

**GONDWANA UNIVERSITY**

**B.Sc. (Home Science)**

**SEM-III**

**CBCS**

**Gondwana University**  
**B. Sc. HOME SCIENCE SEMESTER III**  
**PAPER - I**

**Meal Management**  
**(3T-1)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**OBJECTIVE:**

- 1) To learn Principles of Meal Planning
- 2) To plan and calculate balanced diets for family members

**COURSE CONTENT: THEORY**

**UNIT-I**

**Family Meal Management:**

**I) Meal Planning:**

- 1) Use and importance of RDA and Food Value Tables in meal
- 2) Principles, Objectives & Advantages of Meal Planning
- 3) Planning of balanced diet based on the following factors;
  - a) The nutritional needs of the family members-RDA for various age groups.
  - b) Sensory factors- eye appeal taste, aroma, flavour, texture, temperature, etc.
  - c) Other factors- availability of foodstuff, tradition, culture, religion, likes and dislikes, food fads and fallacies.

**II) Diet planning with reference to special individual requirements:**

- 1) Nutrition during adulthood: Balance diet for Adult Man, Women. Dietary guidelines for Adults (Reference Man / Reference Woman)

**UNIT II**

1) Nutrition for Mother:

A. Nutrition during pregnancy: a) Desirable weight gain b) Nutritional requirements c) Diet during normal pregnancy.

B. Nutrition during lactation: a) Nutritional Requirement b) Diet during Lactating Period.

### **UNIT - III**

#### **Family Meal Management:-**

Nutrition for specific age groups:

1. Nutrition during infancy: a) Nutritional requirements b) Types of milk fed to infants c) Advantages of Breast Feeding d) Bottle feeding e) Weaning and Supplementary foods

2) Nutrition during :

1. Preschool age. 2. School going children

a) Nutritional requirements

b) Establishment of good food habits

### **UNIT - IV:**

1) Nutrition during Adolescence

a) Nutritional requirements

b) Establishment of good food habits

2) **Geriatric nutrition (age over 60 years):**

a) Changes occurring during Ageing.

b) Nutritional requirements

c) Diet during old age.

<b>Total Marks</b>	<b>25</b>
--------------------	-----------

### **PRACTICAL**

1) Calculation of nutrients present in different recipes (any 2)

2) Calculation of cost and amount of food to get specified amount of calories (any 2)

3) Conversion of Weights and volumes of raw foods to cooked food (any 5)

4) Conversion and Weight of portion of food containing same level of a nutrient energy, proteins, iron, calcium.

5) Weights and Measures - Standard and household measure for raw and cooked food.

6) Meal Planning for various groups:

a) Planning and Calculation of a whole days model meal for

i) Adult Man ii) Adult Woman

iii) Pregnant women IV) Lactating woman v) Infant (10 to 12 months)

vi) Preschooler (2-6 years) vii) School Child (6-10 years)

viii) Adolescent Boy ix) Adolescent Girl x) Old Person

## INTERNAL ASSESSMENT

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

- 1) Visit to Balwadi and conduct anthropometry and write a report. (Sample Size: 25)
- 2) Visit to Schools and give nutrition education programme. (V –VII<sup>th</sup>Class)

## References

- 1) **Nutritive Value of Indian Foods:** *Gopalan C, Rama Sastri & Balasubramanian S.C.* National Institution, 1993.
- 2) **Understanding Nutrition:** *Whitney E.N. & Rolfes S.R.* 8<sup>th</sup> Edition West/ Wordsworth. 1999
- 3) **Dietetics:** *B Srilakshmi*, New Age International (P) Ltd., Publishers 3<sup>rd</sup> Edition, 2000
- 4) **Nutrition and Dietetics :** *Shubhangini A. Joshi*, Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1992
- 5) **Nutritional Research:** Current Scenario and Future Trends Editor: *K. Krishnaswamy*, Oxford and IBH Publication Co. Pvt. Ltd., 2000
- 6) **Nutritional Problems of India:** *Shukla P.K.*, Prentice Hall of India Pvt. Ltd., Delhi 1982
- 7) **The Science of Food:** An Introduction to Food Science, Nutrition and Microbiology: *Gaman P.M. & Sherrington K.B.* 2<sup>nd</sup> Edition. Pergamon Press, 1989.

# Gondwana University

## B.SC HOME SCIENCE SEMESTER - III

### PAPER -II

### Early Childhood Development and Education

(3T-2)

Total Marks	100
Theory	60
IA	15
I Practical	25

#### Objectives:

- \* To make students aware of development during childhood.
- \* To make students aware of preschool and its functioning.

#### Unit-I Early Childhood

Characteristics, Development tasks, Physical development, Motor development, Speech development, Emotional development, Socialization(play development), Development of understanding, Sex role typing, Family relationship, Personality developments, Hazards Behaviour problems - Enuresis, Thumb sucking, Stuttering, Stammering, Feeding problems, Temper Tantrums.

