BOARD OF OPEN SCHOOLING AND SKILL EDUCATION (BOSSE)

SIKKIM

Senior Secondary

VOCATIONAL COURSES CURRICULUM

SKILLS FOR TODAY, OPPORTUNITIES FOR TOMORROW

CARPENTRY & FURNITURE MAKING

DATA ENTRY OPERATIONS

ELECTROPLATING

FOOD PROCESSING

FOUNDATIONAL STAGE CARE AND EDUCATION

FURNITURE AND CABINET

FUNDAMENTALS OF DRAWING AND PAINTING

GARDENING

HOTEL FRONT OFFICE OPERATIONS

HOUSEKEEPING

LIBRARY AND INFORMATION SCIENCE

PLANT PROTECTION

PRESERVATION AND FURNITS AND VEGETABLE

SECRETARIAL PRACTICE

SOIL AND FERTILIZER MANAGEMENT

LEARN Continuously

SKILL Practical Training

GROW For a Better Future

SUCCEED In Life

Empowering Learners • Building Skills • Creating Futures

Senior Secondary

Vocational Courses Curriculum

BOARD OF OPEN SCHOOLING AND SKILL EDUCATION (BOSSE), Sikkim
(Established under Act No. 14 of 2020 of the Sikkim Legislative Assembly)
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1. CARPENTRY & FURNITURE MAKING

INTRODUCTION

Carpentry and Furniture Making is a skilled trade that combines creativity, craftsmanship, and technical knowledge to transform raw wood into functional and aesthetically pleasing products. This course introduces learners to the foundational techniques of measuring, cutting, shaping, joining, assembling, and finishing wood to create furniture and interior fixtures. Students are trained to use both traditional hand tools and modern power tools while following safety procedures and industry standards. Throughout the course, learners develop problem-solving abilities, precision, and attention to detail—essential qualities for producing high-quality furniture. Apart from practical skills, the course also covers reading technical drawings, understanding material selection, learning different joint techniques, and applying surface finishing methods. By the end of the course, students gain confidence in designing and constructing furniture pieces such as tables, chairs, cabinets, and storage units. This training prepares them for employment, self-employment, and entrepreneurship in the fast-growing furniture and interior industry.

SCOPE AND VALUE

A Carpentry & Furniture Making course offers wide career scope in construction, interior design, and custom furniture manufacturing. Learners gain hands-on skills in woodworking, tool handling, joinery, finishing, and working with modern materials like plywood, MDF, and laminates. With rapid growth in housing, modular furniture, and renovation industries, skilled carpenters are in high demand. The course supports careers as carpenters, furniture makers, workshop technicians, or entrepreneurs in custom furniture and interior work. Its value lies in combining traditional craftsmanship with modern techniques, enabling learners to build functional, aesthetic, and durable products while opening pathways to sustainable, long-term employment or self-employment.

MODULE 1: INTRODUCTION OF CARPENTRY & FURNITURE MAKING & PROFESSIONAL SKILLS

Lesson 1: Introduction to Carpentry & Furniture Making

- History and evolution of carpentry
- Scope and applications of carpentry in daily life
- Branches: cabinet making, joinery, furniture production, woodcraft

Lesson 2: Carpentry Tools & Equipment

- Hand Tools – saws, chisels, hammers, planes
- Measuring & Marking Tools – tape, try square, calipers
- Power Tools – drills, jigsaws, sanders, circular saws
- Tool Maintenance – sharpening, cleaning, safe storage

Lesson 3: Soft Skills for Carpentry & Furniture Making

- Importance of Soft Skills in Carpentry
- Workplace Discipline
- Customer Interaction
- Problem-Solving & Adaptability

MODULE 2: MATERIALS & WORKSHOP PRACTICES

Lesson 4: Types of Wood and Alternatives

- Softwoods vs. Hardwoods
- Plywood, MDF, Veneer, Laminates
- Sustainable & recycled wood options

Lesson 5: Wood Properties & Selection

- Grain, texture, hardness, durability
- Moisture content & seasoning of wood
- Choosing the right wood for furniture

Lesson 6: Workshop Layout & Safety Practices

- Safe workshop design
- Personal protective equipment (PPE)
- Fire safety, first aid, emergency procedures

Lesson 7: Measuring, Marking & Cutting

- Units of measurement & accuracy
- Common marking techniques
- Cutting methods for different materials

MODULE 3: JOINERY & CONSTRUCTION TECHNIQUES

Lesson 8: Types of Wood Joints

- Butt joint, Lap joint, Mortise & Tenon
- Dovetail, Finger joint, Dowel joint
- Advantages and applications

Lesson 9: Assembling & Fixing Techniques

- Nailing, screwing, gluing
- Clamping methods
- Use of modern fasteners

Lesson 10: Furniture Construction Basics

- Frames & panels
- Chairs, tables, cabinets – structural elements
- Reinforcement techniques for durability

MODULE 4: FINISHING & SURFACE TREATMENT

Lesson 11: Surface Preparation

- Sanding methods
- Filling cracks & gaps
- Levelling & smoothing surfaces

Lesson 12: Polishing & Painting

- French polish, varnish, lacquer
- Paints & stains for wood finishing
- Spray vs. brush application

Lesson 13: Upholstery & Decorative Work

- Basics of upholstery materials
- Cushioning & covering techniques
- Adding design details (inlays, carvings)

MODULE 5: FURNITURE DESIGN, MAINTENANCE & ENTREPRENEURSHIP

Lesson 14: Basics of Furniture Design

- Reading technical drawings
- Ergonomics in furniture making
- Design trends & creativity

Lesson 15: Maintenance & Repair of Furniture

- Identifying damages (cracks, loose joints, scratches)
- Repair methods for different furniture types
- Long-term care of wooden furniture

Lesson 16: Entrepreneurship in Carpentry

- Setting up a small carpentry business
- Cost estimation & budgeting
- Marketing furniture & client relations

2. DATA ENTRY OPERATIONS

INTRODUCTION

Data Entry Operations form the backbone of business processes in today's digital economy. From banking and healthcare to e-commerce, logistics, government services, and corporate enterprises, accurate and efficient data entry ensures the smooth functioning of operations. The growing need for digitization, record management, and real-time information has created a strong demand for skilled data entry operators. This course on Data Entry Operations is designed to equip learners with essential technical and soft skills such as computer fundamentals, keyboarding proficiency, accuracy in data handling, knowledge of spreadsheets, database management, and basic communication skills. It not only prepares individuals for clerical and back-office support roles but also develops their competence to adapt to evolving technologies such as automated data systems and cloud-based documentation.

SCOPE & MARKET VALUE OF DATA ENTRY OPERATIONS

Data Entry Operations continue to hold strong market value across industries such as banking, healthcare, e-commerce, education, logistics, and government services. With the rapid growth of digital record-keeping, businesses require skilled data entry operators to ensure accuracy, speed, and secure handling of information. The demand is increasing due to expanding online services, digital transformation, and the need for large-scale data processing. The scope includes roles like data entry clerk, documentation assistant, MIS assistant, back-office executive, and database support staff. Companies value professionals who deliver error-free data, making this field a reliable source of steady employment and long-term career stability.

MODULE 1: INTRODUCTION & PROFESSIONAL SKILLS

Lesson 1: Fundamentals of Computer Systems

- Components of a Computer (Hardware, Software, Peripherals)
- Input/Output Devices for Data Entry
- Types of Software: System & Application
- Storage Devices & File Systems

Lesson 2: Operating System & File Management

- Introduction to OS (Windows/Linux)
- Desktop & File Explorer

- Creating, Renaming, Copying & Deleting Files
- Organizing Folders & Backup Basics

Lesson 3: Soft Skills for Data Entry Operators

- Importance of Soft Skills in Data Entry
- Communication Skills
- Time Management & Discipline
- Teamwork and Collaboration
- Workplace Ethics & Professionalism

MODULE 2: WORD PROCESSING & DOCUMENTATION

Lesson 4: Basics of Word Processing (MS Word/Writer)

- Creating and Saving Documents
- Formatting Text & Paragraphs
- Bullets, Numbering & Styles
- Page Setup & Printing

Lesson 5: Advanced Word Processing

- Tables & Tabulation of Data
- Inserting Images, Symbols & Charts
- Mail Merge & Labels
- Macros & Templates

Lesson 6: Data Entry Practices in Word

- Typing Speed & Accuracy Exercises
- Proofreading & Editing Skills
- Document Security (Password Protection)

MODULE 3: SPREADSHEET MANAGEMENT

Lesson 7: Introduction to Spreadsheets (MS Excel)

- Understanding Worksheets & Workbooks

- Cell Formatting & AutoFill
- Basic Formulas & Functions

Lesson 8: Data Analysis in Spreadsheets

- Sorting & Filtering Data
- Conditional Formatting
- Charts & Graphs Creation

Lesson 9: Advanced Spreadsheet Functions

- Pivot Tables & Data Summarization
- Lookup Functions (VLOOKUP, HLOOKUP)
- Data Validation & Error Checking

MODULE 4: PRESENTATION, INTERNET & EMAIL SKILLS

Lesson 10: Creating Presentations (MS PowerPoint/Impress)

- Basics of Slide Creation
- Inserting Media (Images, Audio, Video)
- Slide Transitions & Animations

Lesson 11: Internet & Web Applications

- Using Browsers & Search Engines
- Downloading/Uploading Files
- Online Forms & Cloud Storage

Lesson 12: Email & Online Communication

- Creating & Managing Email Accounts
- Sending, Receiving & Attaching Files
- Email Etiquette & Professional Writing

MODULE 5: DATA QUALITY & SECURITY

Lesson 13: Data Quality & Accuracy

- Common Data Entry Errors

- Proofreading & Correction Techniques
- Accuracy Standards & Benchmarks

Lesson 14: Data Security & Backup

- Importance of Data Security
- Passwords & Access Control
- File Backup & Recovery Methods

3. ENTREPRENEURSHIP

RATIONALE

Entrepreneurship education helps students develop a range of skills and competencies that are valuable in both their personal and professional lives. It teaches them how to think creatively and critically, how to identify and solve problems, and how to take calculated risks.

Entrepreneurship promotes economic growth, provides access to goods and services, and improves the overall standard of living. Many entrepreneurs also make a positive impact on their communities and improve their well-being by catering to underserved areas and developing environment-friendly products.

One major benefit of studying entrepreneurship is the gained ability to recognize opportunity. Entrepreneurial studies focus on the application of one's knowledge and skills to commercial opportunities. Being able to determine a company's worth through analysis of their strategies, practices.

Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy.

Entrepreneurship is frequently credited as a major driver of economic growth, spurring transformation, the creation of new markets, innovation, and building wealth. Entrepreneurs are often key to developing ideas and solutions to problems while creating new products.

The Government of India and state governments are creating a supportive entrepreneurial ecosystem and providing incentives and infrastructural facilities through the single window system. This has resulted in improvements in India’s place in the world ranking of Ease of Doing Business.

Entrepreneurship is all about starting, designing, launching and managing a business enterprise. Innovation is important to sustain and improve any business enterprise. With this spirit, the entrepreneurship course has been initiated for the senior secondary level to provide learners with a basic understanding of entrepreneurship and choosing enterprise as a career.

Curriculum Objectives

This course will help develop the understanding of entrepreneurship as a discipline.

The objectives of the subject should be to enable the learners to

- Understand what the subject is all about, its knowledge and wisdom, origin and evolution.

