragraph formatting, applying Bullets and Numbering – Find and Replace – Insertion of Objects, Date and Time, Headers, Footers and Page Breaks – Auto Correct – Spelling and Grammar checking – Graphics, Templates and wizards - Mail Merge : Meaning, purpose and advantages – creating merged letters, mailing labels, envelops and catalogs- Working with Tables – Format Painter.

Unit 2 : MS Excel
Features of MS Excel , Advantage of Spreadsheet in Business Field– Spread sheet / worksheet, workbook, cells, - Parts of MS Excel window – Saving, Opening and Closing workbook – Insertion and deletion of worksheet – Entering and Editing data in worksheet – cell range – Formatting – Auto Fill –Formulas and its advantages – References : Relative, absolute and mixed – Functions: Meaning and Advantages of functions, different types of functions available in Excel – Templates –Charts – Graphs.

Unit 3 : Tally
Description of Tally Software and Screen: Features of Tally(Accounting Features, Financial Management Features, Inventory Management Features); Opening Company (without inventory) vouchers, journals, ledgers ; Configuration ,Features, Preparation of Final Account using Trial Balance.

Practicum:
MS-WORD : Text Manipulations ; Usage of Numbering, Bullets, Tools and Headers ; Usage of Spell Check and Find and Replace ;Text Formatting ; Picture Insertion and Alignment ;Creation of Documents Using Templates ; Mail Merge Concept and Creation of Tables, Formatting Tables

MS-EXCEL : Creation of Worksheet and Entering Information ;Aligning, Editing Data in Cell; Excel Function (Date, Time, Mathematical, Financial Functions) **;**Changing of Column Width and Row Height (Column and Range of Column) **;**Moving, copying, Inserting and Deleting Rows and Columns **;**Formatting Numbers and Other Numeric Formats **;**Drawing Borders around Cells **;**Creation of Charts-Manipulating chart and Using Excel as a Grade book/Exam result sheet.

TALLY: Creating Vouchers, Journals, Ledgers ; Preparation of Final Account using Trial Balance.

References:

Computer Fundamentals 3rd Edition Pradeep K. Sinha, Priti Sinha BPB Publications

Computer Fundamentals By Anita Goel

Microsoft Office – Dienes,Sheila S. – BPB Publication Delhi

Creating a Presentation in Microsoft Office PowerPoint 2007 for Windows -Tom Negrino

Financial Accounting On Computers Using Tally - By Namrata Agrawal

Bhasker Bharat: Electronic Commerce(Framework, Technologies and Applications); Tata McGraw Hill, New Delhi.

Edwards, Ward and Bytheway: The Essence of Information Systems; Prentice Hall, New Delhi.

Kanter: Managing with Information; Prentice Hall New Delhi Leon Alexis and Leon Matthews: Introduction to Computers; Leon Vikas, Chennai.

Minoli Daniel, Minoli Emma: Web Commerce Technology Handbook; Tata McGraw Hill, New Delhi.

Minoli Daniel: Internet & Intranet Engineering; Tata McGraw Hill, New Delhi.

Reddy Jayaprakash R.: Advanced Financial Accounting and Software; APH Publishing Corporation, New Delhi.

Tanebaum Andrew S.: Computer Networks; PHI Learning Pvt. Ltd., New Delhi.

KEYBOARD PROFICIENCY COURSE *3 Credits (1-1-1)*

Course Objective: The Keyboard Proficiency Course aims to equip participants with the essential skills and techniques required to become proficient and efficient keyboard users. Through a combination of theoretical knowledge and practical exercises, participants will develop their typing speed, accuracy, and overall keyboarding skills. By the end of the course, participants will be able to navigate the keyboard with confidence and apply their newfound skills in various professional and personal contexts.

Course Outcomes: By successfully completing the Keyboard Proficiency Course, participants will be able to:
Master Keyboard Layouts: Understand and memorize keyboard layouts, including QWERTY, AZERTY, and others, to navigate the keys with ease.

Develop Typing Speed: Achieve a proficient typing speed suitable for various tasks, such as data entry, writing, and communication, with an emphasis on accuracy.

Enhance Accuracy: Minimize typing errors through proper finger placement, touch typing techniques, and consistent practice.

Improve Ergonomics: Apply ergonomic principles to optimize hand and wrist posture, reducing the risk of strain and discomfort during extended typing sessions.

Build Muscle Memory: Develop muscle memory for common words, phrases, and keystroke combinations to enhance typing speed without relying on looking at the keyboard.

Learn Keyboard Shortcuts: Acquire knowledge of essential keyboard shortcuts for improved efficiency when using software applications and navigating digital platforms.

Increase Productivity: Apply keyboarding skills to real-world scenarios, such as document creation, email correspondence, and web browsing, to enhance overall productivity.

Adapt to Different Devices: Transfer keyboard skills to various devices, including desktop computers, laptops, tablets, and smartphones, ensuring seamless proficiency across platforms.

Course Structure:
Module 1: Keyboard Fundamentals, Speed and Accuracy

- Introduction to keyboard layout variations
- Understanding home row and finger placement
- Basic typing exercises to build familiarity
- Techniques for improving typing speed without sacrificing accuracy
- Timed typing exercises and drills
- Strategies for minimizing errors

Module 2: Touch Typing Mastery, Ergonomics and Health

- Touch typing principles and practice
- Developing muscle memory for common words and letter combinations
- Progressively challenging exercises to build skill

- Importance of ergonomic keyboard setup
- Correct hand and wrist posture
- Stretching and relaxation exercises to prevent strain

Module 3: Keyboard Shortcuts and Practical Application

- Essential keyboard shortcuts for productivity
- Application of shortcuts in various software and platforms
- Typing documents and reports
- Composing emails and messages
- Web browsing and data entry exercises

Suggested Readings:
Typing Lessons for Beginners: Quick way to learn English Typing by Shiva G (Author)
Typing Tutor Software By Tech Guy

COUSE ON COMPUTER CONCEPTS [CCC] *3 Credits (1-1-1)*

Objective/Outcomes: The course is designed to equip a person to use computers for professional as well as day-to-day use. It provides theoretical background as well as in-depth knowledge of Software/ packages. After completing the course the incumbent will be digitally literate and will be able to:

- Acquire confidence in using computers in Office and General Life;
- Will be able to identify the basic components of computers and terminology;
- Understand file management;
- Create documents using word processor, spreadsheet & presentation software;
- Understand computer networks, and browse the internet, content search, email and collaborate with peers;
- Use e-Governance applications, and use computers to improve existing skills and learn new skills
- Understanding the Social Networking platform
- Develop knowledge about Future skills The module on financial literacy will enable individuals to understand the various financial services and be aware of the various schemes of the Government.