#### Unit-II Early Childhood Education

Significance of Early Childhood years, need, importance, objectives and goals Contributions of early childhood educators – Rousseau, Pestalozzi, Froebel, Montessori, GijjubhaiBadheka, TarabaiModak, AnutaiWagh, types of preschool education.

#### Unit-III Curriculum Planning

Factors influencing, Curriculum Planning, Routine activities – Free conversation, Storytelling, Music and rhyme, Creative activities, Science experiences, Social studies experiences, Children's literature Readiness programme, Nature walk, Festivals, Importance of school lunch/snack hour.

#### Unit- IV Administration and Organization

An introduction to building and equipment for preschool, Low cost equipments and games without equipment, Essential of records and reports in pre-school, Child Welfare, meaning, National and International organizations, Role and qualities of preschool teacher.

Total Marks	25
-------------	----

**Practicals:**

- i) Visit to a nursery school
- ii) Preparation of teaching aids for nursery teaching-puppets, charts, flash cards, posters etc.
- iii) Participation in a nursery school – five participations Record to be maintained.

**Internal Assessment:**

Total Marks	15
-------------	----

Assignment on Early Childhood Care & Education

**Books Recommended**

- I) Development Psychology                      Elizabeth Hurlock, 5<sup>th</sup> Edition  
Tata Mc Graw Hill Publishing Co.,New Delhi
  
- II) Early Childhood Education                      Dr. G.Pankajam, 1<sup>st</sup> Edi.  
(Foundation &Practice)                      The Indian Publication
  
- Early Childhood Education                      J.S. Growal

**Gondwana University**  
**B.Sc. HOME SCIENCE SEMESTER – III**  
**Textile Design**  
**PAPER – III**  
**(3T-3)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**Objectives**

1. To acquire knowledge of various methods of fabric construction.
2. To develop creativity in designing for prints.
3. To impart knowledge of traditional textiles of India.
4. Create awareness of different dyeing and printing techniques.

**Theory**

**Unit I:**

- 1 Design – Types, design development, motif, pattern and layout, design manipulation, inspiration from nature and history. Types of motifs from India, China, Japan ,
- 2 Elements of design and their effects- Line, shape, Color and Texture.
- 3 Principles of design and their effects- Proportion, Balance, Emphasis, Rhythm,
- 4 .Develop designs for saree, Dress material and dupatta, bedcover, curtain by using different designs.

**Unit II :**

- 1 Methods of fabric constructions : Weaving, - handloom, its parts and operation.  
Types of weaves, basic weaves, decorative weaves.-Dobby,Jacquardpile,Swivel,Lappet  
Double cloth
- 2 Introduction to Knitting – Classification, difference between warp and weft knitting, Basics of warp and weft knitting, ,uses, advantages and disadvantages,  
Non wovens :Bonded fabric, Felt -types and manufacturing process and their uses.  
Other methods of fabric constructions – Netting, lace making, braiding.

**Unit III :**

1. Finishes, Importance of finishes : General finishes – Scouring, bleaching, singeing, sizing, mercerizing, tentering, calendaring.

2. Special finishes: Special calendaring, napping, flame proofing, water proof and water repellency, shrinkage control, permanent press, wrinkle resistances.

#### **Unit IV :**

1. Regional embroidery : History, stitches, colour, material , threads and stitches used in Kantha of Bengal, Chamba of Himachal Pradesh, Kasuti of Karnataka, Kashida of Kashmir.
2. Phulkari of Panjab, Chikankary of Uttarpradesh, Manipuri from Manipur, Kathiyawadi of Gujrat.

<b>Total Marks</b>	<b>25</b>
--------------------	-----------

#### **Practical**

1. Make an embroidery album of Kantha of Bengal, Chamba of Himachal Pradesh, Kasuti of Karnataka, Kashida of Kashmir, Phulkari of Panjab, Chikankari of U.P Manipuri, Kathiawadi of Gujrat
2. Develop designs for saree, Dress material and dupatta, bedcover, curtain by using different design with different colours.

#### **INTERNAL ASSESSMENT**

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

1. The Internal Assessment marks will be given on different type of article by different type of regional embroidery.
  - a) Kantha of Bengal
  - b) Chamba of Himachal Pradesh,
  - c) Kasuti of Karnataka,
  - d) Kashida of Kashmir
  - e) Phulkari of Panjab
  - f) Chikankari of U.P
  - g) Manipuri
  - h) Kathiawadi of Gujrat

#### **BOOKS RECOMMENDED**

- Chattopadhyaya, K., Handicrafts of India, All India Handicrafts Board, New Delhi, 1975.
- Ikat textiles of India Chelna Desai, Chronicle Books, San Francisco, 1988
- Silk Brocades Yashodhara Roli & Janssen BV, New 2003
- Hand-woven Fabrics of India, Jaslen Dhamija and Jyotindra Jain, Mapin Publishing Pvt. Ltd. Ahmedabad, 1989
- Tie-Dyed textiles of India, Veronica Murphy & Rosemary Crill, Victoria



