NEP SYLLABUS

FOR

SEMESTER-I

IN

B.Sc. HOME SCIENCE

GONDWANA UNIVERSITY

GADCHIROLI (M.S.)

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Gondwana University, Gadchiroli
NEP 2020 U.G. PROGRAMME SESSION 2024-25
Faculty of Science and Technology
Programme Name - B.Sc. Home-Science SEM- I

Sr. No.	Course Category	Subject name		Total Credit	Teaching Scheme (Hrs)			Examination Scheme									Total Marks
								Theory					Practical				
					Theory	Practical	Total Hrs.	UA	CA	Total Mark	Min. Passing	Duration of Exam (Hrs.)	UA	CA	Total Mark	Min. Passing	
1	Gr Subject	Select any Two core group subject from Annesure-1	Subject-I (Home-science) 1)Fundamental of Food science and Nutrition OR 2) Fundamental of Home-science Extension OR 3) Fundamental of Family Resource Management OR 4) Fundamental of Textile and clothing OR 5) Fundamental of Human Development	02	02	--	02	40	10	50	20	02	--	--	--	--	50
			ii) Subject II- Major Subject from Applied Science	02	02	--	02	40	10	50	20	02	--	--	--	--	50
			iii) Practical Based on Subject –I	02	--	04	04	--	--	--	--	--	30	20	50	25	50
			iv) Practical Based on Subject –II	02	--	04	04	--	--	--	--	--	30	20	50	25	50
2	OE	Group-A (Any one from Annexure –II) i)Basic chemistry ii) Housing and home		02	02	--	02	40	10	50	20	02	--	--	--	--	50

		furnishing														
3	**VSC**	**Practical skill related to home science (Preparation and preservation of food OR Preparation of teaching material OR Communication Skill OR Accessories in Home Decoration OR Tie and Dye Techniques) (Annexure-III)**	**02**	**--**	**04**	**04**	**--**	**--**	**--**	**--**	**--**	**30**	**20**	**50**	**25**	**50**
4	**SEC**	**i) Food Adulteration ii) Dyeing and printing iii) Extension learning (Annexure-IV)**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
5	**VEC**	**Audit Course (Anyone from Annexure –V)**	**02**	**02**	**--**	**02**	**--**	**50**	**50**	**20**	**--**	**--**	**--**	**--**	**--**	**50**
6	**AEC**	**English/Marathi/Hindi/Bengali /Pali/ Supplementary english (Annexure –VI)**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
7	**IKS**	**Generic IKS**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
8	**CC**	**NCC/NSS/Yoga/Sports**	**02**	**--**	**04**	**04**	**--**	**--**	**--**	**--**	**--**	**--**	**50**	**50**	**25**	**50**
Total			**22**	**14**	**16**	**30**	**240**	**110**	**350**	**140**	**12**	**90**	**110**	**200**	**100**	**550**

Abbreviations:
OE : Generic/ Open Electives
SEC: Skill Enhancement Courses **AEC:** Ability Enhancement Courses:
IKS: Indian Knowledge System **VEC:** Value Education Courses
VSEC/VSC: Vocational Skill and Skill Enhancement Courses

Note(s):

1)Student shall opt any one subject out of Five from core group-I
2) As per open elective (OE)is concerned, students shall opt one subject from Group-A
3) Generic IKS will be common for all Faculties in the first Semester as per Government letter No. क्र. एनईपी.२०२२/प्र.क्र.०९/विशि—३(शिकाना) दिनांक २५ जानेवारी, २०२४.
4) VSC Shall be based on Group Subject.

B.Sc. Home Science Semester-I
Core Subject (Credit-2+2)
1. Fundamentals of Food Science and Nutrition

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Course Outcomes:

The student at the completion of the course will be able to:

- To understand the function of food and the role of various nutrients, their requirements and effect of deficiency and excess.
- To promote basic knowledge pertaining to various food groups and nutrients.
- To make students familiar with the different method of cooking, their advantages and disadvantages
- To develop ability to improve the nutritional quality of food.

UNIT-I	**INTRODUCTION TO FOOD NUTRITION** 1. Basic terms used in food and nutrition. Definitions-Foods, Nutrients, Nutrition ,Optimum nutrition, Nutritional Status, Health, Balanced diet. 2. Functions of food-Physiological ,Psychological, Social, Cultural 3. Scope of Nutrition, Food groups. **MACRONUTRIENTS** 1. **Carbohydrates-** Definition, Classification, Sources, Functions, Requirement, Deficiency 2. **Protein-** Definition, Classification, Sources, Functions, Requirement, Deficiency. 3. **Fats-** Definition, Classification, Sources, Functions, Requirement, Deficiency.
UNIT-II	**MICRONUTRIENTS** **Vitamins**- Definition, Classification 1. **Fat Soluble Vitamins**- Sources, Function, Deficiency of :Vitamin A, Vitamin D, Vitamin E ,Vitamin K 2. **Water Soluble Vitamins** - Sources, Function, Deficiency of : Thiamine (B1), Riboflavin (B2) ,Nicotinic acid (B3) , Pyridoxine (B6) ,Biotin ,Folic acid, Cynocobalamine (B12),Vitamin C
UNIT-III	**Minerals – Sources ,Functions and Deficiency** **1. Major Minerals:-** Sodium ,Potassium ,Calcium, Phosphorous 2. **Minor Minerals**:- Iron ,Iodine , Magnesium ,Zinc **3. Water:-** Functions of water in human body, water balance, sources of water in human body ,effect of dehydration and its prevention

PRACTICALS

1. Food Presentation and Table Setting.
2. Preparation of Ingredients : Pre-preparation, methods of mixing, methods of cooking.
3. Simple cooking- preparation, serving, calculation of cost and yield

a) Appetizers : Soups (any 2).
b) Starters: a) Paneer Preparations b) Samosa c) Kabab d) Cutlet (any 2).
c) Salad : a) Sprouted b)Vegetable c) Fruits (any 2).
d) Raita: (any 2).
e) Snacks : Pakoras, Namkin, Sandwiches, Idli, Dhokla (any 2)

INTERNAL ASSESSMENT (Refer Direction)

1. Market survey of the Food Commodities as per Food Groups and their cost.
2. Latest Kitchen appliances in the market-their use & upkeep (any 5).

Books Recommended:-

1. **Nutritive Value of Indian Foods:** *Gopalan C, Rama Shastri & Balasubramanin S.C.*, National Institute of Nutrition, 1993

2. **Food Science, Chemistry and Experimental Foods**: *Dr.M.Swaminathan*,The Bangalore Printing and Publishing Co. Ltd. 1995.

3. **Essentials of Food and Nutrition,** Vol.I (Fundamental aspects): *Dr. Swaminathan*, 2nd edition BAPPCO, 1985.

4. **Applied Nutrition**: *R. Rajlakshami* Oxford & IBH Pub. Co.pvt Ltd,3rd edition, 1981.

5. **Foods and Nutrition**: *The Educational Planning Group, Delhi,* Arya Publishing House. 3rd edition, 1991.

6. **Food Chemistry**: *Meyer, L.H.* CBS Publishers & Distributors, Delhi, 1987.

7. **Scope manual on Nutrition**: *Latham M.C., McGandy, McCann M.B.& Stare F.J. Published by the Upjohn Co, Kalamazoo, Michigan,* 2nd edition. The Upjohn Co, Kalamazoo, Michigan 1972.