Unit I: Introduction to Computer:

Introduction to Basics of Computer, Components of the Computer System; Concepts of Software and Hardware; Representation of Data or Information; Concepts of Data Processing. Introduction to GUI-Based Operating System; The User Interface; Simple Setting of Operating System; Basics of Operating System; Types of Files; Directory and File Management

Unit II: Elements of Word Processing, Spread Sheet & Small Presentation

Introduction to Elements of Word Processing; Basics of Word Processing; Formatting the Text; Opening and Closing the Documents; Table Manipulation; Text Creation and Manipulation. Introduction to Spreadsheets. Function and Charts: Function, Formulas, and Charts; Elements of Electronic Spreadsheet: Saving Workbooks, Addressing Cells, Printing and Opening Spread sheets Manipulation of Cells: Changing the Height and Width of Cells, Entering Numbers, Texts, and Dates, Creating Date Series, Numbers, and Texts, Editing Worksheet Data, Deleting and Inserting Rows and Columns. Introduction to Presentations; Creating a Presentation; Providing Aesthetics to a Presentation; Slideshows in a Presentation; Preparation of Presentation Slides; Basics of Making a Presentation

Unit III: Computer Communication and Internet

Introduction to Computer Communication and Internet and its objectives. Internet: Concepts and Basics of Internet Architecture. Internet Services: Websites and World Wide Web, Internet Communication. Computer Networks and Basics: LAN, WAN, etc.A computer for Internet Access: Internet Access Techniques, ISPs, WiFi, Broadband, Dialup, etc.

Suggested Readings:

Computers Just What You Need to Know - Hardware by DV Englebretch.

DOS for Dummies by Dan Gookin.

Windows 10: The Ultimate Beginners Guide by Alex Nozoma.

Microsoft Office 2016 All in One by Peter Weverka.

Cyber Security Hand Book : Cyber Domain is Unforgiving Be Prepared by S Khadsare.

COMPUTATION USING EXCEL *3 Credits (3-0-0)*

Course Learning Outcomes: By studying this course, students will be able to:

i) Use Excel for data analysis
ii) Make meaningful representations of data in the form of charts
iii) Draw analysis on data using spreadsheets and use interpretation to make decisions

UNIT-I: Understanding Excel: Excel's Files, Ribbon and shortcut, Create a workbook, Enter data in a worksheet, Format a worksheet, Format numbers in a worksheet, Create an Excel table, Filter data by using an Auto filter, Sort data by using an AutoFilter. Essential worksheet Operations: Using Short cut keys, Key board shortcuts. Working with Cells and Ranges: Formatting Cells, Name Manager. Visualizing Data Using Conditional Formatting: Apply conditional formatting. Printing Your Work: Print a worksheet, Using Print Preview and other utilities

UNIT-II: Dates and Times & Text: Working with Dates & Time, Creating Formulas that Manipulate text – Upper, Proper, Lower, Concatenate, Text to Column. Creating Formulas that Count, Sum, Subtotal. Create a formula, Use a function in a formula. Creating Formulas that Look up Values: VLookup, Hlookup, Match & index. Creating charts and Graphics. Chart the data, Creating Sparkline Graphics, Using Insert Tab utilities.

UNIT-III: Excel advanced techniques: Templates, Efficiency, and Risk (Standard Deviation, Variance, and Coefficient of Variation), Data Validation; Functions and Power functions, Array Formulae (Frequency Distribution, mode.mult, mode.sngl), Tables, Advanced Range Names, What-if-analysis: Goal-seek, Data tables, and Scenario Manager; Data Analysis ToolPak: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation, and Regression analysis (only for projection).

Reference Books:

1. Charts and Graphs Microsoft Excel 2013 – Bill Felen – Pearson Publication.

2. Statistics made simple do it yourself on PC – KVS Sarma – 2nd Edition – PHI.

3. Microsoft Office 2007- Essential Concepts and Techniques – Shelly Cashman Vermaat – Cengage Learning.

4. PC software Under Windows – Puneet Kumar – Kalyani Publishers.

5. MS Excel 2016, Data Analysis & Business Modelling, Wayne Winston, PHI.

6. Microsoft Excel 2016 – Data Analysis and Business Modelling Paperback – 1 May 2017 Wayne L. Winston, Microsoft Press.

7. Microsoft Excel Practical Formulae: From Basic Data Analysis to Advanced Formulae

PROGRAMMING WITH FORTRAN *3 Credits (2-0-1)*

Course Learning Outcomes: The aim of this course is not just to teach FORTRAN programming but to emphasize its role in solving problems in Physics. The course will consist of hands on training on the problem solving on Computers. Students after successful completion of the course will be able to use the computer language (FORTRAN) as a tool in solving physics problems (applications)

Unit-I Scientific Programming: Importance of computers in Physics, paradigm for solving physics problems for solution**.** Algorithm: Definition, properties and development. Flowchart: Concept of flowchart, symbols, guidelines, various types of programming, structured programming. Development of FORTRAN, Basic elements of FORTRAN: Character Set, Constants and their types, Variables and their types, library functions. Operators: Arithmetic, Relational, Logical and Assignment Operators. Expressions: Arithmetic, Relational, Logical, Character and Assignment Expressions, FORMAT specifications. Fortran Statements: I/O Statements (unformatted/formatted), Executable and Non-Executable Statements, Layout of Fortran Program, Format of writing Program and concept of coding.

Unit-II Control Statements: Types of Logic (Sequential, Selection, Repetition), Branching Statements (Logical IF, Arithmetic IF, Block IF, Nested Block IF, ELSE IF, IF-THEN-ELSE and ELSE-IF-THEN, Ladder statements), Looping Statements (DO-CONTINUE, DO-END-DO, DO-WHILE, Implied and Nested DO Loops), Jumping Statements (Unconditional GOTO, Computed GOTO, Assigned GOTO). Subscripted Variables (Arrays: Types of Arrays, DIMENSION Statement, Reading and Writing Arrays), simple examples.