&Albert Museum, London, 1991

- Traditional Indian costumes and Textiles, ParulBhatnagar, Abhishek Publication, Chandigarh, 2004
- Designs for a life time UshaShrikant, SamataEntreprise,Mumbai, 2002
- Marsh, J.T., An Introduction to Textile Finishing, B.I. Publishers, 1979
- Corbman,P.B., Textiles-Fibre to Fabric, Gregg Division/McGraw Hill Book Co.,US, 1985
- Potter MD and Corbman BP. Textiles: Fibres to Fabric – Published by McGraw Hill Inc. U.S.A
- UshaShrikant - Ethnic Embroidery of India, SamaiaEnterprises , Mumbai.  
William Watson - Textile Design and colour, Longman Green and Co. London.

**Gondwana University**

**B.Sc. HOME SCIENCE SEMESTER III  
PAPER –IV (i) (Optional)**

**Extension Learning**

**3(T-4)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**Objectives:**

1. To develop understanding regarding extension teaching
2. To develop understanding regarding extension learning
3. To impart the knowledge of motivation for 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.

## Unit-IV

**Extension Worker:** Meaning and definition of extension worker, classification of extension worker, qualities of extension worker, role and duties of extension worker in the field of rural development, role of duties of subject matter specialist in the field of rural development.

### PRACTICAL:

Total Marks	25
-------------	----

1. Study of village panchayat and submission of report.
2. Conducting method demonstration on Home Science aspects to provide effective communication.
3. Handling and operation of O.H.P. for transparency presentation.
4. Preparation of flash cards and presentation of story to provide communication to the group of learners.

### INTERNAL ASSESSMENT

Total Marks	15
-------------	----

Write a detail account on one the progressive programme held in your village

Eg. GraminSwachataAabhiyan, sarvashikshaaabhiyan 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.

**Gondwana University**  
**B.Sc. Home Science Semester III**  
**PAPER – IV (ii) (Optional)**  
**Housing and Home Furnishing**  
**(3T-4)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**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, rattan, 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

## Unit IV

- (a) Bonsai- (i) History (ii) Preparation of soil (iii) Selection of plants (iv) Potting and repotting (v) Different styles (vi) Selection of containers (vii) Care
- (b) Landscaping- (i) Importance (ii) How a professional landscape design can enhance home (iii) Selecting landscape plants (iv) Selecting landscape structures/materials (v) Installing driveways and walkways (vi) Lighting (Outdoors) (vii) Garden ornaments

<b>Total Marks</b>	<b>25</b>
--------------------	-----------

## Practical

- Exp. No. 1: Symbols of various kinds of furniture used in scale drawing.  
Exp. No. 2: Arrangement of furniture with the help of symbol in Drawing room.  
Exp. No. 3: Arrangement of furniture with the help of symbol in Bed room.  
Exp. No. 4: Cleaning of different metals copper, silver, iron, brass, aluminum.  
Exp. No. 5: Care and cleaning of furniture

## INTERNAL ASSESSMENT

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

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, 2<sup>nd</sup> Edition.
4. Deshpande R. S. – ‘Build your own Home’, United Book Corporation, Poona, 4<sup>th</sup> Edition.
5. Deshpande R. S. – ‘Low Cost Housing’, United Book Corporation, Poona, 4<sup>th</sup> Edition.
6. Goldstin H. / Goldstein V. – ‘Art in Everyday Life’ MacMillan Co., New York, 4<sup>th</sup> Edition.
7. Pak – Tin & Helan Yeap – ‘Feng Shui – Health Harmony’ B.Jain Publishers Pvt Ltd., New Delhi, 1998.
8. Rutt A. – ‘Home Furnishing’, Wiley Eastern Pvt.Ltd., New Delhi, 2<sup>nd</sup> Edition.  
Shrivastav – ‘Remedial Vastu Shastra’, Manoj Publication, Delhi, 2001.**B.Sc HOME**

**Gondwana University**  
**B.Sc. HOME SCIENCE SEMESTER III**  
**Paper – V (i) (Optional)**  
**Applied Physiology**  
**3(T-5)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**Objectives:**

1. To understand the structure and function of various organs of human body.
2. To promote the basic knowledge of first aid.

**Unit – I**

1. Animal Cell – Definition, Structure and functions of cell organelles.
2. Tissue – Definition, classification, structure and functions of tissue.
3. Muscular system – Definition, types, structure and functions.

**Unit – II**

1. Locomotor system- Definition of bones, classification and functions.
2. Joints of the skeleton – Definition, types structure and functions.
3. Digestive system – Structure and functions of alimentary canal, associated glands. Process of digestion and absorption.

**Unit –III**

1. Excretory system – definition, structure and functions of excretory organs.
2. Formation of urine
3. Lymphatic System – definition of lymph, lymph circulatory system, spleen its structure and function.

