MANGALORE UNIVERSITY

Model Curriculum

Program Name	**B.Sc**	Total Credits for the Program	**146 Credits**
Core	**Home Science**	Starting year of implementation	**2024-25**

Program Outcomes: At the end of the program the student should be able to:

(Refer to literature on outcome-based education (OBE) for details on Program Outcomes)

1. Deliver quality tertiary education through learning while doing.
2. Reflect universal and domain-specific values in Home Science.
3. Involve, communicate, and engage key stakeholders.
4. Preach and practice change as a continuum.
5. Develop the ability to address the complexities and interface among of self, societal and national priorities.
6. Generate multi-skilled leaders with a holistic perspective that cuts across disciplines.
7. Instill both generic and subject-specific skills to succeed in the employment market.
8. Foster a genre of responsible students with a passion for lifelong learning and entrepreneurship.
9. Develop sensitivity, resourcefulness, and competence to render service to families, communities, and the nation at large.
10. Promote research, innovation, and design (product) development favoring all the disciplines in Home Science.
11. Enhance digital literacy and apply them to engage in real time problem solving and ideation related to all fields of Home Science.
12. Appreciate and benefit from the symbiotic relationship among the five core disciplines of Home Science-Resource Management, Food Science and Nutrition, Textiles and Clothing, Human Development and Family Studies and Extension and communication

Semester I								
Sl. No	**Course Code**	**Title of the Course**	**Category of Courses**	**Teaching Hours per Week**	**SEE**	**IA**	**Total Marks**	**Credits**
1		**Fibre to Fabric**	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
2		Fundamentals of Interior Design	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
3		Food Science	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
Semester II								
4		Extension Education and Communication	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
5		Human Physiology	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
6		Basic Nutrition	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
Semester III								
7		Life Span Development: The Early Childhood	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
8		Apparel Designing	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
9		Community Nutrition	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
10		**Elective I** Nutritional Biochemistry	Theory	2	40	10	50	2
		Elective II Event Management						
Semester IV								
11		Lifespan Development : School age to adulthood	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
12		Food Preservation	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
13		Resource Management	Theory	4	80	20	100	3
			Practical	4	40	10	50	2
14		**Elective I** Food Microbiology	Theory	2	40	10	50	2
		Elective II Garden and Landscape Designing						
15		Public Health Nutrition (Compulsory)	Internship Report	2	40	10	50	2

PAPER DISCRIPTION

SL.NO	SEMESTER	CODE NO. OF THE PAPER	TITLE OFTHE PAPER
1	I		Fiber to Fabric
			Fundamentals of Interior Design
			Food Science
2	II		Extension Education and Communication
			Human Physiology
			Basic Nutrition
3	III		Life Span Development: The Early Childhood
			Apparel Designing
			Community Nutrition
			(Elective) Nutritional Biochemistry Event Management
4	IV		Lifespan Development : School age to adulthood
			Food Preservation
			Resource Management
			(Elective) Food Microbiology Garden and Landscape Designing
			Public Health Nutrition (Compulsory)
			Compulsory Paper : Internship Report

MANGALORE UNIVERSITY
Suggested Programme Structure for the Under Graduate Programme
[BSc. Home Science]

Semester	Major 1	Major 2	Major 3	Elective / Optional	Language (English + Hindi/ French)	Compulsory	Total Credit	Max. Marks		
								IA	Exam Mark	Total
I	5 (3T+2P) Fiber to Fabric	5 (3T+2P) Fundamentals of Interior Design	5 (3T+2P) Food Science	------	3+3	2	23	20	80	100
								(P) 10	40	50
II	5 (3T+2P) Extension Education and Communication	5 (3T+2P) Human Physiology	5 (3T+2P) Basic Nutrition	-------	3+3	2	23	20	80	100
								(P) 10	40	50
III	5 (3T+2P) Life Span Development: The Early Childhood	5 (3T+2P) Apparel Designing	5 (3T+2P) Community Nutrition	2 1. Nutritional Biochemistry or 2. Event Management and Hospitality Services	3+3		23	20	80	100
								(P) 10	40	50
								(E) 10	40	50
IV	5 (3T+2P) Lifespan Development : School age to adulthood	5 (3T+2P) Food Preservation	5 (3T+2P) Resource Management	2 1. Food Microbiology Or Garden and Landscape Designing	3+3	2 Public Health Nutrition	25	20	80	100
								(P) 10	40	50
								(E) 10	40	50
								(C) 10	40	50

*Languages 3 credit – 4 contact hours

SYLLABUS

BSc HOME SCIENCE

I SEMESTER

PAPER-I FIBER TO FABRIC

(THEORY)

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes: (COs)

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

* Develop the skill of identifying and analyzing various types of fibres, yarns and fabrics.
* Knowledge of textile care and maintenance
* Awareness on sustainable textiles and its application daily life.

Total 48 hours **3 hours /Week**

UNIT - 1: Introduction to Textiles **12hrs**

* Introduction and classification of textile fibers and their properties
* Production and uses of various fibers
* Natural Fibers : Cotton, Linen, Wool, Silk
* Manmade Fibers – Rayon, Nylon, Polyester, Acrylic.
* Recent trends in fibers

UNIT – 2: Study of Yarn **12 hrs**

* Basic principles and process of yarn construction - Different types of Yarn, Staple, Filament, Textured and Blended Yarns, Yarn Count, Thread count, Yarn Twists, 'S' And 'Z' Twist
* Types of Yarns- Simple Yarns, Single Yarns, Ply Yarn, Cord Yarn.
* Novelty Yarns -Slub, Flake, Spiral, Loop, Knot
* Characteristics of Woven Fabrics – Warp and Weft, Grain and Selvedge.

UNIT – 3: Techniques of Fabric Construction and Weaving **12 hrs**

* Introduction, Fabric Construction Process
* Woven: The Loom, Types of Looms, Parts of a Loom and its Functions Characteristics of Woven Fabrics, Woven fabric defects.
* Basic Weaves : Plain, Twill, Satin
* Decorative Weaves : Jacquard, Dobby, Leno, Pile
* Non Woven Textiles – Knitting, Braiding, Netting, Felting
* Lace Making – Uses and types of Lace

UNIT 4: Eco-textiles & Fashion **12 hrs**

* Eco fibres and fabrics, carbon footprint, Eco mark for fabrics, Eco fibres and their applications and impact on the environment, its comparison with the other manmade fibres.

* Textile waste and Up-cycling, Reuse, recycle, Concept of Reconstruction - Redesign, repair and recycle
* Eco fashion terminologies, Eco fashion labels, Benefits of eco labels.