Unit-III Sub Programs: Functions and Subroutines (Arithmetic Statement Function, Function Subprogram and Subroutine), RETURN, CALL, COMMON and EQUIVALENCE Statements), DATA files: Structure, Disk I/O Statements, open a file, writing in a file, reading from a file, closing a file, file creation program.

Laboratory Activities – Computer Lab. : Students will write simple FORTRAN programs using the topics taught in these 3 units. They will run the programs in the Lab. desktop computer or Laptop and obtain the desired output. At least 10 programs must be given them as assignment.

Reference Books:

1. Computer Programming in Fortran 77". V. Rajaraman (Publisher: PHI).

2. Schaum's Outline of Theory and Problems of Programming with Fortran, S Lipsdutz and A Poe, 1986 Mc-Graw Hill Book Co.

3. R.S. Salaria: *AModern Approach to Programming in FORTRAN*, Khanna Book Pub.,New Delhi (2004).

4. C. Xavier: *FORTRAN 77 and Numerical Methods*, New Age Intl. (2005).

PROGRAMMING WITH C++ *3 Credits (2-0-1)*

Course Learning Outcomes: The aim of this course is not just to teach C++ programming but to emphasize its role in solving problems in Physics. The course will consist of hands on training on the problem solving on Computers. Students after successful completion of the course will be able to use the computer language (C++) as a tool in solving physics problems (applications)

Unit-I Introduction : Basic concepts of Object Oriented programming (OOP), Benefits of OOP, basic structure of C++ programs, executing C++ program. Character set, C++ tokens, keywords and identifiers, constants, variables, data types, declaration of variables, assigning value to variable, defining symbolic constants, strings in C++, declaration of strings.
Operators and Expression: Operators - arithmetic, relational, logical, assignment, increment-decrement, conditional, bit-wise and special. Arithmetic expressions, evaluation of expressions, precedence of arithmetic operators, type conversions in expressions, operator overloading and operator precedence, control structures

Unit-II Function and Structure: Flow of control: statements, selection statements: If, If-Else, nested If-Else, Switch statements; Iteration statements (while, do-while, for), Jump statements (break, goto, continue, exit). Function in C++, Function prototyping, Call by reference, Call by value, Function overloading, Math library Functions.
Structure in C++: Initializing of structure, structure declaration, nested structures, Arrays of structure, Arrays within structures, Passing structures to Functions. Simple programs in C++.

Unit-III Arrays and Pointers: Dimension of array, Multidimensional array, Pointers, dynamic memory, declaring and initializing pointers, manipulation of pointers, pointers expressions and arithmetic, Using pointers with arrays and strings, Arrays of pointers, Accessing strings using pointers and arrays, Pointers to Functions. Simple programs using Arrays and Pointers.

Laboratory Activities – Computer Lab. : Students will write simple C++ programs using the topics taught in these 3 units. They will run the programs in the Lab. desktop computer or Laptop and obtain the desired output. At least 10 programs must be given them as assignment.

Reference Books:

1. C++ Essentials - SharamHekmat, PragSoft Corporation,*www.pragsoft.com*
2. Object Oriented Programming with C++, 4th Edn., E Balagurusamy, TMH Publishing, 2008
3. C++ Program Design, Cohoon& Davidson, McGraw-Hill, 1999.
4. C++ for Beginners: A step by step Guide, Bud Tenny, Notion Press Media, 2022.

WEB TECHNOLOGY & MULTIMEDIA *3 Credits (2-0-1)*

Course Objectives:

The course is designed to equip students with basic knowledge on webpage creation and management, and some basic elements of editing multimedia files.

Course Learning Outcomes:

1. Webpage development and website management.
2. Create dynamic web interface and understand basic concepts of networking.
3. Ability to handle various multimedia and authoring tools.

Unit-I: Introduction

Web page development – the worldwide web (www), hypertext markuplanguange (HTML), hypertext transfer protocol (http), file transfer protocol (ftp), transmission control protocol (TCP), internet protocol (IP), Point-to-Point Protocol (PPP), domain names, uniform resource locator (URL), IP address, website, web browser, web server, web hosting.

Unit-II: JavaScript

Webscripting. JavaScript – variables, operators, pop-up boxes, comments, control structures, functions.
Objects in JavaScript. – window, document, location, array, string, date/time, form object, working with control objects. New operator, object() constructor.
Creating dynamic interface with HTML form controls and JavaScript.
Responding to events – onLoad, onUnload, onFocus, onBlur, onChange, onMouseOver.

Unit-III: Multimedia

Concept of multimedia – picture/graphics, audio, video.
Digital images and their representations and formats –
TIFF, BMP, JPG/JPEG, GIF, PDF, PSD, PIC.
Graphic tools – Photoshop/ Coreldraw/ GIMP. Elements of image creation and handling. Operations on layers, channels and masks, painting and editing, options pallete.
Sound – recording sound, importing audio files from external devices and saving them. Elements of sound editing.
Audio file formats – AIFF, MIDI, WAV, MP3, ASF.

Practical:

Create a webpage with embedded multimedia.

References (online):

www.w3schools.com

FUNDAMENTALS OF BIOCHEMICAL & MICROBIOLOGICAL TECHNIQUES

3 Credits (1-0-2)

Course Objectives:
The course will provide students the knowledge of good laboratory practices, knowledge of analysis of biological fluids like blood and urine and their importance in diagnosis of diseases. The course also introduces students to the microbes around us and basic insights on culturing of microbes for further studies.

Course Learning Outcomes:
After successful completion of the course, the students will be able to understand:

- Hazards and good practices in the laboratory, Preparation and storage of reagents
- Basic concepts of microbiology
- Composition, collection and analysis of biological fluids**.**

Unit 1: Good Laboratory Practices and Preparation of Solutions
Safety measures and first aid in the laboratory. Preparation and storage of reagents (Normal, molar, percent, stock and standard solution). Preparation of buffer and determination of pH. Principle and applications of UV-Visible Spectroscopy
Exercises:

a) Determination of pH using pH meter.
b) Preparation of buffer using Handerson-Hasselbach equation.
c) Estimation of protein/carbohydrates by Spectrophotometer

Unit 2: Analysis of Biological samples
Biochemistry of blood: ABO blood grouping; Rh factor; Blood cell types; Haemoglobin-function; Understanding Blood Pressure. Urine and its composition, Normal values for important constituents in urine.
Exercises:

a) Determination of ABO Blood groups and Rh factor
b) Estimation of blood Haemoglobin
c) Collection & Separation of Blood plasma/serum
d) Checking of Blood Pressure
e) Estimation of Blood Glucose/ Cholesterol
f) Collection of urine and qualitative analysis of normal constituents of urine.

