

**Scheme of Examination and Courses of Study**  
**B.Sc. Home Science, Part –II (2024-25)**  
**Duration of Theory Examinations:- 3 hrs**  
**Semester - III**

Course Particular	Course Code	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
<b>Skill Enhancement Course</b>			Theory	2	70+30
<b>Main Papers</b>					
<b>DCC</b>	<b>BHS8301T-CO</b>	<b>Food and Nutrition II (Food Science)</b>	Theory	4	70+30
	<b>BHS8301P-CO</b>	<b>Food Science</b>	Practical	2	50
<b>DCC</b>	<b>BHS8302T-CO</b>	<b>Family Resource Management -II ( Consumer Economics)</b>	Theory	4	70+30
	<b>BHS8302P-CO</b>	<b>Consumer Economics</b>	Practical	2	50
<b>DCC</b>	<b>BHS8303T-CO</b>	<b>Textile and Clothing- II (Textile &amp; Laundry Science )</b>	Theory	4	70+30
	<b>BHS8303P-CO</b>	<b>Textile &amp; Laundry Science</b>	Practical	2	50
<b>Grand Total</b>				<b>20</b>	<b>550</b>

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each) . Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Attendance : 10 Marks

**Main Papers**  
**Paper 1**  
**Food and Nutrition -II**  
**(Food Science)**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Objectives :** The course will enable the students to

1. Get acquainted with the composition of different foodstuffs.
2. Understand the chemistry of foods.
3. Apply the theoretical aspects in ensuring food quality.

**Contents :**

**UNIT I**

1. **Physio-chemical properties of foods.** – Concepts of Colloids, osmotic pressure, hydrogen ion concentration (pH) and bound water in foods.
2. **Sensory Evaluation** –Definition, Use of Sensory analysis in product evaluation, Methods of Sensory Evaluation (in brief).
3. **Carbohydrate foods** –
  - a. **Starchy Foods-**
    - i. Structure of Starch Cell
    - ii. Changes produced in starch cell during cooking
    - iii. Factors requiring control during starch cookery
    - iv. Various preparations using starchy foods.
  - b. **Cereals**
    - i. Processes done before cooking – Elementary knowledge of milling, polishing, parboiling, flaking, and parching, roasting.
    - ii. Various ways of using cereals – whole grain, flour-coarse, fine & refines, convenience foods, cereal food products.
  - c. **Sugars-**
    - i. Basic knowledge of manufacturing process of sugar and Jaggery
    - ii. Properties of sugar.
    - iii. Sugar Cookery – Behavior of sugar in concentrated solutions, uses and various preparations of Sugar and Jaggery.

**UNIT II**

4. **Protein foods** –  
**(A) Animal Sources :**

**a. Milk and milk products :**

- i) Preparation of milk products in brief: curd , khoa, paneer , cheese and milk powder
- ii) Processing techniques – Pasteurization and Homogenization.
- iii) Use of milk in food preparations – Effect of heat, acid, enzymes and salt, various uses.

**b. Eggs :**

- i) Measures of quality and grading of eggs.
- ii) Egg Cookery – Factors affecting whipping quality of eggs and heat coagulation of egg protein.
- iii) Uses of egg in cookery.
- iv) Methods of cooking egg and egg dishes.

**c. Flesh foods : (meat, fish and poultry) –**

- i) Postmortem changes and aging of meat.
- ii) Factors affecting tenderness.
- iii) Meat cookery – changes during cooking , Curing Process.

**(B) Vegetable Sources :**

**a. Legumes and Pulses :**

- i. Effect of methods like soaking, germination and fermentation
- ii. Effect of acid and soda during cooking.
- iii. Various preparations, incorporation of pulses with other food groups

**5. Fats and Oils :**

- a. Types of Fats and Oils.
- b. Manufacturing process – separation/ extraction, refining process and hydrogenation.
- c. Importance in cooking.
- d. Change in fats and oils on heating. Storage of used oils.
- e. Rancidity of fats.