PRACTICALS: **Total – 52 hours**
4 hrs /Week

1. Identification of different types of Textiles Fibers : Visual , Microscopic and
2. Burning
3. Construction of Basic and Decorative stitches
4. Use and care of sewing machine- construction of seams
5. Basic Weaves - Prepare paper samples for all the basic weaves: (one sample for each)
6. Collect the samples for the Decorative Weaves
7. Visit to Garment manufacture unit.

REFERENCES:

1. Ziffzer – clothing construction practicals –prasaranga Mysore University
2. Hess," Textile fibres and their use: 6th edition Oxfors& IBH publishing Co.PVt ltd., New Delhi, Bombay, Calcutta.
3. Mary, B. Cowan, Martha E. jungerman Introduction to textiles; D.B.Taraporvala sons & Company Pvt., Ltd.,
4. DurgaDaulkar, " Household Textiles & Laundry work
5. Erwin, Mabul"Clothing for Moderns N.Y. Macmillian Publication.
6. Wingate, "Textile fabrics and their selcation" Prentice hall Englewood cliffs N.J.
7. Potter and Corbmon, "Fibre to fabric" N.Y. Gergg division and macran hill book co.
8. Dr.NaveenKaur "Comdex Fashion Design". Vol II (2010) Dreamtech Press New Delhi
9. Dr.SushmaGuptha, neeruGarg, RenuSaini (2003)" Text Book of Clothing and Textiles" Kallyani publishers, ludhiyana, New Delhi.
10. Joseph m.L(1981)" Introductory Textiles Science" Holt Ripen hart of winstin New York.
11. D'souza N(1998) 'Fabric care' New Age International Pvt. Ltd. Publishers

I SEMESTER

PAPER-II FUNDAMENTALS OF INTERIOR DESIGN

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

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

* Gain knowledge on application of elements of art and principles of design in Interiors.
* Analyze the traditional and contemporary furniture designs and furnishing styles
* Understand the history of Interior design at local, National and International levels
* Evaluate case studies on global market trends and techniques in the area of design.

Total : 48 hour **3 hours/week**

Unit – 1 Design Aspects **12 hours**

* Design, Definition, Characteristics and classification of Design, History of Design, Terminologies in Interior design and decoration
* Elements of Design and its application
* Principles of Design and its application

Unit – 2 Colours in Interiors **12 hours**

* Colors in Interiors - Meaning of colour, Colour Spectrum – VIBGYOR, Dimensions of colour.
* Colour Systems -Prang and Munsell colour systems.
* Colour schemes and its significance in interiors
* Colour psychology and Colour dynamics, Skills in rendering colours to interiors.

Unit – 3 Decorations and Furnishings for Interiors **12 hours**

* **Lighting and Its Accessories -** Lighting types, Lighting fixtures, suitable for various activities, Lighting accessories and their role in interiors, Effect of natural light and artificial light.
* **Decoration -** Flower arrangement, Rangoli and Floral Decorations, Accessories and decoration - Recent Trends & Innovation
* **Furnishings-** Soft Furnishings and Hard Furnishings, Selection, use and care of household linens and other furnishings
* **Window Treatments and Curtain Styles-** Hard windows and Soft Windows, Curtain Styles

Unit – 4 FURNITURE DESIGN **12 hours**

* History of Furniture Design, History of Interior design in India- traditional styles of design and decoration in homes. Global Furniture Styles.
* Selection and arrangement of furniture, Upholstered furniture material, techniques and design
* Design of furniture and its work heights, Comfortable working postures with design considerations for residential and commercial work spaces, Furniture design based on anthropometric dimensions.

PRACTICALS: **Total 52 hours**

4 hours/ week

1. Illustrate the different types of design
2. Illustrate the application on Elements of Art and Principles of Design.
3. Develop Prang and Munsell Colour chart.
4. Illustrate the different colour schemes for various interiors.
5. Market Survey on lighting accessories, furnishings and Furniture
6. Flower Arrangements- Different types and styles
7. Create an album on furniture styles – Traditional, Modern and Contemporary.
8. Design Research – Evaluation of Case Studies
   - Decoration – trends and classic style to suit lifestyle
   - Furniture Designs - international markets and global trends, marketing techniques, branding, promotion and presentation, work opportunities, intellectual property.

REFERENCES :

1. Ball, Victoria .K (2001), The Art of Interior Design, McMillan and Co, New York.
2. Bhatt.P.D, Goenka.S(2003). Foundation of Art Design, Lakshmi Book Depot, Mumbai.
3. GopalKrishna, K.R, (2006), Fundamentals of Drawing, Subhas Stores Book Corner, Bangalore.
4. Pratap Rao M, (2002) Interior Design, Principles and Practices, Standard Publishers and Distributors
5. John Pile and Judith (2013). A History of Interior Design, Wiley Publishers
6. Penny Spark (2009). Designing the Modern Interior, Berg Publishers
7. Choudhary, A.K.R. (2000). Modern Concepts of Colour and Appearance, Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
8. Hilliard, E. (2000). Brilliant Colour at Home, Kyle Cathie Ltd, London

I SEMESTER
PAPER-III FOOD SCIENCE

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

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

* Summarize and critically discuss and understand both fundamental and applied aspects of Food Science.
* Able to explain functions of food in maintaining health
* Identify factors of foods and related disciplines to solve practical as well as Real world problems

Total : 48 hour **3 hours/week**

Unit-1 Introduction of Food Groups, Food Pyramid **12 hours**

* Definition and Terms used in Food Science and Nutrition - Health, Food, Nutrition, Nutrients and Malnutrition
* Various classifications of Foods and Food Groups - Definition, Classification and Functions of Foods.

* Basic Food Groups and Need for Grouping Foods and Application of Food Groups in Planning Adequate/Balanced Diets – Introducing EAR.

Unit-2 Cooking Methods **12 hours**

* Culinary terms and Methods of Cooking - An Overview of culinary terms - Different Modes of heat transfer like Radiation, Conduction and Convection.
* Moist heat methods - Boiling, Simmering, Poaching, Steaming, Pressure cooking. Dry heat methods - Air as medium of cooking - Grilling, broiling, roasting, Baking. Fat as medium of cooking -Sautéing, Shallow fat frying, Deep fat frying. Combined (Moist and dry) Methods - Braising, Stewing.
* Other cooking methods -Microwave cooking, and Solar cooking. Advantages and Disadvantages of Cooking methods

Unit-3 Nutritional Significance of cereals and pulses **12 hours**

* Types of cereals: wheat, rice, millets.
* Cereal Products -Flaked rice, puffed rice, wheat flour) Principles and properties of Cereals and its utility: Germination (Amylase Rich Foods- ARF), fermentation, Parboiling, Gelatinization, Dextrinization, Gluten formation
* Pulses and Legumes
* Fruits and Vegetables

Unit-4 Importance and functional properties of the following **12 hours**

* Milk and Milk Products: including Fortified milk & its importance.
* Eggs-Basic structure of an egg and biological value, Quality evaluation and grading of eggs.
* Meat, poultry and fish.
* Nuts, oils and Oil seeds.
* Salt, Sugar and Jaggery.
* Spices & Condiments.