- Develop in students the knowledge and thought of India for developing a national pride.
- Understand the meaning, types and characteristics of entrepreneurship
- Cultivate the interest of the learners and motivate them to opt for entrepreneurship as a career
- Appreciate the importance of entrepreneurial creativity and innovation
- Know the concepts and theories of motivation
- Understand the process of enterprise marketing and resource mobilization
- Create awareness regarding entrepreneurial growth and development
- Familiarize with entrepreneurial eco-system and government support

COURSE STRUCTURE

The current curriculum comprises of IV Modules and 17 lessons. The study hours and marks allotted are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module 1	3	22	09
Module 2	3	23	10
Module 3	4	30	13
Module 4	7	45	18
Practical/Project work		120	50
Total	**17**	**240**	**100**

MODULE I: IDEA OF ENTREPRENEURSHIP

Time: 22 hrs **Marks: 09**

Lesson 1: Values, Wisdom and Knowledge- The Ultimate Aim of Education

(Time allocation: 7hrs)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Entrepreneurship **(Time allocation: 08hrs)**

- Who are Entrepreneurs?
- Types of Entrepreneurs
  - **Entrepreneurship:** Need and Importance
  - (**Need of Entrepreneurship for Economic Growth**: Innovation, Employment, Living standard, Research and Development
  - (Individual: Economic Development by Entrepreneurs, Contribution of Entrepreneurs to National Profit, Social Change by Entrepreneurs)
- Elements of Entrepreneurship
- Barriers to Entrepreneurship
- Dimensions of Entrepreneurship
  - Intrapreneurship
- Entrepreneur Vs Intrapreneur
  - Technopreneur ship
  - Tourism Entrepreneurship
  - Ecopreneurship
  - Cultural Entrepreneurship
  - Social Entrepreneurship
  - Rural Entrepreneurship
  - International Entrepreneurship

- Women Entrepreneurship
- Skills and Competencies
- Developing Entrepreneurial Competencies\

Lesson 3: Origin and Evolution of Entrepreneurship **(Time allocation: 07hrs)**

- Evolution of Entrepreneurship
  - ❖ Ancient Period
  - ❖ Medieval Period
  - ❖ Modern Period
    - ➢ Pre Independence
    - ➢ Post Independence
- **Changing Face of Entrepreneurship in India** (Box Info, Few Case Studies)
  - Liberalization, Privatization, Globalization (Post 1991)
  - Make in India
  - Atmanirbhar Bharat (Post 2014)

    (Emphasis on New Government Policies)

MODULE II: ENTREPRENEURIAL OPPORTUNITY AND PLANNING

Time: 23 hrs **Marks: 10**

Lesson 4: Creativity and Innovation **(Time allocation: 08hrs)**

- Concept of Creativity
- Creativity – a Necessity for Entrepreneurial Success
- Concept of Innovation
- Need for Innovation as Value Addition for Entrepreneur
- Concept of Entrepreneurial Motivation
- Entrepreneurial Motivating Factors
- Entrepreneurial Motivation and Human Needs (Maslow Theory)
- Intrinsic and Extrinsic Motivation
- Entrepreneurship for Self-Actualization

Lesson 5: Entrepreneurial Opportunity **(Time allocation: 07hrs)**

- Idea Generation and Sources
- Environment Scanning
- Selecting the right opportunity
- Launching a New Venture/ Startup: Concept of Business Incubation, Steps Involved in Launching a Business, Various Forms of Business Ownership, Registration of Business Units

Lesson 6: Feasibility Studies and Business Plan **(Time allocation: 08hrs)**

- POC, Proto Type and MVP
- Feasibility Studies: Concept and Relevance
- Components of Feasibility Studies
- Opportunity Analysis; External Environment Analysis Economic, Social and Technological Analysis.
- Development of a Business Plan (viability)
- Execution of a Business Plan

MODULE III: ENTERPRISE MARKETING AND RESOURCE MOBILIZATION

Time: 30 hrs **Marks: 13**

Lesson 7: Operation Management **(Time allocation: 06hrs)**

- Prototyping to Minimal Viable Product (MVP)
- Supply Chain Management

  (Project Management)
- Time Management
- (Quality Management)

Lesson 8: Marketing and Sales Management **(Time allocation: 07hrs)**

- Understanding the Market Concept, Types, Micro / Macro Market, Environment
- Marketing Research
- Marketing Mix
- Branding, Logo, Tag Line

Lesson 9: Resource Mobilization **(Time allocation: 09hrs)**

- Human Resource Management -Talent Acquisition, Team Building and Organizational Development
- Traditional Sources:
  - Capital Market: Concept
  - Primary Market: Concept, Methods of Issue
- Institutional Finance: Commercial Banks and Other Financial Institutions (NSIC, SIDO, DIC's, SSIB etc)
- Emerging Trends of financing:
  - Family Friends
  - Seed Funding from Government
  - Angel Investor: Features
  - Venture Capital: Features, Funding
  - Mudra Loan

Lesson 10: Business Finance Concepts **(Time allocation: 08hrs)**

- Unit of Sale, Unit Price & Unit Cost – for Single Product or Service
- Types of Cost – Start-up, Variable and Fixed
- Time Value of Money (Present Value, Future Value)
  - Profitability and Financial Statement
    - Trading and Profit and Loss Account
    - Balance Sheet and Financial Statement
  - Return on Investments (RoI)
  - Pay Back

  Break Even Analysis – for Single Product or Service

MODULE IV: ENTREPRENEURAL GROWTH AND DEVELOPMENT

Time: 45hrs **Marks: 18**

Lesson 11: Entrepreneurial Growth Strategies **(Time allocation: 06hrs)**

- Franchising: Concept and Types
- Mergers and Acquisitions

- Advantages and Limitations to Franchisor and Franchisee.
- Reasons for Mergers and Acquisition: Concept, Reasons and Types

Lesson 12: Sustainability & Entrepreneurship (Time allocation: 07hrs)

- Ministry of Skill Development and Entrepreneurship:
- NIESBUD
- Micro & Small Enterprises: Concept & Meaning
- Features and Characteristics
- Objectives of MSME
- Role of MSME in Economic Development
- Support and Sustainability of Enterprise
- Problems of MSME

Lesson 13: Digitalization in Entrepreneurship (Time allocation: 07hrs)

- e-Resources
- Impact of Digitalization on Entrepreneurship
- Entrepreneurship in Digital India
- Tech-Enabled Enterprises that have been a Success from India

  (Case Studies, for Example: Infosys, Nyyka)

Lesson 14: Ethics in Entrepreneurship (Time allocation: 06hrs)

- Importance
- Entrepreneurial Values and Attitudes
- Social Norms
- Morality
- Philanthropy & Social Responsibility Initiatives: CSR
- Norms of Conduct
- Business Ethics and Conduct

Lesson 15: Social Entrepreneurship (Time allocation: 06hrs)

- Social Entrepreneurship
- Characteristics of social entrepreneur

- Importance of Social entrepreneurship
- Difference between commercial and social entrepreneurship
- Indian case studies of Social Entrepreneurship

Lesson 16: Entrepreneurial Success in India **(Time allocation: 07hrs)**

- Successful Corporate Houses (Case Studies)
  - Tata
  - Birla
  - Ambani
  - Adani
- Small Caselets
  - Wipro
  - HCL
  - Mahendra
  - Hero Motors
- Self-Made Women Entrepreneurs of India
  - Kiran Mazumdar Shaw
  - Falguni Nayar
  - Aditi Gupta
  - Pabiben Rabari
  - Lalita Patil
- Successful Startups (Case Studies)

Lesson 17: New Government Schemes, Initiatives and Support Organizations

(Time allocation: 06hrs)

- EDP (Entrepreneurship Development Programs):
  - Need and Objectives
- Listing and Briefing of the Schemes and Initiatives
- Business Incubation
- Startup India

Project work/ Case Studies

4. ELECTROPLATING

MODULE 1: INTRODUCTION TO ELECTROPLATING

Lesson 1: Electroplating – Meaning & Need

- Definition
- Purpose of electroplating

Lesson 2: Applications, Advantages & Limitations

- Industrial and daily uses
- Benefits and drawbacks
- Identification of Electroplated Articles
- Examples from daily life

MODULE 2: ELECTROCHEMISTRY BASICS

Lesson 3: Basics of Electricity

- Current, voltage, resistance

Lesson 4: Electrolytes & Ionization

- Conductors and electrolytes

Lesson 5: Electrolysis

- Principle and examples
- **Electroplating Cell**
  - ❖ Anode, cathode, electrolyte
- **Faraday's Laws**
  - ❖ First and second law (numerical)

MODULE 3: ELECTROPLATING PROCESS & EQUIPMENT

Lesson 6: Electroplating Setup & Equipment

- DC power supply
- Electrodes

Surface Preparation

- ❖ Cleaning, degreasing, pickling

Lesson 7: Electroplating Procedure

- Step-by-step process

Factors Affecting Electroplating

- ❖ Current density
- ❖ Time, temperature

MODULE 4: TYPES OF ELECTROPLATING

Lesson 8: Copper & Nickel Plating

- Uses and process

Lesson 9: Chromium & Zinc Plating

- Protective and decorative plating

Lesson 10: Precious Metal Plating

- Silver and gold plating

Lesson 11: Comparison & Selection of Plating

- Choosing suitable metal

MODULE 5: DEFECTS, SAFETY & INDUSTRY

Lesson 12: Electroplating Defects

- Peeling, pitting, burning

Lesson 13: Safety, Health & Environment

- PPE
- Waste disposal

Lesson 14: Industrial Applications, Careers & Revision

- Quality control (basic)
- Career options

5. FOOD PROCESSING

MODULE I: INTRODUCTION, NUTRITION AND FOOD SPOILAGE

Lesson 1: Introduction to Food Processing Industry

- Meaning and importance of food processing
- Food processing sectors in India
- Levels of food processing (primary, secondary, tertiary)
- Role of food processing in employment and economy
- Career opportunities and self-employment in food processing

Lesson 2: Food Constituents and Nutrition

- Food constituents: carbohydrates, proteins, fats, vitamins, minerals, water
- Nutritional importance of major food groups
- Balanced diet and nutritional requirements
- Effect of processing on nutritional value
- Selection of nutritious raw materials

Lesson 3: Food Spoilage and Deterioration

- Concept of food spoilage
- Causes of spoilage: insects and rodents
- Physical and chemical factors affecting food spoilage
- Signs of food spoilage
- Classification of foods based on perishability

MODULE II: FOOD PRESERVATION PRINCIPLES AND METHODS

Lesson 4: Principles of Food Preservation

- Need for food preservation
- Principles of preservation
- Shelf life of foods
- Traditional and modern preservation methods
- Factors affecting keeping quality of foods

Lesson 5: Food Preservation Methods – I

- Drying and dehydration
- Refrigeration and freezing
- Preservation by salt
- Preservation by sugar
- Storage of preserved foods

Lesson 6: Food Preservation Methods – II

- Pickling
- Fermentation
- Bottling and canning
- Food preservatives (Class I and Class II)
- Safety and hygiene in preservation

MODULE III: PROCESSING OF MAJOR FOOD GROUPS

Lesson 7: Processing of Fruits and Vegetables

- Post-harvest handling of fruits and vegetables
- Washing, grading, peeling and cutting
- Processing into jams, jellies, squashes, sauces, chutneys
- Role of sugar, acids and heat
- Packaging and storage of processed products

Lesson 8: Processing of Cereals and Pulses

- Importance of cereals and pulses
- Cleaning, milling, grinding, soaking, roasting
- Processing of flours and mixes
- Value-added cereal and pulse products
- Storage and pest control

Lesson 9: Milk and Dairy Product Processing

- Composition and properties of milk
- Milk processing and pasteurization
- Preparation of curd and paneer

- Butter, ghee and other dairy products
- Hygiene and sanitation in dairy processing

Lesson 10: Bakery and Confectionery Products

- Bakery ingredients and their functions
- Mixing, kneading, proofing, baking
- Bread, biscuits, cakes and confectionery
- Shelf life and storage
- Costing and portion control

Lesson 11: Meat, Fish and Poultry Processing

- Importance of meat, fish and poultry
- Hygienic handling and storage
- Chilling and freezing
- Preservation methods
- Safety and ethical considerations

MODULE IV: FOOD SAFETY, MARKETING AND SKILL APPLICATION

Lesson 12: Food Quality Control and Safety

- Food quality and food safety
- Food contamination and hazards
- Personal hygiene and sanitation
- Quality control measures
- Prevention of food-borne illnesses