## Unit –IV

1. Sense organs – Structure and functions of Eye, Ear, Nose, Tongue and Skin.
2. First Aid – Definition, first aid box, Importance of first aid. Triangular bandage – types and importance.

First aid during emergencies- Drowning, Burns and Scalds, Dog bite, Snake bite, artificial respiration

### INTERNAL ASSESSMENT :

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

### Internal Practical :

1. Study and identification of bones.
2. Study and use of Microscope.
3. Study of microscopic slides of common organs – lungs, artery, vein, liver, kidney, testis, ovary, salivary gland.
4. To examine the blood group and Rh-factor
5. Determination of hemoglobin by Sahli's method.

Marks distribution -25	
Experiment	07
Spotting	08
Viva-voce	05
Record book	05

### References / Books Recommended :

- i) Human Physiology - C. C. Chaterjee
- ii) Anatomy and Physiology for Nurses - Pears
- iii) Text book of Medical Physiology - A.C. Guyton
- iv) Foundation of Anatomy and physiology- Janet S. Ross, Kathleen J.W. Wilson



**Gondwana University**  
**B.Sc. HOME SCIENCE –SEMESTER -III**  
**Paper V (ii) (Optional)**  
**BASIC CHEMISTRY**  
**(3T-5)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
I Practical	25

**COURSE CONTENT:**  
**THEORY**

**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) gravity sand filter and pressure filtration and v) sterilization: boiling, chlorination (chlorine gas, bleaching powder, chlorine tablet and high test hypochlorite), ozonization, aeration and ultraviolet radiation

**Unit-II**

- (a) **Alloy:** Definition, Classification of alloy (ferrous and Non-ferrous), purpose of making an alloy
- (b) Effect of alloying various elements on properties of steel, composition and uses of stainless steel and brass.

**Unit-III**

- a) **Solutions:** Types of 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).

#### Unit-IV

(a) **Colloids:** Definition, types of colloidal systems, Types of colloidal solution, methods of preparation, properties (Tyndall Effect, Brownian Movement, Electrophoresis, Electro-osmosis) and colloids in daily life (applications)

(b) **Emulsion and gel:** definition, types, methods of preparation, properties and their applications.

#### INTERNAL ASSESSMENT :

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

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.

#### Internal Practical:

<b>Total Marks</b>	<b>25</b>
--------------------	-----------

#### A) Volumetric analysis:

1. Single acid base titration, Determine the Normality and weight per liter.
2. Determination of total and permanent hardness of water by EDTA titration.

#### B) Physical Experiments.

- 1) Determination of viscosity of given liquid by Ostwald's Viscometer.
- 2) Determination of Surface tension of given liquid by Stalagmometer.
- 3) Preparation of colloidal solution of starch.

#### BOOK RECOMMENDED:

1. Text-Book of organic Chemistry: B; S. Bahl and G.D. Tuli, S. Chand Publication, New Delhi.
2. Text Book of Physical Chemistry: B.S. Bahl and G.D. Tuli, S. Chand Publication, New Delhi.
3. A Text Book of Basic and Applied Chemistry, P.C. Jain and Monica Jain.

4. Polymer Science by V.R. Gowarikar, Wiley Ester Ltd. 1987.
5. Text Book of Organic Chemistry by J. L. Finar, Longman Publication.

### **Gondwana University**

#### **B.Sc. HOME SCIENCE –SEMESTER III**

#### **Apparel Construction-I**

#### **Skill Base**

<b>Total Marks</b>	<b>50</b>
--------------------	-----------

#### **Making sample of the followings:**

1. Different Types of pleats.
2. Different Types of Tucks.
3. Different Types of plackets.
4. Different Types of Neckline finishing.
5. Hemline finishing.
6. Different Types of waistline finishing and waist belt.
7. Different Types of Ruffles.
8. Shirring.
9. Different types of pockets.
10. Patch work.
11. Bows.
12. Fabric buttons and flowers.

Make a portfolio of the sample as given in the syllabus

#### **Books Recommended:-**

1. Complete guide to sewing – Reader’s Digest
2. Encyclopedia of dress Making – Raul Jewel
3. Comparative clothing construction techniques –S.S Chhabra

**GONDWANA UNIVERSITY**

**B.Sc. (Home Science)**

**SEM-IV**

**CBCS**

# Gondwana University

## B. Sc. HOME SCIENCE - SEMESTER IV

### PAPER - I Community Nutrition (4T-1)

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
Practical	25

#### OBJECTIVE:

- 1) To prepare standardized recipes for specific age groups and calculate the nutrients
- 2) To orient students to the basic principles of nutritional assessment as applied to the study of community nutrition.
- 3) To understand the importance and of nutrition education
- 4) To develop an understanding of the role of micro-organism in food.

#### COURSE CONTENT: THEORY

##### UNIT - I

###### 1) Malnutrition

- a) Definition and Types of malnutrition.
- b) Causes & Symptoms of malnutrition
- c) Commonly occurring Deficiencies of Malnutrition Diseases Generally Occurring due to Malnutrition.
- d) Prevalence of Malnutrition in India.
- e) Effects of malnutrition on general health, physical, mental and national development.