PRACTICALS: **Total 52 hours**
4 hours/week

1. Weights and measures with standardization of recipes
2. Cereal and pulse preparation
3. Vegetable cookery – Effect on pigments and enzymatic browning in fruits and vegetables
4. Milk and Egg cookery
5. Stages of Sugar Cookery

REFERENCES:

1. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd.
2. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.
3. Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. Elite Publishing House Pvt Ltd., Delhi.
4. Srilakshmi B (2014). Food Science, 6th Edition. New Age International Ltd., Delhi.
5. Bamji MS, Krishnaswamy K, Brahmam GNV (2016). Textbook of Human Nutrition, 4th edition. Oxford and IBH Publishing Co. Pvt. Ltd.
6. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. Wardlaw's Perspectives in Nutrition, McGraw- Hill International Edition, 9th edition, 2013.
7. Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi
8. Gordon M Ward law (1999) Perspectives in Nutrition 4thed.WCB/Mcgraw Hill. International edition.
9. Mahan, L.K., Arlin, M.T. (2000): Krause's Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London.
10. Passmore, R and Davidson S (1986) Human Nutrition and Dietetics.Living stone Publishers.
11. Robinson, C.H;Lawler, M.R.Chenoweth, W.L;andGarwick,A.E (1986):Normal and Therapeutic Nutrition,17th Ed., Mac Millan Publishing Co

II SEMESTER

PAPER-IV Extension Education and Communication

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

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

- Understand the Concept of Extension Education and Communication
- Develop skills in the use of Extension methods and media.
- Become aware of Extension teaching and Learning.

Total : 48 hours **3 hours/week**

Unit – 1 Extension Education and Adult Learning **12 hours**

* Extension Education Definition, meaning, objectives, principles, scope, and Philosophy. Qualities of an Extension facilitator. Home science extension – Concept, definition, objectives, and philosophy, Contribution of Home Science Extension towards development of society.
* Extension Teaching – Concept, goals, characteristics, steps, phases in extension education process. Edgar Dale's cone of experience. Adult learning, factors affecting, types. Teaching process – types of teaching methods, principles of teaching. Qualities of a good teacher.
* Leader and leadership – types, styles, qualities, functions, advantages, and disadvantages of working with the leaders. Training camps.

Unit – 2 Extension Teaching Methods & Media Communication **12 hours**

* Definition, Aims and objectives, classification. Each of the Extension methods merits and limitations.
* Audio visual aids – definition, role of visual aids in teaching, important audio, visual and other extension methods for effective teaching.
* Visual Media - it's preparation and usage for the following: -

  a. Electronic Media - i. Radio ii. Television iii. Films. Group Media and it's usage in Extension

  b. Print Media - i. News Paper ii. Magazines. Mass media and their uses for extension

  c. Folk Media - Meaning and Characteristics ii. Major Indian Folk forms ii. Importance of Folk forms.

Unit - 3 Diffusion and Adoption of Extension **12 hours**

* Diffusion and Adoption, Innovation decision process, its stages, four main elements in diffusion of innovations.

* Difference between communication and diffusion.
* Steps in adoption process, important factors related to adoption of practices.

Unit- 4 Extension Training Methods **12 hours**

* Lecture, Group Discussion, Seminar, Panel discussion

* Symposium, workshop, case study, role play

* Simulated method, video conferencing.

PRACTICALS: **Total 52 hours**
4 hours/week

1. Content analysis of news/programmes.
2. Edgar Dale's cone of experience.
3. Selection and preparation of developmental message using different methods and media: -
   a. Planning for the community.
   b. Developing message to the community.
   c. Evaluation of teaching aids used.
4. Using an appropriate example apply the stages of an adoption process.
5. Do an Interviewing/case study about a leader or successful social worker or organization itself which does community development work.
6. Using any communication media design/develop a tool to use for community effectiveness.

REFERENCES :

1. P.M Khan and L. L Somani (2010): Fundamentals of Extension Education. Agrotech publishing company.

2. Wittch and schuller (2002): Audio Visual Materials, Havper& Row publications.

3. Extension Education by S.k. Waghmare (2007) New Age India publications.

4. Fundamentals of Teaching Home Science by Arvind Chandra, Anupam Shah and Uma Joshi (2010) International publishers.

5. A textbook of Audio-Visual aids by Lalit Kishore (2002) United publications.

6. Education and Communication for Development by O.P Dahama and O.P Bhatnagar (2007) revised edition. New Age India publication.

II SEMESTER
PAPER-V Human Physiology

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

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

* Gain knowledge into the structure and functions of cells, tissues and organs of human body
* Understand the anatomy and physiology of the various systems in the human body
* Comprehend the functions of systems.

Total 48 hours **3 hours/week**

Unit – 1 Introduction to Human Physiology **12 hours**

* Basic concepts of Cell structure, tissues, organs and their function.
* Structure and Functions of lymph System
* Structure and Functions of Skeletal System

Unit -2 Cardiovascular System and Respiratory System **12 hours**

* Blood and its composition ,Functions; Blood groups
* Structure and functions of heart Cardiac cycle, Blood Pressure (Systolic &Diastolic Blood pressure), , ECG, Common disorders: anemia, myocardial ischemia and infarction
* Physiological Anatomy of Respiratory Tract, Mechanism of Respiration, Transport of Respiratory Gases in Blood, Gaseous Exchange in Lungs and tissues.

Unit–3 Physiology of Digestive system and excretory system **12 hours**

Digestive System

* Principal accessory organs- salivary glands, liver, gall bladder, pancreas- structure & function
* Digestion and absorption of carbohydrates, proteins and lipids
* Common disorders of the digestive system :Diarrhea, constipation, vomiting, obstructive jaundice, gastroenteritis, and acidity

Excretory System

* Structure of Excretory System- Kidney, Nephron **Page 13**
* Urine Formation, micturition, Glomerular Filtration Rate(GFR),
* Acute glomerulonephritis, Chronic glomerulonephritis, Nephrotic Syndrome and Renal failure.

Unit – 4 Physiology of Endocrine system, Reproductive system and nervous system

12 hours

Endocrine System

* Functions of endocrine glands

* Functions and Hormones secreted by Pituitary Gland
* Disorders of hypo and hyper secretion of the glands

Reproductive System

* Structure, hormones secrete by male and female reproductive organs
* Physiology of Menstruation- Estrogen vs Progesterone.
* Pregnancy and associated changes, physiology of lactation

Nervous system

* Structure and functions of Neuron, Brain

PRACTICALS: **Total 52 hours**
4 hours/week

1. Blood Grouping
2. Bleeding time
3. Clotting time
4. Haemoglobin Estimation
5. Record of Blood pressure

REFERENCES:

1. Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata
2. Chatterjee C.C (2004), Human Physiology Volume II, Medical Allied Agency, Kolkata. Sembulingam, K. (2000) Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi
3. Chaudhri, K. (1993) Concise Medical Physiology, New Central Book Agency (Parentral) Ltd., Calcutta.

