St. Joseph's College for Women (A), Visakhapatnam
B.Sc. Home Science Syllabus Grid-2025-2026

Semester	Major/ Minor	Course Title
SEM I	Major 1	Introduction to Home Science
	Major 2	Housing for Better Living
SEM II	Major 3	Essentials of Home Science Extension
	Major 4	Fundamentals of Textiles
SEM III	Major 1	Life Span Development
	Major 2	Extension Education & Community Development
	Major 3	Fundamentals of Textiles
	Major 4	Resource Management
	Minor 1	Basic Nutrition
SEM IV	Major 1	Textile Design
	Major 2	Interior Design & Decoration
	Major 3	Nutritional Biochemistry
	Minor 1	Human Physiology
	Minor 2	Family & Community Nutrition
SEM V	Major 1	Marriage, Family and Child Welfare
	Major 2	Early Childhood Education
	Major 3	Apparel Design
	Major 4	Family Economics
	Minor 1	Clinical Nutrition & Diet Therapy
	Minor 2	Food Microbiology
SEM VI	Major 1	Internship

ST. JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM
UG HOME SCIENCE SYLLABUS
SEMESTER I
MAJOR CORE: INTRODUCTION TO HOME SCIENCE
Theory: 3 Hours / Week **Credits: 3**

Course Objectives: By the end of the course, the learner will be able to:

1. Understand the concept, scope, philosophy, and multidisciplinary nature of Home Science as an academic discipline.
2. Familiarize with the different core and applied branches of Home Science and their relevance in daily life and community development.
3. Recognize the career opportunities, entrepreneurial avenues, and research trends within the field of Home Science.

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

1. CO1: Explain the meaning, philosophy, scope, and multidisciplinary nature of Home Science.
2. CO2: Describe the core branches of Home Science and apply their concepts to individual, family, and community well-being.
3. CO3: Identify and analyze recent trends and research areas in different Home Science specializations.
4. CO4: Evaluate the significance of Home Science in professional development, entrepreneurship, and societal contribution.
5. CO5: Demonstrate awareness of field-based institutions, organizations, and digital platforms relevant to Home Science education and practice.

Syllabus Content

Unit I: Basics of Home Science

- Meaning and definition of Home Science
- Branches of Home Science
- Scope and relevance of Home Science in modern society
- Development of Home Science as a discipline in India
- Role and activities of the Home Science Association of India (HSAI)
- Linkages of Home Science with other related subjects (e.g., Sociology, Psychology, Biology, Economics)

Unit II: Branches of Home Science – I

- **Human Development**
  - Meaning, definition, and scope
  - Stages of human development
  - Developmental tasks/milestones
- **Food and Nutrition**
  - Definition, importance, and functions of food

- Concept of nutrition
- Basic terms: Nutrients, Food groups, Balanced diet, Food Guide Pyramid

Unit III: Branches of Home Science – II

- **Textiles and Clothing**
  - Origin, importance, and functions of clothing
  - Basic textile terms: fiber, yarn, textile, weaving, knitting
  - Classification of textile fibers
- **Extension Education and Communication**
  - Concept, nature, scope, and principles of extension and communication
  - Methods and media for community outreach
- **Resource Management & Interior Design**
  - Concept and scope
  - Need for management
  - Classification of resources
  - Factors affecting use of resources
  - Importance and functions of housing and interior design

Unit IV: Research in Home Science

- **Overview of research in various branches:**
  - Foods & Nutrition
  - Human Development & Family Studies
  - Textiles & Clothing
  - Resource Management & Interior Design
  - Extension Education & Community Development
- **Recent developments and trends in Home Science research**

Unit V: Careers & Entrepreneurship in Home Science

- **Career and entrepreneurial opportunities in:**
  - Foods & Nutrition – hospitals, health centres, food industry
  - Human Development – preschools, government/NGO welfare programs
  - Textiles & Clothing – textile industry, boutiques, research labs
  - Resource Management & Interior Design – construction sector, CAD assistant, interior designer, creative crafts entrepreneur
  - Extension Education – extension projects, teaching-aid development, community training

PRACTICAL

Credits: 1 **Hours: 2 hrs/week**

Course Objectives

1. To gain exposure to institutions related to Home Science.
2. To understand practical applications of theoretical concepts.
3. To develop observation and reporting skills.

Course Outcomes

1. Ability to analyze the functioning of related institutions.
2. Relating theory with practical field experiences.
3. Awareness of professional organizations and their roles.

Activity-Based Learning Experiences

1. Visit to hospital dietary department/food-service unit.
2. Visit to a handloom or textile loom unit.
3. Visit to a crèche or preschool.
4. Visit to ICDS project or Anganwadi centre.
5. Browsing and reporting on official websites such as HSAI, NIN, ICMR.

References

1. Chouhan, A. (2015). *Comprehensive Home Science X*.
2. Yadav, K., & Singh, O. S. (2014). *Home Science*. Atlantic Publishers (ISBN 978-81-269-1906-
3. Premlata Mullick, P. *Textbook of Home Science*. Kalyani Publishers.

Co-curricular Activities

1. Virtual or physical visits to Home Science Departments in reputed universities/colleges.
2. Online/virtual interactions with faculty/students of Home Science from other states/institutions.

SEMESTER – I
MAJOR CORE: HOUSING FOR BETTER LIVING

Theory: 3 Hours / Week **Credits: 3**

Course Objectives: By the end of the course, the learner will be able to:

1. Understand the importance and functions of housing for better living.
2. Learn the principles of house planning with emphasis on efficient kitchen layouts.
3. Gain knowledge of building materials, flooring, and protection methods.
4. Acquire skills in selection, operation, and maintenance of household equipment.
5. Apply ergonomic principles in planning family living spaces.

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

1. Explain the importance and functions of housing.
2. Apply the principles of planning a house, including kitchen layouts and storage facilities.
3. Identify types and properties of building and flooring materials.
4. Analyze methods of protection against dampness, termites, and fire hazards.
5. Demonstrate knowledge of selection, construction, use, and care of household equipment.

THEORY

Unit I: Housing

- Importance and functions of a house.
- Factors influencing the choice of house.
- Requirements for purchasing land – site, soil condition, locality, orientation, sanitary facilities, neighborhood, legal aspects.
- Principles of planning a house – aspect, prospect, privacy, flexibility, roominess, grouping, circulation, sanitation, practical considerations.

Unit II: House Plans

- Planning of different rooms – veranda, living room, bedroom, kitchen.
- Kitchen plans – efficient work centers (L-shape, U-shape, single wall, peninsula), storage facilities.
- House plans for different income groups – high, middle, low.
- Advantages and disadvantages of owning and renting a house.

Unit III: Building Materials and Flooring Materials

- Types and properties: stone, clay products, cement, mortar, concrete, timber, plywood, plastics, paints, ferrous, gypsum.
- Flooring – factors influencing selection, types of flooring.

Unit IV: Building Protection

- Dampness protection – reasons, preventive and curative methods.

- Termite protection – sources, preventive and curative methods.
- Fire protection – causes, preventive measures, fire-resisting construction.

Unit V: Household Equipment

- Selection and purchase of household equipment.
- Construction, use, and care of appliances:
    - Small electrical – mixers, toasters, beaters, iron.
    - Large electrical – refrigerator, washing machine, vacuum cleaner, dishwasher, electric range.
    - Low-cost non-electrical (for rural areas) – hay box, low-cost refrigerator, solar cooker.
- Points to consider while operating appliances.
- Safety measures to avoid accidents.

PRACTICAL

Credits: 1 **Hours: 2 hrs/week**

Objectives

1. To develop skills in drawing house and kitchen plans.
2. To identify and analyze building and flooring materials.
3. To learn care and cleaning techniques for household surfaces and equipment.

Practical Outcomes: On successful completion, the learner will be able to:

1. Draw and interpret site, floor, and elevation plans.
2. Design kitchen layouts for efficient work and storage.
3. Identify market-available building materials and finishes.
4. Demonstrate cleaning and maintenance of household materials and equipment.

Activities

1. Preparation of house plan – symbols, site plan, floor plan, elevation, landscape.
2. House plans for low, middle, and high-income groups.
3. Kitchen layouts – L-shape, U-shape, broken L, peninsula, single wall.
4. Market study of building materials and identification of finishes (floor, wall, ceiling).
5. Care and cleaning of metals, non-metals, floors, and walls using proper equipment and agents.

References

1. Premlata Mullick (2016). *Textbook of Home Science*. 4th ed., Kalyani Publishers.
2. Varghese & Oagle (2005). *Home Management*. New Age International Publishers.
3. Subasini Mohapatra (2010). *Home Management and Household Economics*. Kalyani Publishers.
4. Premavathy Seetharaman, Parveen Pannu (2005). *Interior Design and Decoration*. CBS Publishers.
5. Sushma Gupta, Neeru Garg & Renu Saini (2018). *Textbook of Family Resource Management, Hygiene and Physiology*. 11th ed., Kalyani Publishers.
6. Pratap Rao, M. (2012). *Interior Design – Principles & Practice*. Standard Publishers.
7. Veena Gandotra & Sarjoo Patel (2006). *Housing for Family Living*. Dominant Publishers.

Co-Curricular Activities

1. Study of building materials and equipment beyond the syllabus.
2. Visits to construction sites/buildings.
3. Drawing layouts and making models (clay, cardboard, etc.).
4. Debates, seminars, group discussions, quizzes.
5. Preparation of charts, posters, and exhibitions.
6. Album making of layouts and finishes.

SEMESTER – II
MAJOR CORE: ESSENTIALS OF HOME SCIENCE EXTENSION

Theory: 3 Hours / Week **Credits: 3**

Course Objectives: By the end of the course, the learner will be able to:

1. Understand the concept, scope, and philosophy of Extension Education in Home Science.
2. Acquire knowledge about teaching–learning processes, methods, and communication in Extension.
3. Develop practical skills in preparing and using audio-visual aids and extension teaching methods.

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

1. Explain the meaning, scope, and principles of Extension Education.
2. Describe the role and qualities of an effective Extension worker.
3. Analyze the teaching–learning process, motivation, and principles of learning.
4. Differentiate between individual, group, and mass teaching methods used in Extension.
5. Demonstrate knowledge of communication types, elements, and barriers in the Extension process.

THEORY

Unit I – Extension Education

- Meaning, Concept, Scope, and Objectives.
- Formal and Non-formal Education.
- Philosophy and Principles of Extension Education.
- Role and Qualities of an Extension Worker.

Unit II – Teaching and Learning Process

- Teaching – Meaning, definition, steps in teaching.
- Learning – Meaning, definition, elements of learning.
- Learning Situation – Definition and elements.
- Principles of learning and implications for teaching.
- Motivation – Principles of motivation in Extension.
- Classification of motives.

Unit III – Teaching Methods / Techniques

- Extension teaching methods – Definition, functions, classification (individual, group, mass).

- Individual methods – Farm and home visits, telephone calls, personal letters, result demonstrations.
- Group methods – Method demonstration, group meetings, conferences, field trips.
- Mass methods – Print and electronic media, internet, social media, exhibitions.
- Factors to be considered in selection and combination of teaching methods.

Unit IV – Audio-Visual Aids

- Audio-Visual Aids – Meaning and classification.
- Factors influencing selection of Audio-Visual Aids.
- Principles of preparing, planning, and evaluating A.V. aids.
- Cone of Experience.

Unit V – Communication

- Communication – Meaning, definition, scope.
- Key elements: Communicator, Message, Channel, Treatment, Audience, Response.
- Types of communication – Verbal, Non-verbal, Small-group, Mass communication.
- Barriers to communication.

PRACTICAL

Credits: 1 **Hours: 2 hrs/week**

Objectives

1. To identify socio-economic needs of a community through surveys.
2. To develop teaching aids and extension communication tools.
3. To gain hands-on experience in delivering demonstrations and illustrated lectures.