8. **Every Day Indian Processed foods**: *K.T. Achaya*, National Book Trust, India, 1984.

9. **The book of Ingredients**: *Philip Dowell & Adrian Bailey, Michaey*, Michael Joseph, Ltd, 1980.

10. **Nutrition an integrated approach** : Pike Ruth L and Brown Myrtle L. 1970 :: Wiley Eastern Pvt Ltd.

11. **Nutrition Science:** B. Srilakshmi 4th Edition. New Age International Ltd.

12. **Fundamentals of Foods, Nutrition and Diet Therapy** :S.R Mudambi and M.V.Rajgopal. New Age International Ltd.

13. **Modern Cookery**: Thangam Phillip

B.Sc. Home Science Semester-I
Core Subject (Credit-2+2)
2. Fundamentals of Home Science Extension

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Objective:

 To impart knowledge regarding:
 To impart knowledge of extension education:
 To acquire knowledge of meaning, fields and objectives of home science extension.
 To develop understanding the importance and functions, models of communication.
 To understand the role of extension teaching method in the field of extension.

Unit – I

Extension Education : Definition of education, types of education, definition of extension education, origin & meaning of extension education, concept , objectives, principles fields, philosophy of extension education, variation between formal & extension education, essential links in the chain of rural development.

Unit – II

Home Science Extension : Definition concept of home science extension, fields of home science extension, philosophy of home science extension, characteristics of home science extension, objectives of home science extension, scope of home science extension, guiding of principles of home science extension.

Unit – lll

Extension Teaching Methods : Meaning & definition, importance functions and classification of extension teaching methods according to use and according to form, study of various extension teaching methods.

Interpersonal approach : Visits (Home & Farm), calls (Office & Telephone) & letters.(Personal & Official)

Group approach : Lecture, Method demonstration, study tour, group discussion and meetings. Mass approach : Circular letter, result demonstration, puppet show, exhibition and film show.

Practical's :

1. Handling and operation of camera for extension photography.
2. Practice of preparing circular letter to motivate homemakers for acceptance of new ideas.
3. Visits to rural areas to get information about rural living (their needs, interests, customs and traditions, standard of living, economic status, educational background, habits, etc)
4. Framing of simple questionnaire to collect data on rural life style.

Internal Assessment :

1) Preparation of a twelve page album on rural development activities.

Reference :

1. Dahama, O.P. and Bhatnagar O.P. Education and communication for development oxford and B.M. publishing Co. New Delhi.
2. Chandra A : Introduction of home science, Metropolitan book co. New Delhi.
3. Supe S.V. An Introduction to extension education oxford and IBH publishing co. New Delhi.

4. Singh K. Rural sociology, prakashan Kendra, Lucknow.
5. FarkadeT.Gonge, S.Gruhavigyanvistar, Vidyaprakashan, Nagpur

B.Sc. Home Science Semester-I
Core Subject (Credit-2+2)
3. Fundamentals of Family Resource Management

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

OBJECTIVE:

1) To develop good taste through the study of basic elements and principles of design
2) To develop aesthetic sense and to be good art consumer

Unit I – **Introduction to Foundation of art and Design**

1. Meaning of art
2. Elements of art: - a) Line b) Form c) Color d) Texture e) Space d) Light g) Pattern h) Idea
3. Concept of design
4. Objectives to design – i) Beauty ii) Expressiveness iii) Functionalism
5. Design and principles of art
6. Types of design : **-** i) Structural ii) Decorative iii) Naturalistic iv) Stylized v) Geometric iv) Abstract vii) Modern viii) Traditional

Unit II-Principal of Design in interior

3. **Harmony: -** a) Definition and importance

4. b) Line and shape ,texture, idea and color c)Application in Interior decoration
3. Balance:- a) Definition and Importance b) types of Balance – Formal, Informal, Redial

c) Balance in interior & exterior decoration
4. Rhythm –
a) Definition and importance

b) Application in interior decoration

5. Proportion –
a) Definition and importance

6. Emphasis –
a) Definition and importance
Unit III –Importance of colour and colour scheme in Interior Decoration
1. Classification of color
i) Primary ii) Secondary iii) Intermediate iv) Tertiary

iv) Quaternary v) Neutral
2. Characteristics or dimensions of colour
i) Hue ii) Value iii) Intensity
3. Colour wheel, Warm & cool colours

4. Colour Schemes:
a) Related colour scheme: i) Monochromatic ii) Analogous
b) Contrast colour scheme: i) Complementary ii) Double complementary

iii) Split complementary iv) Triad v) Neutral
5. Colour schemes for different rooms
i) Kitchen and dinning
ii) Drawing room /Living room
iii) Bed room

Practical

Experiment No. 1.- Types of design
i) Structural ii) Decorative No. iii) - Naturalistic and stylized No. iv) - Geometric and Abstract No. v)- Modern and Traditional No. vi) - Types of Balance

B.Sc. Home Science Semester-I
Core Subject (Credit-2+2)
4. Fundamentals of Human Development

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Objectives:
1. To make the students aware of science of Human Development.
2. To make student aware of methods of studying human behavior.

Theory:

Unit I - Introduction to Human Development
1. What is Human Development? Definition of HD, why do we need to study HD?
2. Brief history and studies of HD
3. HD as a scientific discipline
4. Scope of the subject
5. Developmental period
6. Rate of development and developmental task.

Unit II – **Growth & Development**
1. Meaning of growth & development, Principles of growth & development
2. Principal of growth and development
3. Factors influencing growth and development and dimensions of development
4. Role of heredity and Environment, maturation, genetic endowment and learning
5. Needs and Rights of children's

Unit III: - Stages of development –
1. Female reproductive system, menstrual cycle, Fertilization, Conception.
2. Prenatal Development- Factors influencing prenatal Development.
3. Complications /Hazards during pregnancy.
4.Disturbance and care during pregnancy.
5.Birth process, kind of birth

Practicals
1. Methods of child study –
Anthropometry, Observation, Interview, Questionnaire, Case study, Projective, Psychological tests, Sociometry, Longitudinal and cross sectional approach
2. Survey of 10 pregnant women (use of questionnaire is compulsory) 3. Observation of children while play.(record to be maintained)
4. Various developments of children.

Internal Assessment (Refer Direction)
1. Visit to crèche and Anganwadi
2. Preparation of resources files on human development.
3. Preparation of work book on any one.
4. Type of play.
5. Type of discipline, Heredity and environment etc.

References:
Santrock, J.W. (2006). Child development New York : Mc Graw Hill.
Swaminathan, M. (1998), The first five years : A critical perspective on early childhood care and education in India. New Delhi : Sage .

B.Sc. Home Science Semester-I
Core Subject (Credit-2+2)
5. Fundamentals of Textile & Clothing

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Course Outcome

1. To get acquainted with basic knowledge of textile fibers.
2. To acquire knowledge of various principles of clothing constructions, and their application.