II SEMESTER
PAPER-VI BASIC NUTRITION

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

To enable the students to

* To Understand the Functions and Sources of Nutrients
* Apply the knowledge in maintenance of Good Health for the individual and the Community
* Be familiar with factors affecting availability and requirements.

Total 48 hours

3 hrs / week

UNIT - 1 Introduction to Nutrition **12 hrs**

* Nutritional Status: The relation of good nutrition to normal health.
* Definitions of the terms – Food, Nutrition, Health, Nutrients, Nutritional status, Malnutrition etc.
* Energy - Definition of energy, calorie and joule, Measurement of calorific values of foods: gross and physiological value of food. Basal Metabolic Rate (BMR) and Factors affecting BMR. Specific Dynamic Action (SDA) of foods. Energy needs of the body. Direct and indirect calorimeter.

UNIT – 2 Macro Nutrients **12hrs**

* Definition, Classification, Dietary Sources, Functions, Recommended Dietary Allowances, clinical signs and symptoms of Deficiency diseases and Excess of the following: a) Energy; b) Carbohydrates; C) Fats; d) Proteins; e) Water and fiber.

UNIT - 3 Minerals **12hrs**

* Definition, Classification, Dietary Sources, Functions, Recommended Dietary Allowances, clinical signs and symptoms of Deficiency diseases and Excess of the following: a) Calcium; b) Phosphorus; c) Magnesium; d) sodium; e) Potassium; f) Iron; g) Zinc; h) Iodine; i) Flourine.

UNIT - 4 Vitamins **12 hrs**

* Classifications, functions, sources, Clinical signs and symptoms of deficiency, requirements of Fat Soluble Vitamins - A, D, E and K.
* Water Soluble Vitamins-B Complex Vitamins- Thiamine, Riboflavin, Niacin, Pyridoxine, Folic acid, Cyanocobalamin and Vitamin C.

PRACTICALS: **Total 52 hours**

4 hours/week

* Plan, Prepare and serve the following recipes rich in:
  1. Protein
  2. Calcium
  3. Iron
  4. Vitamin A
  5. Vitamin C
  6. Thiamine

REFERENCES:

1. Guthrie, A. H., (1986) Introductory Nutrition, 6th Ed., The CV Mosby Company
2. Swaminathan, M., (1985) Essentials of food and nutrition, Vol I and II, Ganesh and Co, Madras Gopalan C (1991) Nutrition value of Indian foods, ICMR
3. WTO Technical Reports Series for Different Nutrients.
4. Robinson CH, Lawler MR, Chenoweth WL, Garwick AE (1986) Normal and therapeutic nutrition, 17th Ed., Macmillan Publ. Co.
5. Agarwal A, Udipi SA (2014) Text book of human nutrition, Jaypee Bros. Medical Publ., New Delhi
6. Bamji M, Rao NP, Reddy V (1996) Text book of Human Nutrition, Oxford and IBH Publ. Co. Pvt Ltd, New Delhi
7. Srilakshmi B (2015) Nutrition science - 4th Ed., New age international Publ., New Delhi
8. Shills ME, Shike M, Ross AC, Caballero B, Cousins RJ (2005) Modern Nutrition in health and disease – 10th Ed., Lippincott Williams and Wilkins

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III SEMESTER

PAPER-VII LIFE SPAN DEVELOPMENT: THE EARLY CHILDHOOD

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

To enable the students to understand :

* The importance of Early Childhood education for future learning.
* To learn how to organize and manage a good nursery school.

Total 48 hours

3 hrs / week

UNIT - 1 Introduction **12 hrs**

* Introduction - Definition, Need and scope of Human Development, trends and issues in Human Development, concepts and Principles of Growth and Development. Theoretical perspectives and methods of studying Human Development. Influence of heredity and Environment on development (theoretical perspective).

UNIT - 2 prenatal development **12 hrs**

* Prenatal Development - conception, pregnancy, signs, symptoms, discomforts, complications, stages of prenatal development, factors affecting prenatal development.
* Child Birth - Process and types of birth, birth complications.

UNIT – 3 Neonate and Infancy **12 hrs**

* The Neonate : appearance, size proportion and care, physiological functioning and behavior patterns
* Infancy (from one month to 2 years) : physical development and motor skills, emotional development, cognitive development and social development.
* Habit and habit formation.

UNIT - 4 Pre-school and Nursery school **12 hrs**

* Pre-school child (2-6 years): physical growth and motor skills social behavior, intellectual development, pre-school childs vocabulary, discipline and guidance of pre-school child.
* Nursery school - essentials of a nursery school, building, equipment and personnel, programme in the nursery school, values of play, parent education, types of pre-school - creches, anganwadies, day care centres, balawadies.
* Methods of child study.

PRACTICALS : **Total 52 hours**

4 hrs/week

1. Observation of different developments among children.

   i. Physical development

   ii. Motor development

   iii. Emotional development

   iv. Language development

v. Intellectual development

2. Rhyme

3. Story telling

4. Basic activities

5. Review of Literature

6. Write a report on cultural practices related to pregnancy and early childhood.

7. Visit to nursery schools/Anganwadi.

REFERENCES:

1. Life span development - a topical approach, third edition, Jhon W. Santrock, Tata McGraw-Hill edition.

2. Human development, eleventh edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.

3. Human development, Ninth edition, Diane Papalia, Sally Olds, Ruth Field Man,MaGraw Hill.

4. Developmental Psychology, a lifespan approach, Elizabeth Hurlock, McGraw Hill.

5. Understanding Human Development, third edition, Weddy L. Dunn, Grace JeroigMcGraw Hill.

6. Nayak A.K. (2007) Guidance and counseling, APH Publishing Corporation

III SEMESTER

PAPER- VIII APPAREL DESIGNING

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

To enable the students to

* Enable the students to develop skills in apparel designing and constructing garments.
* Gain knowledge in fundamentals of fashion and garment construction technique.

Total – 48 hours

3 hrs / week

UNIT - 1 Fashion and Clothing **12 hrs**

* Fashion Interpretation - Terminology concepts, characteristics and Fashion cycle influence, Dictionary of Fashion Cycle Influence, Dictionary of Fashion terms and role of Fashion Designer.
* Clothing in relation to season, occasion, size and figure, figure problem and optical illusion.