Outcomes: On successful completion, the learner will be able to:

1. Conduct baseline surveys and analyze socio-economic conditions of a community.
2. Prepare and effectively use different types of teaching aids.
3. Demonstrate skills in illustrated lectures and method demonstrations for community outreach.

Practical Syllabus

1. Visit to a community/village to assess socio-economic needs.
2. Preparation of a survey schedule.
3. Preparation and display of teaching aids (posters, charts, flash cards).
4. Display of bulletin board.
5. Illustrated lecture and method demonstration to a community on Home Science topics.

References

1. Adivi Reddy (1985). *Extension Education.* Sreelakshmi Press, Bapatla.
2. Dahama, O.P. (1981). *Extension and Rural Welfare*. Ram Prasad & Sons, Agra.
3. Doshi, S.L. (2007). *Rural Sociology*. Rawat Publishers, Delhi.
4. Dubey, V.K. (2009). *Extension Education & Communication*. New Age International.
5. Indhubala (1980). *Gruhavignasastravistarana*. Telugu Academy.
6. Sanths Govind, G., Tamliselvi & J. Meenainbigai (2011). *Extension Education and Rural*

Development. Agroblos, Jodhpur.
7. Shekar, S. & Santosh Ahlawat (2013). *Textbook of Home Science Extension Education*. Daya Publishing House.
8. Supe, S.V. (1983). *An Introduction to Extension Education*. Oxford & IBH, New Delhi.

Co-Curricular Activities

1. Adoption of a village based on socio-economic background.
2. Baseline survey of demographic, educational, and felt needs of villagers.
3. Data collection, pooling, and analysis.
4. Preparation, use, and evaluation of visual aids (posters, charts, flash cards, bulletin boards).
5. Seminar presentations in classrooms.
6. Blackboard teaching (15 minutes) for practice.
7. Activities to promote effective verbal and non-verbal communication skills.

II SEMESTER
FUNDAMENTALS OF TEXTILES

Credits -3

Objectives: To enable student to learn

1. To introduce students to the fundamental concepts, classifications, and properties of various textile fibers.
2. To enable students to understand the production processes, characteristics, and care requirements of natural, synthetic, and mineral fibers.
3. To provide knowledge about yarn types, spinning methods, and their importance in fabric construction and design.

Learning Outcome: To enable student to learn

1. Define textiles and explain the importance of studying textile fibers in daily life and professional practice.
2. Classify textile fibers into natural, manmade, synthetic, and mineral categories with examples.
3. Describe the production process, properties, uses, and care of cotton, linen, silk, wool, nylon, polyester, acrylic, fiber glass, and asbestos.
4. Explain the concept, advantages, and applications of blends and mixtures in textiles.
5. Differentiate between types of yarns and describe methods of mechanical and chemical spinning.

THEORY

Unit-I Introduction to Textiles

• Introduction to textiles - Importance of study of textiles.
• General properties of a Textile Fiber - Primary and Secondary.
• Classification of textile fibers – Natural and manmade; cellulose, protein, synthetic and mineral

Unit-II Natural Fibers

• Cellulose fibres – Cotton and Linen - Production, properties, use and care
• Minor cellulose fibres
• Protein fibers – Silk and wool - Production, properties, use and care.

Unit-III Synthetic Fibers

• Nylon – Production, properties use and care
• Polyester – Production, properties use and care
• Acrylic fibres – Production, properties use and care

Unit – IV Mineral Fibers

• Mineral fibres – Fibre glass and Asbestos Production, properties and Uses
• Mixtures and Blends – Importance and advantages of Blending
• Blends of Natural cellulose fibers, protein fibers and manmade fibers.

Unit – V Yarns

• Yarns – Types of Yarns - Staple and Filament

• Methods of spinning – Mechanical process
• Methods of spinning – Chemical process - Wet, Dry
• Classification of yarns – simple, novelty and textured yarns

PRACTICAL

Objectives

1. To develop skills for identification and classification of textile fibers using different testing methods.
2. To provide hands-on experience in recognizing types of yarns including simple and novelty yarns.
3. To equip students with basic analytical skills through microscopic examination, texture analysis, and burning tests for fiber identification.

Learning Outcomes: After completing the practical component, students will be able to:

1. Identify and differentiate plant, animal, and synthetic fibers by their physical properties.
2. Collect and classify various textile fibers and yarns for documentation and further study.
3. Conduct microscopic examinations and burning tests to confirm fiber types effectively.

1. Identification and collection of Textile Fibres
    a. Plant Fibres – Cotton, Linen, Jute
    b. Animal Fibres – Silk, Wool
    c. Synthetic Fibres – Polyester, Nylon, Acrylic
2. Identification and collection of Yarns
    d. Simple Yarns
    e. Novelty Yarns
3. Tests to identify textile fibers
    f. Texture
    g. Microscopic examination and
    h. Burning test.

REFERENCES

1. DeepaliRastogi and Sheetal Chopra (2017). Textile Science, 1st edition, Orient Black Swan Pvt. Ltd.
2. KanwarVarinder Pal Singh. (2014). Introduction to Textiles, 1st edition, Kalyani Publishers.
3. Seema Sekhri. (2017). Text book of Fabric – Fundamentals to Finishing, 2nd edition, PHI Learning Pvt. Ltd.
4. Sushma Gupta, NeeruGarg, Renu Saini. (2018). Text book of clothing, textiles and laundry, 8th edition, Kalyani publishers.
5. Vastala, R. (2013) .Text book of Textiles and Clothing, 1st edition, Published by ICAR.

CO- CURRICULAR ACTIVITIES

1. Seminar/Assignment/Quiz/Group Discussion
2. Use of ICT in Class reports and Seminars.
3. Project Work
4. Construction of garments and their exhibition.
5. Visit to nearby weaving, dyeing units and printing.

III SEMESTER
LIFE SPAN DEVELOPMENT

Credits -3

Objectives: To enable students to learn:

1. Scientific knowledge about child-development, and Developmental tasks at various stages of child development.
2. Use basic principles for assessment of various developments during childhood.
3. Observation of neonatal characteristics by visiting a maternity hospital.
4. Familiarize with problems of elderly through case studies and institutional visits.

Learning outcomes: To enable students to learn:

1. Explain the fundamental concepts and principles of child development, including the factors influencing growth and development in children.
2. Understand the stages of prenatal development and the key physical, motor, cognitive, and socio-emotional developments during infancy and babyhood.
3. Describe the physical, emotional, social, and cognitive development during early and late childhood, including key theories such as Piaget's preoperational and concrete-operational stages.
4. Understanding of the physical, physiological, cognitive, emotional, and social changes that occur during adolescence, with an emphasis on Piaget's formal-operational stage.
5. Identify and explain the developmental tasks and significant changes during young adulthood, middle adulthood, and late adulthood, including physical, cognitive, and socio-emotional aspects, as well as coping strategies for the challenges of old age.

Unit I Introduction to Growth and Development

1. Understanding the terms Child, Growth, Development, Child Development, Human Development, and Developmental tasks.
2. Principles of Child Development and Factors influencing growth and Development of Children.
3. Determinants of Development - Heredity Vs. Environment - Maturation Vs. Learning
4. Stages of Development across lifespan

Unit II Prenatal and Early Years of Development

1. Stages of Prenatal development - Physical and Physiological changes during pregnancy- - Complications during pregnancy. Importance of Placenta, Amniotic Fluid, Role of Hormones during Pregnancy
2. Stages of birth and Types of Birth
3. Infancy – Characteristics -Physical proportions, Physiological functions, Motor activities.
4. Babyhood – Developmental Tasks and Characteristics, Physical-motor development, Cognitive development - Piaget's Sensorimotor stage, Language, Socio-emotional development.

Unit III Development during Early and Late Childhood

1. Early Childhood Period –Characteristics -Physical, Emotional, Social and Cognitive development-Piaget's Preoperational stage -Social stages in play.
2. Late Childhood Period – Characteristics, Physical, Emotional, Social and Cognitive development-Piaget's Concrete-operational stage.

Unit IV Development during Adolescence

1. Adolescence – Definitions by WHO, UNICEF, NCERT- Characteristics of Adolescence
2. Physical and physiological Changes during puberty for Boys and girls
3. Developments during adolescence – Cognitive-Piaget's Formal-operational stage, Emotional and Social development

Unit V Development during Adulthood

1. Young Adulthood - Definition, Development tasks, significance of the period, Adjustments during young adulthood period
2. Middle adulthood – Definition, physical, physiological and Psychological changes during middle age, preparation for retirement.
3. Late adulthood –Sub groups and definitions, Characteristics of old age – Physical and physiological changes during old age, cognitive and memory changes. Problems of old age and coping up strategies

Practical

Course Objectives

1. Proficiency in Observing Developmental Milestones
2. Analysis of Social and Emotional Adjustments across Life Stages
3. In-Depth Case Studies in Adulthood Stages

Course Outcomes

1. Identification and Interpretation of Developmental Characteristics
2. Assessment of Social Development and Adjustment Issues
3. Documentation and Analysis of Lifespan Development through Case Studies

1. Observation of characteristics of an infant
2. Observation of different Developments of pre-school children –
-Physical development
-Language development
-Concept development.
3. Assessment of social Development among elementary school children
4. Study of adolescent adjustment problems
5. Case study of man and woman during Middle adulthood
6. Case study of elderly man and woman.

REFERENCES

1.Berk, L. E. (2007). Child Development. Prentice-Hall of India Pvt.Ltd, New Delhi.
2. Feldman, R.S. (2011).Understanding Psychology, Tenth Edition, Tata MC Graw Hill Education Private Limited, McGraw- Hill, New Delhi.
3. Hurlock – E.B. (1990) Child Development, Tata McGraw Hill Company Ltd, New York.

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4. Santrock, J. W. (2013). Child Development. Tata McGraw Hill Company Ltd, New Delhi.
5. Singh, A.(2015). Foundations of Human Development: A life span approach, 1st edition Orient Black Swan Pvt. Ltd., New Delhi.

CO-CURRICULAR ACTIVITIES

1. Observation of neonatal characteristics by visiting a maternity hospital.
2. Observation of a pre-school child
3. Visit to Old age home
4. Celebration of Important Days (National and International): -

- International Day of Elderly-October 1st
- Children's Day (Nov 14th)

III Semester

EXTENSION EDUCATION AND COMMUNITY DEVELOPMENT

Credits -3

Objectives:To enable student to learn

1. To impart knowledge of program planning principles, steps, and evaluation methods for effective extension work.
2. To develop an understanding of the characteristics of rural, urban, and tribal communities to design relevant developmental programs.
3. To familiarize students with government, non-governmental, and international agencies involved in community development and welfare initiatives.

Learning Outcomes: **To enable student to learn**

1. Define program planning in extension and explain its objectives, principles, and evaluation methods.
2. Develop effective lesson plans for various target groups including women, adolescents, and children on relevant community topics.
3. Differentiate the features of rural, urban, and tribal communities and analyze their unique developmental needs.
4. Describe the structure and functions of the Panchayati Raj system at village, mandal, and district levels
5. Identify the roles and contributions of government, voluntary, and international agencies such as WHO, UNICEF, ICDS, and PASS in community development.

Unit 1 Program Planning

1. Definition, Objectives and Principles of Program Planning in Extension
2. Steps in Program Planning
3. Evaluation – Principles, methods of evaluating individual and group performances.
4. Methods to find out felt and unfelt needs of the community.

Unit-II Lesson Planning

1. Characteristics of good lesson plan – Pre-requisites and components of lesson planning.
2. Planning lessons for specific groups – Women, adolescents and Children
3. Different topics for lesson plans – Swatcha Bharath, Swaasthya Bhaarat, Energy Conservation, Stress Management, Millets for Health, health education (Any FOUR).