**UNIT III**

**6. Protective Foods : Fruits and Vegetables**

- a. Changes occurring during maturation and ripening.
- b. Pigments present.
- c. Changes that take place during cooking : Effect of heat, acid and alkali.
- d. Pectin, gum and applications in food processing.

**7. Phytochemicals**

**8. Food additives : Types, and functions.**

**PRACTICAL  
Food Science**

Hours/week ; 2 hrs  
Exam duration : 3 hrs

Max Marks :50  
Min Pass Marks : 20

1. **Organoleptic evaluation of foodstuffs.**
2. **Starch and Cereal Cookery :-**
  - a. Examination of starches under the microscope.
  - b. Various preparations showing.
    - i. Dextrinisation, gelatinization and thickening abilities – effect of heat, types of starch, concentration of starch, fat, acid, protein, heating, agitation, and ingredients.
    - ii. Gluten formation and factors influencing its formation.
  - c. Preparation of selected common recipes.
3. **Sugar – Cookery :**
  - a. Preparation showing syrups of various strengths.
  - b. Preparation in which :
    - i. Size of crystals is controlled.
    - ii. Crystal formation is prevented.
    - iii. Some functions of sugars are shown.
4. **Pulses , Nuts and oilseeds :**
  - a. Effect of acid and alkali on texture and doneness of pulses.
  - b. Use and preparation of selected recipes.
  - c. Ways of improving nutritive quality of proteins.
5. **Cooking with fats and oils :**
  - i) Studying different factors affecting fat absorption.
  - ii) Suitability of different fat sources to different products.
6. **Egg cookery :**
  - a. Preparation showing functions of egg in cooking – as foaming, coating, binding, flavouring and colouring agent.
  - b. Effect of time, temperature, salt and acid on coagulation of egg protein.
  - c. Egg white foam – factors contributing to volume and stability.
  - d. Various ways of using egg: boiled, poached , fried, scrambled, plain and puffy omelets, egg curry, etc.
7. **Vegetable cookery:**
  - a. Effect of acid, alkali, heating, covering and cooking on the colour and doneness of vegetables.
8. **Cooking of flesh foods :**Preparation of selected common recipes using meat, fish, and poultry. (Optional)
9. **Frozen desserts :** Souffle and Ice creams.

10. **Baked Products** : Cakes and Biscuits.

11. Visit to a food – processing Unit.

**Distribution of Marks**

1. Files & Records	10
2. Planning (2 Problems)	10
3. Preparation of recipes	12
4. Method of work & cleaning.	5
5. Service	5
6. Identification of (a) Starch grains (2)	3
7. Viva voce	5
<b>Total</b>	<b>50</b>

**References ;**

1. Peckham, G.C. : Foundations of Food Preparation. MacMilln Publishing co.
2. Potter, N.N. : Food Science CBS Publisher and Distributers N. Delhi.
3. Swaminathan M. (1995)Food Science –Chemistry and Experimental Foods , BAPCO, Banglore.
4. Sethi, M. and Rao, ES. (2001): Food science, Experiments and Applications. CBS Publications and Distributors, N. Delhi.
5. Srilakshmi, B. (1997) : Food Science, New age International (P) Ltd., Publishers , N. Delhi.
6. Khader, V. (2001) : Textbook of Food Science and Technology. ICAR, N. Delhi.
7. [unclear] [unclear] (2019) : [unclear] [unclear], New Age International Publishers, New Delhi.

**Paper 2**  
**Family Resource Management -II**  
 ( Consumer Economics)

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**UNIT I**

**1. Consumer Economics :**

Definition of consumption and consumer, types of consumer, factors affecting consumer.

2. **Wants** –definition, classification, characteristics ,factor affecting wants
3. **House hold Income** – meaning, types and sources of income,factors affecting family income,ways of supplementing family income.

**UNIT-II**

4. **Family budget**-definition, importance and steps in making budget

5. **Family expenditure**- meaning, types, importance and factors affecting family expenditure.
6. **Saving and investment**- meaning, importance, types and factors determining saving, criteria for judging good investment and saving
7. **Market** :- Definition, types, characteristics ,channels of distribution.