UNIT- 2 Grooming and Design **12 hrs**

* Good Grooming and Psychological aspects of Clothing - Clothing and wearers, Personality factors and Clothing Choices, Selection of Fabrics, Factors Effecting Choice of Clothing.

* Elements of Design - Line, Colour, Texture.
* Principles of Design in Clothing - Balance, Rhythm, Proportion, Emphasis, Harmony.

UNIT- 3 Traditional Indian Textiles **12 hrs**

* Traditional Indian Textiles and Embroideries - Dacca Muslin, Baluchar Buttedar, Himrusand Amrus, Kalamdar, Patola, Bhandhnius, Punjabi Phulkari, Kanthasof Bengal, Embroidery of Kashmir, Chikankari and Kasuthi of Karnataka.

UNIT 4 Body measurements and Pattern making **12 hrs**

* Importance of Taking Body Measurements - Methods of Taking Measurements, steps in Preparing Fabrics for Construction.
* Pattern making - Principles and Techniques involved in Pattern Making.

PRACTICALS: **Total 52 hours**

4 hrs/ week

1. Taking Body Measurements
2. Steps in Pattern Making
3. Darning, Patch work and garment enrichment
4. Drafting, Tracing and Construction of 'A' line Frock for a Preschooler/Saree petticoat/Apron.
5. Computer Aided Design - Visit to study software operation of various machines write the report.
6. Make a study of collection of famous designers and their famous innovations.

REFERENCES:

1. Mungal, R. S., 2015, Textiles Fibre to Fabric, Satyam Publishers & Distributors, Jaipur.
2. Premalata Mullick., 2011, Textbook of Home Science, New Delhi, Kalyani Publishers.
3. Navneet Kaur., 2012, "Comdex Fashion Design" Vol II, Dreamtech Press, New Delhi.
4. Durga Deulkar., 2002, "Household Textiles and Laundry Work," Atma Ram & Sons Publishers.
5. Ziffzer, 1974, Clothing Construction practicals - Prasaranga Mysore university.

III SEMESTER
PAPER-IX COMMUNITY NUTRITION

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

To enable the students to:

* To gain knowledge regarding nutritional needs at different stages of growth.
* To understand the concept of growth promotion in the community.

Total – 48 hours

3 hrs / week

UNIT I Introduction **12 hrs**

* Basic principles of meal planning, factors affecting meal planning.
* Explanation of the terms : Health, RDA, Adequate intake, Balanced diet, Food guide pyramid.
* Nutrition during Infancy - Advantages of breast milk, bottle feeding and its effect on child health and weaning foods.

UNIT 2 Nutritional needs of Children **12 hrs**

* Growth and development, RDA, RFA, EAR, Dietary guidelines and nutrition needs of pre-school children, school age children and adolescents.
* Nutritional programmes.

UNIT 3 Nutritional needs during Pregnancy and lactation **12 hrs**

* Nutrition during pregnancy and lactation : Signs, common problems and complications during pregnancy. RDA, RFA, dietary guidelines and nutritional needs of pregnant and lactating mother.
* Nutritional programmes for pregnant and lactating mother.

UNIT 4 Nutritional needs for Geriatrics **12 hrs**

* Geriatric nutrition : Physiological changes, RDA, dietary guidelines and nutritional needs.

PRACTICALS : **Total : 52hrs**

4 hrs/week

1. Weaning foods
2. Normal diet for

   a. pre-school b. School age child c. Adolescent girl

3. Diet for pregnant/lactating mother.

REFERENCES :

1. Antia FP (2005) Clinical Nutrition and Dietetics, Oxford University Press, New Delhi.

2.Mahan LK, Arlin, M.T.(2000) Krause's Food Nutrition and Diet Therapy 11th edition, W.B. Saunders Company, London.

3. Robinson, C.H; Lawler, M.R.Chenoweth, W.L; and Garwick, A.E (1986) : Normal

4. Shubhangini A Joshi (2002) : Nutrition and Dietetics 2nd edition, Tata mc Graw-Hill Publishing Company Limited, New Delhi.

5. Srilakshmi B. (2005) : Dietetics, 5th edition, New Age International(P) limited Publishers, New Delhi.

6. Therapeutic Nutrition, 17th Ed., Mac Millan Publishing Co.

7. Williams's (1989) : Nutrition and Diet therapy. 6th edition. Times Mirror/Mosby College Publishing St.Louis.

ELECTIVE PAPERS

III SEMESTER

ELECTIVE I - NUTRITIONAL BIOCHEMISTRY

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome:

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

* Comprehend basic concepts of biochemistry including structure, functions and metabolism of carbohydrates, proteins, and lipids.
* Understand the functions, mode of action of enzymes and nucleic acids.
* Infer errors of metabolism with reference to macronutrients.

Total 32 hours **2 hrs / week**

UNIT 1 :Chemistry And Nutritional Importance of Carbohydrates and Proteins 12 hrs

* Introduction to biochemistry and relation to nutrition
* Carbohydrates- Definition, structural classification, metabolism of glucose- Glycolysis, krebs cycle, gluconeogenesis, blood glucose maintenance and its regulation.
* Structure and Classification of amino acids, primary, secondary and tertiary structure of proteins, hydrolysis of proteins, denaturation, precipitation and coagulation, urea cycle, nitrogen balance.

UNIT 2 : Chemistry and Nutritional importance of Lipids and Nucleic Acids 12 hrs

* Chemical composition of fats, ketone bodies, Ketogenesis and ketosis, cholesterol-biosynthesis, importance of lipo protein.
* Nucleic acids - Definition, Components, nucleotides, Nucleosides, structure and functions of DNA and RNA, types of RNA.

UNIT-3: Chemistry and Nutritional importance of Enzymes; Metabolic errors 10 hrs

* Classification, factors affecting enzyme activity, mechanism of enzyme action, enzyme inhibition, coenzymes , isoenzymes.
* Elementary knowledge on inborn errors of metabolism with reference to carbohydrate – Fructosuria, Galactosemia. Protein – albinism. Lipids – Tay- sach's disease

REFERENCES :

1.Lehninger, A.L, Biochemistry, worth publishers INC, New York, 2000.

2.Ambiga Shanmugam, Fundamentals of biochemistry for Medical students,Karthik printers, 2002.

3.Nutritional Biochemistry, 2nd edition Tom Bridt, Academic press 2006.

4.Powar and Chatwal, Biochemistry, Himalaya publishing house, 2000.

5.Ranganatha Rao, K, Text book of Biochemistry, Prentice Hall of India, NewDelhi, (2000).

6.Sathyanarayanan, U.,Chakrapani, U., textbook of biochemistry, 3rd edition,books and allied (p) ltd kolkata, 2010.

7.Lehinger's principle of Biochemistry (2000), Nelson and Cox.