Unit-III Community Types and Their Characteristics

1. Features of Rural community
2. Features of Urban community
3. Features of Tribal community

Unit-IV Community Development

1. Community Development – Definition , Scope, objectives – Role of Functionaries
2. Panchayat Raj Systems in India (brief) – Meaning, Definition, Democratic Decentralization
3. Three tier system of Panchayat Raj – Village Panchayath –Functions
4. Mandal Parishath – Seven Committees (Planning, Production etc.,) Functions

5. ZillaParishath – Commitees, Functions- District, State and central level
6. Extension organization in Panchayath raj set-up
7. Concept of Welfare State, Directive Principles

Unit- V Government and Non-Governmental Organizations

1. Government and Non- Governmental Organizations-Meaning and definition
2. Role of organizations (Government and Voluntary) for the development of people
3. International Agencies – WHO, CARE, UNICEF,
4. National and Voluntary Agencies – ICDS, RASS, KVK, DWCRA, MEPMA
5. Local Level Voluntary Agencies, people's organizations at grass roots – PASS

PRACTICAL

Objectives:**To enable student to learn**

1. To enable students to plan and implement need-based awareness activities in the community.
2. To provide field exposure to various government and voluntary organizations involved in community welfare.
3. To develop skills in interacting with community functionaries and self-help group members to understand grassroots-level issues and development processes.

Learning Outcomes:**To enable student to learn**

1. Plan and conduct awareness activities for women and children based on identified community needs and interests.
2. Prepare and present lesson plans and method demonstrations effectively for community education.
3. Gain firsthand experience by visiting mandal offices, ICDS centers, NGOs, and tribal areas to observe their functioning and services.
4. Interact with village-level functionaries and self-help group members to understand the impact of welfare programs.
5. Compile detailed reports on field visits, community interactions, and group projects to reflect their understanding of extension and development work.

1. Plan an activity to create awareness among women and children of community surveyed according to their needs and interests - Lecture cum group discussion
2. Field Visits – Mandal Office, ICDS, Mahila Pranganam, PASS organization
3. Community development – Need based group project work.
4. Field Visit to Voluntary Organizations to know functioning
5. Interaction with village level functionaries to understand issues at grassroot level.
6. Interaction with women self- helps group leaders/ members to know the impact of welfare programmes.
7. Field visit to a tribal area to know their issues(optional)

REFERENCES

1. A guide book for Anganwadi workers. Published by the department of women & child development. Ministry of Human resource development. Government of India.
2. Doshi, S.L. (2007). Rural Sociology. Delhi Rawat Publishers
3. Dahama.O.P .(1981). Extension and Rural welfare, Ram Prasad and Sons Agra Bhopal.

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CO- CURRICULAR ACTIVITIES

1. Prepare a model lesson plan to create awareness among women and children in the community surveyed.
2. Execute the lessons in the community.
3. Prepare a model/ method demonstration to educate the women on nutritious locally available foods and demonstrate in the community.
4. Visit to the ICDS office to acquaint with the services rendered and submit the report.
5. Visit to local NGO (Eg: PASS) organization to know the functions.
6. Visit to KVK, Mahila praganam to have awareness on different training programs given by the Government to the needy women.
7. Plan, organize and execute awareness program in the community at the end of the SEMESTER on nutrition, environment, energy conservation and health education.

III SEMESTER
FUNDAMENTALS OF TEXTILES

Credits -3

Objectives: To enable student to learn

4. To introduce students to the fundamental concepts, classifications, and properties of various textile fibers.
5. To enable students to understand the production processes, characteristics, and care requirements of natural, synthetic, and mineral fibers.
6. To provide knowledge about yarn types, spinning methods, and their importance in fabric construction and design.

Learning Outcome: To enable student to learn

6. Define textiles and explain the importance of studying textile fibers in daily life and professional practice.
7. Classify textile fibers into natural, manmade, synthetic, and mineral categories with examples.
8. Describe the production process, properties, uses, and care of cotton, linen, silk, wool, nylon, polyester, acrylic, fiber glass, and asbestos.
9. Explain the concept, advantages, and applications of blends and mixtures in textiles.
10. Differentiate between types of yarns and describe methods of mechanical and chemical spinning.

THEORY

Unit-I Introduction to Textiles

• Introduction to textiles - Importance of study of textiles.
• General properties of a Textile Fiber - Primary and Secondary.
• Classification of textile fibers – Natural and manmade; cellulose, protein, synthetic and mineral

Unit-II Natural Fibers

• Cellulose fibres – Cotton and Linen - Production, properties, use and care
• Minor cellulose fibres
• Protein fibers – Silk and wool - Production, properties, use and care.

Unit-III Synthetic Fibers

• Nylon – Production, properties use and care
• Polyester – Production, properties use and care
• Acrylic fibres – Production, properties use and care

Unit – IV Mineral Fibers

• Mineral fibres – Fibre glass and Asbestos Production, properties and Uses
• Mixtures and Blends – Importance and advantages of Blending
• Blends of Natural cellulose fibers, protein fibers and manmade fibers.

Unit – V Yarns

• Yarns – Types of Yarns - Staple and Filament

• Methods of spinning – Mechanical process
• Methods of spinning – Chemical process - Wet, Dry
• Classification of yarns – simple, novelty and textured yarns

PRACTICAL

Objectives

4. To develop skills for identification and classification of textile fibers using different testing methods.
5. To provide hands-on experience in recognizing types of yarns including simple and novelty yarns.
6. To equip students with basic analytical skills through microscopic examination, texture analysis, and burning tests for fiber identification.

Learning Outcomes: After completing the practical component, students will be able to:

4. Identify and differentiate plant, animal, and synthetic fibers by their physical properties.
5. Collect and classify various textile fibers and yarns for documentation and further study.
6. Conduct microscopic examinations and burning tests to confirm fiber types effectively.

4. Identification and collection of Textile Fibres
    i. Plant Fibres – Cotton, Linen, Jute
    j. Animal Fibres – Silk, Wool
    k. Synthetic Fibres – Polyester, Nylon, Acrylic
5. Identification and collection of Yarns
    l. Simple Yarns
    m. Novelty Yarns
6. Tests to identify textile fibers
    n. Texture
    o. Microscopic examination and
    p. Burning test.

REFERENCES

1. DeepaliRastogi and Sheetal Chopra (2017). Textile Science, 1st edition, Orient Black Swan Pvt. Ltd.
2. KanwarVarinder Pal Singh. (2014). Introduction to Textiles, 1st edition, Kalyani Publishers.
3. Seema Sekhri. (2017). Text book of Fabric – Fundamentals to Finishing, 2nd edition, PHI Learning Pvt. Ltd.
4. Sushma Gupta, NeeruGarg, Renu Saini. (2018). Text book of clothing, textiles and laundry, 8th edition, Kalyani publishers.
5. Vastala, R. (2013) .Text book of Textiles and Clothing, 1st edition, Published by ICAR.

CO- CURRICULAR ACTIVITIES

1. Seminar/Assignment/Quiz/Group Discussion
2. Use of ICT in Class reports and Seminars.
3. Project Work
4. Construction of garments and their exhibition.
5. Visit to nearby weaving, dyeing units and printing.

III SEMESTER

RESOURCE MANAGEMENT

Objectives: To enable the students to

1. To enable students to understand fundamental concepts, processes, and tools of home management for effective family resource utilization.
2. To develop analytical skills in decision-making, problem-solving, and conflict resolution within home and family contexts.
3. To provide knowledge about time, energy, and work simplification techniques to enhance family well-being and quality of life.

Learning Outcomes: To enable the students to

1. Define home management and explain the roles, responsibilities, and challenges faced by homemakers including role overload and conflict.
2. Describe the management process, its steps, and apply the system's approach to various household management situations.
3. Illustrate the decision-making process, types of decisions, and construct decision trees for family management.
4. Explain the interrelationship between values, goals, and standards and classify household resources based on their characteristics.
5. Discuss the significance, tools, and techniques of time and energy management, fatigue reduction, and work simplification for better resource utilization.

UNIT-I:

Home Management-definition, types of management situations in family; characteristics of a good manager-roles played by homemaker, role overload, role conflict.

UNIT-II:

Management Process- steps-planning, controlling, evaluating, system's approach - components, changing concept of management.

UNIT - III:

A. Decision making - Process steps, types of decisions, decision tree.

B. Conflict resolution-types, importance.

UNIT-IV:

A. Motivating factors in management - Values - types, sources, Goals - types, characteristics, Standards-types, characteristics; Inter-relationship between values, goals and standards.

B. Resources-classification, characteristics.

UNIT-V:

A. Time management-significance, tools of time management-time cost, time norm, work norm, work curve, peak load; Process of time management.

B. Energy management - significance, energy cost, factors affecting energy cost, Fatigue -types, methods of reducing.

C. Work simplification- techniques to study, Mundel's classes of changes

REFERENCES:

1. Management in family living, (1980) Nickell& Dorsey, Wiley Eastern Pvt Ltd., New Delhi.
2. Management for Modern Families, (1970) Gross & Crandall, Appleton - century crafts, I.N.C., New York.
3. Management for Modern Families, (1970) Gross, Crandall & Knoll, Appleton - century crafts, I.N C. New York
4. Textbook of household arts, (1985) Soundaraj. S, Orient Longman, Bombay
5. Home furnishings, A. H. Rutt, (1969) Wiley eastern pvt ltd., New Delhi.
6. Management for Indian families, (1976) Mann. K.M., Kalyani Publishers, Delhi.
7. Varghese, M.A., Ogale, N.N &Srinivasan, K (1985) Home management, Wiley Eastern Pvt Ltd., New Delhi.

Practical

RESOURCE MANAGEMENT

Objectives: To enable the students to

1. To provide hands-on experience in decision-making, time management, and resource utilization through practical exercises.
2. To enhance skills in preparing time schedules, pathway charts, and process charts for efficient household management.
3. To develop creativity and application skills through the preparation of household accessories and surveys on resource use.

Learning Outcomes: To enable the students to

1. Prepare decision trees and make effective plans for specific occasions and purposes in home management.
2. Develop and evaluate time schedules for both Home Science and Non-Home Science students for effective time utilization
3. Create household accessories such as braided door mats, patchwork place mats, quilted cushion covers, or kitchen aprons/bags using learned techniques.
4. Apply tools of time management like work norms, work curves, peak loads, and time cost analysis in household contexts.
5. Conduct surveys to assess resource use in households and compile findings systematically for analysis and presentation.

UNIT-I: Decision making planning for specific occasions/purpose-with decision tree
UNIT II: Preparing time schedule for Home science/ Non- Home science students and evaluating it.
UNIT-III: Making Household accessories (Optional)
a) Braiding-door mat
b) Patchwork-place mat
c) Quilting-cushion cover
d) Kitchen accessories (Apron or Bag)
UNIT-IV: Tools of time management-work norm
UNIT-V: Tools of time management - work curve
UNIT-VI: Tools of time management-peak load
UNIT-VII: Tools of time management-time cost of household activities

UNIT-VIII: Pathway and process chart
UNIT-IX: Survey for use of resources.

REFERENCES:

1. Management in family living. (1980) Nickell& Dorsey, Wiley Eastern Pvt Ltd., New Delhi.
2. Management for Modern Families, (1970) Gross & Crandall, Appleton - century crafts, I.N.C., New York.
3. Management for Modern Families, (1970) Gross. Crandall & Knoll, Appleton-century crafts, I.N.C., New York.
4. Textbook of household arts, (1985) Soundaraj. S, Orient Longman, Bombay.
5. Home furnishings. A.H. Rutt, (1969) Wiley eastern pvt ltd, New Delhi.
6. Management for Indian families, (1976) Mann. K.M., Kalyani Publishers, Delhi.
7. Varghese, M.A., Ogale, N.N. &Srinivasan, K (1985) Home management. Wiley Eastem Pvt Ltd., New Delhi.

SEMESTER – III
MAJOR CORE: BASIC NUTRITION

Theory: 3 Hours / Week **Credits:** 3

Course Objectives: By the end of the course, the learner will be able to:

1. Understand the fundamental concepts of nutrients, their functions, requirements, and deficiencies.
2. Learn the principles of meal planning and dietary guidelines for maintaining optimal health.
3. Develop skills in calculating nutritive values and planning balanced diets for different needs.