Lesson 13: Food Laws, Standards and Entrepreneurship

- Food laws in India: FSS Act 2006, Essential Commodities Act 1995
- Key Regulatory Bodies in India and their role: Ministry of Food Processing Industries (Mo FPI), Bureau of Indian Standards, FSSAI
- Quality marks: AGMARK, ISI, FPO, India Organic, ISO 22000
- Consumer rights
- Basics of food entrepreneurship

Lesson 14: Product Development and Skill Application

- Preparation of a food product using appropriate preservation and processing techniques
- Combining multiple processes: e.g., drying + pickling, milk processing + bakery mix
- Packaging and labelling of the prepared product
- Quality checks: taste, texture, shelf-life, hygiene
- Documentation of process, ingredients and observations

Lesson 15: Food Packaging and Labelling

- Importance and functions of packaging
- Types of packaging materials
- Primary, secondary and tertiary packaging
- Food labelling requirements
- Packaging for shelf-life extension
- Role of Legal Metrology Department

6. FOUNDATIONAL STAGE CARE AND EDUCATION

MODULE 1: FOUNDATIONS OF EARLY CHILDHOOD EDUCATION AND INDIAN CONTEXT

Lesson 1: Introduction to Foundational Stage Education

- Foundational Stage (Ages 3–8) as per NEP 2020
- Importance of foundational learning for holistic development and lifelong learning
- Pre-school education and Anganwadi formalization
- Key NEP 2020 focus areas: Foundational Literacy and Numeracy, play-based teaching-learning, inclusivity, language-rich environment
- Role of educators and caregivers

Lesson 2: Development of Education in India

- Education commissions and policies (Radha Krishnan, Mudaliar, Kothari, NPE 1968, 1986, POA 1992, NEP 2020)
- Key initiatives: RTE 2009, NCF 2000 and 2005, NCF-FS 2022
- Historical and contemporary reforms in early education
- Government initiatives: ICDS, Samagra Shiksha, NIPUN Bharat, PM SHRI, Vidya Pravesh, POSHAN Abhiyaan
- Digital education tools: DIKSHA, NDEAR, Vidyanjali 2.0
- Impact on quality, equity, and access at the Foundational Stage

Lesson 3: Philosophy, Culture and Values in Education

- Relationship between Philosophy and Education
- Schools of philosophy: Idealism, Naturalism, Pragmatism, Humanism
- Cultural influences on education, multiculturalism, Lessons in diversity
- Values and life skills: moral, social, universal; Panchkosh; Four Purusharths
- Teacher's role in value inculcation

Lesson 4: Child and Society: Issues and Challenges in the Indian Context

- Nature of Indian society: multicultural, multilingual, hierarchical
- Societal issues: gender, poverty, diversity, literacy, inclusion
- Educational implications of societal challenges
- Child Rights and Protection Policies

MODULE 2: CHILD DEVELOPMENT, CARE, HEALTH AND INCLUSION

Lesson 5: Growth and Development

- Principles and stages of growth and development
- Physical, social, emotional, intellectual (cognitive), moral, spiritual needs of children
- Holistic development: physical, intellectual, social, emotional, moral, spiritual
- Early signs of delays and interventions
- Key theorists: Piaget, Vygotsky, Erikson, Gijubhai Badheka, Tarabai Modak, Durganand Sinha

Lesson 6: Principles of Child Care and Child-Centred Approach

- Meaning of child care and child-centred education
- Principles of care, protection, and responsiveness
- Individual differences among children: Respect for individual pace and abilities
- Importance of positive interaction and encouragement
- Inclusive and supportive learning environment

Lesson 7: Child Health, Nutrition and Safety

- Basics of child health and hygiene: Importance of rest, sleep, and physical activity
- Basics of Nutrition: Planning balanced meals for children
- Health and hygiene awareness in the Learning Centre/School
- Classroom safety and First Aid practices

MODULE 3: TEACHING–LEARNING IN FOUNDATIONAL STAGE

Lesson 8: Learning, Motivation and Assessment

- Concept and Principles of Learning
- Learning Theories: Behaviourism, Cognitivism, Constructivism, Humanism
- Discovery, Inquiry, Project, ICT, Play-based, Gamification
- Motivation, inspiration, convergent and divergent thinking, creativity
- Assessment: Informal, Continuous and Comprehensive, Developmental, Competency-based, Formative and Summative
- Portfolio and record maintenance

Lesson 9: Play-Based Teaching-Learning

- Play-based learning: concept and importance
- Types of play: free play, guided play, structured play
- Role of play in holistic development
- Indoor and outdoor play activities
- Learning through songs, stories, and games

Lesson 10: Experiential Teaching-Learning

- Experiential Learning: Concept and Importance
- Classroom-based projects: learning aids, activity kits, teaching materials
- Designing play-based, literacy, numeracy, and creative activities
- Simulated child engagement with peers
- Documentation, presentation, and reflection of project work
- Development of creative skills

Lesson 11: Teaching-Learning of Foundational Literacy and Numeracy

- NEP 2020 & NCF-FS 2022: pedagogical shifts, mother tongue-based education, inclusion, Multilingualism, digital literacy
- Foundational literacy and phonics
- Oral language, early reading and writing skills; Storytelling, rhymes, and picture reading
- Hands-on numeracy activities: counting, sorting, patterns

Lesson 12: Curriculum Planning and Daily Routine

- Curriculum: Concept and Importance
- Meaning of curriculum at foundational stage
- Lesson planning and activity design for Foundational Stage
- Planning age-appropriate activities
- Daily routine and time scheduling
- Flexible and inclusive planning
- Integration of care and education

Lesson 13: Technology and Digital Tools for Teaching-Learning

- Educational Technology: Audio-visual, Multimedia, ICT, AI
- Digital teaching aids, apps, story slides, audio rhymes
- Integrating digital resources in classroom simulations
- Evaluating and documenting child engagement

MODULE 4: MANAGEMENT, PROFESSIONAL PRACTICE AND SKILL APPLICATION

Lesson 14: Guidance, Counselling and Child Observation

- Guidance and counselling techniques (directive, non-directive, eclectic)
- Observation methods: naturalistic, interviews, reflective journals, case studies
- RPwD Act and inclusion principles
- Managing behavioural issues, disabilities, and learning challenges
- Supporting children with diverse learning needs
- Documentation of child progress and communication with caregivers

Lesson 15: Professional Ethics and Role of Educator

- Qualities of a Foundational Stage Educator
- Professional behaviour and ethics
- Respecting child rights and dignity
- Confidentiality and responsibility
- Continuous Professional Development

Lesson 16: Management of Foundational Stage Centres

- Organisation and administration of centres: Anganwadi, preschool
- Child-friendly environment planning and resource management
- Financial, human, and material management
- Quality standards, accreditation, and TQM in centres
- Role of supporting institutions: NCERT, SCERT, DIET, BRC, CRC

7. FURNITURE AND CABINET

INTRODUCTION

Carpentry and Furniture Making is a skilled trade that combines creativity, craftsmanship, and technical knowledge to transform raw wood into functional and aesthetically pleasing products. This course introduces learners to the foundational techniques of measuring, cutting, shaping, joining, assembling, and finishing wood to create furniture and interior fixtures. Students are trained to use both traditional hand tools and modern power tools while following safety procedures and industry standards. Throughout the course, learners develop problem-solving abilities, precision, and attention to detail—essential qualities for producing high-quality furniture. Apart from practical skills, the course also covers reading technical drawings, understanding material selection, learning different joint techniques, and applying surface finishing methods. By the end of the course, students gain confidence in designing and constructing furniture pieces such as tables, chairs, cabinets, and storage units. This training prepares them for employment, self-employment, and entrepreneurship in the fast-growing furniture and interior industry.

SCOPE AND VALUE

A Carpentry & Furniture Making course offers wide career scope in construction, interior design, and custom furniture manufacturing. Learners gain hands-on skills in woodworking, tool handling, joinery, finishing, and working with modern materials like plywood, MDF, and laminates. With rapid growth in housing, modular furniture, and renovation industries, skilled carpenters are in high demand. The course supports careers as carpenters, furniture makers, workshop technicians, or entrepreneurs in custom furniture and interior work. Its value lies in combining traditional craftsmanship with modern techniques, enabling learners to build functional, aesthetic, and durable products while opening pathways to sustainable, long-term employment or self-employment.

MODULE 1: INTRODUCTION OF CARPENTRY & FURNITURE MAKING & PROFESSIONAL SKILLS

Lesson 1: Introduction to Carpentry & Furniture Making

- History and evolution of carpentry
- Scope and applications of carpentry in daily life
- Branches: cabinet making, joinery, furniture production, woodcraft

Lesson 2: Carpentry Tools & Equipment

- Hand Tools – saws, chisels, hammers, planes
- Measuring & Marking Tools – tape, try square, calipers
- Power Tools – drills, jigsaws, sanders, circular saws
- Tool Maintenance – sharpening, cleaning, safe storage

Lesson 3: Soft Skills for Carpentry & Furniture Making

- Importance of Soft Skills in Carpentry
- Workplace Discipline
- Customer Interaction
- Problem-Solving & Adaptability

MODULE 2: MATERIALS & WORKSHOP PRACTICES

Lesson 4: Types of Wood and Alternatives

- Softwoods vs. Hardwoods
- Plywood, MDF, Veneer, Laminates
- Sustainable & recycled wood options

Lesson 5: Wood Properties & Selection

- Grain, texture, hardness, durability
- Moisture content & seasoning of wood
- Choosing the right wood for furniture

Lesson 6: Workshop Layout & Safety Practices

- Safe workshop design
- Personal protective equipment (PPE)
- Fire safety, first aid, emergency procedures

Lesson 7: Measuring, Marking & Cutting

- Units of measurement & accuracy
- Common marking techniques
- Cutting methods for different materials

MODULE 3: JOINERY & CONSTRUCTION TECHNIQUES

Lesson 8: Types of Wood Joints

- Butt joint, Lap joint, Mortise & Tenon
- Dovetail, Finger joint, Dowel joint
- Advantages and applications

Lesson 9: Assembling & Fixing Techniques

- Nailing, screwing, gluing
- Clamping methods
- Use of modern fasteners

Lesson 10: Furniture Construction Basics

- Frames & panels
- Chairs, tables, cabinets – structural elements
- Reinforcement techniques for durability

MODULE 4: FINISHING & SURFACE TREATMENT

Lesson 11: Surface Preparation

- Sanding methods
- Filling cracks & gaps
- Levelling & smoothing surfaces

Lesson 12: Polishing & Painting

- French polish, varnish, lacquer
- Paints & stains for wood finishing
- Spray vs. brush application

Lesson 13: Upholstery & Decorative Work

- Basics of upholstery materials
- Cushioning & covering techniques
- Adding design details (inlays, carvings)

MODULE 5: FURNITURE DESIGN, MAINTENANCE & ENTREPRENEURSHIP

Lesson 14: Basics of Furniture Design

- Reading technical drawings
- Ergonomics in furniture making
- Design trends & creativity

Lesson 15: Maintenance & Repair of Furniture

- Identifying damages (cracks, loose joints, scratches)
- Repair methods for different furniture types
- Long-term care of wooden furniture

Lesson 16: Entrepreneurship in Carpentry

- Setting up a small carpentry business
- Cost estimation & budgeting
- Marketing furniture & client relations

8. FUNDAMENTALS OF DRAWING AND PAINTING

MODULE 1: ADVANCED DRAWING AND PAINTING TECHNIQUES

Lesson 1: Mastery of Drawing Techniques

- Refined pencil drawing techniques (cross-hatching, stippling, shading, and blending)
- Detailed study of textures (wood, metal, cloth, etc.)
- Advanced perspective drawing (one-point, two-point, and three-point perspective)