##### UNIT – II

###### Nutritional Assessment

- 1) Assessment of Nutritional Status:
  - a) Anthropometry.
  - b) Diet Survey
  - c) Clinical Assessment
  - d) Laboratory Method (Biochemical)

Limitations and interpretation of all the above parameters.

2) Role of National organizations (ICAR, ICMR, NIN, CFTRI) and International organizations (FAO, WHO, UNICEF, CARE) in Community Nutrition and Health.

### **UNIT – III**

#### **1) Nutrition Education**

A) Meaning, importance, objectives of Nutrition Education..

a) Methods and evaluation of Nutrition Education.

b) Problems involved in organizing Nutrition Education Programme for the community and how to solve them.

B) National Nutrition Programme: a) ICDS b) MDM Programme c) National Nutrition Anemia Prophylaxis Programme (NNAPP) and d) Vitamin A Prophylaxis Programme (VAPP) e) Goiter Control.

### **UNIT – IV**

#### **Principles underlying Food spoilage and Food preservation :Improving Shelf Life and Nutritional Quality of Food**

1. **Food Spoilage** :Types of Food Spoilage.Food Perishability based on shelf life.

#### **2. Food Preservation**

1) Importance of Food Preservation.

2) General Principles and Methods of Food Preservation

a) High/Low temperature (pasteurization/refrigeration/deep freezing)

b) Drying (sun-drying / mechanical drying)

c) Radiation

d) Preservatives.

3. **Food Fermentation**: Role of Microorganisms as food fermenting agent for products such as Idli, Curd, Butter, Cheese & Bread. Nutritive value of Fermented foods

4.**Leavening Agent**: Microbiological Chemical and Natural Leaveners.

<b>Total Marks</b>	<b>25</b>
Planning	05
Cooking	05
Calculation	05

**PRACTICAL:**

1) Planning, Preparation and Nutritive Calculation of selected recipes for :

Presentation	05
Record	05

- i) Weaning recipes for infants (any two)
- ii) Nutritive Finger Foods for Preschool Child (3-6 yrs) (any two)
- iii) Packed Tiffin's (small break) for school going child (6-8 years) (any 2)
- iv) Mini Meal for a school going child (any one)
- v) Packed Lunch for Adolescents / Adults (any one)
- vi) Nutritious Recipes for Adolescent Girl/ Boy (any two)
- vii) Nutritious Recipes for Adult man/ woman (any two)
- viii) Nutritious recipes for Pregnant mother (any two)
- ix) Soft Recipes for Old Age (any two).

**INTERNAL ASSESSMENT**

Any one of the following

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

- 1) Surveys to check the School lunches/ Mid day Meals.
- 2) Conduct a Survey and maintain record of BMI (Sample size: 50)
- 3) Preparation of Workbook/ Scrapbook on Food Spoilage and Food Preservation.
- 4) Canteen

**References**

- 1) **Nutritive Value of Indian Foods:** *Gopalan C, Rama Sastri & Balasubramanian S.C.* National Institution, 1993.
- 2) **Understanding Nutrition:** *Whitney E.N. & Rolfes S.R.* 8<sup>th</sup> Edition West/ Wordsworth. 1999
- 3) **Dietetics:** *B Srilakshmi*, New Age International (P) Ltd., Publishers 3<sup>rd</sup> Edition, 2000
- 4) **Nutrition and Dietetics :** *Shubhangini A. Joshi*, Tata McGraw Hill Publishing Co. Ltd., New Delhi, 1992
- 5) **Nutritional Research:** Current Scenario and Future Trends Editor: *K, Krishnaswamy*, Oxford and IBH Publication Co. Pvt. Ltd., 2000
- 6) **Nutritional Problems of India:** *Shukla P.K.*, Prentice Hall of India Pvt. Ltd., Delhi 1982
- 7) **Food Preservation and Processing:** *M. Kalyani* Publishers, 1996,
- 8) **Food Microbiology:** *Frazier W.C. & D.C. West Hoff.* McGraw – Hill Book Co. Ltd Inc. 1981.

- 9) **The Science of Food:** An Introduction to Food Science, Nutrition and Microbiology:  
*Gaman P.M. & Sherrington K.B.* 2<sup>nd</sup> Edition. Pergamon Press, 1989.

**Gondwana University**  
**B.SC HOME SCIENCE SEMESTER - IV**  
**PAPER -II**  
**Late Childhood and Adolescence**  
**(4T-2)**

<b>Total Mark</b>	<b>100</b>
Theory	60
IA	15
Practical	25

**Objectives:**

\*To make students aware of development during late childhood.

\*o make students aware of puberty, adolescence & concerns of adolescence.

**Unit: I**

**Late Childhood**

Characteristics, Developmental tasks, Physical development, Speech development, Social behavior(Play interest), Sex role typing, Family relationship, Personality changes, Hazards, Behavioral Problems – Hyper activity, Slow learners, Truancy, School dropouts, Nail biting, Ties.