Course Outcomes: On successful completion of the course, the learner will be able to:

1. Explain the functions, sources, requirements, and deficiencies of macro- and micronutrients.
2. Assess energy needs and perform RDA calculations for individuals.
3. Plan balanced diets and prepare nutrient-rich recipes suitable for different groups.
4. Apply knowledge of nutrition in evaluating food choices and health practices.
5. Demonstrate awareness of national dietary guidelines and nutritional problems relevant to the community.

THEORY

Unit I – Energy, BMR, RDA & Carbohydrates

- Energy – Definition of Kilocalories, Joule, Energy value of foods, Specific Dynamic Action of food.
- Basal Metabolic Rate – Definition, factors influencing BMR.
- Recommended Dietary Allowances for energy.
- Carbohydrates – Sources, classification, functions, and requirement.
- Dietary Fibers – Sources, types, and role in health.

Unit II – Proteins, Fats and Lipids

- Protein – Sources, nutritional classification, functions, requirement, and deficiency.
- Amino acids – Essential and nonessential, importance, biological value of protein.
- Lipids – Sources, classification of lipids and fatty acids.
- Functions, requirement, and deficiency of fats.

Unit III – Vitamins

- Fat-soluble vitamins: A, D – functions, sources, requirements, deficiency.
- Vitamins E and K – functions, sources, requirements, deficiency.
- Water-soluble vitamins: Thiamine, Riboflavin, Niacin, Folic acid, Biotin, Pantothenic acid, B12 – functions, sources, requirements, deficiency.
- Vitamin C – functions, sources, requirements, deficiency disorders.

Unit IV – Minerals

- Minerals – General functions, classification (macro and micro).
- Macro minerals: Iron, Calcium – functions, sources, requirements, deficiency.
- Sodium & Phosphorus – sources, functions, requirements, deficiency.
- Micro minerals: Fluorine, Zinc, Copper, Iodine – sources, functions, requirements,

deficiency, toxicity.

Unit V – Water & Meal Planning

- Water balance – Functions, distribution, water and electrolyte balance.
- Consequences of water imbalance – Dehydration, edema, water toxicity.
- Meal Planning – Balanced diet, basic principles and steps in meal planning.
- Factors influencing food choice.
- Dietary Guidelines for Indians.

PRACTICAL

Credits: 1 **Hours:** 2 hrs/week

Objectives: By the end of the practical component, the learner will be able to:

1. Understand the principles of meal planning and nutritive value calculation.
2. Develop skills in preparing nutrient-rich recipes for different food groups.
3. Apply theoretical knowledge of nutrition in practical dietary planning.

Outcomes: On successful completion of the practicals, the learner will be able to:

1. Plan balanced diets for different individuals.
2. Prepare recipes rich in carbohydrates, proteins, fats, vitamins, and minerals.
3. Calculate nutritive values and portion sizes accurately.
4. Demonstrate skills in selecting nutrient-dense foods for health promotion.
5. Apply nutrition knowledge in practical, real-life meal planning situations.

Practical Syllabus

1. Meal Planning – Steps in planning diet. Planning diets for adult man and woman.
2. Carbohydrates/Fat/Calorie-rich recipe – Planning and calculating nutritive value with portion size.
3. Protein-rich recipe – Planning and calculating nutritive value with portion size.
4. Mineral-rich (Calcium and Iron) recipe – Planning and calculating nutritive value with portion size.
5. Vitamin-rich (Carotene, B-complex, C, D) recipe – Planning and calculating nutritive value with portion size.

References

1. Swaminathan, M. *Essentials of Food & Nutrition – Vol. 1*. Bappco, Bangalore.
2. Davidson, S. & Passmore. *Human Nutrition and Dietetics*.
3. Robinson, C.H., & Lawler, M. *Normal and Therapeutic Nutrition*.
4. Wardlaw, G.M., Insel, P. et al. (2000). *Contemporary Nutrition*. Mosby, Chicago.
5. Whitney, E. (2000). *Nutrition – Concepts and Controversies*. 8th Ed.
6. Yadav, S. (1997). *Basic Principles of Nutrition*. First Edition.
7. Williams, S.R. (1990). *Essentials of Nutrition and Diet Therapy*. 5th Ed., Mosby.
8. Whitney, P.N. & Roes, S.R. (1996). *Understanding Nutrition*. West Publishing Co.

Co-Curricular Activities

1. Student seminars on different nutrients.
2. Preparation of posters, charts, flashcards on nutrient functions, RDA, sources, and deficiency symptoms.

3. Collection of food samples rich in specific vitamins and minerals (e.g., calcium, iron).
4. Visits to food stores, vegetable and fruit markets to study locally available foods.
5. Study projects on food habits in specific conditions (foods avoided/encouraged).
6. Celebration of Important Days:
    - World Breastfeeding Week (Aug 1–7)
    - National Nutrition Week (Sept 1–7)
    - Nutrition Month (September)
    - World Food Day (Oct 16)

IV Semester
Textile Design

Objectives:To enable students to learn

1. To provide hands-on experience in construction and identification of basic and decorative weaves and knitted samples.
2. To develop practical skills in various printing techniques and preparation of dyed, printed, and painted fabric samples.
3. To enhance creativity and technical application in designing surface ornamentation through traditional and contemporary methods.

Learning Outcomes:To enable students to learn

1. Construct and identify various basic and decorative weave structures confidently.
2. Prepare knitted samples demonstrating different knitting techniques.
3. Apply different methods of printing including block, stencil, spray, vegetable printing, fabric painting, tie and dye on fabric samples effectively.
4. Analyze and select appropriate techniques for surface ornamentation to enhance textile aesthetics.
5. Compile and present practical work systematically with proper labelling, observation, and evaluation for academic and professional purposes.

UNIT - I: Introduction to Textile Design

- Classification of methods by which design is obtained in fabrics

UNIT - II: Structural Design in Fabrics

a) Weaving – Basic weaves, Decorative weaves
b) Other Methods – Knitting, Braiding, Felting, Bonding, Crochet, Tatting

UNIT - III: Surface Design on Fabrics

- Preparation of fabric for dyeing and printing
  a) Dyeing
    - Classification of dyes
    - Mode of action and application for various fibers and fabrics
      b) Printing – Block, Roller, Screen, Stencil, Tie and Dye, Batik
      c) Finishes – Scouring, Bleaching, Singeing, Weighing, Tentering, Mercerising, Starching, Calendaring, Embossing, Moireing, Napping, Crepe effect

UNIT - IV: Costumes and Jewellery of Men and Women of India

a) Northern States – Kashmir, Punjab
b) Southern States – Tamil Nadu, Kerala, Karnataka, Andhra Pradesh
c) Eastern States – Assam, West Bengal
d) Western States – Maharashtra

UNIT - V: Traditional Textiles

- Dacca Muslin
- Banarasi Brocade
- Chanderi
- Bandhini
- Patola
- Pochampalli

- Kalamkari

PRACTICAL

Objectives:To enable students to learn

1. To provide hands-on experience in construction and identification of basic and decorative weaves and knitted samples.
2. To develop practical skills in various printing techniques and preparation of dyed, printed, and painted fabric samples.
3. To enhance creativity and technical application in designing surface ornamentation through traditional and contemporary methods.

Learning Outcomes:To enable students to learn

1. Construct and identify various basic and decorative weave structures confidently.
2. Prepare knitted samples demonstrating different knitting techniques.
3. Apply different methods of printing including block, stencil, spray, vegetable printing, fabric painting, tie and dye on fabric samples effectively.
4. Analyze and select appropriate techniques for surface ornamentation to enhance textile aesthetics.
5. Compile and present practical work systematically with proper labelling, observation, and evaluation for academic and professional purposes.

1.Construction and identification of various weaves .
2. Construction of knitted samples
3. Different methods of printing (Preparation of fabric samples)
i). Block
ii) Stencil
iii) Spray
iv) Vegetable
v). Fabric painting
vi) Tie and dye

REFERENCES:

1. Jwekar.M.D&Jwekar.V.B, (1962), "Easy Knitting Instruction", Ball Co, Bombay.
2. Mathew.M, (1979), "Practical clothing construction", Reliance Printers, Madras.
3. Greiser.H.E&Stroom.M.M, (1962), "Guide to modern clothing", Mc Grew Hill, New York. 4. Daniel.H, (1974), "Printing", Hawlin Publishers Ltd, London.

Co-curricular Activities: a). Mandatory: (Training of students by teacher on field related skills: 15 hrs)

For Teacher: Training of students by teacher in laboratory and field for a total of 15 hours on visit to dyeing, printing and embroidery units etc. to demonstrate the process.

For Student:

1. Visiting nearby hand embroidery units and observing different traditional embroidery techniques.
2. Visiting nearby textile emporiums and observing the fabrics of different states.
3. Preparing/Making of Hand and Traditional embroidery samples.
4. Preparing/Making of Dyed, printed and painted textile samples.

5. Max marks for Field Work Report: 05.

IV SEMESTER
INTERIOR DESIGN AND DECORATION
Credits – 3

Objectives

To enable students to:

- Understand the fundamental concepts, principles, and elements of interior design and decoration for application in home and professional settings.
- Develop knowledge of color theories, furniture, furnishings, lighting, and accessories for effective interior planning.
- Inculcate skills in selecting and arranging interior elements aesthetically, functionally, and economically.

Learning Outcomes

Students will be able to:

- Define interior decoration, explain its objectives, and identify characteristics of good taste in designing interiors.
- Classify types of designs and describe the elements and principles of design applied in interior decoration.
- Explain the importance, characteristics, and classification of color schemes for different rooms and areas.
- Describe furniture selection, arrangement, furnishings, lighting types, fixtures, and their role in enhancing interiors.
- Identify types, styles, and materials of flower arrangements and discuss selection, care, and placement of accessories and window treatments.

THEORY

Unit I: Interior Design & Decoration – Elements of Design

a) Interior Decoration – Meaning, objectives of interior decoration. Good taste – meaning, development of good taste

b) Design – Definition, Classification of design – Structural and Decorative designs, Types of Decorative Design

c) Elements of Design – Line, Form, Texture, Colour, Value

Unit II: Interior Design – Principles of Art

- Harmony, Proportion, Balance, Emphasis, Rhythm – methods of obtaining in interiors, importance

Unit III: Interior Design – Colour

a) Colour – Its importance and effect; Prang's colour system – Primary, Secondary, Tertiary and Quaternary colours, Characteristics of colour – Hue, Value and Intensity

b) Colour Schemes – Classification and use in interior decoration

c) Factors affecting choice of colour schemes for different rooms and areas in the house

Unit IV: Interior Decoration – Furniture & Furnishings

a) Furniture Arrangement – Selection of furniture and considerations in arranging the furniture,

Furniture arrangement in different rooms
b) Furnishings – Classification, Factors in selection
c) Lighting – Types of light (Natural and Artificial); Lighting fixtures – Types and their use in interior decoration

Unit V: Interior Decoration – Accessories

a) Accessories – Functions, classification, selection and care of accessories
b) Window Treatments – Types of windows and window treatments; Factors to be considered in the selection of curtains and draperies
c) Flower Arrangement – Types, Styles (Traditional, Oriental/Japanese, Modern); Materials and equipment used; Points to be considered while selecting, storing, and making arrangements

PRACTICAL

Objectives: To enable students to:

- Provide hands-on experience in applying elements and principles of design in drawing, sketching, and decorating interiors.
- Develop skills in preparing color charts, flower arrangements, table settings, and furniture layouts effectively.
- Enhance creativity and observation through practice of different art forms and interior decoration techniques.

Learning Outcomes: Students will be able to:

- Demonstrate drawing and sketching of elements, types, and modifications of designs effectively.
- Apply principles of art such as harmony, balance, rhythm, emphasis, and proportion in room planning and interior decoration.
- Prepare and present colour value charts, intensity scales, and Prang's colour wheel accurately for application in interiors.
- Arrange furniture appropriately in different room layouts and demonstrate formal and informal table settings confidently.
- Create different types and styles of flower arrangements using proper materials, equipment, and techniques.