Unit 3: Introduction to microbial world

Basic introduction to different microbes, growth medium for microbes- differential and specific medium. Sterilization and Disinfection

Exercises:

a) Isolation of bacteria from soil, water or air, counting CFU (Colony forming units).
b) Differential staining techniques.
c) Preparation of hand sanitizers.

Suggested readings:

Devlin, T.M (2011). *Textbook of Biochemistry with Clinical Correlations*. John Wiley& Sons, Inc. (New York), ISBN: 978-0-4710-28173-4.

Burtis, Ashwood and TietZ W.B.S (1999). *Textbook of Clinical Chemistry*, (3rded.).

Wiley, J.M.,Sherwood,L.M and Woolverton, C.J (2017). *Prescott's Microbiology*,(10th ed.), McGraw Hill Higher Education;ISBN13: 9781259657573.

Pelczar, Jr M.J.,Chan,E.C.S and Krieg, N.R(2004).*Microbiology*, (5th ed.).Tata McGraw Hill; ISBN 13: 9780074623206.

Upadhya,A., Upadhyay,K and Nath,N (2014). *Biophysical Chemistry: Principles and Techniques*,(4th ed.). Himalaya Publishing House, India.

David, P (1988). *A Textbook of Practical Biochemistry*. Tata McGraw-Hill Education.

DIETETICS AND DIET THERAPY *3 credits (1-0-2)*

Course Objectives: This course aims at creating awareness about the importance of healthy meal at various stages of our lives. This course also aims to train students in the area of therapeutic diets for common ailments we face today**.**

Course Learning Outcomes: After successful completion of the course, students will

- have a good knowledge on healthy eating practises
- develop the skill of meal planning for different age groups
- develop the skill of meal planning for different common ailments which can be controlled through diet therapy.

UNIT 1: Nutrition through Life Span

- Meal planning- Definition, importance, factors affecting meal planning, Balanced Diet, RDA
- Nutritional requirement, RDA and Diet Plan for:
  i) Adolescence, Adulthood and Old age
  ii) Special conditions – pregnancy

UNIT 2: Food Hazards

- Food borne infections and food poisoning (with special attention and case studies on traditional foods)
- Role of microorganisms in spoilage and common techniques to prevent spoilage of foods.
- Naturally occurring toxins and anti nutritional factors present in foods and the complications due to them.

UNIT 3: Diet Therapy

- Importance and objectives of therapeutic diets.
- Facts about fast foods/junk foods
- Dietary considerations during fevers and digestive system disorders-Peptic ulcer, GERD, Irritable bowel syndrome
- Prevention and correction of obesity and underweight
- Therapeutic diets for Fatty liver, Diabetes, Hypertension and educating the patients.

Exercises:

- Planning and preparation of low Glycemic index recipes.
- Planning and preparation of high & low fibre recipes.
- Planning and preparation of high protein recipes.
- Microbiological analysis of contaminated/ spoilt foodstuffs.

Suggested readings:

- Sharma, S. "Nutrition and Diet Therapy, Peepee Publishers, New Delhi;2014
- Gupta ,A. "Textbook of Nutrition" Medico Refresher Publisher,Agra,2018
- Joshi, A,S. "Nutrition and Dietetics", Elite Publishing House Pvt Ltd, New Delhi,2013, 7th Ed.
- Swaminathan, M. "Essentials of Food and Nutrition Vol. I and II.

COMPOSTING *3 Credits (1-1-1)*

Course Objectives:

The interested students will get the knowledge of composting, they will also turn towards organic farming and will help to maintain the environment pollution free and they can generate employment.

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

To impart knowledge and training to understand the science of composting techniques and to learn mechanism to convert agriculture waste into compost.

Perform various skills related to establishment and maintenance of vermicompost unit.

Demonstrate skills of making beds and growing the earth worms

Acquire knowledge of harvesting, packing and marketing vermicompost.

Unit 1: Introduction: Definition of Compost, Classification of composting, Role of microbes in composting, Importance of Composting.

Unit II: Methods of Composting: Composting stages and factors, Techniques of composting (Aerobic, Anaerobic, Vermicomposting)

Unit III: Practical Composting:

Compost production

Vermicomposting

a. Establishment of vermicomposting unit pit method
b. Establishment of vermicomposting unit bed method
c. Establishment of vermiwash unit
d. Vermicompostproduction , harvesting, and packaging.

Different Composting bins

Compost quality

Suggested readings:

Aravind Kumar, 2005.Verms &Vermitechnology, A.P.H. Publishing Corporation, New Delhi

Christy, M. V. (2008) Vermitechnology, 1st edition, MJP Publishers

Lekshmy, M. S., Santhi R. (2012) Vermitechnology, Sara Publications, New Delhi, India,

Vermicomposting for Sustainable Agriculture by P.K. Gupta, Agrobios (India), Agro. House. Jodhpur 342012.

SEED SCIENCE *3 Credits (1-0-2)*

Course Objectives:

- To strengthen undergraduate students in Seed Production Technology of various crops.
- To impart knowledge in the development of seed and germination.
- To provide students with a basic understanding of Seed Certification, Seed Processing, and Seed Testing

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

- To learn about the concepts and significance of seed quality control
- **Store the pure variety seeds to prevent a pure variety seed shortage caused by unfavorable environmental circumstances.**
- **To provide disease-free seed to the market so that crops can be grown sustainably.**
- **Economic value of plants and their use in human welfare.**

Unit I: Seed and technology : Introduction of different types of seed, Seed development and maturation.

Unit II: Principles of quality seed production, Factors affecting seed quality ,Importance of seed.