### UNIT III

8. **Consumer education** –Rights and responsibilities of consumer, consumer protection act 1986 ,consumer legislation ,consumer redressal mechanism, citizen charter and right to information act.
9. **Entrepreneurship**- definition, need and significance of entrepreneurship development in India, challenges faced by women entrepreneur ,major steps in setting up a small scale project.

### PRACTICALS Consumer Economics

Hours/week ; 2 hrs  
Exam duration : 3 hrs

Max Marks :50  
Min Pass Marks : 20

#### PRACTICAL

1. Study the function of –Retail store, Mobile retailer, Cooperative stores, Super market, Big malls, Multiplex , Credit Card , Direct Marketing, Tele marketing , Mail Order, Vending machines and e-shopping.
2. Conducting case studies of citizen charter in Utilization of Services.
3. Planning and implementation of consumer guidance and counseling centre.
4. Preparation of small scale plan.

#### Marks Distribution :

- |  |          |
|--|----------|
| 1. Students are expected to submit files and reports of market survey. | 10 Marks |
| 2. Viva  | 10 Marks |
| 3. Practical related to topic No.2,3                                   | 15 Marks |
| 4. Practical related to topic No.4                                     | 15 Marks |

**Total** **50 Mark**

#### References :

1. Leland, J. Gordon Stewart, Lee (1974) Economics and Consumer – 7<sup>th</sup>ed D'Von Nostrand Co N.Y.
2. Om Welers (1974): Who Buy – A study of the consumer.
3. Sherlekar, S.A. (1986) : Track Practices and Consumers, Himlayan Publishing House (Unit I, VI)

4. Kolter Philip, Armstrong Gary (1992) : Principles of marketing 5<sup>th</sup> – ed Prentice Hall of India New Delhi.
5. David H. Bangs, Jr: The market planning guide 3<sup>rd</sup> ed. Gangotera Pub.
6. Sarkar A : Problems of consumer in modern India, Discovery publishing House.
7. Jones, Bridget (2000) Entertain in istyle, London ; Annes Publishing Ltd.
8. Gill, Robert, W. (1984) Rendering with paper nd ink 2<sup>nd</sup> Ed.
9. Willar Mak (1960) Know how to draw, London B.T. Batiford Ltd.
10. Chaudhary Rohit (editor) English Lettering and alphabets, New Delhi, Gaurav Publishing House.

**Paper-3**  
**TEXTILES AND CLOTHING - II**  
**Textiles and Laundry Science**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Contents :**

**Unit 1**

**1. Fabric construction**

- a. Weaving
- b. loom and its parts
- c. types of weaves-
  - i. construction, properties and uses of plain, twill, satin and sateen
  - ii. introduction to complex weave-double cloth weave and pile weave
- d. Knitting technology - warp knitting and weft knitting.
- e. Blends - definition, properties and stages of blending.
- f. Felting - properties and stages of felting

**Unit 2**

**2. Fabric finishes**

- a. Introduction and need
- b. Basic finishes - bleaching, scouring, sizing, mercerizing, calendaring, tantering.
- c. Texturing finish - flocking and embossing
- d. Functional finishes – water proofing, fire proofing

**3. Dyeing and printing**

- a. Classification of dyes.
- b. Stages of dyeing equipment used advantage and limitations.

**4. Printing**

- a. Style of printing - direct, resist and discharge.
- b. Methods of printing – block, roller and screen.

**Unit 3**

**5. Laundry science**

- a. Materials and equipments used in laundry.
  - b. Soaps and detergent – classification, chemical nature, manufacturing properties and their cleaning action
- 6. laundering aids**
- a. Stiffening agents - their types, methods of preparation and uses.
  - b. Solvents and absorbents - their types, methods of preparation and uses.
  - c. Stain removal - types and methods of removal of stains
  - d. Care and storage of laundered clothes.

**PRACTICALS**  
**Textiles and Laundry Science**

Duration of examination – 3 hours

Max marks: 50

Hours/week: 2 hrs

Min Pass Marks: 20

1. Identification of weaves and their design, interpretation on graph.
2. Evaluation of colour fastness.
3. Preparation of samples of tie and dye, batik and printing techniques.
4. Preparation of starches by various stiffening agents and their uses.
5. Removal of stains.
6. Introduction to computer aided designing for weaving software.
7. Visit to texting mills, museums and garment factories.