1. Interior Design –
   a) Elements of Design
   b) Types of Design – Natural, Decorative, Types of Decorative Design (Naturalistic, Stylized, Geometric, Abstract) – Drawing/Sketching, Design Modification
2. Application of Principles of Art in different rooms –
   - Harmony, Balance, Rhythm, Emphasis, Proportion (Drawing/Painting/Sketching)
3. Colour – Value chart, Intensity scale, Prang's colour wheel, Six standard colours, Application of colour harmonies
4. Flower Arrangement – Different types and styles (Demonstration)

5. Furniture Arrangement – Room plans, pasting furniture cutouts
6. Table Setting – Formal and informal table settings (Optional – Demonstration)
7. Window Treatments – Types (Optional)

REFERENCES

1. Bela Bhargava (2016). *Family Resource Management & Interior Decoration*. University Book House Pvt Ltd., Jaipur.
2. Parimalam, Andal & Premalatha (2015). *A Textbook of Interior Decoration*. Satish Serial Publishing Home.
3. Premavathy Seetharaman & Parveen Pannu (2014). *Interior Design and Decoration*. CBS Publishers.
4. Premlata Mullick (2016). *Textbook of Home Science*. Kalyani Publishers.
5. Stella Soundararaj (2009). *A Textbook of Household Arts*. Orient Black Swan Ltd.
6. Subasini Mohapatra (2010). *Home Management and Household Economics*. Kalyani Publishers.

CO-CURRICULAR ACTIVITIES

1. Drawing, colouring, and painting using principles of art, Interior designing & Decoration
2. Modelling – clay, chart, cardboard etc.
3. Quiz, Seminars, Debates, and Group Discussions
4. Chart and Poster Presentations
5. Organizing Exhibitions
6. Flower Arrangements
7. Table Settings
8. Furniture Arrangement

Major-IV Semester

NUTRITIONAL BIOCHEMISTRY (THEORY)

Objectives: To enable students to learn

1. Understands the metabolism of different macro and micro nutrients in human physiology.
2. Acquires knowledge on factors affecting digestion, absorption of nutrients.
3. Knowledge on enzymes and its role in nutrient metabolism.

Learning Outcomes: To enable students to learn

1. Able to understand biochemistry, describe its objectives and scope, understand its inter-relationship with other biological sciences, and explain the classification, functions, and properties of carbohydrates.
2. Knowledge on lipids, proteins, and amino acids, classify them, and describe their physical and chemical properties, including the processes of denaturation, coagulation, and precipitation for proteins and the significance of fatty acid characteristics such as acid value, iodine value, and saponification value.
3. classify enzymes and coenzymes, explain the mechanisms of enzyme action, identify factors affecting enzyme activity, and understand the roles of enzymes and vitamins in biochemical processes.
4. Describe the key metabolic pathways for carbohydrates and proteins, including glycolysis, gluconeogenesis, the Krebs cycle, the urea cycle, and the metabolism of amino acids, as well as understand the role of the liver and hormones in regulating blood glucose levels..
5. Explain the processes involved in fatty acid synthesis and lipid metabolism, including the role of adipose tissue and the liver, the formation of ketone bodies, and the causes and implications of ketosis.

UNIT 1: 10 hours

1. **Introduction to Biochemistry:** Definition, objectives, scope and inter-relationship between biochemistry and other biological sciences.
2. **Carbohydrates;** Definition, role of carbohydrates, Classification and functions of carbohydrates-Monosaccharides, disaccharides, polysaccharides, physical and chemical properties of carbohydrates

UNIT 2: 10 hours

1. **Lipids:** Definitions, role of lipids, classification of lipids, properties of fatty acids, Physical and Chemical properties of fats, Characteristics of fat- acid value, iodine value and saponification value. Classification of fatty acid and its functions.
2. **Proteins:** Definition, functions, classification, structure of proteins, Physical and Chemical properties of protein, denaturation, coagulation and precipitation of proteins.
3. **Amino acids**; Definition, classification-Essential and non-essential amino acids, Physical and Chemical properties of amino acids

UNIT 3: 10 hours

1. **Enzymes**- Classification, mechanism of enzyme action, factors affecting enzyme activity, role of enzymes
2. Coenzymes- Definition, classification and functions, Vitamins and their coenzymes

UNIT 4: 10 hours

1. Introduction to Metabolism – Catabolism and anabolism.
2. Energy pathways carbohydrates: Glycolysis, Gluconeogenesis, Kreb Cycle, Role of liver and Hormones in regulation of blood glucose level, Glucose Tolerance Test.
3. Protein pathway: Urea Cycle, Metabolism of Amino acids – Deamination, Transamination, Decarboxylation

UNIT 5: 10 hours

1. Fatty acid pathway: Fatty acid Synthesis, Biosynthesis of fatty acid
2. Metabolism of Lipids – Role of Adipose tissue and Liver in Lipid metabolism
3. Formation of ketone bodies, ketosis, causes of ketosis

Major-IV Semester-Set A
BIOCHEMISTRY-1 PRACTICAL

Objectives:To enable students to learn

1. To develop practical skills in performing qualitative and quantitative analysis of carbohydrates, proteins, fats, minerals, and vitamins.
2. To enable students to understand and apply biochemical methods for the estimation of nutrients in various samples.
3. To equip students with laboratory competencies essential for careers in nutrition, dietetics, and biochemical research.

Learning outcomes: To enable students to learn

1. Gain in- depth knowledge on human metabolism.
2. Understand and experiment on the principles of bio-chemical methods.
3. Be able to demonstrate through scientific experiments chemistry of nutrients.
4. Be qualified to take up career relating bio-chemistry with nutrition for extensive application

Practical:

1. **Carbohydrates:** Quantitative estimation of glucose, sucrose and lactose by titrimetric method
2. **Fats** Qualitative tests for Fats
3. **Proteins** Qualitative tests for proteins
4. **Minerals** Estimation of calcium using EDTA by titration
5. **Vitamins** Estimation of ascorbic acid by using 2, 6 dichlorophenol indophenols method
6. Estimation of Reducing sugars by titration

References:

1. Lehninger A L, Nelson D L and Cox M M (2009). Principles of Biochemistry, 6th Ed. CBS Publishers and Distributors.
2. Murray R.K, Granner D K, Mayes P A and Rodwell V W (2009). Harper's Biochemistry, 28th Ed, Lange Medical Book.
3. Hawk PB, Oser BL and Summerson WH (1954). Practical Physiological Chemistry, Mcgraw Hill, New York.
4. Sundararaj P and Siddhu A (2006). Qualitative Tests and Quantitative Procedures in Biochemistry. Elite Publishing House Pvt. Ltd., New Delhi.

Co-Circular Activities:

- Preparation of charts,models,posters etc.on topics like structures,tests for

identification and metabolic cycles of carbohydrates,proteins and lipids.

- Fieldsurveytocollectdataonmetabolicdisorderslikediabetesmellitus in the community
- Visit to hospitals/private laboratories to observe analysis methods

Minor-IV Semester
HUMAN PHYSIOLOGY

Objectives: To enable students to learn

- Understand the structure and functions of various organs of the body.
- Learn the physiology of various organ systems in the human body.
- Explain the structure and function of various animal tissues and the process of digestion, absorption, and assimilation of nutrients within the digestive system.

Learning outcomes: To enable students to learn

1. Describe the structure, types, and functions of cells and animal tissues, as well as understand the structure and functions of the digestive system and its associated organs, including the liver, gallbladder, and pancreas.
2. Gain knowledge of the composition and functions of blood, including the roles of RBCs, WBCs, and platelets, and understand the structure and functions of the heart and blood vessels, as well as the mechanisms regulating blood pressure and circulation.
3. Comprehend the structure and function of the respiratory system, including the process of gas exchange, and understand the structure and function of the excretory system, focusing on the kidneys and the formation and composition of urine.
4. Explain the physiology of the male and female reproductive systems, including the menstrual cycle and changes during pregnancy, and understand the structure and function of the primary sense organs: eyes, ears, nose, tongue, and skin.
5. Understand the physiology of nerve cells and the central nervous system's parts and functions, and be able to describe the structure and function of major endocrine glands, including the pituitary, thyroid, parathyroid, islets of Langerhans, and adrenal glands.

UNIT-I -8 hours

1. Cell - Definition, Types and Characteristics of cell, Functions of cell
2. Tissues - Classification and Functions of animal tissue- Epithelial, connective, nervous and muscle tissues.
3. Digestive system -– structure & functions of digestive system, Digestive juices, digestion, absorption and assimilation of carbohydrate, protein and fat. Structure & functions of liver, gallbladder and pancreas

UNIT-II-10 hours

1. Blood and its composition, functions RBC,sWBC, Platelets
2. Clotting factor, blood grouping and Rh factor.
3. Circulatory system - Heart structure and functions, blood vessels, types of circulation. Cardiac cycle and cardiac output, Blood pressure and its factors affecting blood pressure.

UNIT-III -10 hours

1. Respiratory system - Structure of the respiratory system, process of respiration, mechanism of transport and exchange of oxygen and carbon dioxide in the body. Oxygen dissociation curve, tidal values
2. Excretory system - Excretory organs - structure of kidney and functions, formation of urine, composition of urine.

UNIT-IV -12 hours

1. Reproductive system - Physiology of the male and female reproductive organs. Menstrual cycle. Pregnancy and associated changes.
2. Sense organs - Structure and function of eye, ear, nose, tongue and skin.

UNIT-V -10 hours

1. Central nervous system - Physiology of the nerve cell, parts of the central nervous system and function.
2. Endocrine glands - function of pituitary, thyroid, parathyroid, islets of Langerhans and adrenal gland.

Reference Books:

1. Chaterjee, C.C., Human Physiology, Vol-I&II Medical allied agency, Calcutta 1981.
2. Best and Taylor, Living body. Mc.Graw hill company, Newyork.
3. Sathya Narayana, Essentials of Biochemistry (2000).
4. SarathaSubramanian,Text of Human Physiology(2000).
5. Stuart Ira Fox,Human Physiology(2003)

Co-Circular activities

1. Preparation of posters, charts, ppt of different organs
2. Model making of different mechanisms of organs
3. Visits to different lab to learn the techniques of blood samples
4. Seminar, quiz, JAM and games for improving knowledge
5. Week celebration related to human organs- Heart day, Aids day, Hypertension week, Diabetes week

Minor-IV Semester

FAMILY AND COMMUNITY NUTRITION(THEORY)

Objectives: To enable students to learn

1. Understand the nutritional demands in various stages of the life cycle.
2. Acquire skills in planning adequate meals in different stages of life cycle to maintain health.

Learning Outcomes: To enable students to learn

1. Apply the principles of meal planning and understand the nutritional requirements for adults, pregnant, and lactating women, considering factors such as physiological changes and recommended dietary allowances (RDA).
2. Explain the nutritional requirements for infants, early childhood, and late childhood, including the importance of breastfeeding, weaning practices, and the impact of traditional and junk foods on health
3. Identify the nutritional requirements and challenges during adolescence and old age, including eating disorders in adolescents and nutrition-related problems in the elderly, and develop appropriate diet management strategies.
4. Assess the nutritional status of a community using both direct and indirect methods, including anthropometry, biochemical analysis, clinical examination, diet surveys, and ecological factors.
5. Describe the major nutritional problems prevalent in India, evaluate community nutrition programs, and understand the role of national and international organizations in combating malnutrition, as well as the methods used in nutrition education.