**Unit –II Puberty**

Characteristics, Criteria, Causes and body changes. Effects of puberty changes and sources of concern, Hazards, Sex education.

**Unit - III Adolescent Development**

Characteristics, Developmental tasks, Physical changes, Emotionality, Morality, Adolescent interests, Personality changes, Hazards.

**Unit - IV Adolescent Care & Concerns**



Identity Formation, Family relationships, Parenting Skills, for Adolescents, Psychological Disturbances – Depression, substance abuse, Suicide, Adolescent Pregnancy, Eating disorders.

Total Marks	25
-------------	----

**Practicals:**

- i) Study of Prejudices, Emotions, Self Concept & Aspiration of school age children.
- ii) Survey of interest of late childhood children.
- iii) Study of Adolescent problems by survey method. Min. sample – 50 and calculate percentage record to be maintained.

Total Marks	15
-------------	----

**Internal Assessment:** Project on psychological disturbance of Adolescents.

**Books Recommended:**

- 1) Developmental Psychology: E.B.Hurlock, 5<sup>th</sup> Edition, 1981, Tata McGraw Hill Publishing Company, New Delhi.
- 2) Human Development: Diane, E. Papalia & Sally Wendkos Olds, Company, New Delhi.
- 3) Adolescent Development: E. B. Hurlocks, 5<sup>th</sup> Edition, 1981, Tata McGraw Hill Publishing Company, New Delhi.
- 4) The Psychology of Adolescent: A.T. Jerslid, 7<sup>th</sup> Edition, Prentice Hall Inc. Englewood Cliff's N. J., U.S.A.

## Gondwana University

### B.SC. HOME SCIENCE SEMESTER – IV PAPER – III DYEING AND PRINTING

4T-3

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
Practical	25

#### 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, sulphur, 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

### Unit IV: Traditional textiles of India

1. Traditional Indian Textiles -Sarees: Bandhani, Patola, Chanderi, Paithani, Dacca, Banarasi, Kanjivaram.,Brocades, Kashmiri Shawls. Jamdani, IkatPochampalli
2. Costumes of different states of India – Maharashtra, Punjab, Gujrat, Rajasthan, Tamilnadu. West Bengal, Kashmir.

### PRACTICAL

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

<b>Total Marks</b>	<b>25</b>
Printing	15
Record	10

### INTERNAL ASSESSMENT

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

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

- a) Block printing
- b) Screen
- c) Stencil
- d) Batik
- e) Tie and Dye

### BOOKS RECOMMENDED

- 1 Potter MD and Corbman BP. Textiles: Fibres to Fabric – Published by McGraw Hill Inc. U.S.A
- 2 UshaShrikant - Ethnic Embroidery of India, SamaiaEnterprises , Mumbai.
- 3 William Watson - Textile Design and colour, Longman Green and Co. London.
- 4 Vastrashilpvigyan by Vimla Sharma. Loyal Book Depot Meerut.
- 5 Vastrashastra: Prof. VimalAdhau Maharashtra VidhyapeethGranthNirmitMandalasathi, Vidhya Books Aurangabad.
- 6 VastravigyanavamParidhan - Dr. Vrunda Singh PanchsheelPrakashan Jaipur.
- 7 VastravigyanavamParidhan - Dr. PrarnilaVermaBihaar Hindi Granth Academy Bhopal.
- 8 VasiraShilpVigyan :Vimla Sharma ,.
- 9 VastravigyanKeMulSiddhant- Dr. G.P. Sheeri - Vinod PustakMandir Agra

**B.Sc. HOME SCIENCE SEMESTER IV**  
**PAPER – IV (i) Optional**  
**Extension Education (Rural Sociology)**

**4(T-4)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
Practical	25

**Objectives:**

1. To understand the nature of rural society and its problems.
2. To develop awareness regarding the women education.
3. To impart the knowledge of factors affecting status of women in the family.
4. To understand the role of vocationalisation in home science.

**Unit –I**

**Rural Sociology:** Meaning of sociology and rural sociology, Scope of Rural sociology, elements of rural sociology in India. Importance the study of rural sociology.

**Unit-II**

**Rural Society:** Meaning and definition of rural society, characteristics of rural society, Importance of rural society, classification of rural social groups and rural institutions.

**Unit-III**

**Social Control:** Meaning of social control, Agents of social control, Rural and urban life, Characteristics of urban life, control between urban and rural life.

## Unit-IV

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

### PRACTICAL:

<b>Total Marks</b>	<b>25</b>
--------------------	-----------

1. Preparation of extension folder on home science extension aspect.
2. Preparation of non-project teaching aid-chart.
3. Study of batch-gate to analysis working pattern and submission of report.
4. Practice of plant propagation method- budding/grafting.

### INTERNAL ASSESSMENT:

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

Preparation of kitchen garden in college premises.