**Distribution of Marks:**

1. Record & File	10 marks
2. Identification of weaves	10 marks
3. Tie & Dye / block Printing / Batik (any one)	10 marks
4. Stain removal (2)	10marks
5. Viva voce	10 marks

**Total**

**50 Marks**

**References**

1. Joseph Marjory L: Introductory Textile Science Holt, Tichard and Winston, N. York
2. Wintage, Isabel B. : Textile fabrics and Their Selection Prentic Hall, Inc., Englewood Cliffs, N. Jersy
3. Joseph Marjory L: Essentials of Textiles Hold, Rinehart and Winston, New York
4. Hess, Katherinc Paddock: Textiles Fabrics and their uses Oxford and IBH –Publishng co. New delhi
5. Corbman Bernard: Textile fiber to Fabric: Mcgraw Hill book Company New York

6. Hollen Norma, Saddle Jane, Angford Anna – Textiles; Macmillan Publishing Co. Inc. N. York
7. Deulkar Durga : Household Textiles and Laundry Work : Atma Ram & Sons, N. Delhi
8. Dhatyagi; Sushella : Fundamentale of Textiles and their Care Oriented Longmans , Bombay
9. Smith Betty F. Block Ira- Textiles in Perspective – Prentice Hall INC Englewoodeliffe Jersey.

**Scheme of Examination and Courses of Study**  
**B.Sc. Home Science, Part –II (2024-25)**  
**Duration of Theory Examinations: --3 hrs**  
**Semester -IV**

Course Particular	Course Code	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
<b>Skill Enhancement Course</b>			Theory	2	70+30
<b>Main Papers</b>					
DCC	BHS8401T-CO	<b>Food and Nutrition -III</b>	Theory	4	70+30
	BHS8401P-CO	<b>Nutritional Biochemistry</b>	Practical	2	50
DCC	BHS8402T-CO	<b>Extension and Communication-II</b>	Theory	4	70+30
	BHS8402P-CO	<b>Community Development</b>	Practical	2	50
DCC	BHS8403T-CO	<b>Human Development - II</b>	Theory	4	70+30
	BHS8403P-CO	<b>ECCE Activity Planning</b>	Practical	2	50
<b>Grand Total</b>				<b>20</b>	<b>550</b>

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each ). Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Attendance : 10 Marks

## Main Papers

### Paper 1

#### Food and Nutrition -III (Nutritional Biochemistry)

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Objectives :** The Course lays the foundation for understanding the functioning of metabolic processes at cellular level, and the role of various nutrients in these processes. This course will enable students to

1. Develop an understanding of the principles of biochemistry (as applicable to human nutrition)
2. Obtain an insight into the chemistry of major nutrients and physiologically important compounds .
3. Understand the biological processes and systems as applicable to human nutrition.

#### Contents :

##### UNIT I

1. **Introduction to biochemistry** - Definition, Objectives
2. **Carbohydrates** –
  - a. Definition, Composition and Classification
  - b. Structure and properties of mono-di-and poly- saccharides
  - c. Functions of Carbohydrates.
3. **Lipids** –
  - a. Definition, Composition, Classification
  - b. Physical and Chemical properties
  - c. Hydrogenation and Emulsification of fats.
  - d. Acid value, iodine value and saponification value.
  - e. Functions of Lipids.
  - f. Rancidity of Fats
  - g. Lipoproteins – types
4. **Proteins** –
  - a. Definition, Composition, Classification
  - b. Essential and non-essential amino acids
  - c. Structure and functions of proteins.