Lesson 2: Introduction to Acrylic and Oil Painting

- Transitioning from watercolors to acrylic and oil paints
- Understanding layering, glazing, and impasto techniques
- Brushwork styles and their impact on texture and form

MODULE 2: ADVANCED STILL LIFE AND OBJECT STUDY

Lesson 3: Complex Still Life Compositions

- Creating dynamic still life scenes using various materials (glass, reflective surfaces, etc.)
- Use of light and shadow to create mood and depth
- Techniques for capturing transparency and reflection

Lesson 4: Portraiture and Figure Painting

- Advanced portrait drawing and painting: proportions, expressions, and detailed features
- Painting the human figure: study of anatomy, skin tones, and texture
- Expressive portraiture using different mediums (watercolor, oils, pastels)

MODULE 3: LANDSCAPE, NATURE, AND ABSTRACT PAINTING

Lesson 5: Advanced Landscape Painting

- Techniques for painting landscapes from observation and imagination
- Atmospheric effects (sunsets, mist, storm clouds, etc.)
- Understanding and rendering light, depth, and scale in nature

Lesson 6: Nature Study and Animal Anatomy

- In-depth study of flora (flowers, trees, leaves) and fauna (birds, animals) in art
- Techniques for painting natural textures and anatomy (fur, feathers, leaves, etc.)
- Depicting motion and life in animals through brushwork and color

Lesson 7: Abstract Art and Expressionism

- Experimenting with abstract forms and mixed media
- The role of emotion and subconscious expression in abstract art
- Exploration of non-representational art styles, color theory, and symbolic imagery

MODULE 4: ART HISTORY, APPRECIATION, AND CRITIQUE

Lesson 8: Classical and Contemporary Art Movements

- An in-depth study of classical art movements (Renaissance, Baroque, etc.) and their impact on modern art
- Overview of contemporary art movements (Cubism, Dadaism, Surrealism, Pop Art, etc.)
- Understanding art trends and their relevance to today's global art scene

Lesson 9: Indian Art Traditions and Modern Transformations

- Exploration of classical Indian art forms: Madhubani, Warli, Pattachitra, Tanjore, etc.
- The fusion of traditional Indian art with modern techniques (e.g., modern interpretations of miniature painting)
- The contribution of Indian artists to global art movements (e.g., Rabindranath Tagore, Amrita Sher-Gil)

Lesson 10: Art Criticism and Appreciation

- An introduction to art critique methods (formal analysis, contextual analysis)
- Learning how to evaluate an artwork's composition, use of color, texture, and form
- Developing an understanding of personal taste, style, and cultural influence in art

Lesson 11: Poster design

- Two streams are in Poster design (Social Problems or issues, Productive poster,)
- Social Awareness Matter (Save girl child, save earth, stop Child labour, domestic Violence etc.)

- Productive poster: - Primarily used for marketing, advertising products/events, or communicating information in high-traffic areas. (all kind of company products or daily uses products etc.)

Projects

- Detailed study of the human form, including the full body and portraiture, focusing on anatomy and expression.
- Create a multi-object still life scene that involves reflection, transparency, and intricate light and shadow.
- Produce a detailed landscape, emphasizing the elements of nature like water, trees, and sky, with special attention to the play of light.
- Create an abstract artwork using non-traditional materials or innovative techniques, reflecting personal expression or a philosophical theme.

Assessment

- **Theory** exam covering art history, art movements, critique techniques, and theory of techniques.
- **Practical** Execution of projects demonstrating skill in advanced techniques, still life, portraiture, and abstract art.
- Viva or oral exam where students discuss their projects, techniques, and artistic choices.

9. GARDENING

MODULE 1: INTRODUCTION TO GARDENING AND NURSERY MANAGEMENT

Lesson 1: Introduction to Gardening

- Definition, scope and importance
- Types of gardens (formal, informal, public, Mughal, Japanese, etc.)
- Role of gardeners in landscaping and urban farming

Lesson 2: Nursery Management

- Establishing nursery infrastructure: shade houses, walk in tunnels, net houses etc
- Soil mixture preparation and seedbed preparation
- Transplanting, potting and hardening of seedlings
- Nursery as a Business

Lesson 3: Propagation Techniques

- Seed propagation and vegetative methods
- Cuttings, layering, stooling (e.g., guava)
- Grafting (e.g., mango) and budding (e.g., rose, citrus)
- Raising rootstocks

MODULE 2: LANDSCAPE DESIGN AND PLANTATION

Lesson 4: Designing Garden Components

- Elements: hedges, edges, shrubbery, pergolas, flower beds, lawns
- Landscape features: gates, paths, fountains, rockery, pergolas, etc.
- Field layout and planning
- Landscaping as a Business

Lesson 5: Plantation Techniques

- Selection and planting of trees and shrubs
- Turf and lawn establishment
- Pit digging, staking, fertilizing

Lesson 6: Soil and Water Management

- Soil structure and texture
- Soil fertility and nutrient management
- Water conservation and drainage
- Control of soil erosion

MODULE 3: AESTHETIC, SPECIALIZED GARDENING & MAINTENANCE

Lesson 7: Floral Display and Aesthetic Gardening

- Planning flower beds and displays
- Annuals, perennials and bulb planting
- Plant spacing and de-heading of flowers
- Maintaining Seasonal Schedules
- Month-wise gardening act

Lesson 8: Training and Pruning

- Techniques of pruning and shaping
- Seasonal pruning and tool handling
- Training of hedges, climbers and bonsai

Lesson 9: Irrigation Systems in Gardening

- Drip and sprinkler systems
- Watering tools and appliances
- Water needs of different plants (WUE)

Lesson 10: Pest and Disease Management

- Identification of common pests and diseases
- Integrated pest management (IPM)
- Safe chemical and non-chemical control

Lesson 11: Indoor and Specialized Gardening

- Indoor plant selection and maintenance
- Bonsai, hanging pots and vertical gardening
- Growing plants in limited spaces

Lesson 12: Health, Safety, and Waste Management

- Use of PPE and first aid
- Safe tool usage and handling of chemicals
- Environmental safety and waste disposal

Lesson 13: Basic Marketing and Cost Estimation

- Meaning and Importance of Marketing in Gardening
- Methods of Marketing
- Cost Estimation (its types and steps involved)
- Pricing of Products and role of Marketing

Practicals:

1. To prepare nursery soil mixture and seed beds
2. To show Vegetative propagation through grafting, budding, and layering
3. To prepare Layout and design of a small garden with marked components
4. To plant and train shrubs and trees
5. To install and maintain drip/sprinkler irrigation systems
6. To prepare and apply organic compost/manures
7. To identify and manage common pests and diseases
8. To create floral arrangements or seasonal flower beds
9. To demonstration of safe tool use, PPE, and first aid in the garden
10. To prepare bonsai plants and pot indoor plants
11. To visit botanical gardens or model landscapes and write a report on the same
12. To calculate total cost of production for growing 50 saplings of a flowering plant including all expenses

10. HOTEL FRONT OFFICE OPERATIONS

Course Overview

This course provides knowledge and skills required for efficient functioning in a hotel's front office. It covers key areas such as guest reception, reservations, check-in/check-out, communication, customer service, and use of office technology. The focus is on professionalism, hospitality etiquette, and hands-on competence.

MODULE 1: INTRODUCTION TO HOTEL INDUSTRY AND FRONT OFFICE

Lesson 1: Overview of the Hospitality Industry

- Introduction and History of Hospitality
- Types of Lodging Establishments
- Importance of the Hotel Industry in Tourism

Lesson 2: Front Office Department – Role and Importance Meaning, Structure, and Layout of the Front Office

- Meaning, Structure, and Layout

MODULE 2: FRONT OFFICE OPERATIONS AND PROCEDURES

Lesson 3: Reservation System

- Types of Reservations (Guaranteed, Non-guaranteed)
- Methods: Online, Telephone, Walk-in
- Cancellation and Amendment Procedures

Lesson 4: Guest Registration Process

- Pre-arrival and Arrival Procedures
- Registration Card, ID Proof, Welcome Procedure

Lesson 5: Check-in and Check-out Procedures

- Handling of Baggage
- Guest Folio, Settlement of Bills
- Feedback and Departure Formalities

MODULE 3: GUEST SERVICES AND COMMUNICATION

Lesson 6: Guest Handling and Services

- Handling Guest Queries and Complaints
- Wake-up Call, Handling Emergencies
- Concierge Services

Lesson 7: Communication Skills and Etiquette

- Verbal & Non-verbal Communication
- Telephone Etiquette
- Grooming and Professionalism

MODULE 4: FRONT OFFICE ACCOUNTING AND RECORDS

Lesson 8: Guest Folio and Billing

- Types of Guest Accounts
- Posting Charges and Settling Bills
- Modes of Payment

Lesson 9: Night Auditing and Reports

- Importance and Process
- Preparing Audit Reports
- Reconciliation of Accounts

MODULE 5: TECHNOLOGY AND AUTOMATION IN FRONT OFFICE

Lesson 10: Hotel Management Software

- Common Software (e.g., IDS, Opera, Cloud beds)
- Features: Booking, Check-in/out, Reports

Lesson 11: Use of ICT Tools in Front Office

- POS, Scanners, Electronic Payments
- Communication Tools: Email, CRM systems

MODULE 6: SAFETY, SECURITY, AND ETHICS

Lesson 12: Safety and Security Measures

- Emergency Protocols (fire, medical, theft)
- Guest Privacy and Data Protection

Lesson 13: Professional Ethics and Conduct

- Code of Conduct for Front Office Staff
- Respect for Diversity and Inclusion

11. HOUSEKEEPING

MODULE 1: INTRODUCTION TO HOUSEKEEPING

Lesson 1: Meaning and Importance of Housekeeping

- Meaning and definition of Housekeeping
- Objectives and scope of Housekeeping
- Importance in hotels and institutions
- Housekeeping as a support service

Lesson 2: Organizational Structure of the Housekeeping Department

- Layout and sections of housekeeping
- Organizational hierarchy (Executive Housekeeper, Supervisors, Attendants)
- Coordination with other departments (Front Office, Maintenance, Food & Beverage)
- Duties and responsibilities of housekeeping staff

Lesson 3: Attributes and Personal Qualities of Housekeeping Staff

- Personal hygiene and grooming standards
- Professional ethics and behaviour
- Attitude, communication, teamwork
- Qualities required for success in housekeeping

MODULE 2: CLEANING SCIENCE AND EQUIPMENT

Lesson 4: Principles of Cleaning

- Basic principles and purposes of cleaning
- Types of dirt and methods of removal
- Cleaning frequencies and schedules

Lesson 5: Cleaning Agents and Chemicals

- Classification of cleaning agents
- Characteristics of good cleaning agents
- Safe handling and storage

- Use of eco-friendly and green cleaning products

Lesson 6: Cleaning Equipment and Tools

- Types of equipment: manual and mechanical
- Selection, use, and care of equipment
- Maintenance and safety precautions

Lesson 7: Cleaning Procedures

- Cleaning techniques for different surfaces (wood, glass, metal, floor, fabric)
- Cleaning of guest rooms, bathrooms, corridors, and public areas
- Daily, weekly, and periodic cleaning routines

MODULE 3: HOUSEKEEPING OPERATIONS

Lesson 8: Guest Room Layout and Types

- Types of guest rooms
- Room layout and standard fittings
- Understanding room status codes

Lesson 9: Bed Making and Turn-down Service

- Types of beds and bed-making procedures
- Turn-down service: meaning and process
- Handling guest linen and supplies

Lesson 10: Public Area Cleaning

- Areas covered under public area cleaning (lobby, restaurants, washrooms, offices)
- Methods, frequency, and cleaning equipment used
- Supervision and inspection procedures

Lesson 11: Handling Guest Requests, Lost and Found

- Standard operating procedures (SOPs) for handling guest requests
- Lost and found procedures and documentation
- Guest satisfaction and service recovery

Lesson 12: Pest Control and Waste Management

- Common pests and their control measures
- Methods of pest prevention
- Waste segregation and disposal practices