Unit I:

1. Scope of textile and Importance of clothing :.
2. Classification of textile fibers, General and essential properties of textile fibers
3. Manufacturing process of natural fibers.;-Cotton, silk, wool ,jute.
4. Physical and chemical properties of natural fibres

Unit II :

1. Manufacturing process, of manmade fibers: - viscose rayon, nylon, polyester Acrylic.
2. Physical and chemical properties of manmade fibres
3. Latest fibres :- Introduction and use of - Organic cotton , Bamboo , Soy, Lyocel, Metallic, Lycra (spandex)

Unit III :

1. Factors affecting clothing : Age, Sex, Cultural influence, Occupation, Economic Status, Social status, Regional beliefs.
2. Introduction to Tools for pattern making and Garment construction- Measuring tools, marking tools, Cutting tools, sewing tools, Pressing tools,
3. Sewing machine –parts, functions, care
4. Types of sewing machines and their uses (over lock, embroidery, computerized, industrial)

PRACTICALS

1. Demonstration of taking body measurements.
2. Drafting, cutting & stitching of ;-Apron, , Bloomer, Baby Frock 3. Embroidery album Decorative stitches - chain, herringbone, stem, running, lazy-daisy, satin, French knot, bullion stitch, buttonhole(Make 4 samples of combination of 2 decorative stitches)
4. Introduction to a sewing machine with a demonstration and practice of learning the running of sewing machine on paper on straight lines, curved lines and corners

Internal Assessment (Refer Direction)

1. Make a decorative article by using combination of decorative stitches (embroidery)
2. Visit to Textile Mill or handloom unit

OPEN ELECTIVE (OE) (Credit: 2) (Group A)

SEMESTER –I
1. BASIC CHEMISTRY

Objective:
To know about different method of purification of water
To learn about alloy and physical properties of liquid.
To learn about different properties and application of colloids and emulsion.

UNIT-I

(a) Water: Sources, impurities, hard and soft water, hardness, temporary and permanent hardness, disadvantages of hard water for domestic purpose,

(b) Methods of purification of water for domestic purpose i) Screening, ii) sedimentation, iii) Coagulation, iv) filtration and v) sterilization: boiling, chlorination (chlorine gas, Bleaching powder, chlorine tablet and high test hypochlorite).

Unit-II

(a) Alloy: Definition, Classification of alloy (ferrous and Non-ferrous), purpose of making an Alloy with examples.

(b) Composition and Application of stainless steel and brass.

Unit-III

a) Solutions: Different ways of expressing concentration of solution (**Equivalent weight, molecular weight, normality and molarity)**

b) Physical Properties of Liquids: Surface tension (definition, determination of surface tension by Stalagmometer method). Viscosity (definition, determination by Ostwald's Viscometer).

INTERNAL ASSESSMENT:

The internal assessment marks shall be awarded on the basis of assignments like class test, attendance, project assignments, seminar, study tour, industrial visits, field work, visits to educational and research organizations or any other innovative practice/ activity.

SEMESTER -I

2. HOUSING AND HOME FURNISHING

Objectives

1 To develop understanding regarding housing needs, Principles, Planning of house

2 To experiment with space, preparing house plans.

3 To develop graphic skills to express ideas in design, forms, knowledge of landscaping and economic use of space.

Theory COURSE CONTENT

Unit I

a) Concept of Housing

b) Importance of Housing

c) Family Housing Needs – (i) Protection (ii) Economic Needs (iii) Affectional (iv) Social

(v) Standards of Living (vi) Housing Goals (vii) Style (viii) Function
(ix) Occupation (x) Physical and Mental Health
d) Selection of Site for House -(i) Physical features (ii) Type of soil (iii) Hygienic Conditions
(iv) Practical convenience (v) Legal point of view (vi)Economic Conditions
e) Principles of house planning - (i) Orientation (ii) Aspect (iii) Prospect (iv) Privacy

(v) Grouping (vi) Roominess (vii) Furniture (viii) Sanitation

(ix) Circulation (x) Economy

Unit II

a) Factors affecting house planning: (i) Income (ii) Occupation (iii) Size of the family (iv) Socio- economic status of the family

b) Study of various rooms in the house with respect to:

(i) Living area: (a) Verandah (b) Drawing room

(ii) Sleeping area: (a) Bedroom (b) Guestroom (iii)Service area: (a) Staircase (b) Toilet (c) Dining room

(d) Store room

(e) Kitchen-Types of kitchen: (a)One wall

(b) Two wall (c) U-shape (d) L-shape
(f) Storage facility in different rooms

Unit III-

Arrangement of Furniture

1. a)Selection of furniture: (i) Expressiveness (ii) Styles (iii) Beauty (iv) Utility (v) Comfort (vi)

Flexibility (vii) Durability (viii) Cost

b) Material Required for construction: (i) Wood (ii) Metal and alloy (iii) Plastic (iv) Glass (v) Willow, ratton, cane.
c) Care of furniture

2. (a) application of art elements and principles in arrangement.
(b) Various kinds of Architectural symbols used in scale drawing.
(c) Arrangement in different rooms- (i) Living (ii) Dining (iii) Bedroom

INTERNAL ASSESSMENT

Accessories in Home Decoration (any two)
1) Articles made out of low cost / waste material
(a) Fabric painting, oil, water, nib, knife, sand, glass, stain glass etc.
(b) Wax work / candles etc.
2) Preparation of bonsai.
3) Visit to Landscape /rock garden.

Books Recommended:

1. Agan T. C. –„The House" Oxford and I. B. H. publishing Co.
2. Ann Reilly; Susan A. Roth – „The Home Landscape", Home planners Inco. Tucson, Arizona.
3. Deshpande R. S. – „Modern Indian Homes in India", United Book Corporation, Poona, 2nd Edition.
4. Deshpande R. S. – „Build your own Home", United Book Corporation, Poona, 4th Edition.
5. Deshpande R. S. –„Low Cost Housing", United Book Corporation, Poona, 4th Editi
6. Goldstin H. / Goldstein V. – „Art in Everyday Life" MacMillan Co., New York, 4th Edition.
7. Pak – Tin &HelanYeap – „Feng Shui – Health Harmony" B.Jain Publishers Pvt Ltd., New Delhi, 1998.
8. Rutt A. – „Home Furnishing", Wiley Eastern Pvt.Ltd., New Delhi, 2nd Edition. Shrivastav – „Remedial Vastu Shastra", Manoj Publication, Delhi, 200

B.Sc. Home Science Semester-I

VSC (Credit: 2)

1. **Preparation and preservation of food**

Total Marks	**50**
UA	**30**
CA	**20**

1.Preparation of Jam
2.Preparation of Jelly
3.Preparation of marmalade
4.Preparation of sugar syrup
5.Preservation by using salt (Pickling)
6.Preparation of Dahi
7. Preparation of Yogurt
8. Preparation of Shrikhand.

B.Sc. Home Science Semester-I

VSC (Credit: 2)

2. Preparation of teaching material

Total Marks	**50**
UA	**30**
CA	**20**

The oral communication methods: (stories, songs, Music, description, explanation, etc.) and conversational methods (conversation, heuristic conversation, questioning on a special subject,etc.).
 Exploratory learning methods: direct exploration of objects and phenomena (systematic and independent observation, small experiments, etc.) and indirect exploration (demonstration through pictures, films,etc.).
 Methods based on the pupils' direct voluntary action (exercises, practical work, etc.) and simulated action (didactic games, learning through drama,etc.).
 Use of natural materials (plants, shells, seeds, insects, rocks, sand, etc.)
 Intuitive materials (cast and clay models, Puppets, blocks, puzzles, mazes, etc)
 Figurative aids (pictures, photographs, atlas books, maps

Creative Activities - importance, Types and values promoted, method of giving instructions. Process of scripting for puppet plays and creative drama.
a) Painting – free hand, finger, thread, wax resist&spray
b) Printing -block, leaf, stencil,thumb
c) Pasting – collage, paper mosaic,sand
d) Miscellaneous-etching, marbling, dough modelling

B.Sc. Home Science Semester-I

VSC (Credit: 2)

3. Communication Skill

Total Marks	**50**
UA	**30**
CA	**20**

1) Writing of a circular letter to communicate effectively to masses.
2) Preparation of radio Script.
3) Preparation of Television Script.
4) Preparation of News story to provide Extension communication to learners.
5) Practice of Public speaking based on topic related to any home science aspects.