Unit III: Practical

Seed production on cereals, Oil seeds and vegetables
Seed processing principles and sequencing
Handling of seeds (Threshing method, drying method)

Suggested readings:

Seed Technology-R.L. Agarwal

Principles of Seed Technology- G.M. Kulkarini

Seed Science and Technology- S. Sen & N. Ghosh

Text book of botany – Pandey 2010,S. Chand and company Ltd,New Delhi

ELECTRONIC MECHANICS *3 Credits (1-0-2)*

Course Learning Outcomes: On completion of this course, student will be able:
To test various electronic components using proper measuring instruments.
To rework on PCB after identifying defects from SMD soldering and de-soldering.
To detect the faults and troubleshoot SMPS, UPS and inverter.
To identify the fault parts and replace modules of the LCD/LED TV & its remote.
To identify the fault parts of the CRT TV & its remote and replace them.

Unit- I

Introduction to Electronic; Mechanic; Safety Precautions; Safety symbols; Earthing, Response to Emergencies; PPES- Personal Protective Equipment.

Electrical Basics: Electric charges; Electric current; E.M.F. and potential difference; Resistance; Basic electrical terms; Basics of AC and DC; Phase; Conductors, insulators and semiconductors; Ohm's law; Kirchhoff's Laws; Electrical symbols.

Components of Electronic Circuit; Tools in Electronic Maintenance and Repairs; ElectronicsTest Equipment

Common Symptoms and Failures in Electronic Equipment, Practical Troubleshooting Techniques and Safety Precautions in Electronic Maintenance and Repairs

Unit- II

Practice the soldering & de-soldering of various electrical components for electronic circuits using solder, flux, pump and wick.

Measure the resistor values using colour code and verify the reading by measuring in multi meter and identify the power rating using size.

Measure the resistance, Voltage, Current through series and parallel connected networks using multi meter.

Identify different inductors and measure the values using LCR meter

Identify the different capacitors and measure capacitance of various capacitors using LCR meter.

Identify different types of diodes, diode modules and their specifications.

Construct and test a half & full wave rectifiers with and without filter circuits.

Construct and test a bridge rectifier with and without filter circuits.

Construct and test a Zener based voltage regulator circuit.

Make the necessary setting on SMD soldering station to solder and de-solder various IC's of different packages by following the safety norms.

Check the cold continuity, identify loose/dry solder and broken track on printed wired assemblies and rectify the defects.

Unit- III

Detect the faults and troubleshoot SMPS.
Detect the faults and troubleshoot UPS.
Detect the faults and troubleshoot Inverter.
Identify, operate various controls, troubleshoot and replace modules of the LCD/LED TV &its remote.
Identify, operate various controls, troubleshoot and replace parts of the CRT TV & its remote.

Recommended Books:

Electronic Mechanic, NSQF Level – 5, 4th Semester, National Instructional Media Institute, Chennai.
K. Mehta and G.V. RamanaMurthy,*Electronics Mechanics 3-In-1*, Computech Publications Limited.
Electronic Mechanic, NSQF Level – 5, 1st Semester, National Instructional Media Institute, Chennai.
Jestine Yong, *Troubleshooting & Repairing Switch Mode Power Supplies*.
ManaharLotia, *Modern Digital Inverter Intro, Servicing & Troubleshooting*.
Emmanuel Raymond, Dr. Bashir Bukar and Dr.YunusaJamilu Hassan, *Introduction To Electronic Maintenance And Repairs.*
Michael Jay Geier, *How to Diagnose and Fix Everything Electronic*, McGraw-Hill Education.
PCB Rework and Repair Guide, Circuit Technology Center, Inc.
Gene B. Williams, *Electronics Repair Manual*, WEKA Publishing, Inc., 1993.
Daniel R. Tomal, Ph.D. and Aram S. Agajanian, Ph.D., *Electronic Troubleshooting*, McGraw-Hill Education.
Robert L. Goodman, *How ToTroubleshoot And RepairElectronic Circuits*, Tab Books Inc.Homer L. Davidson, Consumer Electronics Troubleshooting & Repair Handbook, McGraw Hill.

MENSURATION AND ITS APPLICATION *3 Credits (3-0-0)*

Course Learning Outcomes: This course will enable the students to:Identify 2-dimensional and 3-dimensional objects.

Derive formulas for standard shapes.

Calculate the sides, perimeter and area of plane figures.

Calculate the sides, area and volume of 3-dimensional objects.

Apply the knowledge of Mensuration in real-life situations.

UNIT – I

Identification of 2-dimensional figures: Finding the sides, perimeter and area of 2-dimensional figures viz. square, rectangle, triangle, parallelogram, circle, semi-circle, circular ring.

UNIT – II

Identification of 3-dimensional objects: Finding the sides, area and volume of cube, cuboid. Finding the sides, area and volume of cylinder, cone, sphere, hemisphere.

UNIT – III

Finding the area of plot of land, calculating fencing, calculating the amount of carpet required, finding the amount of paint required to paint a wall, calculating the number of tiles required for a floor, finding the area of a track in the form of a circular ring. Calculation of labour cost. Finding the volume of water tanks. Calculating the number of bricks required. Finding the size of packaging required for certain volume.

Reference Books:

1. SSC Mathematics, Rakesh Yadav
2. Quantitative Aptitude, Dr. R.S. Agarwal
3. Henry H Hutton, Manual of Mensuration, Forgotten Books Publication

SIGN LANGUAGE *3 Credits (1-1-1)*

Course Objectives:

To understand the concept of Sign Language.
To acquire Sign Language the same way spoken language is acquired
To instil a sense of social responsibility and a sense of sensitivity for the non-deaf people.\

Course Learning Outcomes:

Understanding the importance of Sign Language for deaf people.
Positive impact of confidence and self-esteem for the non-deaf
Processing of information and applying knowledge of Sign Language
Interpreting gestures at a given situation.

UNIT I – INTRODUCTION TO SIGN LANGUAGE

- Sign Language: Concept and Definition
- Indian Sign Language (ISL)
- American Sign Language (ASL)
-

UNIT II – USES OF SIGN LANGUAGE

- Sign Language for non-deaf people
- Sign Language for deaf people
- Sign Language for National Integration and Universal outlook
-

UNIT III - INTERPRETATION OF SIGN LANGUAGE

- Interpreter and Interpreting
- Professionalism in Sign Language Interpreting
- Code of Ethics

Practicum:

Field visits to Special schools for extended classroom
nteraction program with Sign language educators and all the stakeholders.