##### UNIT II

5. **Enzymes** –
  - a. Definition
  - b. Classification of enzymes,
  - c. Specificity of enzymes

- d. Factors affecting velocity of enzyme
  - e. Enzyme inhibition.
  - f. General properties of enzyme and functioning
6. **Molecular aspects of transport** - Passive diffusion and active transport.
7. **Vitamins**
- a. Structure and biochemical role of vitamins
  - b. Fat soluble – A, D, E and K
  - c. water soluble – B<sub>1</sub>, B<sub>2</sub>, niacin, B<sub>6</sub> and C.
8. **Minerals** – Biochemical role of inorganic elements – calcium, phosphorous, magnesium, iron, copper, sodium, potassium, iodine, fluorine and zinc.

### UNIT III

9. **Intermediary metabolism** –

Elementary study of intermediary metabolism of Carbohydrates lipids and proteins :  
Glycolysis, gluconeogenesis, glycogenesis, glycogenolysis,  $\beta$  oxidation and biosynthesis of fatty acids, synthesis of ketone bodies, ketosis, general reactions of amino acid metabolism – deamination, transamination, decarboxylation and entry of amino acid into TCA cycle, urea cycle, Citric acid cycle (TCA)..

10. **Introduction to genetic control of metabolism** –

- a. Nucleic acids- Types, Composition and Structures.
- b. Replication and Transcription

### PRACTICALS

#### Nutritional Biochemistry

Hours/week : 2 hrs

Duration of Examination : 3 hrs

This course will enable the students to

1. Be familiar with qualitative tests and quantitative determinations.

**1 : Carbohydrates**

- Reactions of mono, di and polysaccharides and their identification in unknown mixtures.

**2: Fats**

- Reactions of fats and oils.
- Determination of Acid value, Saponification value and Iodine number of natural fats and oils.
- Demonstration on estimation of crude fat content of foods by Soxhlet's method.

**3: Proteins**

- Reactions of amino acids and their identification in unknown mixtures.
- Demonstration on estimation of total N of foods by Kjeldahl method.

**4: Vitamins**

- Estimation of ascorbic acid content of foods by titrimetric method and colorimetric method.

**5: Minerals**

- Estimation of calcium in CaCO<sub>3</sub> by EDTA titrimetric method.
- Estimation of chloride in table salt by titrimetric method.
- Estimation of phosphorous by colorimetric method.

**Distribution of Marks**

i.	Files, Records etc.	10 Marks
ii.	Qualitative analysis (two compounds)	20 Marks
iii.	Quantitative analysis	
	a. Principles and methods	-6
	b. Observation & calculation	-8
	c. Results & precautions	-6

**Total - 50 Marks**

**Note :** Atleast one observation of each experiment should be checked by one of the examiners.

**References :**

1. Conn, E.E. Stumpf P.K. Brueing, G. And Doi R.H. : Outlines of Biochemistry, John Willy & Sons, N. York.
2. Indian Standards Institutions, (1985) ; ISI Handbook of food Analysis, Parts I – XI, Manak Bhawan, New Delhi.
3. Lehninger, A.L., elson, D.L. and Cox, M.M. (1993) : 2<sup>nd</sup> Ed. Principles of Biochemistry, CBS Publishers and distributors.
4. Murray , R.K. Granner, D.K. Mayes, P.A. and Rodwell , V.W. (1993) : 23<sup>rd</sup> Ed. Harper’s Biochemistry. Lange Medical Books.
5. Rao, K.R. : Textbook of biochemistry, Pentice 4 Hall of India Pvt. Ltd. NewDelhi.
6. Sundararaj , P. and Siddhu, A., (1995) : Qualitative test and quantitative procedures in Biochemistry – a practical Manual, Wheeler Publishing.
7. White, A Handler P., Smith E.L., Stelten, D.W (1959): 2<sup>nd</sup> Ed. Principles of Biochemistry, Mc Graw Hill Book Co.
8. Swaminathan, Ms (1985) : Essential of Food and Nutrition VI : Fundamentals aspects VII : Applied Aspects. Banglore Printing Co. Ltd.
9. Deb, A.C.(.) :Fundamentals of Biochemistry, New Central Book Agency Pvt. Ltd. , West Bengal.
10. □□□□ □□□□ □□ □□□□□□□□ □□□□ (2013): □□□ □□□□□, □□□□□□□□ □□□□ □□□□□ □□□□□ □□□□□ □