B.Sc. Home Science Semester-I

VSC (Credit: 2)

4. Accessories in Home Decoration

Total Marks	**50**
UA	**30**
CA	**20**

1) Articles made out of low cost / waste material
(a) Fabric painting, oil, water, nib, knife, sand, glass, stain glass etc.
(b) Wax work / candles etc.
2) Preparation of bonsai.
3) Visit to Landscape /rock garden.

B.Sc. Home Science Semester-I

VSC (Credit: 2)

5. Tie and Dye Techniques

Total Marks	**50**
UA	**30**
CA	**20**

1.Dyeing with direct dyes- cotton
2. Dyeing with reactive dyes- cotton, wool, silk
3. Dyeing with acid dyes- wool, silk
4. Tie and dye technique
5. Block printing using single and double coloured blocks, various placements of blocks
6. Batik technique Make sample and article of screen, block, stencil.and batik

7. Preparation of an article/garment with a combination of techniques learnt above

SEC

SEMESTER -I

1. Food Adulteration

Objectives:

- To understand the role and significance of food adulteration in human life and public health
- To improve the knowledge of students about food adulteration & food laws
- To educate student about common food adulterants and their detection

Unit-I

Food Adulteration: Meaning and definition, Classification of adulterants, causes of food adulteration, Identification of food adulteration, Health hazards of adulterants.

Unit-II

Nature of adulterants, precaution of avoiding food adulteration. Toxic constituents in food, common food adulterants.

Unit-III

Household and Laboratory scale methods to detect the adulterants in various foods like

1) Milk and milk products
2) Oil and fats
3) Spices and condiments
4) Wheat and other flours
5) Fruits and vegetables product
6) Beverages alcoholic and non-alcoholic

INTERNAL ASSESSMENT:

The internal assessment marks shall be awarded on the basis of assignments like class test, attendance, project assignments, seminar, study tour, industrial visits, field work, visits to educational and research organizations or any other innovative practice/ activity.

REFERENCES:

1. N.Shakuntala manay and M. Shadaksharaswamy (2008) Food facts and principals
2. Frank Weiss food adulteration
3. Edwin M Bruce Detection of the common food adulterants.
4. Shyam Narayan jha (2016) Rapid detection of food adulterants and contaminants.
5. Shiva Kiran, R.R. (2012). Manual for detection of common food adulterants, First edition, IAPEN
6. Prevention of food adulteration Act, 4th Edition, Ashoka Law house, 2002.

Semester-I
2. Dyeing and printing

OBJECTIVES-

- To provide comprehensive knowledge about the concepts of dyeing and printing of textiles.
- To foster understanding of traditional Indian embroideries-motifs used, colour combinations used etc.

Unit I:

1. Dyes : Classification, Natural and synthetic ,different types of dyes – direct, acid, basic, reactive, sulpher, vat, azo and natural dyes (vegetable, animal, mineral and mordents used) .

2. Dyeing- Introduction, classification, Methods of dyeing: stock, yarn, piece and union and cross dyeing ,garment dyeing ,Common dyeing defects

Unit II:

2. Dyeing vs. Printing

3. Styles of printing – Direct, Resist, Discharge

3. Methods of printing – Block,stencil, Roller, Screen, Rotary screen, Heat Transfer,

4. Digital, Flock

5. Common printing defects and their remedy

Unit III:

1. Preparation of cloth for printing, types of ingredients used in printing, types of different thickeners, After treatment of printed goods,.

2. Colorfastness: Factors affecting colorfastness, Testing Wash fastness, Light fastness

3. Paitnings: Kalamkari, Madhubani, Warli.

2. Prints :Sanganeri print fabrics, bagru print fabrics

INTERNAL ASSESSMENT

The Internal Assessment marks will be given on different type of article and album by different Printing.

a) Block printing d) Batik

b) Screen e) Tie and Dye

c) Stencil

Semester-l
3. Extension learning

Objectives:

1. To develop understanding regarding extension teaching
2. To develop understanding regarding extension learning
3. To impart the knowledge of motivation foe extension achiever
4. To understand the role of extension worker in rural development.

THEORY:

Unit –I

Extension Teaching: Meaning, definition of extension teaching and importance of extension teaching, factors contributing to teaching, principles of extension teaching, steps involve in extension teaching and desirable traits of a teacher for effective extension work.

Unit-II

Extension Learning: Meaning and definition of extension learning ,laws of learning, principles of learning, ideal learning situation to achieve the goal, learning experience.

Unit-III Extension Motivation: Definition and classification of motivation, importance of motivation in extension work, basic elements to motivate the home maker.

Internal Assignment

Write a detail account on one the progressive programme held in your village Eg. Gramin Swachata Aabhiyan, sarva shikshaa abhiyan etc.

Books Recommended:

1. Supe. S. V. An Introduction to Extension Education – Oxford Publishing Company, New Delhi & Kolkata.1999.
2. Dahama. O. P. and Batnagar O. P. Education & Communication for Development, Oxford & IBH Publishing Co., New Delhi, 1977.
3. Reddy Adivi. A. Extension Education, Shree Laxmi Press, Bapatla, Guntor, A.P.
4. Singh J. K., Mass Media and Information Technology, Mangaldeep Publication, Jaipur.
5. Kumar K. J. L., Mass Communication in India, Jaico Publishing House, Mumbai.
6. Audio Visual Aids for Co-operative Education and Training, FAO Publications

NEP SYLLABUS

FOR

SEMESTER-II

IN

B.Sc. HOME SCIENCE

GONDWANA UNIVERSITY

GADCHIROLI (M.S.)

Gondwana University, Gadchiroli
NEP 2020 U.G. PROGRAMME SESSION 2024-25
Faculty of Science and Technology
Programme Name - B.Sc. Home-Science SEM- II

Sr. No.	Course Category	Subject name		Total Credit	Teaching Scheme (Hrs)			Examination Scheme										Total Marks
								Theory					Practical					
					Theory	Practical	Total Hrs.	UA	CA	Total Mark	Min. Passing	Duration of Exam (Hrs.)	UA	CA	Total Mark	Min. Passing		
1	Gr Subject	Select any Two core group subject from Annesure -1	Subject-I (Home-science) 1)Fundamental of Food science and Nutrition OR 2) Fundamental of Home-science Extension OR 3) Fundamental of Family Resource Management OR 4) Fundamental of Textile and clothing OR 5) Fundamental of Human Development	02	02	--	02	40	10	50	20	02	--	--	--	--		50
			ii) Subject II- Major Subject Applied Science	02	02	--	02	40	10	50	20	02	--	--	--	--		50
			iii) Practical Based on Subject –I	02	--	04	04	--	--	--	--	--	30	20	50	25		50
			iv) Practical Based on Subject –II	02	--	04	04	--	--	--	--	--	30	20	50	25		50