References:

Baker- Shenk, Charlotte and Dennis Cokely 1980. American Sign Language. A teacher's resource text book on grammar and culture. Washington DC, USA: Gallaudet University Press
Bhattacharaya, T,Grover, N and Randhawa, S(eds) 2014. The People's Linguistic survey of India Volume 38: Indian Sign Language(s)
Roy, Cynthia B 2000. Innovation practices for teaching Sign Language Interpreters, Gallaudet University Press: Washington DC

CULTURAL STUDIES *3 Credits (1-1-1)*

Course Objective

To understand the concept of culture and its practices in Mizoram.
To practice the different aspects of culture i.e different forms of arts and crafts, including games, dances, material culture (dress making, culinary, music, etc.)

Course Learning outcome:
To gain knowledge of the fundamental features of culture.
Understand the role of culture in moulding a society
Economic and political Importance of cultural practice.
To empower to be more in sync with the Mizo culture.
To hone and stir cultural knowledge to promote and encourage entrepreneurial skills.

Unit 1: Intangible Art forms:

- Dances
- Culinary Art
- Music

Unit 2: Technique of Material Culture:

- Harvesting of cotton and Yarn making
- Organic Colour making
- Weaving & Pattern making
- Basket weaving
- Implement making

Unit 3: Ancillary Art & Craft:

- Trap making
- Farming & Cattle rearing.
- Hunting/fishing

Practicum:

1.Conducting Practical classes with Skilled resource persons.
2. Field trip for fishing or hunting practices.
3. Field trips to weaving centres
4. Field trip to farms.

References:

Dokhuma, James, Hmanlai Mizo Kalphung, Mizoram Publication Board, Aizawl, 2008.

Laitanga, C., Mizo Khua, Mizoram Publication Board, Aizawl, 2002.
_____, Mizo Sakhua, Tribal Research Institute, Aizawl.
_____ ,Paite in Mizoram, Tribal Research Institute, Aizawl, 2011.
Lalthangliana, B., Mizo Chanchin, Aizawl, 2001.
Malsawmliana and Benjamin Ralte (eds.), Social, Economic & Political History of the Mizo, Guwahati, Eastern Book House, 2011.
Parry, N.E., A Monograph on Lushai Customs and Ceremonies, Firma KLM Private Limited/ Tribal Research Institute, 1927.

Parry, N.E., TheLakhers, London, Macmillan & Co., Limited, 1932.
Sangkima, A Modern History of Mizoram, Spectrum Publications, Guwahati, 2004.
Shakespear, J., The Lushai Kuki Clans, London, Macmillan & Co., Limited,1912. 11.
Shakespear, J., 'The Lushais and the land they live in,' Journal of the Society of Arts, No. 2,201 Vol. XLIII, pp.167-188.
Zohra, K., The Maras, indigenous tradition & Folk Culture, Scientific Book Centre, Guwahati, 2013.

R.C.C BUILDING CONSTRUCTION *3 Credits (1-1-1)*

Objectives: To develop skills and enhance capabilities in building construction.

Outcome: Perform Constructions of RCC building, increase the employability of the youth

THEORY

Module-I

Building Material

Building stones and Aggregrates, Sand, bricks, tiles, cement, mortars, concrete.

Cement Concrete

Water cement ratio, workability, segregation, bleeding, batching, mixing, placing, compaction, curing, plain cement Concrete, Reinforced Concrete, reinforced concrete columns, reinforced concrete beams, reinforced concrete slab, R.C.C. framed buildings, joints in concrete work, formwork or shuttering, scalfolding, setting time.

Reinforcement

Development length of bars, anchoring reinforcing bars, curtailment of reinforcement, reinforcement splicing, spacing of reinforcement, cover to reinforcement, stirrups, requirement of reinforcement or beams, requirement of reinforcement for slabs, requirement of reinforcement for columns.

Flooring

Construction of concrete flooring, construction of tiled flooring.

Foundation

Excavation of foundation trenches.

Module-II

Stone Masonry

Use of stone masonry, selection of stone masonry, mortar for stone masonry, joints in stone masonry, stone masonry retaining wall, dressing of stones.

Plastering

Objective of plastering, cement plaster and their requirements, tools for plastering, methods of plastering.

Brick Masonry

Principle in brick Masonry construction, tools for brick laying, bonds in brick masonry, wall thickness in brick work, defect in brick work, maintenance of brick masonry construction.

Damp prevention

Sources of dampness, effect of dampness, techniques and methods of Damp prevention, treatment of dampness.

Equipment for concrete Construction

Batching of material, mixing, placing, compaction.

Miscellaneous structures

Construction R.C.C .water tank, Construction of Septic Tank & Soak Pit.

PRACTICAL / INDUSTRIAL TRAINING

Suggested Readings

Building Construction (Planning Techniques and Method of Construction) by S.P. Arora & S.P. Bindra; Dhanpat Rai & Sons, Delhi

Concrete Manual by M.L.Gambhir;Dhanpat Rai &Sons, Delhi

Concrete Technology by M.S.Shetty;S.Chandand Company Ltd.,New Delhi

Soil Mechanics and Foundation by Dr.B.C. Punmia; LaxmiPublicationsPvt.Ltd.,NewDelhi

Text Book of Design of Reinforced Cement Concrete by Krishna Raju.

Engineer teThian by Er. K.Lalsawmvela.

Cement Concrete prepared by Central YMA.

MIZO LANGUAGE AND WRITING SKILLS *3 Credits (1-1-1)*

Course Objectives:

1. Zirlaiten Mizo tawngkalhmanglehnihphung an hriatchiannan.
2. Tawngdikzawkhmanlehhriattirte, tawnglehziahdandik lo tehriattir.
3. Mizo tawngaziakzawmlehzawmloh tur te, thuchhehdankalhmangzirtir.

Course Structure (3 credits)

	Paper Title	***Scope***
Chapter 1	Mizo tawngKalhmanglehZiah Dan	*Mizo tawngkalhmang, rihranglehawmziate, tawngdiklehdik lo zirbakahziahchhuahdankalhmangte a huamang.*
Chapter 2	Mizo |awngZiahZawmlehZawmLoh	*Mizo tawngaziahzawmlehzawmloh tur te, part of speech atangathliarhrandanhranghrante a huamang.*
Chapter 3	Practical	*Thupuipeksahmangaziahte, lehkhabuthlir (preview) lehziakdandik lo hranghrangendikte a huamang.*

Suggested Readings

Dokhuma, James, Hmanlai Mizo Kalphung, Mizoram Publication Board, Aizawl, 2008.