Unit-I Meal Planning – Nutrition during Adulthood, Pregnancy and Lactation

- Principles of meal Planning, Factors to be considered for meal planning
- Nutrition for Adults – Reference man and Reference women – Nutritional requirements for adult man and woman of different physical activities (Sedentary, Moderate and Heavy work).
- Pregnancy – Physiological changes, symptoms and complications, Nutritional requirement with RDA
- Lactation – Physiology, Galactogogues food, Nutritional requirement with RDA

Unit-II Nutrition during Childhood

- Infancy – Nutritional requirements – Importance of colostrum, Breast feeding and its advantages; Artificial/bottle feeding; Weaning Practices, Supplementary foods.
- Early childhood – Nutritional requirements – RDA, Factors to be considered while planning meals for pre-school children. Eating problems of children and their management
- Late childhood – Nutritional requirements – RDA, Food habits, Importance of breakfast and packed lunch. Eating problems.
- Traditional foods and Junk foods – Impact on health

Unit-III Nutrition during Adolescence and Old age

- **Adolescence-**Nutritional requirements –RDA, Nutritional problems and Eating Disorders-Anorexia, Bulimia and binge eating
- **Geriatric Nutrition**- Physiological changes in elderly, Factors affecting food intake, Nutrient needs and Requirements, Nutrition related problems and their diet management

Unit-IV Nutritional Status Assessment

- Assessment of the Nutritional Status of the Community – Need and objectives
- Direct methods – Anthropometry, Biochemical Analysis, Clinical Examination, Diet Surveys, Functional assessment and Biophysical or Radiological examination.
- Indirect methods – Ecological factors and Vital Health Statistics

Unit –V Nutritional Problems, Programs and Education

- Nutrition problems prevalent in India – Under nutrition – PEM and deficiencies of Vitamin A, Iron and Iodine; Over nutrition
- Community Nutrition Programmes to combat malnutrition – Supplementary Feeding Programmes – ICDS, School lunch programme; Prophylactic Programmes to prevent Vitamin A, Iron, Iodine deficiencies
- Role of National and International Organizations in combating malnutrition – NIN, CFTRI, NNMB, WHO, FAO, CARE and UNICEF
- Nutrition Education – Definition, methods used in nutrition education to improve nutritional and health status of people.

Minor-IV Semester

FAMILY AND COMMUNITY NUTRITION (PRACTICAL)

Learning Objectives: To enable students to learn

1. Standardization of Portion Sizes for Nutritional Consistency
2. Development of Low-Cost, Balanced Menus for Different Life Stages
3. Calculation and Analysis of Nutritive Values in Planned Diets

Learning Outcomes: To enable students to learn

1. Skills in preparation of different menu plans for different age groups
2. Acquire knowledge on meal planning, meal management and portion sizes
3. Application of variety of food according to age group and nutritional requirement

1. Standardization of portions for cooked food.
2. Preparation and serving the planned menu for men and women of different occupations.
3. Planning a low-cost balanced menu for a pregnant mother and display.
4. Planning a low-cost balanced menu for a lactating mother and display. Calculation of nutritive value for the prepared menu.
5. Planning and preparing diet for infants and preschool children
6. Packed lunch planning for school going children.
7. Menu planning for and adolescent girls and boys.
8. Menu planning for adult Man and Woman (moderate man and sedentary woman).
9. Preparation of diet for old age.

Reference Books:

1. Nutrition Trends in India -Vinodhini Reddy, Prahlad Rao, GovmthSastry and Kashinath, NIN, Hyderabad, 1993.
2 Modern Nutrition in Health and Diseases- Shills, E.M. Olson, A.J. and Shike, Lea and Febiger
3. Dietetics -B. Srilakshmi, New Age International Pvt. Ltd, 2003.
4.NutritionScience-B.Srilakshmi,NewAgeInternationalPvt.Ltd., 2003.
5.Food,nutrition and diet therapy -Krause, Eleventh edition
6. Human Nutrition and Dietetics- Davidson S Passmore R, Brock JP, ELBS and Churchill, Livingstone.
7.Fundamentals of foods and Nutrition - Mudambi SR and Rajagopal M Y, Wiley Eastern Ltd. 8.ICMR- Nutritive value of Indian Foods, 1989.
9.Nutrition throughout the life cycle, Bonnie S.Worthinton, Roberts, Sue Rod well Williams.,The McGraw- Hill company,1996.
10.Nutrition in the life span- Virginia Beal, John Wiley & sons New York.

Co-Circular activities:

1. Academic based:-
    - Preparation of charts and posters for Nutrition education
    - Essaywritingcompetitions
    - Group discussionsontopicsrelevanttocommunitynutrition
    - Exhibitiononlowcostnutritiousfoodsandbalanceddiet
1. Lab/Researchbased:-
    - VisittoAnganwadicentre
    - Visittoschoollunchprograms
    - Visittovillageandurbanslumareaforassessingthenutritionalstatusof ruralandurbanslumpopulation
2. Valuebased:-
    - NutritionandHealthawarenesscamp
    - Posterandpuppetshowregardingnutritioneducationandimportanceofc ommunityparticipation
3. CelebrationofImportantDays(NationalandInternational):-
    - Breastfeedingweek-August1to7th
    - InternationalWomen'sday-March8th
    - WorldHealthday-April7th
    - Internationaldayofelderly-October1st

V SEMESTER
MARRIAGE, FAMILY & CHILD WELFARE

Objectives

1. To understand various child and family welfare programmes, their objectives, and services provided by government and non-governmental organizations.
2. To gain knowledge about legislations related to marriage, family welfare, and divorce to ensure social and legal awareness.
3. To develop skills in applying concepts of marital adjustment, parenting, and welfare through practical exposure and community visits.

Learning Outcomes

1. Students will be able to explain the principles and services of child welfare programmes, including care for children in difficult situations.
2. Students will understand the objectives of family welfare programmes and identify key agencies involved in their implementation.
3. Students will gain knowledge about laws related to marriage, family counselling, and divorce and apply this understanding in personal and community contexts.
4. Students will develop skills in analysing marital adjustments, parenting styles, and welfare needs through case studies and field visits.
5. Students will cultivate social responsibility and ethical understanding by engaging in co-curricular activities such as visits to counselling centres, NGOs, and analysing social issues depicted in mass media.

Unit I- Marriage

- Marriage –Definition and Functions, needs and goals. Criteria for successful marriage.
- Values and goals of marriage – Indian context. Different Marriage practices- Advantages and disadvantages.
- Preparation for Marriage – Factors to be considered in the choice of marriage partner. Modes of mate selection, Self-choice marriage and arranged marriage – Advantages and disadvantages.

Unit II Marital Adjustments and Family

- Adjustments in marriage – In laws, adjustment to mate, adjustment to parenthood, and financial adjustments.
- Family– Meaning, Definition, functions of family, sociological significance of family.
- Types of Family–Definitions of Joint, Extended, Nuclear Families, Alternate family styles- Modern trends in family – Advantages and disadvantages.
- Changing Indian family structure – Changing family functions.

Unit III Parenting

- Parenting -Definition-Transition to Parenthood – Factors that influence Planned Parenthood.
- Parenting Styles –Authoritarian, Authoritative Permissive styles and Uninvolved style, Influence of child rearing practices on child's Behaviors.
- Role of father in child rearing

- Challenges in Parenting –day parenting challenges such as work-life balance, digital exposure, single parenting, and behavioral issues in children.
- Impact of Technology on Parenting

Unit IV Child and Family Welfare

- Child Welfare Programmes- Concept of Child welfare, principles. Programmes and services for children, crèches, day care centres.
- Children in difficult situations – Child Abuse, Street Children, Child Labour– National and International Child Welfare Programmes- Government and Non-Governmental Programmes–Adoption – Foster care – Institutional Care –SOS.
- Family Welfare – Objectives of family Welfare; Family Welfare Programmes and Family agencies -Government and Non-Government organizations

Unit V Legislation relating to Marriage, Family and Divorce

- Legislation related to Marriage: Hindu Marriage Act, Special marriage Act, Dowry Prohibition Act.
- Legislation related to Family: Need for family Counselling centres and family court
- Marital disharmony-Divorce -Reasons for Divorce-Stages of divorce process, Laws related to divorce

CO-CURRICULAR ACTIVITIES

1. Analysing the reasons for suicides among adolescents reported in mass media
2. Identification of Mate selection criteria depicted in Mass media
3. Visiting counselling centres and understanding coping up strategies of problems
4. Familiarise with problems of elderly through case studies and institutional visits.

REFERENCES:

- **Kapadia, K.M. (1981).** *Marriage and Family in India.* Oxford University Press, New Delhi.
- **Desai, M. (1994).** *Family and Intervention: A Course Compendium.* Tata Institute of Social Sciences, Mumbai.
- **Satpathy, S. & Satpathy, D. (2003).** *Child Welfare and Development.* Dominant Publishers and Distributors, New Delhi.
- **Goel, S.L. & Kumar, R. (2004).** *Administration and Management of NGOs: Text and Case Studies.* Deep and Deep Publications, New Delhi.
- **Aggarwal, J.C. (2011).** *Child Development and Process of Learning.* Shipra Publications, New Delhi.

V SEMESTER
EARLY CHILDHOOD EDUCATION

Objectives

1. To understand the significance, aims, and theoretical foundations of early childhood education.
2. To gain knowledge of curriculum planning, infrastructure, and management in preschools.
3. To analyze roles and responsibilities of preschool teachers, stakeholders, and supervision methods in ECE.

Learning Outcomes

By the end of the theory course, students will be able to:

1. Explain the importance, functions, and theoretical bases of early childhood education.
2. Describe contributions of Indian and international educators to preschool education.
3. Plan appropriate curriculum and daily schedules for preschool children.
4. Evaluate preschool infrastructure, equipment needs, and child-friendly environments.
5. Analyze record-keeping, supervision processes, and ethical considerations in ECE.

THEORY SYLLABUS

UNIT I: Early Childhood Education – Significance

- Importance of preschool education – Definition, Aims and objectives, functions of ECE. Challenges and play benefits.
- Theories of Early Childhood Education
- Contributions of key educators to ECE:
    - Indian Contributors: Mahatma Gandhi, Rabindranath Tagore, Tarabai Modak, Jijubai Badheka.
    - International Contributors: Friedrich Froebel, Maria Montessori, John Dewey, Johann Heinrich Pestalozzi.
- The Role of Early Childhood Education in Holistic Development

UNIT II: Curriculum Planning in Early Childhood Education

- Definition and characteristics of curriculum.
- Principles of Curriculum Planning
- Steps and factors influencing curriculum planning.
- Types of Curriculums
- Theme-based approach in curriculum development.
- Structuring a day's program in a preschool – Importance of various daily activities:
    - Language Development: Informal talk, storytelling, and rhymes.
    - Science Experiences, Readiness Activities, Creative Activities.

UNIT III: Stakeholders in Early Childhood Education

- Growth and development of ECE in Five-Year Plans.
- Role of Anganwadi Centers under the Integrated Child Development Services (ICDS) scheme.

- Preschool Staff & Personnel:
    - The teacher – personal and professional qualities of an ideal preschool teacher.
    - Role and responsibilities of teachers and other preschool personnel.
- Parental Involvement & Home-School Interaction:
    - Importance of parent participation.
    - Organizing and conducting Parent-Teacher Association (PTA) meetings.

UNIT IV: Organization and Infrastructure of Preschools

- **Physical Facilities of a Preschool:**
    - Location and building requirements.
    - Ventilation, lighting, safety measures, and child-friendly environment.
    - Space allocation – Indoor and outdoor areas.
    - Arrangement of learning and activity centers/corners.
    - Storage and Organization in Preschools
    - Hygiene and Sanitation Facilities
    - Inclusive and Special Needs-Friendly Infrastructure
- **Preschool Equipment:**
    - Types of equipment for various developmental needs.
    - Selection criteria for indoor and outdoor learning materials.
    - Technology Integration in Preschools

UNIT V: Record-Keeping and Supervision in Early Childhood Education

- Types of Records in a Preschool:
    - Attendance records, health records, developmental assessments, and activity reports, Child Portfolio, Financial and Administrative Records, Communication Records
    - Purpose and importance of maintaining preschool records.
- Supervision in ECE:
    - Goals and objectives of supervision.
    - Qualities of an effective supervisor.
    - Professional Development for Preschool Teachers:
    - Evaluation and Assessment Methods in ECE
- Ethical Considerations in Record-Keeping and Supervision
- Use of Technology in Record-Keeping and Supervision

Practical

Objectives

1. To develop skills in planning and implementing preschool programs.
2. To prepare teaching-learning materials suitable for preschool children.
3. To gain experience in observing, evaluating, and recording preschool activities and teacher competencies.