2	**OE**	**Group-A (Any one from Annexure –VIII) i) Basic ii)Fabric study iii) Food additives**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
		Group-B i) Ecology and environment ii)Community Development iii) Infant stimulation and toddlerhood	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
3	**VSC**	**Practical skill related to homescience (Preparation and preservation of food OR Preparation of teaching material OR Communication Skill OR Accessories in Home Decoration OR Tie and Dye Techniques) (Annexure-IX)**	**02**	**--**	**04**	**04**	**--**	**--**	**--**	**--**	**--**	**30**	**20**	**50**	**25**	**50**
4	**SEC**	**i) Food preservation(Annexure X)**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
5	**VEC**	**Audit Course (Any one from Annexure –XI)**	**02**	**02**	**--**	**02**	**--**	**50**	**50**	**20**	**--**	**--**	**--**	**--**	**--**	**50**
6	**AEC**	**English/Marathi/Hindi/Bengali/Pal i/ Supplementary English (Annexure XII)**	**02**	**02**	**--**	**02**	**40**	**10**	**50**	**20**	**02**	**--**	**--**	**--**	**--**	**50**
8	**CC**	**NCC/NSS/Yoga/Sports**	**02**	**--**	**04**	**04**	**--**	**--**	**--**	**--**	**--**	**--**	**50**	**50**	**25**	**50**
Total			**22**	**14**	**16**	**30**	**240**	**110**	**350**	**140**	**12**	**90**	**110**	**200**	**100**	**550**

Abbreviations:

OE : Generic/ Open Electives

SEC: Skill Enhancement Courses **AEC:** Ability Enhancement Courses:

IKS: Indian Knowledge System **VEC:** Value Education Courses

VSEC/VSC: Vocational Skill and Skill Enhancement Courses

Note(s):

1)Student shall opt any one subject out of five from core group-I (Other than Semester-I)

2) As per open elective (OE)is concerned, students shall opt one subject from Group-A and group B

3) VSC Shall be based on Group Subject.

B.Sc. Home Science Semester-II
Core Subject (Credit-2+2)
1. Fundamentals of Food Science and Nutrition

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Course Outcomes:

The student at the completion of the course will be able to:

- To understand the function of food and the role of various nutrients, their requirements and effect of deficiency and excess.
- To promote basic knowledge pertaining to various food groups and nutrients.
- To make students familiar with the different method of cooking, their advantages and disadvantages
- To develop ability to improve the nutritional quality of food.

UNIT-I	**INTRODUCTION TO FOOD NUTRITION** 4. Basic terms used in food and nutrition. Definitions-Foods, Nutrients, Nutrition ,Optimum nutrition, Nutritional Status, Health, Balanced diet. 5. Functions of food-Physiological ,Psychological, Social, Cultural 6. Scope of Nutrition, Food groups. **MACRONUTRIENTS** 4. **Carbohydrates-** Definition, Classification, Sources, Functions, Requirement, Deficiency 5. **Protein-** Definition, Classification, Sources, Functions, Requirement, Deficiency. 6. **Fats-** Definition, Classification, Sources, Functions, Requirement, Deficiency.
UNIT-II	**MICRONUTRIENTS** **Vitamins**- Definition, Classification 3. **Fat Soluble Vitamins**- Sources, Function, Deficiency of :Vitamin A, Vitamin D, Vitamin E ,Vitamin K 4. **Water Soluble Vitamins** - Sources, Function, Deficiency of : Thiamine (B1), Riboflavin (B2) ,Nicotinic acid (B3) , Pyridoxine (B6) ,Biotin ,Folic acid, Cynocobalamine (B12),Vitamin C
UNIT-III	**Minerals – Sources ,Functions and Deficiency** **3. Major Minerals:-** Sodium ,Potassium ,Calcium, Phosphorous 4. **Minor Minerals**:- Iron ,Iodine , Magnesium ,Zinc **3. Water:-** Functions of water in human body, water balance, sources of water in human body ,effect of dehydration and its prevention

PRACTICALS

1. Food Presentation and Table Setting.
2. Preparation of Ingredients : Pre-preparation, methods of mixing, methods of cooking.
3. Simple cooking- preparation, serving, calculation of cost and yield

a) Appetizers : Soups (any 2).
b) Starters: a) Paneer Preparations b) Samosa c) Kabab d) Cutlet (any 2).
c) Salad : a) Sprouted b)Vegetable c) Fruits (any 2).
d) Raita: (any 2).
e) Snacks : Pakoras, Namkin, Sandwiches, Idli, Dhokla (any 2)

INTERNAL ASSESSMENT (Refer Direction)

1. Market survey of the Food Commodities as per Food Groups and their cost.
2. Latest Kitchen appliances in the market-their use & upkeep (any 5).

Books Recommended:-

1. **Nutritive Value of Indian Foods:** *Gopalan C, Rama Shastri & Balasubramanin S.C*., National Institute of Nutrition, 1993

2. **Food Science, Chemistry and Experimental Foods**: *Dr.M.Swaminathan*,The Bangalore Printing and Publishing Co. Ltd. 1995.

3. **Essentials of Food and Nutrition,** Vol.I (Fundamental aspects): *Dr. Swaminathan*, 2nd edition BAPPCO, 1985.

4. **Applied Nutrition**: *R. Rajlakshami* Oxford & IBH Pub. Co.pvt Ltd,3rd edition, 1981.

5. **Foods and Nutrition**: *The Educational Planning Group, Delhi,* Arya Publishing House. 3rd edition, 1991.

6. **Food Chemistry**: *Meyer, L.H*. CBS Publishers & Distributors, Delhi, 1987.

7. **Scope manual on Nutrition**: *Latham M.C., McGandy, McCann M.B.& Stare F.J. Published by the Upjohn Co, Kalamazoo, Michigan*, 2nd edition. The Upjohn Co, Kalamazoo, Michigan 1972.

8. **Every Day Indian Processed foods**: *K.T. Achaya*, National Book Trust, India, 1984.

9. **The book of Ingredients**: *Philip Dowell & Adrian Bailey, Michaey*, Michael Joseph, Ltd, 1980.

10. **Nutrition an integrated approach** : Pike Ruth L and Brown Myrtle L. 1970 :: Wiley Eastern Pvt Ltd.

11. **Nutrition Science:** B. Srilakshmi 4th Edition. New Age International Ltd.

12. **Fundamentals of Foods, Nutrition and Diet Therapy** :S.R Mudambi and M.V.Rajgopal. New Age International Ltd.

13. **Modern Cookery**: Thangam Phillip

B.Sc. Home Science Semester-II
Core Subject (Credit-2+2)
2. Fundamentals of Home Science Extension

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Objective:

 To impart knowledge regarding:
 To impart knowledge of extension education:
 To acquire knowledge of meaning, fields and objectives of home science extension.
 To develop understanding the importance and functions, models of communication.
 To understand the role of extension teaching method in the field of extension.

Unit – I

Extension Education : Definition of education, types of education, definition of extension education, origin & meaning of extension education, concept , objectives, principles fields, philosophy of extension education, variation between formal & extension education, essential links in the chain of rural development.

Unit – II

Home Science Extension : Definition concept of home science extension, fields of home science extension, philosophy of home science extension, characteristics of home science extension, objectives of home science extension, scope of home science extension, guiding of principles of home science extension.