MODULE 4: LAUNDRY AND LINEN MANAGEMENT

Lesson 13: Laundry Operations Overview

- Importance and functions of laundry
- Types of laundries (in-house, on-premise, contracted)
- Flow process in laundry

Lesson 14: Laundry Equipment and Supplies

- Types of equipment: washing machine, dryer, calendar, press
- Laundry chemicals and their use
- Care and maintenance of laundry equipment

Lesson 15: Linen and Uniform Management

- Types of linen used in hotels
- Linen room organization and layout
- Par stock levels and control procedures
- Uniform issue and maintenance

Lesson 16: Stain Removal and Fabric Care

- Types and sources of stains
- Principles and techniques of stain removal
- Handling of delicate fabrics and dry-cleaning basics

MODULE 5: DECORATION, FLOWER ARRANGEMENT & AESTHETICS

Lesson 17: Interior Decoration Basics

- Importance of aesthetics in housekeeping

- Elements of design: colour, lighting, space, texture
- Decoration of guest rooms and lobbies

Lesson 18: Flower Arrangement and Indoor Plants

- Types and principles of flower arrangement
- Care and conditioning of flowers
- Use of indoor plants and artificial flowers

Lesson 19: Special Decorations and Thematic Displays

- Decorations for special occasions and events
- Seasonal and festival decorations
- Creativity and innovation in décor

MODULE 6: SAFETY, HYGIENE AND ENVIRONMENTAL PRACTICES

Lesson 20: Safety and Security in Housekeeping

- Common accidents and preventive measures
- Fire safety procedures and equipment
- Security of guests and property

Lesson 21: Health and Hygiene Practices

- Personal hygiene and sanitation
- Control of cross-contamination and infection
- Cleaning standards for hospitals and hostels

Lesson 22: Eco-Friendly Housekeeping Practices

- Concept of sustainable housekeeping
- Waste reduction and recycling
- Energy and water conservation methods

MODULE 7: SOFT SKILLS AND EMPLOYABILITY IN HOUSEKEEPING

Lesson 23: Communication and Customer Service

- Verbal and non-verbal communication
- Handling complaints and difficult situations
- Grooming, courtesy, and etiquette

Lesson 24: Career Opportunities and Entrepreneurship in Housekeeping

- Career paths in hotels, hospitals, and institutions
- Self-employment in cleaning services, linen supply, floral decoration
- Preparing a résumé, interview preparation, and workplace readiness

SUGGESTED PRACTICALS / FIELD ACTIVITIES

- Cleaning and maintenance of rooms and bathrooms
- Bed making and room setup demonstration
- Preparation of cleaning agents and use of equipment
- Visit to hotel/guest house/laundry unit
- Demonstration of flower arrangement
- Preparation of cleaning schedule and checklist
- Simulation of guest handling situations

12. LIBRARY AND INFORMATION SCIENCE

MODULE 1: LIBRARIES IN MODERN SOCIETY

Lesson 1. Evolution of Libraries

- **Ancient Libraries**
  - The earliest known libraries date back to Sumerian civilization (~3000 BCE) with clay tablets.
  - Famous ancient libraries: **Library of Alexandria (Egypt)**, **Nalanda (India)**.
- **Medieval Libraries**
  - Dominated by religious institutions like monasteries.
  - Manuscripts were handwritten and preserved by monks.
- **Modern Era**
  - Printing press (15th century) revolutionized information access.
  - Public and academic libraries emerged across Europe and Asia.
- **Digital Age**
  - Emergence of **online databases, e-books, and digital libraries**.
  - Examples: **Digital Library of India**, **Project Gutenberg**, **National Digital Library of India (NDLI)**.

Lesson 2. Types of Libraries

- **Public Libraries**
  - Open to all; funded by government or public funds.
  - Services: reading rooms, borrowing books, internet access.
  - Examples: Delhi Public Library, New York Public Library.
- **Academic Libraries**
  - Found in schools, colleges, and universities.
  - Support curriculum, research, and learning.
  - Examples: DU Central Library, JNU Library.

- **Special Libraries**
  - Serve specific organizations (e.g., banks, hospitals, research centers).
  - Focused collections and services.
  - Examples: BHEL Library, AIIMS Medical Library.
- **National Libraries**
  - Apex institutions responsible for collecting and preserving a nation's publications.
  - Functions: legal deposit, archival storage, cultural preservation.
  - Examples: National Library of India (Kolkata), Library of Congress (USA).

Lesson 3. Five Laws of Library Science

- Introduction
- Five laws of library science

  1. Books are for use.
  2. Every reader his book.
  3. Every book its reader.
  4. Save the time of the reader.
  5. Library is a growing organism
- Implications of five laws of library science
- Five laws of library science –flow chart
- Five laws and modern libraries

Lesson 4. Functions of Libraries in Education and Community

- **Educational Role**
  - Support lifelong learning.
  - Provide access to textbooks, journals, e-resources.
  - Help in research and academic development.
- **Community Development**
  - Conduct workshops, storytelling, awareness drives.
  - Promote literacy and digital inclusion.
  - Serve as safe, inclusive spaces for marginalized groups.

- **Information Dissemination**
    - Newspapers, magazines, databases for updated information.
    - Reference and reader advisory services.

Lesson 5. Role of the Librarian in the Digital Age

- **Information Facilitator**
    - Help users navigate vast information resources—both physical and digital.
- **Technology Integrator**
    - Manage library management systems (LMS), digital catalogues, and e-books.
    - Use tools like OPAC (Online Public Access Catalogue), Koha, and DSpace.
- **Community Educator**
    - Conduct digital literacy programs.
    - Guide in academic writing, referencing, and research ethics.
- **Preservation Specialist**
    - Digitize rare books and manuscripts.
    - Ensure long-term preservation using cloud and digital repositories.

MODULE 2: LIBRARY CLASSIFICATION AND CATALOGUING

Lesson 6. Processing of Library Materials: Classification and Cataloguing

- **Library Classification**
    - Arranges books on shelves in a logical order based on subject.
    - Groups similar subjects together to facilitate browsing.
    - Assigns a **call number** (unique identifier) to each book.
- **Library Cataloguing**
    - Prepares a bibliographic record of a document.
    - Helps users locate books by author, title, subject, or other access points.
    - Enhances the **retrieval of information** in both manual and automated systems.

- **Importance**:
  - Saves users' time.
  - Helps in systematic arrangement and access.
  - Essential for efficient library management.

Lesson 7. Classification Systems – Dewey Decimal Classification (DDC)

- **Basic Structure of DDC**
  - Uses **decimal notation (0–9)** and is divided into **10 main classes**.
  - Each class is subdivided further for more specific subjects.

Main Class	Subject Area
000	Generalities
100	Philosophy & Psychology
200	Religion
300	Social Sciences
400	Language
500	Science
600	Technology
700	Arts & Recreation
800	Literature
900	History & Geography

Example:

- A book on Chemistry → 540
- A book on Indian History → 954

Lesson 8. Catalogue: Definition, Importance, and Types

- **Definition**

  A **library catalogue** is a list or database of all materials available in a library, arranged according to a particular system.

- **Importance**
    - Acts as a **search tool** for locating books and other materials.
    - Provides access by different fields: author, title, subject, series, etc.
    - Enables users to know whether an item is available, issued, or reserved.
- **Types of Catalogues**

Type	Description	Example
Dictionary Catalogue	All entries (author, title, subject) arranged in **alphabetical** order.	A to Z format
Classified Catalogue	Entries grouped by **subject classification** (e.g., DDC numbers).	Books on social science grouped under 300

Lesson 9. Physical Forms of Catalogues

Form	Description
Card Catalogue	A manual system using index cards (12.5 x 7.5 cm). Cards arranged in trays.
Online Public Access Catalogue (OPAC)	Computer-based searchable catalogue. Allows users to search from library computers or remotely.

OPAC Features:

- Search by author/title/keyword.
- Shows availability, location, and call number.
- Can reserve or renew books online.

Lesson 10. Simple Main and Added Entries (As per AACR2)

AACR2 stands for **Anglo-American Cataloguing Rules, Second Edition** — a standard for cataloguing rules.

- **Main Entry**
  - Primary access point, usually under **author's name**.
  - Includes full bibliographic details.

    Example: **Main Entry (Author)**

    Tagore, Rabindranath Gitanjali. – Kolkata: Visva-Bharati, 2015.

- **Added Entry**
  - Additional access points (e.g., co-author, editor, title, subject).
  - Created for user convenience.

    Example: **Added Entry (Title)**

    Gitanjali / by Rabindranath Tagore.

MODULE 3: LIBRARY RESOURCES AND REFERENCE SERVICES

Lesson 11. Types of Documents

Libraries house various types of documents that cater to the diverse needs of users. These include:

- **Books**
  - Printed or digital volumes that cover a subject in detail.
  - Types: Fiction, Non-fiction, Textbooks, Reference books.
- **Journals**
  - Periodicals containing scholarly articles.
  - Used for current research and academic updates.
  - Example: *Indian Journal of Library and Information Science*.
- **Newspapers**
  - Daily or weekly publications with news, articles, and advertisements.
  - Useful for current affairs, obituaries, editorials, and more.
- **Audio-Visual Materials**
  - Includes CDs, DVDs, audiobooks, documentaries, and educational videos.
  - Supports users with different learning styles.

- **Digital Resources**
  - E-books, online journals, databases, and websites.
  - Can be accessed remotely and updated in real-time.

Lesson 12. Primary, Secondary, and Tertiary Sources

Understanding the levels of information sources helps users locate accurate and appropriate materials.

- **Primary Sources**
  - Original, first-hand accounts of events or data.
  - Examples: Research articles, diaries, interviews, photographs, official documents.
- **Secondary Sources**
  - Interpret or analyse primary sources.
  - Examples: Review articles, biographies, critical essays.
- **Tertiary Sources**
  - Summarize or compile information from primary and secondary sources.
  - Examples: Encyclopaedias, directories, indexes, bibliographies.

Lesson 13. Reference Sources

These are consulted for specific pieces of information and not for reading cover-to-cover.

- **Dictionaries**
  - Provide meanings, pronunciations, usage of words.
  - Types: General, Subject-specific, Bilingual.
  - Example: *Oxford English Dictionary*.
- **Encyclopaedias**
  - Provide comprehensive articles on a wide range of subjects.
  - Types: General (*Encyclopaedia Britannica*), Subject-specific (*Encyclopaedia of Science*).

- **Yearbooks**
  - Annual publications with statistical and factual information.
  - Useful for recent events, awards, data.
  - Example: *India Year Book*.
- **Atlases**
  - Collections of maps and geographical information.
  - May include physical, political, and thematic maps.

Lesson 14. Library Services

Libraries offer various services to support users in accessing and using resources.

- **Lending Service**
  - Allows users to borrow books and materials for a limited period.
  - Issued with membership cards or library IDs.
- **Reference Service**
  - Helps users find quick and factual answers or in-depth information.
  - Includes ready reference (quick facts) and long-range reference (detailed queries).
- **Reservation Service**
  - Allows users to reserve books currently borrowed by others.
  - Books are held for the user once returned.
- **Inter-Library Loan (ILL)**
  - A service where users can borrow materials from other libraries.
  - Useful for rare or unavailable resources.

Lesson 15. User Education and Information Literacy

- **User Education**
  - Orientation programmes or guides to help new users understand how to use the library.
  - Covers library layout, catalogue use, and services offered.

- **Information Literacy**
  - The ability to locate, evaluate, and use information effectively.
  - Includes knowing:
    - What information is needed.
    - Where to find it.
    - How to evaluate and apply it ethically.