Learning Outcomes

1. Observe and document daily programs and teacher qualities in preschools or Anganwadis.
2. Design structured day's programs, readiness kits, and creative activities for preschool children.
3. Develop age-appropriate teaching aids, stories, and rhymes for effective learning.
4. Apply observation and evaluation skills in assessing preschool settings and personnel.
5. Demonstrate competence in organizing and conducting activities enhancing holistic child development.

1. Observation and Recording:
    - Documenting a day's program in a preschool/Anganwadi center.
2. Teacher Evaluation:
    - Observing and assessing the qualities of a preschool teacher.
2. Lesson Planning:
    - Designing a structured day's program for preschool children.
2. Teaching Aids Development:
    - Creating visual and tactile aids for preschool learning activities.
2. Story Preparation:
    - Developing age-appropriate stories for preschoolers.
2. Rhymes Composition:
    - Writing and composing rhymes suitable for preschool children.
2. Readiness & Creative Activities:
    - Preparing readiness kits and organizing creative activities for preschoolers.

REFERENCES

1. Pankajam, G. (1994). *Preschool Education: Philosophy and Practice.* The Indian Publications, Ambala Cantt.
2. Aggarwal, J.C. (1983). *Methods and Materials of Nursery Education.* DOABA House, Delhi.
3. Mujibul Hasan Siddiqui (2004). *Early Childhood Education.* APH Publishing Corporation, New Delhi.
4. Crosser, S. (2005). *What Do We Know About Early Childhood Education? Research-based Practice.* THOMSON Delmar Learning, USA.
5. Dorothy, J. S. A., & Dorsey, G. (2003). *Developing and Administering a Child Care Center (5th Edition).* THOMSON Delmar Learning, USA

V SEMESTER
APPAREL DESIGN

Objectives

By the end of this course, students will be able to:

1. Understand the **principles, elements, and classifications** of textile design and their application in apparel design.
2. Gain knowledge of **various structural and surface designs** in fabrics including weaving, dyeing, printing, and finishing techniques.
3. Acquire skills in **construction of garments and practicing surface ornamentation**, integrating traditional textile knowledge with modern apparel design needs.

Learning Outcomes

Upon successful completion, students will be able to:

1. **Explain systematically** the concepts of textile design, types of weaves, dyeing and printing methods, and finishing techniques.
2. **Identify and differentiate** between basic and decorative weaves and evaluate their suitability for various apparel designs.
3. **Analyse and select** appropriate surface design techniques, dyes, and materials for different fabrics and apparel products.
4. **Construct children's and women's garments** such as A-line frock, salwar-kameez, and sari blouse (demonstration), applying precise body measurements and stitching techniques.
5. **Develop practical skills** in printing techniques (block, stencil, tie & dye, vegetable, fabric painting) and surface ornamentation, integrating traditional designs with modern apparel.

Syllabus Alignment

Theory

- **Unit I:** Introduction to textile design; classification of methods for fabric design.
- **Unit II:** Structural designs – weaving (basic & decorative), knitting, braiding, felting, bonding, crochet, tatting.
- **Unit III:** Surface designs – dyeing (classification, mode of action, application), printing (block, roller, screen, stencil, tie & dye, batik), and fabric finishes (scouring, bleaching, mercerising, etc.).
- **Unit IV:** Costumes and jewellery of Indian men and women across northern, southern, eastern, and western states.
- **Unit V:** Traditional textiles – Dacca Muslin, Banarasi brocade, Chanderi, Bandhini, Patola, Pochampalli, Kalamkari.

Practical

- Preparation of materials and recording body measurements.
- Construction of **A-line frock, salwar-kameez, housecoat (optional), sari blouse (demonstration)**.

- Construction and identification of various weaves.
- Preparation of fabric samples using different **printing techniques**: block, stencil, spray, vegetable, fabric painting, tie and dye.

Co-Curricular Activities

- Visits to **dyeing, printing, and embroidery units**, textile emporiums, and observation of traditional embroidery techniques.
- Preparation of **hand and traditional embroidery samples**, dyed, printed, and painted textile samples.
- Assignments, seminars, group discussions, quizzes, debates, and resource file preparation on traditional textiles of India.
- Invited lectures by textile experts and video demonstrations of design processes.

References

1. Jwekar, M.D. & Jwekar, V.B. (1962). *Easy Knitting Instruction*. Ball Co, Bombay.
2. Mathew, M. (1979). *Practical Clothing Construction*. Reliance Printers, Madras.
3. Greiser, H.E. & Stroom, M.M. (1962). *Guide to Modern Clothing*. McGraw Hill, New York.
4. Daniel, H. (1974). *Printing*. Hawlin Publishers Ltd, London.
5. Mullick, P. (2016). *Textbook of Home Science*. Kalyani Publishers, New Delhi.

V SEMESTER
FAMILY ECONOMICS

Objectives

1. To enable students to recognize the internal and external factors influencing financial decisions within a family.
2. To develop the ability to plan and utilize family income effectively for economic stability.
3. To understand the influence of government policies and taxation on family financial management.

Learning Outcomes

1. Explain the family as an economic unit and its financial goals.
2. Identify various sources and types of family income and understand management techniques.
3. Prepare and analyze family budgets and financial records effectively.
4. Discuss the use and implications of credit and various credit instruments.
5. Evaluate savings, investment options, and taxation impacts on family economics.

Course Content

UNIT I:

- Family as an economic unit – definition, types, functions
- Economic goals of family
- Human wants – classification and characteristics

UNIT II:

- Family income – sources and types
- Lifetime and annual income profiles
- Methods of managing family income
- Supplementing family income

UNIT III:

- Family expenditure – budgeting steps and factors influencing family budget
- Standard of living and its influencing factors
- Financial records – long-term and short-term

UNIT IV:

- Credit – reasons for credit use, types, basis of credit, credit instruments
- Wise and responsible use of credit

UNIT V:

- Savings and investments – reasons and modes of savings
- Investments in shares and debentures
- Taxation – canons and types of taxes
- National income – factors influencing

PRACTICAL

Objectives

1. To develop the ability to conduct surveys related to family economic goals and financial behavior.
2. To enhance skills in budgeting and financial planning for different income groups.
3. To understand and analyze credit instruments, savings methods, and taxation through practical exposure.

Learning Outcomes

1. Conduct and document surveys on family economic goals and financial habits.
2. Prepare practical budgets tailored for various income levels.
3. Identify methods to reduce family expenditure effectively.
4. Explain different credit instruments and their use in family finances.
5. Analyze savings patterns and understand taxation through field surveys.

Practical Course Content

UNIT I:

- Survey on economic goals of families

UNIT II:

- Planning monthly budgets for different income groups

UNIT III:

- Planning ways to reduce family expenditure

UNIT IV:

- Survey on various credit instruments used by families

UNIT V:

- Survey on modes of savings
- Survey on types of taxes

References

1. Thal, H.M. & Holcombe, M. (1973). *Your family and its money*. Houghton Mifflin Co., Boston.
2. Sundaram, K.P.M. (1968). *Elementary Economics*. Ram Chand & Co., Delhi.
3. Dewett, K.K. & Verma, J.D. (1977). *Elementary Economic Theory*. S. Chand & Co., New Delhi.
4. Oppenheim, I. (1965). *The family as consumers*. Macmillan Co., New York.
5. Mann, M.K. (1980). *Home Management for Indian Families*. Kalyani Publishers, New Delhi.

V SEMESTER
APPAREL DESIGN

Objectives

By the end of this course, students will be able to:

4. Understand the **principles, elements, and classifications** of textile design and their application in apparel design.
5. Gain knowledge of **various structural and surface designs** in fabrics including

weaving, dyeing, printing, and finishing techniques.

6. Acquire skills in **construction of garments and practicing surface ornamentation**, integrating traditional textile knowledge with modern apparel design needs.

Learning Outcomes

Upon successful completion, students will be able to:

6. **Explain systematically** the concepts of textile design, types of weaves, dyeing and printing methods, and finishing techniques.
7. **Identify and differentiate** between basic and decorative weaves and evaluate their suitability for various apparel designs.
8. **Analyse and select** appropriate surface design techniques, dyes, and materials for different fabrics and apparel products.
9. **Construct children's and women's garments** such as A-line frock, salwar-kameez, and sari blouse (demonstration), applying precise body measurements and stitching techniques.
10. **Develop practical skills** in printing techniques (block, stencil, tie & dye, vegetable, fabric painting) and surface ornamentation, integrating traditional designs with modern apparel.

Syllabus Alignment

Theory

- **Unit I:** Introduction to textile design; classification of methods for fabric design.
- **Unit II:** Structural designs – weaving (basic & decorative), knitting, braiding, felting, bonding, crochet, tatting.
- **Unit III:** Surface designs – dyeing (classification, mode of action, application), printing (block, roller, screen, stencil, tie & dye, batik), and fabric finishes (scouring, bleaching, mercerising, etc.).
- **Unit IV:** Costumes and jewellery of Indian men and women across northern, southern, eastern, and western states.
- **Unit V:** Traditional textiles – Dacca Muslin, Banarasi brocade, Chanderi, Bandhini, Patola, Pochampalli, Kalamkari.

Practical

- Preparation of materials and recording body measurements.
- Construction of **A-line frock, salwar-kameez, housecoat (optional), sari blouse (demonstration)**.
- Construction and identification of various weaves.
- Preparation of fabric samples using different **printing techniques**: block, stencil, spray, vegetable, fabric painting, tie and dye.

Co-Curricular Activities

- Visits to **dyeing, printing, and embroidery units**, textile emporiums, and observation of traditional embroidery techniques.
- Preparation of **hand and traditional embroidery samples**, dyed, printed, and painted

textile samples.

- Assignments, seminars, group discussions, quizzes, debates, and resource file preparation on traditional textiles of India.
- Invited lectures by textile experts and video demonstrations of design processes.

References

6. Jwekar, M.D. & Jwekar, V.B. (1962). *Easy Knitting Instruction*. Ball Co, Bombay.
7. Mathew, M. (1979). *Practical Clothing Construction*. Reliance Printers, Madras.
8. Greiser, H.E. & Stroom, M.M. (1962). *Guide to Modern Clothing*. McGraw Hill, New York.
9. Daniel, H. (1974). *Printing*. Hawlin Publishers Ltd, London.
10. Mullick, P. (2016). *Textbook of Home Science*. Kalyani Publishers, New Delhi.

V SEMESTER
FAMILY ECONOMICS

Objectives

4. To enable students to recognize the internal and external factors influencing financial decisions within a family.
5. To develop the ability to plan and utilize family income effectively for economic stability.
6. To understand the influence of government policies and taxation on family financial management.

Learning Outcomes

6. Explain the family as an economic unit and its financial goals.
7. Identify various sources and types of family income and understand management techniques.
8. Prepare and analyze family budgets and financial records effectively.
9. Discuss the use and implications of credit and various credit instruments.
10. Evaluate savings, investment options, and taxation impacts on family economics.