Laitanga, C., Mizo Khua, Mizoram Publication Board, Aizawl, 2002.
_____, Mizo Sakhua, Tribal Research Institute, Aizawl.
_____ ,Paite in Mizoram, Tribal Research Institute, Aizawl, 2011

AZOLLA CULTIVATION *3 Credits (1-1-1)*

Course Objectives:

- To impart knowledge and crucial skills of *Azolla* culture and production.
- To practice *Azolla* Cultivation and analyze the impact on poultry farming as poultry feed supplement.

Course Learning Outcome:

- Increase the knowledge of *Azolla* Cultivation.
- Understand the nutritive value of *Azolla*.
- Knowledge on *Azolla* as cost effective poultry feed supplement
- Economic impact of *Azolla* as poultry feed.

UNIT-I: Definition, Historical development and Economic importance of *Azolla*sp. Nutritional value and composition of *Azolla* sp. *Azolla* as poultry feed.

UNIT-II: Cultivation of *Azolla*, Media Composition, Requirements for growth and Factors affecting growth of *Azolla* sp. Production of *Azolla*, Harvesting and Marketing of *Azolla*.

UNIT-III: *Azolla* as cost effective poultry feed supplement. Impact of *Azolla* as feed on poultry farming.

Practicum:

Field visit to *Azolla* Cultivation Site

Cultivation of *Azolla*sp

Study of impact of *Azolla*sp as poultry feed supplement.

References:

A. Chevalier, The Cultivation of Azolla for Animal Feed and as Green Manure for Rice Fields.

B. Dr. H. Panda, Integrated Organic Farming Handbook

TRANSLATION AND INTERPRETATION *3 Credits (1-1-1)*

Course Objectives :
To develop students proficiency in both translating written texts and interpreting spoken language.
To enhance skills, cultural awareness, and understanding of various translation techniques.
To focus on building critical thinking.
To familiarize students with specialized terminology.
To gain hands-on experience through practical exercises

Course Learning Outcome :
Improved skills in reading, writing, speaking, and understanding languages.
Enhanced awareness of cultural nuances and sensitivities, allowing for accurate and culturally appropriate translation and interpretation.
Proficiency in various translation strategies, such as literal translation, idiomatic translation, and localization, enabling effective adaptation of content.
Understanding ethical principles in translation and interpretation, including confidentiality, and neutrality.
Development of analytical skills to handle challenging linguistic and cultural situations, leading to effective decision-making during translation and interpretation.
Opportunities for hands-on practice through actual translation/interpretation tasks to prepare for real-world scenarios.
Improved ability to convey messages accurately and effectively, both in written translation and spoken interpretation.
8. Awareness of the need for continuous learning and adaptation to evolving language trends, and technologies.

Unit I :Introduction to Translation and Interpretation
Overview of translation and interpretation
Differentiating between translation and interpretation
Historical evolution and significance of translation and interpretation.

Unit II :Translation Techniques and Strategies
Translation theories and approaches: equivalence, functionalist, cultural translation.
Analysis of language structures: syntax and semantics.
Translating idioms, metaphors, cultural references.
Practical exercises in translation of different text types

Unit III :Interpretation Skills and Practice
Developing active listening skills
Note-taking techniques for consecutive interpretation.
Practical exercise on real life scenarios.

Suggested Readings:

1. Translation and re-translation by GangadharBenerjee.

2. A handbook of Translation Studies by Bijay Kumar Das.

FINANCIAL LITERACY *3 Credits (1-1-1)*

OBJECTIVE:

• To create awareness in students about the need of financial literacy.

OUTCOMES:

• The students will be able to understand the importance of financial literacy and prepare financial plans and managements.

• Students will be able to describe the importance of insurance services as social security measures.

UNIT – I Introduction:

Financial Literacy- Meaning and Importance - Components of Financial Literacy- Financial Institutions: Meaning, Banking and Non-Banking Financial Institutions, Post offices. Meaning and concept of Financial Investment. Financial Planning and Budgets, Family Budget. Budget deficit and Surplus.

UNIT – II Banking:

Meaning and Types of Banks, Various services offered by banks, types of bank deposit accounts, Formalities to open various types of bank accounts, KYC norms. Various types of Loans: Short-term, Medium term and Long term loans. Cashless banking, e-banking, ATM, Debit and Credit cards, banking Complaints.

UNIT – III Financial Services from Post Office:

Post office Savings Schemes: Savings account -Recurring deposit -Term Deposit - Monthly Income Scheme – KissanVikasPathra – NSC – PPF -Senior Citizen Savings Scheme – SukanyaSamriddhiYojana/Account - Indian Post Payments Bank -Money Transfer - Money Order. Postal Life Insurance.

SKILL DEVELOPMENT

1. Visit a nationalized bank near your area and collect information on services offered by the bank.
2. Visit a post office in your area and collect information various deposit schemes and policies available.
3. Collect saving account opening form from a nationalized bank and post office and fill up the form with necessary enclosures.
4. Prepare an annual family budget considering the income of your family.

Books for Reference*:*

Kumar Singh, Abhishek&Rajni(2022), Financial Literacy : JSR Publishing Home.
Avadhani, V A (2019), Investment Management, Mumbai: Himalaya Publishing House Pvt Ltd
B.G. Guruprasad (2021), Financial Literacy :Sapna Book House.
Chandra, P (2012), Investment Game: How to Win . New Delhi: Tata McGraw Hill Education.
Kothari , R (2010), financial Services in India: Concept and application. New Delhi: Sage Publication India Pvttd
Milling B. E, (2003), The Basics of Finance: Financial Tools for Non Financial Managers, Indiana : Universe Company.
Zokaityte , A (2017), Financial Literacy Education. London: Palgrave MacmillanI

BASIC RULES AND LOGIC WITHIN MATHEMATICS *3 Credits (1-1-1)*

Course Learning Outcomes :

Understand the basic concepts of numbers and clarify them in their own identity and gives the students to enable the applications of some basic rules.

Explain basic formula for numbers and how to apply in the specific problems including square roots and cube roots.

Enhancing student's aptitude and logic thinking skill.

Unit – I : Different kinds of numbers, Multiplication, Division, Fractions, Divisibility rules, Prime Numbers.