MODULE 4: LIBRARY MANAGEMENT AND HOUSEKEEPING OPERATIONS

Lesson 16. Acquisition of Books and Journals

- **Meaning of Acquisition:** Acquisition refers to the process of selecting, ordering, and obtaining books, journals, and other materials for the library.
- **Sources of Acquisition**
  - **Purchase** from publishers, distributors, or book fairs.
  - **Gifts and Donations** from individuals or organizations.
  - **Exchange** with other libraries.
  - **Subscription** for journals and magazines.
- **Selection Tools**
  - Library catalogues
  - Publisher brochures
  - Book reviews
  - Recommendations from faculty or users

Lesson 17. Accessioning and Classification

- **Accessioning**
  - Every new book/journal is recorded in the **Accession Register**.
  - The book gets an **Accession Number**, which is a unique ID.
  - The entry includes title, author, publisher, price, source, and date.

- **Classification**
  - Classification means assigning a **number/code** to a book according to its subject.
  - Helps arrange books logically on shelves.
  - Most common system: **Dewey Decimal Classification (DDC)**.
  - Example: 500 – Natural Sciences, 800 – Literature.

Lesson 18. Circulation Procedures

Circulation is the core user service involving the **issue, return, and reservation** of library materials.

- **Issue of Books**
  - Users must have a **library card or ID**.
  - Books are stamped and a due date is written.
  - Number of books and duration depends on library rules.
- **Return of Books**
  - Books must be returned on or before the due date.
  - **Overdue fines** may be charged for late returns.
- **Reservation**
  - If a book is already issued, a user can **reserve** it.
  - The book is kept aside when returned and issued to the next person in queue.
- **Renewal**
  - Extension of loan period before the due date, if no one else has reserved the book.

Lesson 19. Maintenance Operations

Proper maintenance ensures the library is tidy, organized, and efficient.

- **Shelving**
  - Books should be returned to correct shelves by call number.
  - Heavier books placed on lower shelves.
  - Proper signage and classification help users locate materials easily.

- **Stock Verification**
  - Regular checking of all items to identify missing, misplaced, or damaged materials.
  - Can be done annually or bi-annually.
- **Weeding**
  - Removing outdated, damaged, or unused books.
  - Helps in space management and updating the collection.

Lesson 20. Preservation of Documents

Preservation refers to taking care of library materials to ensure their **long life and usability**.

- **Dusting:** Regular dusting of books and shelves with a clean cloth or brush.
- **Repair**
  - Torn pages should be pasted.
  - Loose bindings should be glued or stitched.
- **Binding**
  - Old and fragile books are given **hard binding** for durability.
  - Journals are often **bound together** in volumes for preservation.
- **Environmental Control**
  - Keep library clean and dry.

MODULE 5: ICT IN LIBRARIES

Lesson 21. Introduction to ICT in Libraries

- **What is ICT?**
  - **ICT (Information and Communication Technology)** includes tools used to collect, store, process, and share information electronically.
- **Key Components in Libraries:**

Component	Use in Libraries
Computers	Cataloguing, circulation, database management

Internet	Access to e-resources, digital libraries, remote services
Database	Structured collections of bibliographic or full-text information
E mail & social media	Communication and outreach
Printers/Scanners	Supporting document access and processing

Lesson 22. Library Automation

- **Meaning**
  - Library automation refers to the use of computers and software to perform library tasks such as cataloguing, circulation, and acquisition.
- **Benefits of Library Automation**
  - **Faster Services**: Speeds up book issue/return, search, etc.
  - **Accuracy**: Reduces human errors.
  - **Remote Access**: Users can search catalogues from anywhere.
  - **Better Management**: Easy tracking of books, members, and statistics.
- **Basic Steps in Library Automation**
  - **Planning**: Assess needs and infrastructure.
  - **Data Entry**: Feed existing records into the system.
  - **Software Installation**: Choose and set up library software.
  - **Training Staff**: Teach them to use automated systems.
  - **Implementation**: Start automated issue, return, and search.

Lesson 23. Overview of Library Management Software

Library software helps manage library functions through automation.

- **Koha**
  - **Open-source** Integrated Library System (ILS)
  - Features: Cataloguing, Circulation, OPAC, User Management, Reports.
  - Web-based and widely used in schools, colleges, and public libraries.

- **e-Granthalaya**
  - Developed by **National Informatics Centre (NIC), Govt. of India**.
  - Suitable for government libraries, schools, and research centres.
  - Offers cloud-based services for digital library access.

Feature	**Koha**	**e-Granthalaya**
Open-source	Yes	No (Govt software)
Cataloguing	Yes	Yes
OPAC	Yes	Yes
User Friendly	High	Moderate
Developed by	Global Community	NIC (India)

Lesson 24. Use of Barcode, QR Codes, and RFID in Libraries

- **Barcode**
  - A pattern of black lines used to represent numeric data.
  - Used on books and user cards.
  - Enables fast issue/return with barcode scanners.
- **QR Code (Quick Response Code)**
  - 2D code that stores information and links.
  - Can lead users to digital content (e.g., book reviews, e-books).
  - Scanned using smartphones.
- **RFID (Radio Frequency Identification)**
  - Uses radio waves to identify and track books and users.
  - Each item has an RFID tag.
  - Benefits:
    - Faster circulation

- Theft reduction
- Easy inventory management

Technology	Function	Used For
Barcode	Scanning	Book issue/return
QR Code	Link info	Accessing digital resources
RFID	Wireless ID	Auto check-in/out, inventory

Lesson 25. Digital Libraries and OPAC

- **Digital Libraries**
  - Libraries that store and provide access to books, journals, and documents in **digital format.**
  - Users can read/download resources online.
  - Examples:
    - *NDLI (National Digital Library of India)*
    - *Internet Archive*
    - *Project Gutenberg*
- **OPAC (Online Public Access Catalogue)**
  - A **searchable online database** of library holdings.
  - Allows users to:
    - Search by title, author, subject
    - Check book availability
    - Place reservations
- **Benefits of OPAC:**
  - 24x7 Access
  - Easy to use
  - Saves time

MODULE 6: OPEN ACCESS RESOURCES AND ETHICS

Lesson 26. Concept of Open Educational Resources (OER)

Open Educational Resources (OER) are freely available teaching, learning, and research materials that can be used, shared, adapted, and reused without restriction.

- **Key Features**
  - Free to access
  - Open licenses (e.g., Creative Commons)
  - Can be downloaded, copied, modified
  - Useful for teachers, students, researchers
- **Types of OER**
  - E-books and textbooks
  - Online lectures and videos
  - Assignments and quizzes
  - Software tools for learning
  - Course modules and syllabi
- **Importance for Open Learners**
  - Cost-effective and accessible
  - Available in multiple languages
  - Supports self-paced learning
  - Reduces dependence on physical libraries

Lesson 27. Key Platforms Offering OER in India

- **National Digital Library of India (NDLI)**
  - Developed by IIT Kharagpur under the Ministry of Education.
  - Provides access to books, articles, theses, videos, and more.
  - Useful for students from school to postgraduate level.
  - Website: https://ndl.iitkgp.ac.in

- **e-Pathshala**
    - Developed by NCERT.
    - Provides digital textbooks for school education in multiple languages.
    - Available as a website and mobile app.
    - Content includes audio-visuals, flipbooks, and PDFs.

SWAYAM (Study Webs of Active–Learning for Young Aspiring Minds)

- Online platform offering courses from school to university level.
- Managed by the Government of India.
- Includes video lectures, quizzes, discussion forums, and certificates.
- Courses are free, and certification is low-cost.

Lesson 28. Ethical Use of Information

Using information responsibly is essential in academic and professional settings.

- **Plagiarism**
    - **Meaning**: Using someone else's work or ideas without giving credit.
    - **Examples**: Copy-pasting from the internet, submitting others' work as your own.
    - **Consequences**: Academic penalties, loss of credibility, legal issues.
    - **Prevention**:
        - Always cite the source.
        - Use quotation marks for direct quotes.
        - Paraphrase and acknowledge the original author.
- **Copyright**
    - Legal protection given to creators of original work (books, music, software, etc.).
    - You must **not copy, distribute, or modify** copyrighted materials without permission.
    - Exceptions apply under *Fair Use* (see below).

- **Fair Use**
  - A legal rule allowing limited use of copyrighted material **for educational or non-commercial purposes**.
  - Example: Quoting a few lines from a book in a research paper with proper citation.
- **Creative Commons Licenses**
  - Special licenses that allow free sharing and use of content with conditions like:
    - **CC BY** – Must credit the author
    - **CC BY-SA** – Must credit and share alike
    - **CC BY-NC** – Non-commercial use only

Lesson 29. Role of Professional Library Associations

Library associations help in promoting access to information and upholding ethical standards.

- **ILA (Indian Library Association)**
  - National professional body of librarians in India.
  - Works to promote library science education, training, and ethics.
  - Publishes journals, organizes conferences, and offers policy advice.
- **IFLA (International Federation of Library Associations and Institutions)**
  - Global association of library institutions.
  - Sets international standards and guidelines for libraries.
  - Promotes access to information and intellectual freedom worldwide.
- **Importance of Library Associations:**
  - Advocate for free and open access
  - Provide professional development
  - Encourage ethical conduct
  - Facilitate knowledge sharing among librarians

13. PLANT PROTECTION

MODULE 1: BASICS OF PLANT PROTECTION

Lesson 1: Introduction to Plant Protection

- Meaning and definition
- Scope of plant protection
- Importance in agriculture and food security

Lesson 2: Causes of Crop Loss

- Biotic factors
- Abiotic factors
- Economic impact of crop losses

MODULE 2: INSECT PESTS OF CROPS

Lesson 3: Classification of Crop Pests

- Major and minor pests
- Chewing and sucking pests

Lesson 4: Life Cycle of Insect Pests

- Egg, larva, pupa, adult
- Relation of life cycle to control

Lesson 5: Major Insect Pests of Crops

- Pests of cereals
- Pests of pulses
- Pests of vegetables

MODULE 3: PLANT DISEASES

Lesson 6: Causes of Plant Diseases

- Fungal diseases
- Bacterial diseases
- Viral diseases

Lesson 7: Symptoms and Spread of Diseases

- Disease symptoms
- Modes of transmission

Lesson 8: Common Diseases of Crops

- Diseases of cereals
- Diseases of vegetables
- Diseases of fruit crops

MODULE 4: WEEDS AND THEIR MANAGEMENT

Lesson 9: Introduction to Weeds

- Definition and characteristics
- Harmful effects of weeds

Lesson 10: Types of Weeds

- Annual, biennial, perennial weeds
- Aquatic weeds

Lesson 11: Weed Control Methods

- Mechanical methods
- Chemical methods
- Cultural methods

MODULE 5: METHODS OF PLANT PROTECTION

Lesson 12: Cultural and Mechanical Methods

- Crop rotation
- Field sanitation
- Hand weeding and traps

Lesson 13: Biological Methods

- Natural enemies
- Use of biopesticides

Lesson 14: Chemical Methods

- Need for chemicals
- Precautions during chemical control

MODULE 6: PESTICIDES AND SAFETY MEASURES

Lesson 15: Types of Pesticides

- Insecticides
- Fungicides
- Herbicides

Lesson 16: Pesticide Formulations and Equipment

- Dusts, granules, sprays
- Sprayers and dusters

Lesson 17: Safe Use and Storage of Pesticides

- Label symbols
- First aid measures
- Safe disposal

MODULE 7: INTEGRATED PEST MANAGEMENT (IPM)

Lesson 18: Concept of IPM

- Definition and principles
- Need for IPM

Lesson 19: IPM Components

- Cultural, biological, chemical methods
- Monitoring and threshold levels

Lesson 20: IPM in Major Crops

- IPM in rice
- IPM in vegetables

MODULE 8: PLANT PROTECTION AND ENVIRONMENT

Lesson 21: Environmental Impact of Pesticides

- Types of Pesticides (based on their target- (insecticides, herbicides, fungicides) and their Environmental Behavior
- How pesticides move and persist in the environment (soil, water, air)
- Soil Pollution
  - ➢ Contamination of soil due to chemical pesticides.
  - ➢ Impact **on soil health:**
    - ❖ Reduction in beneficial microbes.
    - ❖ Alteration of nutrient cycles.
    - ❖ Decrease in soil fertility.
- Water pollution

➢ Pesticides entering rivers, lakes, and groundwater through runoff or leaching.