Course Content

UNIT I:

- Family as an economic unit – definition, types, functions
- Economic goals of family
- Human wants – classification and characteristics

UNIT II:

- Family income – sources and types
- Lifetime and annual income profiles
- Methods of managing family income
- Supplementing family income

UNIT III:

- Family expenditure – budgeting steps and factors influencing family budget
- Standard of living and its influencing factors
- Financial records – long-term and short-term

UNIT IV:

- Credit – reasons for credit use, types, basis of credit, credit instruments
- Wise and responsible use of credit

UNIT V:

- Savings and investments – reasons and modes of savings
- Investments in shares and debentures
- Taxation – canons and types of taxes
- National income – factors influencing

PRACTICAL

Objectives

4. To develop the ability to conduct surveys related to family economic goals and financial behavior.
5. To enhance skills in budgeting and financial planning for different income groups.
6. To understand and analyze credit instruments, savings methods, and taxation through practical exposure.

Learning Outcomes

6. Conduct and document surveys on family economic goals and financial habits.
7. Prepare practical budgets tailored for various income levels.
8. Identify methods to reduce family expenditure effectively.
9. Explain different credit instruments and their use in family finances.
10. Analyze savings patterns and understand taxation through field surveys.

Practical Course Content

UNIT I:

- Survey on economic goals of families

UNIT II:

- Planning monthly budgets for different income groups

UNIT III:

- Planning ways to reduce family expenditure

UNIT IV:

- Survey on various credit instruments used by families

UNIT V:

- Survey on modes of savings
- Survey on types of taxes

References

6. Thal, H.M. & Holcombe, M. (1973). *Your family and its money*. Houghton Mifflin Co.,

Boston.
7. Sundaram, K.P.M. (1968). *Elementary Economics*. Ram Chand & Co., Delhi.
8. Dewett, K.K. & Verma, J.D. (1977). *Elementary Economic Theory*. S. Chand & Co., New Delhi.
9. Oppenheim, I. (1965). *The family as consumers*. Macmillan Co., New York.
10. Mann, M.K. (1980). *Home Management for Indian Families*. Kalyani Publishers, New Delhi.

V SEMESTER
Minor-I
CLINICAL NUTRITION& DIET THERAPY

Objectives: To enable students

- Gain knowledge about principles of diet therapy and different therapeutic diets.
- Develop aptitude for taking up dietetics as a profession.

Learning outcomes:

- Understands about modification of normal diets to therapeutic diets.
- Skills in Planning and preparation of diets for different diseases like Obesity, Cardiovascular, Renal, Diabetes mellitus etc,
- Assessment on nutritional status
- Acquire knowledge of IV feeds
- Comprehend on calculation of various disease conditions

UNIT – I -10 hours

- **Objectives of diet therapy** - Role of a dietitian. Principles of diet preparation and counseling.
- Therapeutic diet: clear fluid, full fluid, semi soft diet, soft diet, bland diet and regular diet Different types of Feeding - Basic concepts of oral feeding, tube feeding, IV feeding, gastrostomy feeding.

UNIT – II -10 hours

- Underweight and Obesity - definition, etiology, complications, risk factors, types and nutritional requirement
- Diseases of the gastro intestinal tract- peptic ulcer, constipation & diarrhea
- Diet in febrile conditions - Short duration e.g. Typhoid, Long duration e.g. Tuberculosis.

UNIT – III -10 hours

- **Cardiac disease:** Atherosclerosis-etiology, complication, symptoms, dietary management. Hypertension-types, etiology, complication, symptoms, dietary management.
- **Liver disease: Hepatitis-** types, etiology, complication, symptoms, dietary management. Liver cirrhosis- etiology, complication, symptoms, dietary management.

UNIT – IV-10 hours

- **Diabetes mellitus** – Types, causes, symptoms, bio-chemical changes, insulin, dietary management.
- **Renal disease:** Acute and chronic nephritis, Nephritic syndrome, Urinary calculi: Causes and dietary treatment of kidney diseases and dialysis, ESRD (End Stage Renal Dialysis).

UNIT – V -10 hours

- **Nutrition and cancer**- types, symptoms, complications and Dietary guidelines for management.
- **Diet in Allergy** - Definition, classification, common food allergy, test of allergy, diet therapy. Diet in relation to deficiency diseases-Protein calorie deficiency, vitamin A deficiency and anemia.

PRACTICAL: Learning Outcomes:

- Demonstrate the ability to plan hospital diets for different health conditions
- Be familiar with all clinical condition that impact diet planning.
- Possess hands-on knowledge of physiology of diseases, to be considered in diet planning under different disease conditions
- Be qualified to take up career as a diet planner in a hospital

PRACTICAL

Practical Objectives:

1. To enable students to plan and prepare appropriate hospital diets for various health conditions based on nutritional requirements.
2. To develop skills in customizing diets for specific diseases such as obesity, anemia, cardiovascular and kidney diseases, diabetes, and liver disorders.
3. To enhance students' ability to communicate diet plans effectively using modern presentation tools like PowerPoint.

Practical Outcomes:

1. Prepare and explain different types of hospital diets such as normal, light, soft, liquid, and bland diets tailored to patient needs.
2. Design therapeutic diets for common medical conditions including obesity, anemia, gastrointestinal disorders, cardiovascular diseases, kidney diseases, diabetes, and liver ailments.
3. Demonstrate the ability to adapt diet plans according to disease severity and patient requirements.
4. Create clear and informative PowerPoint presentations on diet therapy and disease management for educational and clinical purposes.

Practical Syllabus

1. Planning and preparation of hospital diets a. normal diet, regular diet, light diet, soft diet, full liquid diet, clear liquid diet & bland diet.
2. Diet for obesity & under weight
3. Diet for anemia
4. Diet for diseases of the GI tract – peptic ulcer, diarrhea, constipation.
5. Diet for Cardio-vascular diseases- atherosclerosis, hypertension.
6. Diet for diseases of the kidney – nephritic and nephrotic syndrome.
7. Diet for diabetes mellitus
8. Diet in febrile conditions- Short duration – typhoid; long duration – tuberculosis
9. Diet in liver diseases – Viral hepatitis and cirrhosis
10. Preparation of power point presentations on diet and disease conditions

Reference Books:

1. Krause and Mahan – Food ,Nutrition and Diet therapy, 6th Edition W.B. Saunders company, London
2. Normal and therapeutic nutrition –17th Edition, Robinson et. al ., Mac Millan Pub.Co., New York
3. ICMR(1989) Nutrient Requirements and recommended dietary allowances for Indians. 4.Antia FP (1987) Clinical Dietetics and Nutriton, Oxford University Press, New Delhi

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4. Shubhangini. A. Joshi (2002) Nutrition and dietetics, Tata Mc Graw- Hill publishing company limited, New Delhi.
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7. Sue rod Williams, Nutrition and diet Therapy, Times Mirror Mosby College publishing,Boston, 1989.
8. The Indian journal of nutrition and dietetics, Avinashilingam Deemed University, Coimbatore

Co-Circular Activities:

1. Academic based: -

- Visit to dietetics Dept. and diet counselling centre Exhibition on therapeutic diets
- Diet plans and laboratory reports

1. Research based: -

- Case studies
- Project work on assessment of obesity among staff members and students of the college

1. Value based: -

- Clean and green, nutrition games
- Drama, dance, and music to propagate and promote nutrition education

1. Celebration of Important Days (National and International): -

- World Diabetes day -November 14th
- World Cancer day -February 4th World Health day -April 7th
- National Cancer Awareness Day-Nov 7th

Minor- II-V Semester

FOOD MICROBIOLOGY (THEORY)

Objectives: To enable students

1. To know the important genera of microorganisms associated with food and their characteristics.
2. To understand the role of microbes in fermentation, spoilage and food borne diseases.

Learning Outcomes:

1. Understanding the concept of sterilization and disinfectant
2. Knowing about the microbial analysis and assessment and comparing with indices
3. Comprehending importance of microbes in food fermentation.
4. Learning different staining techniques and isolation methods
5. Knowing about factors effecting microorganisms' survival and practically applying it

UNIT 1

1. **Food Microbiology**: Definition, scope of food microbiology and importance of studying microorganisms in food.
2. **Historical development and Contributions of food microbiology in the areas of**
    - Food Preservation, Food Spoilage
    - Food Poisoning and Food Legislative
3. **Cultivation of microorganisms:**
    - Methods of isolation and cultivation.
    - Serial dilution technique.
    - Pure culture techniques.

UNIT2. -10 hours

1. **Microbial food spoilage:** Primary sources of microorganisms in foods.
2. **Microbial growth in food:**
    - Factors affecting microbial growth in food, including: Intrinsic and extrinsic factors
3. **Role of probiotics and fermented foods in health:**
    - Definition and significance of probiotics.
    - Common fermented foods and their microbial basis.
    - Health benefits associated with probiotic consumption.

UNIT3: 10 hours

1. **Food Spoilage**
    - Definition, causes, prevention of food spoilage, factors responsible for food spoilage, chemical changes due to spoilage.
2. **Spoilage of other food groups:**
    - **Cereals and cereal products:** Mold growth, insect contamination, and enzymatic deterioration.

- **Fruits and vegetables:** Soft rot, fermentation, and mold spoilage.
- **Canned products:** Spoilage types including flat sour, sulfide spoilage, and gas production leading to swelling..

3. **Spoilage of specific food groups:**
    a. **Milk and dairy products:** Causes and types of spoilage such as souring, bitterness, gas production, and texture changes.
    b. **Meat, poultry, and seafood:** Microbial spoilage mechanisms including putrefaction, slime formation, discoloration, and off-odors.

- **Canned products:** Spoilage types including flat sour, sulfide spoilage, and gas production leading to swelling.s

UNIT4. 10 hours

1. **Microbial foodborne illnesses:** Definition and distinction between microbial intoxications and infections.
2. **Foodborne diseases:** Causative agents, symptoms, and transmission of bacterial and viral foodborne illnesses.
    - Bacterial pathogens: *Salmonella*, *Listeria monocytogenes*, *Escherichia coli*, *Shigella*, *Clostridium botulinum*, etc.
    - Viral pathogens: Norovirus, Hepatitis A, and others.
    - Mycotoxins: Types, sources, health effects, and prevention strategies.
3. **HACCP (Hazard Analysis and Critical Control Points):** Introduction, importance, and principles.

UNIT5. 10 hours

1. **Control of microorganisms in foods**: Principles and various methods of preservation.
2. **Physical methods of food preservation:** Dehydration, Freezing, Cool storage, Heat treatments (pasteurization, sterilization), Irradiation
3. Chemical methods of preservation and use of bio-preservatives.
4. **Immunological methods for microbial detection**: ELISA, Fluorescent Antibody and Radioimmunoassay

B.Sc. FOOD SCIENCE AND NUTRITION
Minor-V Semester
FOOD MICROBIOLOGY (PRACTICAL)

Learning outcomes:

1. Display ability to explore beneficial and harmful activities of microorganism
2. Demonstrate skill in the usage of equipment used for sterilization and disinfectants
3. Exhibit skill in scheduling and types of immunity
4. Acquire skills in studying microorganisms in sewage and water treatment

Practical:

1. Functioning and use of compound microscope
2. Cleaning and sterilization of glassware
3. Preparation and sterilization of nutrient broth
4. Preparation of slant, stab and plates using nutrient agar
5. Cultivation and sub-culturing of microrganisms
6. Morphological study of bacteria and fungi using permanent slides
7. Simple staining
8. Gram's staining
9. Standard Plate Count Method
10. Visits (at least two) to food processing units or any other organization dealing with advanced methods in food microbiology.

References:

1. Frazier William C and Westhoff, Dennis C. Food Microbiology, TMH, New Delhi,2004
2. Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
3. Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997.
4. Banwartt: Food Microbiology
5. Pelczar MJ, Chan E.C.S and Krieg, Noel R. Microbiology, 5th Ed., TMH, New Delhi, 1993.

Co-Circular Activities:

1. As a group student also spend time discussing some of the lesser-known roles microbes have in food preparation such as the production of food additives or in modifying starting ingredients.
2. This is an excellent opportunity to help students draw connections between their everyday lives and the microbial sciences
3. Visits to food labs and learn the different method
4. Ppt, quiz, seminar need to be presented
5. Food microbiology course to encourage students to learn about fermented foods from around the world and share their discoveries with their colleagues.