### 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, Guntur, 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. Mehta D. S., Mass Communication and Journalism in India, Allied Publishers Pvt. Ltd., Chennai.

**Gondwana University**  
**B.Sc. HOME SCIENCE SEMESTER IV**  
**PAPER – IV (ii) Optional**  
**Housing and Home Furnishing**

**(4 T-4)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
Practical	25

**Objectives –**

- To gain knowledge about the role of internal amenities in contributing for satisfying family living
- To learn technique that will help one to construct some furnishing items, relative to their function and beauty.

**UNIT I -Internal Amenities**

1. Interior Decoration –i)Essential factors of interior decoration ii)Available material  
For decoration iv) Decoration in various rooms
2. House Drainage – i)Bath water ii)Laundry water iii) House cleaning water
3. Methods of house drainage – i) Dilution ii) Purification iii) Soakage pits.
4. Waste Disposal - Types of Refuse – i)Dry ii)Solid iii) Liquid
5. Methods of waste disposal –i) Tipping or dumping ii) Taking in to the sea  
iii) Compost formation iv) Burning v) Conservancy system

**UNIT II - Lighting and Furniture**

(A) Natural Lightning

(B) Artificial Lightning: (i) Candles (ii) Oil Lamp (iii) Kerosene Lamp (iv) Gas Lighting (v) Electric Lighting

(C) Principles of Lighting: (i) Intensity (ii) Steady (iii) Glare (iv) Color (v) Safety (vi) Economy

(D) Types of Lighting: (i) Direct (ii) Semi-direct (iii) Indirect (iv) Semi-indirect

**Unit III**

a) Different symbols used in house plans

b) House plans for different income levels- (i) Higher (ii) Middle (iii) Lower

c) Vastushastra- (i) Importance (ii) Placements of rooms (iii) Location of well (iv) Placements of Doors (v) Position and fixing

**Unit IV –Home Furnishing andFloor Coverings**  
1.HomeFurnishing – (a) Necessity of curtains (b) Types of curtains (c) selection of curtains (d)Making and Hanging of curtains (e)Care and maintenance of curtain

## 2. Carpet and Rugs:

a)Factor affecting the selection- (i) Character (ii) Styles (iii) Pattern (iv) Texture (v) Durability(vi) Cost (vii) Color (viii) Size

(b)Types of carpets and rugs.

c.)Care of carpets and rugs.

## 3. Wall treatment- (i) Wallpapers (ii) Paints (iii) Tiles

## 4. Glass ceiling:-i) Meaning i) Importance iii) Types of glass ceiling iv) Care of glass ceiling.

### Practicals

1: Drawing of Architectural symbols for house Plan.

2: Drawing of floor Plan for low income group.

3: Drawing of Floor Plan for middle income group.

4: Drawing of Floor Plan for high income group.

5: Draw one wall kitchen.

6: Draw two wall kitchens.

7: Draw 'U' shaped kitchen.

8: Draw 'L' shaped kitchen.

9: Working drawing of landscape design.

<b>Total Marks</b>	<b>25</b>
Floor Plans	10
Draw kitchens	05
Landscape Drawing	05
Record	05

### INTERNAL ASSESSMENT

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

Any two of the following

(a)Accessories in Home Decoration (any two)

Ceramic work / Clay Modeling /Pottery painting

(b)Visit to ideal house/ideal kitchen

(c) Preparation of sample book on furnishing materials and types of curtains

### Books Recommended:

Agan T. C. –‘The House’ Oxford and I. B. H. publishing Co.

Ann Reilly; Susan A. Roth – ‘The Home Landscape’, Home planners Inco. Tucson, Arizona.

Deshpande R. S. – ‘Modern Indian Homes in India’, United Book Corporation, Poona, 2<sup>nd</sup> Edition.

Deshpande R. S. – ‘Build your own Home’, United Book Corporation, Poona, 4<sup>th</sup> Edition.

Deshpande R. S. –‘Low Cost Housing’, United Book Corporation, Poona, 4<sup>th</sup> Edition.

Goldstin H. / Goldstein V. – ‘ Art in Every day Life’ MacMillan Co., New York, 4<sup>th</sup> Edition.

Pak – Tin & Helan Yeap – ‘Feng Shui – Health Harmony’ B.Jain Publishers Pvt Ltd., New Delhi, 1998.

Rutt A. – ‘Home Furnishing’, Wiley Eastern Pvt.Ltd., New Delhi, 2<sup>nd</sup> Edition.

Shrivastav – ‘Remedial Vastu Shastra’,Manoj Publication, Delhi, 2001

### **Gondwana University**

### **B.Sc. HOME SCIENCE - SEMESTER IV**

### **Paper V(i) Optional**



**BASIC CHEMISTRY**  
**(4T-5)**

<b>Total Marks</b>	<b>100</b>
Theory	60
IA	15
Practical	25

**COURSE CONTENT**

**THEORY**

**Unit-I**

- a) **Fuels:** Definition, classification, characteristics of good fuel, calorific value, preparation of Gobar gas.
- b) Crude petroleum and its refining by fractional distillation, cracking of petroleum, composition and application of LPG, Precautions while using LPG

**Unit-II**

- a) **Acid and base:** Concept of acid, base and salt, (Arrhenius theory and Lowry and Bronsted Theory), Conjugate pair, neutralization reaction.
- b) pH and pH scale, (Numerical on pH scale) Buffer solution and its applications in everyday life.