➢ **Impact on water bodies:**

- ▪ Toxicity to aquatic life (fish, amphibians).
- ▪ Disruption of aquatic ecosystems.
- ▪ Bioaccumulation in food chains.

- Effect on non-target organisms
  - ➢ Harm to organisms other than pests, such as birds, bees, and beneficial insects.

➢ Long-term ecological imbalance caused by indiscriminate pesticide use.

Lesson 22: Sustainable and Organic Plant Protection

- Organic farming practices
- Botanical pesticides
- Eco- Friendly Alternatives to chemical Pesticides

➢ Integrated Pest Management (IPM) techniques.

➢ Use of pheromones, traps, and microbial agents.

➢ Biological control methods using natural predators or pathogens.

Lesson 23: Protection of Beneficial Organisms

- Human Health and food safety
  - Reducing pesticide residues in food.
  - Preventing health hazards like toxicity, allergies, and chronic diseases.
- Pollinators
- Natural predators

PRACTICAL / FIELD WORK

- Identification of pests, diseases, and weeds
- Demonstration of spraying techniques
- Preparation of neem-based biopesticide
- Field visit / virtual observation

14. PRESERVATION AND FRUITS AND VEGETABLES

MODULE I: PRINCIPLES OF FOOD PRESERVATION

Lesson 1: Introduction to Food Preservation

- Importance and Scope of Fruit & Vegetable Preservation
- Post-Harvest Losses and Their Causes
- Overview of Spoilage Mechanisms (Microbial, Enzymatic, Physical)

Lesson 2: Scientific Principles of Preservation

- Principles – Temperature, Acidity, Moisture, Oxygen Control
- Classification of Preservation Methods
- Pre-treatment and Pre-processing Techniques (Cleaning, Blanching, Sorting)

Lesson 3: Understanding Spoilage and Shelf Life

- Signs and Types of Spoilage
- Shelf-Life Estimation and Extension Techniques
- Preventing Cross-Contamination and Hygiene Protocols

MODULE II: TRADITIONAL PRESERVATION TECHNIQUES

Lesson 4: Drying and Dehydration

- Sun Drying and Oven Drying Techniques
- Factors Affecting Drying and Dehydration
- Packaging and Storage of Dried Products

Lesson 5: Pickling and Fermentation

- Salt, Vinegar, and Oil-based Pickling
- Fermentation in Pickle Making
- Safety and Spoilage in Pickles

Lesson 6: Jam, Jelly, and Marmalade Making

- Role of Pectin, Acid and Sugar

- Cooking and Setting Techniques
- Common Defects and Their Remedies

Lesson 7: Bottling and Canning

- Sterilization and Sealing Techniques
- Bottling Juices and Sauces
- Quality Control in Bottled Products

MODULE III: MODERN PRESERVATION & PACKAGING TECHNIQUES

Lesson 8: Freezing and Refrigeration

- Principles of Freezing and Cold Chain
- Blanching for Frozen Vegetables
- Packaging for Frozen Products

Lesson 9: Pasteurization and Sterilization

- Heat Treatment for Preservation
- Pasteurizing Juices and Sauces
- Shelf-life Improvement through Heat

Lesson 10: Chemical Preservation and Additives

- Permitted Preservatives (Benzoate, Sorbate, etc.)
- Legal and Health Aspects
- Application in Fruit Syrups and Sauces

Lesson 11: Packaging Innovations

- Vacuum Packaging and MAP (Modified Atmosphere Packaging)
- Use of Food-Grade Packaging Materials
- Labeling and Legal Compliance

MODULE IV: FOOD SAFETY, VALUE ADDITION & ENTREPRENEURSHIP

Lesson 12: Food Safety and Hygiene

- Hygiene in Processing Environments
- Personal Hygiene and Food Handling
- Introduction to HACCP and Safety Audits

Lesson 13: Value-Added Products

- Fruit Bars, Leather and Candied Fruits
- Sauces, Chutneys and Syrups
- Testing and Quality Control of Final Products

Lesson 14: Storage and Shelf-Life Management

- Ideal Storage Conditions
- Spoilage Detection and Record Keeping
- Extending Shelf Life through Packaging

Lesson 15: Entrepreneurship and Business Planning

- Starting a Home/Small-Scale Processing Unit
- Budgeting, Pricing and Cost Control
- Branding, Marketing and Distribution

15. SECRETARIAL PRACTICE

MODULE 1: INTRODUCTION TO SECRETARIAL PRACTICE

Lesson 1: Understanding Secretarial Practice

1. Meaning and scope of Secretarial Practice
2. Importance and objectives of Secretarial Practice
3. Evolution of Secretarial Practice – from traditional clerical work to modern corporate governance

Lesson 2: The Secretary – Role and Types

1. Qualities and personal attributes of an efficient secretary
2. Educational and professional qualifications
3. Types of secretaries – personal, private, company, departmental, institutional, government, etc.

Lesson 3: Functions and Duties of a Secretary

1. General duties of secretaries in various organizations
2. Specific functions in business, government, and non-profit settings
3. Professional ethics and code of conduct for secretaries

MODULE 2: BUSINESS COMMUNICATION AND CORRESPONDENCE

Lesson 4: Essentials of Business Correspondence

1. Meaning and significance of business correspondence
2. Essentials of a good business letter
3. Formats of business letters (block, semi-block, and simplified)

Lesson 5: Drafting Business Letters

1. Enquiries and replies
2. Orders and complaints
3. Circulars and notices

Lesson 6: Modern Business Communication

1. Email etiquette and drafting professional emails
2. Use of electronic and instant communication tools (fax, SMS, WhatsApp Business, etc.)
3. Principles of modern digital correspondence

MODULE 3: COMPANY SECRETARY AND CORPORATE LAWS

Lesson 7: Role and Legal Position of a Company Secretary

1. Definition and legal recognition of a Company Secretary
2. Statutory status under the Companies Act
3. Powers, rights, and liabilities of a Company Secretary

Lesson 8: Corporate Legal Framework

1. Basic provisions of the Companies Act relevant to secretarial work
2. Legal documents: Memorandum and Articles of Association
3. Company formation: steps and secretarial duties

Lesson 9: Secretarial Compliance and Documentation

1. Maintenance of statutory registers and records
2. Filing of returns and reports with authorities
3. Corporate governance and ethical responsibility

MODULE 4: MEETINGS AND SECRETARIAL PROCEDURES

Lesson 10: Types and Conduct of Meetings

1. Types of company meetings – Board Meetings, AGM, EGM
2. Legal provisions and importance of meetings

Lesson 11: Meeting Documentation

1. Notice, agenda, and quorum requirements
2. Role of secretary before, during, and after meetings
3. Drafting of resolutions and minutes

Lesson 12: Practical Aspects of Meeting Management

1. Meeting coordination and logistics
2. Electronic meetings and e-voting
3. Case examples of secretarial procedures

MODULE 5: OFFICE ORGANISATION AND RECORDS MANAGEMENT

Lesson 13: Office Structure and Functions

1. Meaning, types, and functions of office
2. Principles of office organization
3. Role of the secretary in office administration

Lesson 14: Office Layout and Equipment

1. Principles of effective office layout and ergonomics
2. Office furniture, machines, and automation
3. Safety and maintenance of office equipment

Lesson 15: Records Management

1. Filing systems – manual and digital
2. Handling inward and outward mail
3. Record retention, archiving, and disposal policies

MODULE 6: COMMUNICATION AND ICT TOOLS FOR SECRETARIES

Lesson 16: Professional Communication in Office Settings

1. Telephone etiquette and intercom systems
2. Managing calls, messages, and appointments
3. Verbal and non-verbal communication skills

Lesson 17: ICT Tools and Applications

1. Use of email, fax, SMS, and video conferencing
2. Office automation software: Word processing, spreadsheets, presentations
3. Cloud storage and collaborative platforms

Lesson 18: Cybersecurity and Data Confidentiality

1. Importance of data protection in secretarial work
2. Confidentiality protocols and ethical use of digital tools
3. Safe online practices and information security

16. SOIL AND FERTILIZER MANAGEMENT

MODULE 1: FUNDAMENTALS OF SOIL SCIENCE

Lesson 1. Introduction to Soil Science

- Definition and scope of soil science
- Importance of soil in agriculture and environment

Lesson 2: Soil Formation

- Factors of soil formation (CLORPT model)
- Weathering processes: physical, chemical, biological

Lesson 3: Soil Profile and Classification

- Soil profile: Master horizons
- Soil classification systems: FAO, USDA

Lesson 4: Physical Properties of Soil

- Texture, structure, porosity, bulk density
- Soil water-holding capacity and movement

Lesson 5: Chemical and Biological Properties of Soil

- Soil pH, Cation Exchange Capacity (CEC), EC
- Soil organic matter and biological activity
- Role of microbes in soil fertility

MODULE 2: SOIL FERTILITY AND NUTRIENT MANAGEMENT

Lesson 6: Concept of Soil Fertility

- Soil fertility vs. soil productivity
- Factors affecting soil fertility

Lesson 7: Essential Plant Nutrients

- Macro- and micronutrients: Functions and deficiency symptoms
- Nutrient mobility in soil and plants

Lesson 8: Soil Nutrient Dynamics

- Nutrient transformations in soil
- Nutrient loss mechanisms: leaching, volatilization, fixation

Lesson 9: Soil Fertility Evaluation

- Soil testing: principles, procedures/ methods, interpretation
- Plant tissue analysis and diagnosis

Lesson 10: Integrated Nutrient Management (INM)

- Concept and need for INM
- Organic and biofertilizers
- Recycling of organic residues and green manuring

MODULE 3: FERTILIZER TECHNOLOGY AND APPLICATION

Lesson 11: Classification of Fertilizers

- Types: Straight, complex, mixed
- Macronutrient and micronutrient fertilizers

Lesson 12: Fertilizer Manufacture and Properties

- Production and properties of Urea, DAP, SSP, MOP, etc.
- Enhanced efficiency fertilizers: slow-release, coated fertilizers

Lesson 13: Fertilizer Application Techniques

- Methods: broadcasting, band placement, fertigation, foliar application
- Application timing and efficiency improvement

Lesson 14: Fertilizer Use Efficiency

- Calculation of fertilizer doses for crops
- Improving nutrient use efficiency through agronomic practices

Lesson 15: Environmental Impacts of Fertilizer Use

- Fertilizer runoff and water pollution
- Sustainable and climate-smart fertilizer management

Project Work and Field Visits

- Individual or group project on soil fertility management in local farms
- Visits to soil testing labs, fertilizer industries, progressive farms
- Project report writing and presentation

17. MEDIA AND COMMUNICATION

RATIONALE

The Media and Communication Sector is expanding fantastically in the modern world. This sector has seen impressive growth in diverse fields like broadcast, filmmaking, advertisement, print advertising, music, the internet, and many more. For people who are interested in a niche industry and wish to choose it as their career, journalism and media & communication studies provide a diverse range of chances for the next generation.

The study of media and communication impacts practically every facet of daily life and is becoming more and more popular. This is due to the fact that diverse media has entered our lives including social media.

Today, Media and Communication is a good career choice with immense potential for growth offering plenty of opportunities for aspiring professionals in diverse fields such as newspapers, magazines, radio, television, advertising, public relations, new media etc. with immense potential for growth.

Media courses being offered by several universities/ colleges as well as private media schools at the undergraduate level are in great demand. Several young learners at the school level would be aspiring to take up this field as a career option.

There is a need to groom such learners by accelerating their level of awareness. A basic understanding of the subject may equip them better while choosing it as a career option. The course will impart some of the basics of media and communication to those aspiring to pursue a career in the information/ communication /entertainment industry, and equip them with skills required for jobs in the media industry.