8.Harper's Biochemistry - Rober K. Murray, Daryl K. Grammer, Mc GrawHill,Lange Medical Books

9.Biochemistry - Dr. Ambica shanmugam, published by author 2006.

10.Illustrated biochemistry-lippincott's,5th edition

III SEMESTER

ELECTIVE –II EVENT MANAGEMENT AND HOSPITALITY SERVICES

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome:

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

* Understand and develop skills in hospitality services.
* Develop skill in meeting the demands of event management industry.
* Formulate context appropriate action plans for challenges identified in hospitality services and event management industry.

Total 32 hours

2 hrs / week

Unit 1 - Basics of Event Management **12 hrs**

* Introduction to Events - Scope, concept, Characteristics, types of events, 5 C's of Events (Conceptualization, costing, Canvassing, customization & carrying out)
* Decision making in the event – What is Decision making, Steps in Decision making Process, Kinds of Decisions, Factors affecting Decision making of event planner.

UNIT 2 - Event Planning and Skills in Event Management **10 hrs**

* Participant Management, Resource Management, Problem Solving in Crisis Management, Staffing

* Leadership Skills, Communication Skills, Presentation Skills, Management Skills, Event Requirements And Management.

* Basic Event Accounting - The Budget, Financial management, Promotion and publicity

* Occupational Safety and Security of resources, Safety – Techniques and Tips Security – Need, types and problems, Occupational Safety and Health – Employer rights, responsibilities, First Aid

Unit 3- Hospitality Management **12 hrs**

* Introduction to Hospitality Management, Scope Hospitality management in different industries

* Concepts of Hospitality Management - operations management, tourism and event management.

* Hospitality Services at hotel industry - Front Desk Management (Reception) Servicing Rooms and General Cleaning Building and Food Service

* Risk Management - Types of Risks, Process of risk Management – Identify, Assess and Manage the risk & hazard.

REFERENCES:

1.Abhishek Arora, Karnataka University, Business communication skills (MCC, XZ:8M4 ARO)

2.Athul Shrivstava, 'Modern Hospitality and Tourism Management', 2010, ISBN 978-93-80540-98-6.

3.Diwaker Sharm & Ajay Kumar, Event Planning & Management

4.P D Chaturvedi & Mukesh Chaturvedi, Business Communication- Skills, Concepts & application, (MCC XZ:8M4, CHA)

5.Pondichery University, Dist Education Study Material

6.Premavathi Seetharaman, Sonia Batra & Preethi Mehra, An Introduction to Family Resource management.

7.R K Madhukar, Business Communication, (MCC XZ:8M4 MAD)

8.Sanjay Singh Gaur & Sanjay V Saggere, Event Marketing & Management, (MCC library, XZ74:51 GAU)

9.Sita Ram Singh, Event Management, MCC Library, XZ74:8

10.Wagen & Carlos; Event Management for tourism, cultural business & sporting Events

IV SEMESTER

PAPER-X LIFE SPAN DEVELOPMENT: SCHOOLAGE TO ADULTHOOD

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome: To enable the students to understand :

* Different developmental tasks in each stages of life.
* The role of parents and peers in development.

Total – 48 hours **3 hrs / week**

UNIT I Introduction to School age **12 hrs**

* Introduction to school age - Definition, Developmental tasks, physical, social, emotional, moral and intellectual development.
* Common health problems during school age - sore throat, cold and cough, flue, breathing problems, stomach ache, dental carries/oral, ocular health, bed wetting, diarrhoea, malaria.
* Role of immunization**.**

UNIT 2 Introduction to Adolescence **12 hrs**

* Adolescence - definition, developmental tasks, physical changes, puberty, growth spurt, primary and secondary sex characteristics, role of confusion, ego identity.
* Counselling for Adolescence, Early marriage and its effects.

UNIT 3 Problems in Adolescence **12 hrs**

* Problems and Special problems in adolescents, effects of substance abuse and its risks, influence of peer on adolescents, role of nutrition, eating disorder.
* Concept of small family norms**.**

UNIT 4 Influence of Parenting **12 hrs**

* Influence of various parenting styles on development, behaviour and functioning during childhood and adolescence.
* Different stages of childhood and adolescence.

PRACTICALS : **Total : 36 hours**

4hrs/week

1. Participation in preschool with visual aids,
    a. Nature experience
    b. Science experience
    c. Dramatization
2. Creative activities.
3. Case study of an adolescent - including study of self, family relationship and peer relationship.

REFERENCES:

1. Life span development - a topical approach, third edition, Jhon W, Santrock, tata McGraw-Hill edition.

2. Human development, eleventh edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.

3. Human development, ninth edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.

4. Developmental psychology, a lifespan approach, Elizabeth Hurlock, McGraw Hill.

5. Understanding Human Development, third edition, Weddy L., Dunn, Grace JeroigMcGraw Hill.

6. Nayak A.K., (2007) Guidance and counseling, APH publishing corporation.

IV SEMESTER

PAPER-XI FOOD PRESERVATION

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome: To enable the students to understand

* The basic concepts and parameters of preservation techniques.
* Learn to purchase and preserve different foods.
* Learn various quality and preservation techniques used in various foods.

Total 48 hours **3 hrs / week**

UNIT 1 Introduction to Food Preservation 12 hrs

* Food preservation - Definition, importance of food preservation, Causes of food spoilage - microorganisms, enzymes, insects, parasites and rodents, environmental factors and measures to control them.

* Classification of food by ease of spoilage, General principles of food preservation.
* Methods of food preservation- Asepsis(keeping out of microorganisms), maintenance of aseptic condition, removal of microorganisms - clarification, filteration, centrifugation, thermal processing (blanching, pasteurization, sterilization and microbial death rate), food drying and dehydration, cooling and freezing, food preservation using chemicals, irradiation.

UNIT 2 Sugar and Salt Concentrates 12 hrs

* Sugar concentrates - general principles, methods of preparation of jam, jelly and marmalade, tests of doneness, problems in jam and jelly preparation, theory of gel formation, factors affecting gel formation.
* Salt concentrates - general principles, role of ingredients in preparation of pickles, and preparation of sauerkraut.

UNIT 3 Methods of Food Preservation 12 hrs

* Canning, vacuum packing, freezing, refrigeration, smoking, fermentation, pasteurization - definition, types(if any), process, its advantages and disadvantages.
* Emerging techniques in food preservation - pulsed electric field, High Pressure Processing, modified atmospheric packaging, irradiation - definition, application, advantages and disadvantages.

UNIT 4 Drying and Dehydration 12 hrs

* Drying - definition, general principles, methods and types of driers, factors controlling drying and dehydration.
* Dehydration - definition, principles, pre-treatments for drying, changes during drying, effect of drying on nutritive value, factors influencing dehydration.
* Sun drying vs. artificial drying.