Unit – lll

Extension Teaching Methods : Meaning & definition, importance functions and classification of extension teaching methods according to use and according to form, study of various extension teaching methods.

Interpersonal approach : Visits (Home & Farm), calls (Office & Telephone) & letters.(Personal & Official)

Group approach : Lecture, Method demonstration, study tour, group discussion and meetings. Mass approach : Circular letter, result demonstration, puppet show, exhibition and film show.

Practical's :

1. Handling and operation of camera for extension photography.
2. Practice of preparing circular letter to motivate homemakers for acceptance of new ideas.
3. Visits to rural areas to get information about rural living (their needs, interests, customs and traditions, standard of living, economic status, educational background, habits, etc)
4. Framing of simple questionnaire to collect data on rural life style.

Internal Assessment :

1) Preparation of a twelve page album on rural development activities.

Reference :

1. Dahama, O.P. and Bhatnagar O.P. Education and communication for development oxford and B.M. publishing Co. New Delhi.
2. Chandra A : Introduction of home science, Metropolitan book co. New Delhi.
3. Supe S.V. An Introduction to extension education oxford and IBH publishing co. New Delhi.

4. Singh K. Rural sociology, prakashan Kendra, Lucknow.
5. FarkadeT.Gonge, S.Gruhavigyanvistar, Vidyaprakashan, Nagpur

B.Sc. Home Science Semester-II
Core Subject (Credit-2+2)
3. Fundamentals of Family Resource Management

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

OBJECTIVE:

1) To develop good taste through the study of basic elements and principles of design
2) To develop aesthetic sense and to be good art consumer

Unit I – **Introduction to Foundation of art and Design**

1. Meaning of art
2. Elements of art: - a) Line b) Form c) Color d) Texture e) Space d) Light g) Pattern h) Idea
3. Concept of design
4. Objectives to design – i) Beauty ii) Expressiveness iii) Functionalism
5. Design and principles of art
6. Types of design : **-** i) Structural ii) Decorative iii) Naturalistic iv) Stylized v) Geometric iv) Abstract vii) Modern viii) Traditional

Unit II-Principal of Design in interior

3. **Harmony: -** a) Definition and importance

4. b) Line and shape ,texture, idea and color c)Application in Interior decoration
3. Balance:- a) Definition and Importance b) types of Balance – Formal, Informal, Redial

c) Balance in interior & exterior decoration
4. Rhythm –
a) Definition and importance

b) Application in interior decoration

5. Proportion –
a) Definition and importance

6. Emphasis –
a) Definition and importance
Unit III –Importance of colour and colour scheme in Interior Decoration
1. Classification of color
i) Primary ii) Secondary iii) Intermediate iv) Tertiary

iv) Quaternary v) Neutral
2. Characteristics or dimensions of colour
i) Hue ii) Value iii) Intensity
3. Colour wheel, Warm & cool colours

4. Colour Schemes:
a) Related colour scheme: i) Monochromatic ii) Analogous
b) Contrast colour scheme: i) Complementary ii) Double complementary

iii) Split complementary iv) Triad v) Neutral
5. Colour schemes for different rooms
i) Kitchen and dinning
ii) Drawing room /Living room
iii) Bed room

Practical

Experiment No. 1.- Types of design
i) Structural ii) Decorative No. iii) - Naturalistic and stylized No. iv) - Geometric and Abstract No. v)- Modern and Traditional No. vi) - Types of Balance

B.Sc. Home Science Semester-II
Core Subject (Credit-2+2)
4. Fundamentals of Human Development

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Objectives:

1. To make the students aware of science of Human Development.
2. To make student aware of methods of studying human behavior.

Theory:

Unit I - Introduction to Human Development

1. What is Human Development? Definition of HD, why do we need to study HD?
2. Brief history and studies of HD
3. HD as a scientific discipline
4. Scope of the subject
5. Developmental period
6. Rate of development and developmental task.

Unit II – Growth & Development

1. Meaning of growth & development, Principles of growth & development
2. Principal of growth and development
3. Factors influencing growth and development and dimensions of development
4. Role of heredity and Environment, maturation, genetic endowment and learning
5. Needs and Rights of children's

Unit III: - Stages of development –

1. Female reproductive system, menstrual cycle, Fertilization, Conception.
2. Prenatal Development- Factors influencing prenatal Development.
3. Complications /Hazards during pregnancy.
4. Disturbance and care during pregnancy.
5. Birth process, kind of birth

Practicals

1. Methods of child study –
Anthropometry, Observation, Interview, Questionnaire, Case study, Projective, Psychological tests, Sociometry, Longitudinal and cross sectional approach
2. Survey of 10 pregnant women (use of questionnaire is compulsory) 3. Observation of children while play.(record to be maintained)
4. Various developments of children.

Internal Assessment (Refer Direction)

1. Visit to crèche and Anganwadi
2. Preparation of resources files on human development.
3. Preparation of work book on any one.
4. Type of play.
5. Type of discipline, Heredity and environment etc.

References:

Santrock, J.W. (2006). Child development New York : Mc Graw Hill.
Swaminathan, M. (1998), The first five years : A critical perspective on early childhood care and education in India. New Delhi : Sage .

B.Sc. Home Science Semester-II
Core Subject (Credit-2+2)
5. Fundamentals of Textile & Clothing

Total Marks	**100**
Theory	**40**
IA	**10**
Practical's	**50**

Course Outcome

1. To get acquainted with basic knowledge of textile fibers.
2. To acquire knowledge of various principles of clothing constructions, and their application.

Unit I:

1. Scope of textile and Importance of clothing :.
2. Classification of textile fibers, General and essential properties of textile fibers
3. Manufacturing process of natural fibers.;-Cotton, silk, wool ,jute.
4. Physical and chemical properties of natural fibres

Unit II :

1. Manufacturing process, of manmade fibers: - viscose rayon, nylon, polyester Acrylic.
2. Physical and chemical properties of manmade fibres
3. Latest fibres :- Introduction and use of - Organic cotton , Bamboo , Soy, Lyocel, Metallic, Lycra (spandex)

Unit III :

1. Factors affecting clothing : Age, Sex, Cultural influence, Occupation, Economic Status, Social status, Regional beliefs.
2. Introduction to Tools for pattern making and Garment construction- Measuring tools, marking tools, Cutting tools, sewing tools, Pressing tools,
3. Sewing machine –parts, functions, care
4. Types of sewing machines and their uses (over lock, embroidery, computerized, industrial)

PRACTICALS

1. Demonstration of taking body measurements.
2. Drafting, cutting & stitching of ;-Apron, , Bloomer, Baby Frock 3. Embroidery album Decorative stitches - chain, herringbone, stem, running, lazy-daisy, satin, French knot, bullion stitch, buttonhole(Make 4 samples of combination of 2 decorative stitches)
4. Introduction to a sewing machine with a demonstration and practice of learning the running of sewing machine on paper on straight lines, curved lines and corners

Internal Assessment (Refer Direction)

1. Make a decorative article by using combination of decorative stitches (embroidery)
2. Visit to Textile Mill or handloom unit

OE (Credit:2) (Group A)
Semester-II
1. Basic Physics

COURSE OBJECTIVES: At the end of course, students will able to

1. Understand basic unit of various physical quantities and measurement devices.
2. Enable the students to get knowledge on electricity and electrical safety devices.
3. Impart knowledge on the basics of semiconductor.
4. Inculcate an idea of significance of nano materials properties, synthesis method and characterization.
5. Develop the ability to apply concepts of Nanomaterials and computer to understanding various applications.