The benefits of this profession include improves communication skills, opportunities to work on challenging projects, social status, freedom to travel and experience different cultures, global networking, glamour, creativity, and competency work. Having access to locations that are off-limits to most people also provides them with a distinctive outlook on the world.

For those who want to see themselves separate from the crowd, there are many prospects in media and communication studies. After all, in this sector, learners' creativity and uniqueness propels them to higher altitudes.

CURRICULUM OBJECTIVES

i) To give learners an exposure to the diverse areas of Media and Communication studies;

ii) To endow learners with the knowledge, communication skills and perspectives necessary for future careers in the information/ communication/entertainment industry;

iii) To develop their aesthetic skills;

iv) To inculcate elements of creativity.

COURSE STRUCTURE

The current curriculum comprises VII Modules and 24 lessons. The study hours and marks allotted are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module 1	3	18	7
Module 2	5	30	13
Module 3	2	12	5
Module 4	2	12	5
Module 5	3	18	7
Module 6	3	18	8
Module 7	6	36	15
Practical/Project work		96	40
Total	**24**	**240**	**100**

MODULE I -IDEA OF MEDIA STUDIES

Time: 18hrs **Marks: 7**

Lesson 1: Values, Wisdom and Knowledge – The Ultimate Aim of Education

(Time allocation: 6hrs)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Media and Communication

(Time allocation: 6 hrs)

- Introduction and Definition of Media & Communication
- Communication as an Organic Process
- Concept of Media and Mass Communication
- Barriers to Communication
- Aspects of Mass Communication
- Functions of Mass Communication
- Types of Media
- Role of Mass Media in Politics and Development of a Nation
- Mass Media and Society

  Scope of Media

Lesson 3: Origin And Evolution of Media and Communication (Time allocation: 6 hrs)

- Origin of Mass Communication
- History of Mass Communication
- Timeline of Evolution of Media
- Invention of Print, Electronic, and Digital Media
- Traditional/Folk Media
- Traditional/Folk vs Contemporary Media)
- Developments in Media
    - Print Media
    - Electronic Media – Radio & TV
- Development Communication – Social Media, You Tube, Internet

MODULE II: MASS COMMUNICATION: VISUAL, PRINT AND ELECTRONIC MEDIA

Time: 30hrs **Marks: 13**

Lesson 4: Media, Art and Culture **(Time allocation: 6 hrs)**

- Relationship between Media, Art and Culture
- Creativity and Media
- Art & Culture as Media
- Dance & Drama
- Literature
- Cinema, Music & Theatre

Lesson 5: Print Media **(Time allocation: 6 hrs)**

- Introduction to Print Media
- Brief History of Print Media
- Print Media in India
- What is News
- Reporting and Editing
- Language Press in India
- Content Analysis of Newspapers and Periodicals
- Print Media and Concentration.

Lesson 6: Radio **(Time allocation: 6 hrs)**

- Introduction to Radio
- Brief History of Radio
- Radio in India
- Characteristics of Radio
- The Radio Station
- Formats of Radio Programmes
- Radio Programme Production
- Content Analysis of Radio Programmes
- Community Radio

Lesson 7-Television **(Time allocation: 6 hrs)**

- Introduction to Television

- Brief History of Television
- Television in India
- Role of Television as a Mass Medium
- Television Channels
- Television Programme Production
- Analysis of TV Programmes
- Television: Formats, Production and Distribution.

  TRP: Television Rating and Marketing

Lesson 8: Film / Cinema **(Time allocation: 6 hrs)**

- Evolution of cinema
- DG Phalke and Silent Era
- Coming of Sound, Studio Era, Post Independent Era
- Satyajit Ray and Parallel Cinema
- Analysis of Films
    - The Concept of Mise en Scene
    - Short Film-Fiction, Short Film - Non Fiction
    - Feature Film
- Digital Filmmaking (With Mobile and Other Technologies)
- Digital Media and Independent Cinema
- Films and Social Change

MODULE III-MASS COMMUNICATION: DIGITAL MEDIA

Time: 12hrs **Marks: 05**

Lesson 9: Digital Media **(Time allocation: 6 hrs)**

- Digital Media- an Introduction
- Digital Media as a Form of Communication
- Digital Media and its Importance
- Types of Digital Media
- Characteristics of Digital Media
- Concept of Convergent Media
- Digital Media and Management

Lesson 10: Role of Digital Media in Social and Nation building (Time allocation: 6 hrs)

- Impact of Social media in Nation Building
- Strengthening of Democracy
- Digital Media and Social Transformation
- Digital Media as a Marketing Tool
- Digital Media and Cultural Change
- Tools of Digital Media: Uses of Blogs, Articles, Captions, Hashtags, Infographics

MODULE IV: EDUCATIONAL MEDIA & TECHNOLOGY FOR NATION BUILDING

Time: 12hrs **Marks: 05**

Lesson 11: Educational Media: Concept and Practical Application

(Time allocation: 6 hrs)

- Evolution of Educational Media: Traditional & Modern
- Traditional Educational Media: Print; Audio; Visual (Projected/Non-Projected); Audio-Visual; Multi-Media
- Technology in Educational Media: Use of Computer and Internet
- Space Technology – Satellite Based Educational Media
- Content Writing and Publishing
- Developing Audio/Video Programmes
- Script Writing for Audio/Video
- Recording
- Editing

Lesson 12 A: Digital Educational Platforms **(Time allocation: 3 hrs)**

- Educational Radio
- Educational TV – Swayam Prabha Project of Govt. of India with 34 DTH Educational Channels
- Digitalization of Knowledge: NCERT Diksha(Digital Infrastructure for Knowledge Sharing) in India, Wikipedia at Global Level
- Concept of OERs (Open Educational Resources) – Digital e-Library of India (collaborative project by 21 institutions in India Handled by IISc, Bangalore, National Digital Library of IIT Kharagpur, Shodhganga Repository of Research Thesis and Dissertations; NPTEL (National Programme on Technology Enhanced Learning) Run by 7 IITs Sponsored by Ministry of Education, Govt. of India; NCERT; NIOS

Lesson 12 B : Digital Educational Platforms **(Time allocation: 3 hrs)**

- Concept of MOOC (Massive Online Open Course) – Swayam MOOC Portal of Govt. of India
- Concept of Learning APPs
- Some Popular Learning Apps – Vedantu, Udemy. Unacademy, Coursera, Simplilearn, Duolingo, TED, Khan Academy
- Concept of Learning Management Systems – Canvas, Google Classroom, Schoology, Moodle

MODULE V-UNDERSTANDING ADVERTISING

Time: 18 hrs **Marks: 08**

Lesson 13: Advertising: An Introduction **(Time allocation: 6 hrs)**

- Introduction to Advertising
- Concept & Process of Advertising
- History of Advertising Industry
- Functions of Advertising
- Marketing Mix
- Difference between Marketing and Advertising
- Brand and Brand Identity

Lesson 14: Traditional Advertising **(Time allocation: 6 hrs)**

- Types of Advertising
  - Print-Newspapers, Magazines, Brochures, Fliers, Posters
  - OOH-Billboards, Kiosks, Tradeshows Events
  - Broadcast Advertising - Radio, TV, Digital Internet + Mobile
  - In Film' Promos
  - Celebrity Endorsements
  - Merchandise

Lesson 15: Digital Advertising **(Time allocation: 6 hrs)**

- Games (Mobile and Computer)
- (To be Assessed in Practicals Only. No Question to be Asked in Theory Examination from This Portion.)
- Covert Advertising
- Forms of Advertising
- Product Advertising (Pay Per Click)

- Institutional Advertising (Corporate)
- Social Service – PSA Advocacy Advertising
- Comparative Advertising Cooperative
- Advertising Direct Mail.
- A Point-of-Purchase Advertising.
- Informational Advertising.
- Social Media Advertising
- Advertising and Personalization

MODULE VI: CORPORATE COMMUNICATION AND EVENT MANAGEMENT

Time: 18hrs **Marks: 08**

Lesson 16: Public Relations **(Time allocation: 6 hrs)**

- Concept of Public Relations
- Evolution of Public Relations in India
- Types of Public Relations
- Government Public Relations Structure
- Digital Tools of Public Relations as Digital Form.

Lesson 17: Corporate Communication **(Time allocation: 6 hrs)**

- Definition, Meaning and Importance of Corporate Communication
- Example of Corporate Communication
- Role of Corporate Communications
- Types of Corporate Communication
- Digital Media
- Objectives of Communication
- Components of Communication
    - Branding Awareness
    - Corporate Branding
    - Corporate Reputation (Brand Credibility)
    - Customer Communication
    - Brand Talent
    - Employee Engagement
    - Employee Productivity
- Importance of Corporate Communication

Lesson 18: Event Management **(Time allocation: 6 hrs)**

- Concept of Event Management.
- Event Planning
- Event Risk Management
- Business Communication
- Event Advertisement and Marketing
- Event Cost Management and Budgeting
- Streaming

MODULE VII-CAREER AND ENTREPRENEURSHIP IN MEDIA

Lesson 19: Life Skills for Media Profession **(Time allocation: 6 hrs)**

- Life Skills
    - Communication skills
    - Self Management skills
    - ICT skills
    - Entrepreneurial skills

Lesson 20: Employment Opportunities **(Time allocation: 6 hrs)**

- Print
- Radio
- Television
- Advertising and Public Relations
- Event Management
- Corporate Communications
- Photo Journalism
- Film/Cinema

Lesson 21: Career & Entrepreneurship in Media **(Time allocation: 6 hrs)**

- Self Employment
- Start Ups
- Government Schemes
- Private Participation

Lesson 22: Media Literacy **(Time allocation: 6 hrs)**

- Defining Media Literacy, its Importance and Functions
- Understanding the Process of News Making: Sources, Framing, Ideology, Language, Representation
- Decoding and Understanding Framing and Meaning of Media Messages
- Emerging Platforms for News Consumption: Internet. Mobile, Social Media and Messaging Platforms
- How to Read Newspaper, Watch TV News Channel and Digital News Portals

Lesson 23: Media Ethics **(Time allocation: 6 hrs)**

- Defining Media Ethics: Social Responsibility of Press
- Legal Rights and Responsibilities of Journalists
- Code of Conduct by Press Council of India
- Prasar Bharati Code of Conduct
- Editor's Guild

Lesson 24: Media and Law **(Time allocation: 6 hrs)**

- Press Laws Before and After Independence: An Analysis
- Freedom of Press and Indian Constitution (Article 19 (1)a and Article 19 (2))
- Intellectual Property Rights and 7 Types of Intellectual Property Rights, Namely – copyright, Trademarks, Patents, Geographical Indications, Plant Varieties, Industrial Designs and Semiconductor Integrated Circuit Layout Designs.
- Acts and Laws: Press and Registration of Books Act 1867, Copyright Act 1957, Working Journalists Act 1955 and 1958, Young Persons Harmful Publications Act 1956, Prasar Bharati Act 1990 and Cinematograph Act 1952, Official Secrets Act 1923 and Right to Information Act 2005 (Case Studies), Defamation (Libel and Slander)

  Regulatory Bodies: TRAI, BCCC, News Broadcasters Association and their Functioning

PROJECT WORK

BOARD OF OPEN SCHOOLING AND SKILL EDUCATION (BOSSE), SIKKIM

(Established under Act No. 14 of 2020 of the Sikkim Legislative Assembly)

ABOUT BOSSE

Board of Open Schooling and Skill Education (BOSSE), Sikkim is established under Act No. 14 of 2020 of the Sikkim Legislative Assembly.

It is committed to providing inclusive, flexible and quality education with skill development opportunities to empower learners for a better future.

Our vocational curriculum is designed to enhance employability, promote entrepreneurship and build a skilled workforce for tomorrow.

OUR PROGRAMMES FOCUS ON

- **Skill Development**
- **Career Opportunities**
- **Practical Learning**
- **Self Reliance**

CONTACT US

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