PRACTICALS: Total 52 hrs

4 hrs/ week

1. Preparation of pickles
2. Preparation of jam and jelly
3. Preparation of chutney powder
4. Visit to food industry.

REFERENCES:

1. Frazier WC, Westoff DC (1998) Food microbiology 4th edition, Tata Mc Graw Hill publication Co., Ltd.

2. Prescott SC, Proctor BE (1937) Food technology, McGraw Hill.

3. Desroier NV (1963) The technology of Food preservation, AVI Pub. Co.

4. Lal G Siddappa GS, Tandon GL (1960) Preservation of food and vegetables, ICAR,New Delhi.

5 Manay NS, Shadaksharaswamy M (2010) Foods - Facts and principles, New Age International Publ., New Delhi.

IV SEMESTER
PAPER-XII RESOURCE MANAGEMENT

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome To enable the students to:

* Develop an understanding of the principles of Home Management.
* Develop experience and technique in the field of household equipments and purchases.

Total – 48 hours **3 hrs / week**

UNIT 1 Introduction to Resource Management **12 hrs**

* Meaning & processes of family resource management.
* Steps in Decision making and types of decisions
* Resources –classification, characteristics and factors affecting use of resources.

Unit 2 Time and Household Equipments **12 hrs**

* Time as a resource –steps in time plan, its importance, tools in time management, peak load, work curve and ret period.
* Household equipments - use and care of different household equipments: cooking stove, refrigerator, pressure cooker, iron box, mixer, oven, washing machine and vacuum cleaner.
* A study on modern gadgets available in the market.

Unit 3 Energy and Work Simplification **12 hrs**

* Energy –fatigue, types of fatigue and relieving methods.
* Work simplification –definition, importance, principles and techniques.
* Mundel's classes of change.

Unit 4 Money and Budget **12 hrs**

* Money-income-types and ways of supplementing family income
* Family budget- definition, limitations, advantages.
* Steps in making a budget; maintenance of accounts. Account keeping methods.
* Saving- need, saving institutions.
* Consumer education -Rights, responsibilities, problems and protection.

PRACTICALS : **Total : 52 hours**

4hrs/week

1. Survey of global resources; Solar/Water/Wind/biogas etc.
2. Time and activity chart; for one full working day, half working day and a holiday.
3. Techniques of work simplification - Flow process chart/ pathway chart with symbols and activity.
4. A study on Peak loads for working women and home maker with alternate time plans.
5. Survey on Modern household equipment available in the market.

6. Different types of kitchen plan.

REFERENCES:

1. Deshpande, R.S., (1980), Modern ideal homes for India, Education Deshpande publications, India.

2. Nickel, P.and Dorsey, J. M. (1986) Management in Living; 3rd edition, John Wiley & Sons New York.

3. Gross, Crandall & Kroll (1980)' Management for Modern Families' Prentice Hall, New Jersey.

4. Varghese, Ogale and Srinivasan (1985), 'Home Management 'Wiley Eastern Ltd., New Delhi.

5. Bela Bhargava (2005) 'Family Resource Management & Interior Decoration, University Book House (p) Ltd.

6. Premalatha Mullick (2011) "Text Book of Home Science" Kalyani Publishers, New Delhi.

7. Sushma Gupta, Neeru Garg, Amita Aggarwal (1993)" Home Management Hygiene and Physiology" Kalyani Publishers. Ludhiyana.

ELECTIVE PAPER

IV SEMESTER
ELECTIVE I: FOOD MICROBIOLOGY

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome To enable the students to understand:

* Understand the concepts of microbes in food and human welfare.
* Infer the role of microbial spoilage of various foods and its intoxications.

Total – 32 hours **2 hrs / week**

UNIT 1 Introduction Food Microbiology **10 hrs**

* Fundamentals of Microbiology - History and development of microbiology, Scope and importance of food microbiology, Economic importance of yeast, moulds and bacteria, Bacterial growth curve, Factors affecting the survival and growth of microorganisms in food.
* Intrinsic and Extrinsic parameters that affect microbial growth. Intrinsic factors for growth - Generalized, nutrient effect, pH, buffer, anaerobic/aerobic conditions, moisture content, temperature, gaseous atmosphere.

UNIT 2 - Microbiology of Water and different Foods **10 hrs**

* Water -Sources, bacteriology of water supplies - Bacteriological examination and purification of water.
* Types of microorganisms & Sources of contamination, Types of spoilage, prevention and control
* Milk and Milk products, Vegetables & fruits, cereal and cereal products, Meat, fish and poultry
* Role of Microbes in Fermented foods and Genetically Modified food

UNIT 3 - Food borne diseases **12 hrs**

* Food infections- Salmonellosis, Shigellosis, Vibrio gastroenteritis, E.Coli, Hepatitis A and Shellfish poisoning.
* Food Borne Intoxication -Staphylococcal poisoning, Bacillus cerues poisoning, Botulism - Mycotoxins- Aflatoxicosis, Ergotism - Bacterial and viral food borne disorders
* Food-borne important animal parasites - Food borne diseases and their outbreak

REFERENCES :

1. Bibik Ray “Fundamental Food Microbiology” Third edition – 2005 CRC Press London
2.Thomas J. Montville; Kalmia E. Kniel; Karl R. Matthews : “Microbiology an Introduction” Fourth Edition Year: 2017
3. Rajan Nijhawan “Food Safety & Standards Act, Rules & Regulations” 24th Edition, 2023
4. Sunetra Rhoday “Food hygiene and Sanitation” Second revision 2017.
5. S.K. Goyal Suresh Chandra, Durvesh Kumari A Competition Book For Food Safety Officer - Main Subject : An Objective Approach Unknown Binding – Student Calendar 2019 jain brothers

IV SEMESTER

ELECTIVE: II GARDEN AND LANDSCAPE DESIGNING

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome:

At the end of the course the student should be able to: -

* Understand the importance of cultivating ornamental plants and their scope in entrepreneurship.
* Raise and sustain indoor plants skillfully.
* Draft landscape plans for commercial and residential sectors.