UNIT	Content
UNIT:I UNITS, DIMENSION AND MEASUREMENT	Unit, physical quantities: fundamental and derived quantities and their units with dimension, Systems of units: CGS, MKS and SI, Scalar and Vector Physical Quantities. Causes of Errors in Measurement, Applications of Vernier calipers, Screw gauge.
UNIT-II ELECTRICITY AND SAFETY DEVICES	Concept of charge, Coulomb's inverse square law, Electric field, Electric field intensity, potential and potential difference, Concept of current, voltage, resistance, capacitor, Inductor, Transformer, Ohm's Law, Conductors and Insulators of electricity and their applications, Household wiring- safety features- fuse, MCB and earthing,Lightning conductor.
UNIT-III SEMICONDUCTOR PHYSICS	Formation of energy bands in solid, classification of material on the basis of energy band, Intrinsic Semiconductors – Carrier concentration in intrinsic semiconductors – extrinsic semiconductors - Carrier concentration in N-type & P-type semiconductor, P-N junction diode, Forward biasing, Reverse Biasing and various types of diode.

Course Outcomes:

1. Develop ability to choose a physical approach to understanding of advanced areas in Physics.
2. Develop a better understanding of physics as a fundamental discipline.
3. Gain an understanding of developing areas in Nanomaterials and computers and their possible Applications.
4. Be comfortable with fundamental ideas in areas like semiconductor, electrical and safety devices.
5. Increase understanding of the type of questions addressed by theories in and methods of physics in different fields.

Text Books:

1. Engg. Physics by Avadhanulu & Kshirsagar S. Chand Prakashan.

2. A Text book of Engg. Physics, N. N. Padole and S. A. Pawade, DNA Publication, Nagpur 2021
3. A textbook on Physics for B.Sc (Home Science) by N. N. Padole-2023

Reference Books:

1. Physics- Unit and Dimension: Master Book for Physics by T. M. Kishan
2. Fundamentals of Physics by David Halliday, Robert Resnik And Jerle Walker John Wiley &Sons 2002
3. Fundamentals of Nanotechnology by N. N. Padole, Lap Lambert Academic Publishing 2022
4. Electronic Engineering Material & Devices by John Allison (TMH)
5. Applied Physics by P.K. Mittal, I.K. International
6. Applied Physics by K. C. Nandi, Tech. Max. Pune

Semester-II
2. FABRIC STUDY

OBJECTIVES:

1. To understand the importance and necessity of various construction techniques for different fabrics, and to acquire the skills to apply those construction techniques in a sample form
2. To enhance the knowledge of fabrics.

Unit I :

1. Types of Yarn – Simple, novelty, textured yarns. Yarn twist,
2. Spinning Process- Mechanical- Ring spinning, Open-end spinning.
3. Chemical spinning – Dry, wet, melt.
4. Blends : Reasons for blending, methods of blending,

Unit II :-Methods of Fabric construction Weaving Knitting, Felting and Briding and non woven fabric, Weaving – Parts of Hand looms and Process

Unit III

1. Finishing Process :- General and special finishing. Purpose of 1. Standard weaves :- Plane and derivates, twill and derivatives, satin and sateen, honeycomb, mockleno.
2. Basic Knitting Technology :- Principles of weaving and knitting, Introduction to weft and warp knitting.
3. Knitting:- Classification of weft knitting machines. Terms and definition of weft knitting.
4. Study of basic weft knit structures and their characteristics finishes.
2. Sizing, singeing, desizing, scoring, bleaching, mercerizing, calendaring and special calendaring., tentering and napping finishes.
3. Wrinkle free finishes:- Water repellent, Flame retardant and antimicrobial finish, shrinkage Cntrol.

INTERNAL ASSESSMENT

1. Preparation of sample book based on trimmings, fasteners.
2. Preparation of Charts/ Assignments.

REFERENCE BOOKS:

1. Aswani K.T. Fancy Weaving Mechanism, Mahajan Books, Ahmedabad.
2. DeulkarDurga - Household Textile and laundry work, Atmaram and sons, Delhi,
3. Dongorkemy Kamala S.- The Romance of Indian Embroidery, Thakur and Co. Bombay.
4. Dorothy Siegart, Lyle - Modern Textiles, John Wiley and Sons. Inc New York.
5. Nisbet H. - Grammer of Textile Design, Taraporwala and Sons, Bombay

6. PanditSavitri - Indian Embroidery, its variegated charms.
7. Complete Guide to Sewing-Readers Digest, The reader‟s digest association, 1976
8. Complete Book of Sewing, Alison Smith Dorling Kindersley, 1999
9. Singer Sewing Book, Gladys Cunningham, The Singer Company

Semester-II

3. Food Additives

Objectives:

- To teach various types of food additives

Unit-I

Food additives: Definition, classification, Functions and uses of food additives, effect of food additives. Microbial antagonists. Awareness while using food additives.

Unit-II

Sweetening agent: Definition, Classification, importance and role of sweetening agent in food processing.

Flavoring agent: Definition, Classification, importance and role of flavoring agent in food processing.

Unit-II

Coloring agent: Definition, Classification, importance and role of Coloring agent in food processing.

Leavening agent: Definition, Classification, importance and role of leavening agent in food processing.

INTERNAL ASSESSMENT:
The internal assessment marks shall be awarded on the basis of assignments like class test, attendance, project assignments, seminar, study tour, industrial visits, field work, visits to educational and research organizations or any other innovative practice/ activity.

REFERENCES:

1. Food additives A Larry branen, P Michael Davidson and seppo salminen CRC Book Presss. USA.

2. Food additives S.N.Mahindru APH Publishing corporation, Drya Ganj, New delhi.

3. Food colors, Flavors and additives technology handbook NIR Board of consultants and engineer national institute of industrial research, kamala nagar delhi.

4. Food chemistry H.D.Belitz, W. Grosh and P.Schieberle 4th revised and extended edition,springer.

OE (Credit: 2) (Group B)
SEMESTER – II
1. Ecology and Environment

Course Outcomes:

1. Develop ability to choose a physical approach to understanding of advanced areas in Biology.
2. Develop a better understanding of Ecology as a fundamental discipline.
3. Gain an understanding of developing areas in Biology and their possible Applications.

Unit I Ecology

1 **Ecology**- Definition, types branches of ecology and significance.
2 **Climatic Factors**: Atmosphere, Light, Temperature.
3. **Edaphic Factors**: Paedogenesis (process), Soil profile and properties (Physical and Chemical).

Unit II Ecology

1 **Biotic Factors:** Interactions between plants and animals, interaction between plants growing in a community, interactions between plants and soil microorganisms.
2 Biogeochemical Cycles: Water, Carbon, Nitrogen.
(Oxygen cycle, Carbon cycle, Nitrogen cycle and Hydrological cycle)

Unit III Ecosystem

1 Ecosystem: Definition, Biotic and Abiotic components, Types
2 Structure, details structure of grassland and pond ecosystem.
3 Food chains, Food web, Ecological pyramid.

Text Books:

4. Environmental Biology by P.D. Sharma
5. Ecology and Environment by P. D. Sharma
6. Plant Ecology, Biodiversity and plant geography by O. P. Singh & A. N. Shende.
7. Environmental pollution by S. S. Dara

SEMESTER – II

2. Community Development

Unit-l

Community Development: Meaning and definition of community development, elements of community development, objectives of community development programme, philosophy behind community development programme.