**Unit-III**

- a) **Organic Compounds:** Definition, saturated and unsaturated hydrocarbon, classification of organic compounds based on their structure and functional groups. Definition of alkane, alkene and alkyne with examples.
- b) Homologous series, IUPAC nomenclature of alkane, Laboratory preparation, chemical properties and uses of methane and ethylene.

**Unit-IV**

- a) **Corrosion:** Definition, atmospheric corrosion (Corrosion by oxidation and by other gases). Factors causing atmospheric corrosion,
- b) Methods for protection of metals from corrosion (Galvanizing, tinning and electroplating).

**Practical**

**Practical A**

- 1. Titration of strong acid vs strong base (Acid-base double titration)
- 2. Determination of pH of different solutions by using pH meter/ pH paper.

<b>Total Marks</b>	<b>25</b>
Practical A	10
Practical B	05
Record	05
Viva Voce	05

**Practical B**

- 1. Detection of functional groups- Acids, Alcohols, Aldehydes and Ketones.

2. Preparation of acidic and basic buffer solution.

### **INTERNAL ASSESSMENT**

<b>Total Marks</b>	<b>15</b>
--------------------	-----------

1. Assignment book/ workbook for topics from syllabus (all four units)

### **BOOK RECOMMENDED:**

1. Text-Book of organic Chemistry: B; S. Bahl and G.D. Tuli, S. Chand Publication, New Delhi.
2. Text Book of Physical Chemistry: B.S. Bahl and G.D. Tuli, S. Chand Publication, New Delhi.
3. A Text Book of Engineering Chemistry, S.S. Dara and Suresh Umare, S. Chand Publication, New Delhi.
4. A Text Book of Basic and Applied Chemistry, P.C. Jain and Monica Jain.
5. Polymer Science by V.R. Gowarikar, Wiley Ester Ltd. 1987.
6. Text Book of Organic Chemistry by J. L. Finar, Longman Publication.

## **B.Sc. HOME SCIENCE SEMESTER –IV**

### **Paper – V (ii) Optional**

#### **Applied Physiology**

**4(T-5)**

Total	100
Theory	60
IA	15
Practical	25

#### Unit 1:

1. Blood – composition and function of blood, blood cells, blood groups, blood coagulation.
2. Heart – structure and function, blood vessels and their structure and function.

#### Unit 2:

1. Respiratory system – structure and function of respiratory organs.
2. Mechanism of respiration.

#### Unit 3:

1. Female reproductive system- structure and functions of female reproductive organs, physiology of menstrual cycle, ovulation and menopause.
2. Male reproductive system – structure and functions of male reproductive organs spermatogenesis.

#### Unit 4:

1. Nervous system – structure of neurons, structure and function of cerebrum and cerebellum.
2. Endocrine glands – structure and function of pituitary gland, thyroid gland and adrenal gland.

#### **INTERNAL ASSESSMENT:**

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

#### **Practical:**

1. To determine the bleeding time.
2. To determine the clotting time of blood.
3. Application of Triangular bandage.
4. First Aid

Marks distribution -25	
Experiment	06
Spotting	04
Bandage	05
Viva-voce	05
Record book	05

**Books recommended / References:**

1. Community Health and Nursing- BasavanPhappa B.T.
2. Practical Pathology- Chaturvedi O.U.
3. Human Anatomy- Chaurasia
4. Medical Physiology- Guyton
5. Hygiene and Public Health- Ghosh P.
6. A.B.C. of Nursing in the Home- Gravelious E.M.
7. Manual of First Aid- Gupta
8. Nursing- George
9. Anatomy and Physiology for Nurses- Jain A.K.
10. Practical Guide to First Aid- Keech P.
11. Anatomy and Physiology for Nurses- Pearce
12. Essentials of Community Health Nursing- J.E. Park
13. Practical First Aid- Park & Park

**Skill Base**  
**Apparel Construction**

**Total Marks-50**

1. Male and Female mechanical and flashoutcrouqui (Front and Back)
  2. Different poses with print and texture.
  3. Drafting, Cutting and Stitching of Salwar and Kurti, Katori Blouse.
- \* Make a portfolio depicting male and female figure in different poses.
  - \* Show different texture and print in 4'' x 4'' box each.  
Any four design of print and texture.
  - \* Give design, drafting, cutting and stitching for garment mention in the syllabus and stitch above mentioned garments.

<b>Total Marks</b>	<b>50</b>
Design	10
Drafting	10
Stiching	20
Record	10