Total 32 hours **2 hrs / week**

UNIT 1 - Concept and Classification of Landscape Garden **10 hrs**

* Introduction to Landscape Garden Definition, Importance and Scope of landscape garden
* Types of Gardens -English garden, French garden, Mughal garden, Japanese garden, Italian garden and Persian garden
* Gardens based on styles–Formal , Informal and Free style

UNIT 2 -Layout, Design Principles and Components in Landscape **10hrs**

* Layout- The foreground area, The private living area and The service area
* Design Elements-Line, Form, Color, Texture, Space and Pattern in garden layouts Beauty Principles-Balance, Proportion, Scale, Rhythm and Harmony – adoption in garden and landscape layouts
* Classification of Landscape and plants Classification of ornamental plants: Annual, Biennial and Perennial

UNIT 3 - Indoor Gardening, Garden Decor and Adornment **12 hrs**

* Factors considered for growing indoor plants, selection and placement ,types of indoor plants ,care and maintenance
* Basic requirements for maintenance of garden plants-temperature, light, water, air, nutrients and space. garden tools and equipment, insecticides and pesticides, pruning methods
* Bonsai-plants suitable for bonsai culture, techniques and styles

REFERENCES:

1. Ashraf, A. M. (2010). A Handbook of Landscape Gardening and Environment.India:Agrobios
2. Bose et al., (2011).Floriculture and Landscaping. Calcutta: Allied Publishers
3. Bruce, S. (2016).Thinking about Landscape Architecture: Principles of Design Profession for the 21st Century. London: Routledge Taylor and Francis group
4. Carols, S. (2017). Eco Landscape Design. UK: Scitus Publisher
5. Encyclopaedia of Landscape Design (2017). Planning, Building and planting Your Perfect Outdoor Space. New Delhi: DK Publishers

6.Kumar, N. (2010).Introduction to Horticulture.Nagarcoil: Rajalakshmi Publications

7.Larson, A. (2013). Introduction to Floriculture.London:Academic Press Publishers

8.Lyall, S. (2012). Designing the New Landscape. California: Thames and Hudson publishers

9.Moir, J. (2018). New Landscape Ideas that Work.Vermont: Taunton Press Inc

10.Shaheer, et al., (2013). Landscape Architecture in India: a Reader. New Delhi: L A Publisher

11.Singh,A.K., and Sisodia. A. (2017). Text Book of Floriculture and Landscaping. New Delhi:New India Publishing Agency.

COMPULSORY PAPER

IV SEMESTER

PAPER-XIII PUBLIC HEALTH NUTRITION

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course outcome:

At the end of the course the student should be able to: -

* Know basics of public health nutrition and understand need of prioritizing nutritional issues.
* Assess nutritional health status of community.
* Understand nutritional programmes and policies and apply ICT in formulation of community nutrition education programme.

Total 32 hours **2 hrs / week**

UNIT 1 - Introduction to Public Health Nutrition **10 hrs**

* Concept and Scope of Public Health Nutrition, Roles and responsibilities of public health nutritionist.
* Optimum health, malnutrition (under nutrition, overweight, obesity, micronutrient deficiency), nutrition intervention, nutrition monitoring & surveillance, nutrition education, morbidity, mortality rate.

* Nutrition – Consequences of Malnutrition, Strategies to Overcome Malnutrition, Nutrition, and food security.

UNIT 2 - Nutritional Status and Assessment **10 hrs**

* Introduction, Definition of Nutritional Status, Nutritional assessment-, Anthropometry and other clinical measures, Instruments.
* Techniques commonly used in public health (weight, height & BMI)
* WHO growth standards, its use, implications, classification to define mild, moderate & severe forms of malnutrition.

UNIT 3 - Nutritional Intervention **12 hrs**

* Specific nutrient Deficiency signs & symptoms (Vitamin A, Iron, Iodine, B complex vitamins), PEM.
* National nutrition policy – National Prophylaxis programmes (vitamin A, Iron, iodine etc.,), ICDS, Mid day meal.

REFERENCES :

1. Scrimshaw NS, Taylor CE, Gordon JE. Interactions of nutrition and infection. Geneva: WHO; 1968.
2. Gwatkin D, Wilcox J, Wray J. Can health and nutrition interventions make a difference? Washington DC: Overseas Development Council; 1980. (Monograph13)
3. WHO; UNICEF. The declaration of Alma Ata. International conference on primary health care jointly sponsored by WHO and UNICEF. Geneva: WHO; 1978.
4. WHO; UNICEF. Integrated Management of Childhood Illness, chart booklet. Geneva: WHO; 2008.
5. Maternal and child undernutrition. Lancet. 2008;371(9608):270–273. [7 March 2013]; http://www .thelancet .com/series/maternal-and-child-undernutrition. [PubMed]
6. Allen LH, Gillespie SR. What works? A review of the efficacy and effectiveness of nutriton interventions. Geneva and Manila: ADB and ACC/SCN, Manila; 2001. (ACC/SCN Nutrition Policy Paper No. 19; ADB Nutrition and Development Series No.5)
8. Victora CG, Habicht JP, Bryce J. Evidence-based public health: moving beyond randomized trials. American Journal of Public Health. 2004;94 (3):400–405. [PMC free article] [PubMed]
10. Tontisirin K, Winichagoon P. Community-based programmes: success factors for public nutrition derived from the experience in Thailand. Food and Nutrition Bulletin.1999;2000 (3):315–322.
11. Gillespie S, Mason J, Martorell R. How nutrition improves. Geneva: ACC/SCN; 1996. (Nutrition Policy Discussion Paper No. 15)
12. World Bank; UNICEF. Combating malnutrition: time to act. Gillespie S, McLachlan M, Shrimpton R, editors. Washington DC: World Bank; 2003.
13. Mason JB, etal. Community health and nutrition programs. Disease control priorities in developing countries. 2nd edition. Jamison DT, et al., editors. Washington DC: World Bank; 2006. pp. 1063–1074. [PubMed]

Question paper pattern for Major papers of **(I, II, III, IV, V & VI)** Semester Examination in BSC Home Science

SEMESTER MONTH YEAR

Code: TITLE OF THE COURSE
PAPER

Time: 3Hours Max.Marks:80

PART - A

I. Answer any TEN of the following questions 10x2=20

a.
b.
c.
d.
e.
f.
g,
h.
i.
j.
k.
l.

PART-B

II. Answer any THREE of the following questions. 3x4=12

1.
2.
3.
4.

PART-C

III. Answer any FOUR of the following questions. 4x6=24

5.
6.
7.
8.
9.

PART-D

IV. Answer any THREE of the following questions. 3x8=24

10.
11.
12.
13.

Note: Sixth Semester will have Internship / Project with viva, which can be undertaken in Hospitals / Food Industry / or any other related field of Home Science as compulsory comprises of 2 credits.

Question paper pattern for ELECTIVE **[III, IV Semester]** COMPULSORY papers of **(IV, V)** Semester Examination in BSC Home science

SEMESTER MONTH YEAR

Code: TITLE OF THE COURSE
PAPER

Time: 2 Hours Max.Marks:40

PART - A

I. Answer any SIX of the following questions 6x2=12

a.
b.
c.
d.
e.
f.
g

PART-B

II. Answer any TWO of the following questions. 2x4=8

1.
2.
3.

PART-C

III. Answer any FOUR of the following questions. 4x5=20

4.
5.
6.
7.
8.