UNIT-II

Community Organization-

Meaning and concept of community organization, importance, objectives, principles underlined in community organization, methods of community organization in extension work.

UNIT-III

Development programme

Definition of development, need and importance of development programme in the field of home science. Role and impact of IRDP, ICDS,NPFW,NAEP etc. in upliftment of rural/urban families.

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INTERNAL ASSIGNMENT

Arranging photos in photo-album on any developmental activity in village.

Books Recommended:

1. Supe. S. V. An Introduction to Extension Education – Oxford Publishing Company, New Delhi & Kolkata.1999.
2. Dahama. O. P. and Batnagar O. P. Education & Communication for Development, Oxford & IBH Publishing Co., New Delhi, 1977.
3. Reddy Adivi. A. Extension Education, Shree Laxmi Press, Bapatla, Guntor, A.P.
4. Singh J. K., Mass Media and Information Technology, Mangaldeep Publication, Jaipur.
5. Kumar K. J. L., Mass Communication in India, Jaico Publishing House, Mumbai.
6. Audio Visual Aids for Co-operative Education and Training, FAO Publications.

SEMESTER – II

3. Infant Stimulation and Toddlerhood

UNIT-I Infancy:-

- (0-2 years) Neonate- an overview, reflexes, APGAR scale, adjustments of neonate,
- Factors affecting, Physical development height, weight, head circumference.
- Definition, changes in body proportion & structure, common motor skills,
- pre-speech forms of communication, speech skills, cognitive
- Developmental process, sensory motor development, socio-emotional development.

Unit-II Care:-

● Immunization.
● Guidance in feeding, weaning, teething, toilet training, bathing, sleeping, health &
● Postnatal care of mother & baby, importance of breast feeding , advantages of breast feeding , scientific method feeding .

Unit – III Toddlerhood:-

● Characteristics, developmental tasks, physical development, muscle control, speech development, emotional behavior, socialization, interest in play, development of understanding beginnings of morality, hazards & happiness.

Internal Assesment:-

1. Survey of ten lactating mother (use of questionnaire is compulsory)
2. Visit to maternity ward.
3. Visit to well-baby clinic (Record to be maintained)

Book Recommended:-

1. Developmental Psychology: Elizabeth Hurlock, 5thedition, 1981, Tata McGraw Hill Publishing Co. New Delhi
2. Human Development: Dian E Papalia& Sally Wendkos olds, 5 Eth dition 1981, Tata McGraw Hill Publishing Co. New Delhi.
3. Child Psychology:Vatsayayan, 3rd edition KedarNath Ram NathMeerul.
4. Developmental Psychology:Vatsayayan, 3rd edition KedarNath Ram NathMeerul.
5. Children in Crèche: Alfred D`Souza, Intellectual Publishing House, Delhi

B.Sc. Home Science Semester-II

VSC (Credit: 2)

1. **Preparation and preservation of food**

Total Marks	**50**
UA	**30**
CA	**20**

1.Preparation of Jam
2.Preparation of Jelly
3.Preparation of marmalade
4.Preparation of sugar syrup
5.Preservation by using salt (Pickling)
6.Preparation of Dahi
7. Preparation of Yogurt
8. Preparation of Shrikhand.

B.Sc. Home Science Semester-II

VSC (Credit: 2)

2. Preparation of teaching material

Total Marks	**50**
UA	**30**
CA	**20**

The oral communication methods: (stories, songs, Music, description, explanation, etc.) and conversational methods (conversation, heuristic conversation, questioning on a special subject,etc.).

 Exploratory learning methods: direct exploration of objects and phenomena (systematic and independent observation, small experiments, etc.) and indirect exploration (demonstration through pictures, films,etc.).

 Methods based on the pupils' direct voluntary action (exercises, practical work, etc.) and simulated action (didactic games, learning through drama,etc.).

 Use of natural materials (plants, shells, seeds, insects, rocks, sand, etc.)

 Intuitive materials (cast and clay models, Puppets, blocks, puzzles, mazes, etc)

 Figurative aids (pictures, photographs, atlas books, maps

Creative Activities - importance, Types and values promoted, method of giving instructions. Process of scripting for puppet plays and creative drama.

a) Painting – free hand, finger, thread, wax resist&spray
b) Printing -block, leaf, stencil,thumb
c) Pasting – collage, paper mosaic,sand
d) Miscellaneous-etching, marbling, dough modelling

B.Sc. Home Science Semester-II

VSC (Credit: 2)

3. Communication Skill

Total Marks	**50**
UA	**30**
CA	**20**

1) Writing of a circular letter to communicate effectively to masses.
2) Preparation of radio Script.
3) Preparation of Television Script.
4) Preparation of News story to provide Extension communication to learners.
5) Practice of public speaking topic based on any home science aspects.

B.Sc. Home Science Semester-I

VSC (Credit: 2)

4. Accessories in Home Decoration

Total Marks	**50**
UA	**30**
CA	**20**

1) Articles made out of low cost / waste material
(a) Fabric painting, oil, water, nib, knife, sand, glass, stain glass etc.
(b) Wax work / candles etc.
2) Preparation of bonsai.
3) Visit to Landscape /rock garden.

B.Sc. Home Science Semester-II

VSC (Credit: 2)

5. Tie and Dye Techniques

Total Marks	**50**
UA	**30**
CA	**20**

1.Dyeing with direct dyes- cotton
2. Dyeing with reactive dyes- cotton, wool, silk
3. Dyeing with acid dyes- wool, silk
4. Tie and dye technique
5. Block printing using single and double coloured blocks, various placements of blocks
6. Batik technique Make sample and article of screen, block, stencil.and batik

7. Preparation of an article/garment with a combination of techniques learnt above

(SEC) SEMESTER-II
Food Preservation

Unit 1 Fundamentals of Food Preservation
-Concept
- Importance of food preservation
-Principles of food preservation
-Techniques of food preservation.

Unit 2 Microorganisms in food
-Introduction
-Types of Microorganisms
-Conditions for growth.
-Food spoilage & their control

Unit 3 Preservation by preservatives
-Concept and definition
-Types
-Natural preservatives
-Synthetic preservatives

Unit 4 Irradiation
- Concept, definition
-Principles of irradiation.
- Types
-Application.

INTERNAL ASSESSMENT:
The internal assessment marks shall be awarded on the basis of assignments like class test, attendance, project assignments, seminar, study tour, industrial visits, field work, visits to educational and research organizations or any other innovative practice/ activity.

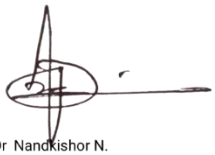
Reference:
1. Food Preservation and processing by Kalila, MnoranjanSood, Sangita.
2. Food microbiology by M.R. Adom M.O. Moss.
3. Modern Food Microbiology by James M.
4. Niir Board : Modern Technology of Agro Processing and Agriculture Waste of India
Re 2000.

Dr. P. L. Telgade

(Mr. N.M. Ghatbandhe)

Dr. Priya A. Sangole
D. K. Mahila Mahavidyalaya
Kurkheda.

Aroonae
(Dr. A. N. Shende)



(Dr Nandkishor N. Padole)

Singh
(Dr. O.P. Singh)