Unit – II : Basic formulae on Numbers, application to problems on numbers, Square roots and Cube roots.

Unit – III : Logical Reasoning, Pattern and Series of Numbers, Letters and Figures.

Suggested Readings :

Dr R.S. Aggarwal : Quantitative Aptitude for Competitive Examination, S. Chand Publication.

Rajesh Verma : Fast Track Objective Arithmetic Paperback – 2021, Arihant Publication.

Dr. R.S. Aggarwal : A Modern Approach to Logical Reasoning, S. Chand Publication.

ArunSharma : Teach Yourself Quantitative Aptitude, McGraw Hill Publication.

CARTOGRAPHIC TECHNIQUE *3 Credits (1-1-1)*

Course Objectives

To understand the concept of cartographic technique and its importance
To acquaint the knowledge's and skills of map reading and map making.
To acquaint the knowledge's and skills of interpreting the topographical map, and extracting the relief features.

Course Learning Outcomes

The students will be able to understand the concept of cartography and its importance.
The students will be able to have the knowledge and skills of map reading and making process.
The students will be able to extract the relief features from the topographical map.
The students will be able to create map and represent the population by using different methods.

UNIT I: Meaning and importance of cartography; Types of scales; Types of Maps

UNIT II: Topographical Maps: Meaning, Methods of Relief Representation, Map Interpretation Procedure

UNIT III: Cartograms- Dot method; Shade method; Line Graph, Bar Diagram; Pie Chart; Proportionate Circles.

Practicum:

Interpretation of topographical maps in relation to Relief, Drainage, Transportation and Settlements
Topographic Profile: Hills; Cliff; Plateau, V-shape Valley; U-shape Valley
Map Making using Dot method; Shade method; Line Graph, Bar Diagram; Pie Chart; Proportionate Circles.

Suggested Readings:

Singh, R.L. (1970): *Elements of Practical Geography*, Banaras.
Robinson, A.H. et al. (1995): *Elements of Cartography*, John Wiley and Sons, USA.
Sarkar, A. (1997): *Practical Geography: A Systematic Approach*, Orient Longman, Kolkata.
Singh, R.L. and Singh, R. P. B (1991): *Elements of Practical Geography*, Kalyani Publishers, New Delhi

BAKING, PICKLING & PACKAGING *3 Credits (1-1-1)*

Objective
To help students acquire skills in baking and pickling
To enable them to earn while they learn
To encourage students to utilize available resources of the state to promote production and also help them be self-sufficient.

Course Outcome:
Students will have easy means of earning their livelihood.
Students will be encouraging production of the available natural resources of the state (i.e., bamboo, banana & other fruits)
Students will be enabled to earn while they learn by practically making use of the course.

Unit I: Baking variety of Cakes
Banana Cake
Butter Cake
Plain Cake
Chocolate Cake
Red Velvet Cake

Unit II : Baking Cookies
Butter Cookies
Custard Cookies
Coconut Cookies
Cake Icing

Unit III : Making Pickles
Bamboo Shoot Pickle
Banana Flower Pickle
Chilly pickle
Mango Pickle
Packaging

Suggested Readings:

On the Pickle Trail by MonishGujral
Simple Home Baking by Sanjeev Kapoor

MOBILE REPAIRING *3 Credits (1-1-1)*

Course Objectives:
To impart basic instruction in both mobile software and mobile hardware.

To train the students for practical repairing of mobile.

To enhance the economic opportunities for the students after graduate.

To help students in setting up their own enterprise.

Course Outcomes:
Students will gain knowledge on software and hardware.

Students will have knowledge on mobile repairing.

Students will learn the business scope of mobile repairing.

UNIT I :**HARDWARE**
Basic Parts of Mobile Phones (Mic, Speaker, Buzzer, LCD. Antenna, etc) ; Basic Circuit Board / Motherboard Introduction ; Basic Electronics ; Details of various components used in mobile phones. ; Use of tools and instruments used in mobile phone repairing ; Names of different IC's ; Work of Different IC's ; All troubleshooting, fault finding and chip level repairing of various brand and model; Basic and android smart cell phones ; Jumpering techniques and solutions ; Troubleshooting through circuit diagrams ; Repairing procedure for fixing different hardware and advance faults ; Use of multimeter ; Assembling and Disassembling of different types of basic mobile phones, android smart mobile phones and tablet ; Soldering and de-soldering components using different soldering tools and hot air gun ; Fault finding and diagnostic using schematic diagram ; Re-balling IC's, boot sequence.

UNIT -II:SOFTWARE
Use of dongle, UFI and easy tag box ; Flashing ; Formatting ; Unlocking ; Downloading Bypass and resetting

UNIT III:THEORY
Mobile phone dictionary – full form of term used in mobile phone ; Mobile phone repairing tools and equipment ; Identification of card and chip level parts ; Identification of PCB ; Identification of big parts and small parts in mobile phone ; IC (Integrated Circuit) counting techniques of leg type and ball type ; Circuit symbol ; Section of mobile phone ;Software problems and solution.

Practical:
Students opting for the course will undergo hands-on practical training at Synod Multipurpose Training Centre (SMTC), Mission Vengthlang.

Suggested books :
SanjibPandit – Advance Mobile repairing.
Ram Babu Rao-Perfect Mobile Repairing Handbook
ChukyOparanda – Mobile Phone and Tables repairing

SAFETY AND EMERGENCY PREPAREDNESS *3 Credits (1-1-1)*

Objectives :
Understanding disaster management

To learn basic fire-fighting techniques and self-defense strategies

Learn essential first aid skills

Unit I: Basic Self-Defense
Physical techniques for self defense

Verbal defense

Personal safety tools

Unit -II: Fire Fighting and Disaster Management
Emergency Response

Search and rescue techniques

Fire fightingtools(e.g. Helmets, Clothing) and safety in different environments (home, workplace, etc.)

Unit III: First Aid
Injury assessment and management(fractures, burns, wounds)

Emergency (Heart attack, Stroke, Allergy)

Integrated first aid scenarios(Injection, Thermometer, BP Measurement, etc.)

Practicum:
Practical class with professional experts.

Suggested books

Jeff Cooper- Principles of personal defense
Bob Francis- Verbal self defense
B.K. Singh – Handbook on disaster management techniques and guidelines