## Main Papers

### Paper 2

#### Extension and Communication - II (Community Development)

Hours/Week – 4 hrs /week

Duration Examination – 3 hrs

Max Marks : 100

Min Marks :40

#### Unit I

1. **Extension System in India:** Extension efforts in Pre-Independence era:- (Sriniketan, Marthandam, Sevagram, Gurgaon. Post-Independence era:- Firka development, Etawah Pilot Project & Nilokheri Experiment
2. **Rural Development:**
  - i. Definition, and Concepts
  - ii. Objectives and Importance of rural development.
  - iii. Problems in rural development.
  - iv. Social Structure & System: Society, Community, Institutions, Social Groups, Family & Marriage.
  - v. Impact of Industrialization & urbanization on Indian Social Structures.

#### Unit II

3. **Various rural development programmes launched by Govt. of India**
  - i. Community Development Program: Meaning, Definition of Community, Development & Community Development, objectives, & Principals of Community Development
  - ii. Panchayati Raj System: Concept, Objectives & Challenges, Structural Organization & Role in Community Development
4. **Community Development Programme Approach**
  - i. Multi - Purpose
  - ii. Target Group
  - iii. Growth Centered
  - iv. Minimum needs
  - v. Antyodaya
  - vi. Integrated

#### Unit III

5. **Approaches & Methods of Socio-economic Analysis**
  - i. Survey
  - ii. Case studies
  - iii. Observations
  - iv. Rapid Rural Appraisal

v. Participatory Rural Appraisal

**6. Diffusion & Adoption of Innovations: Meaning & Definition**

i. Process & Stages of Adoption

ii. Adopter's Category

**7. Cyber Extension/ E-Extension**

**PRACTICALS  
Community Development**

Duration of Examination : 3hrs

Max Marks : 50

No. of Hours/Wk - 2 hr

Min Pass marks :20

1. Visit to the rural/urban community where some community development/extension programmes are going on.
2. Assess any one ongoing programme in that area.
3. Presentation of the report on the programme and socioeconomic condition of the area.
4. Practical use of RPA/PRA methods.

**Distribution of Marks :**

- |                           |          |
|---------------------------|----------|
| 1. File & Record          | 20 marks |
| 2. Presentation of Report | 20 marks |
| 3. Viva Voce              | 10 marks |

**Total :50 marks**

**References :**

1. Dhama, O.P. & Bhatnagar, O.P. : Extension and Communication for Development, Oxford and IBH Publishing Co., New Delhi, 1985.
2. Singh, R; Text Book of Extension Education, Sahitya Kala Prakashan, Ludhiyana, 1987.
3. Patnayak R; Rural Development in India, Anmol Publication, New Delhi 1990.
4. Reddy, A.; Extension Education, Sri Lakshmi Press, Bapatata, 1987.
5. Baidyanath M; Poverty, Unemployment and Rural Development, Himalaya Publishing House, Bombay, 1991.
6. Thingalaya, N.K. ; Rural India-Real India, Himalaya Publishing House, Bombay, 1986.
7. Alminyso, Social Change and Development, Sage Publications Pvt. Ltd., Madras, 1990.
8. Desai V.; A study of Rural Economics System Approach, Himalaya Publishing House, New Delhi, 1990.
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**Journals.**

1. Changing Villages, PPS Gussain for consortium on Rural Technology, D-320, Laxmi Nagar, New Delhi - 110092.
2. Journal of Rural Development, The National Institute of Rural Development, Rajendranagar, Hyderabad - 500029.
3. Social Welfare, Central Social Welfare Board, Samaj Kalyan Bhavan, B- 12, Tona Crescent, Institutional Area South of IIT , New Delhi - 110016.

## **Main Papers**

### **Paper 3 Human Development – II (Early Childhood Care & Education)**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

#### **Content:**

#### **UNIT I**

1. Introduction to early childhood education .
  - a. Meaning and nature of early childhood education
  - b. Need and importance of ECCE
  - c. Objective of early childhood education
2. Types of curriculum models of early childhood education
  - a. Kindergarten
  - b. Montessori
  - c. Nursery
  - d. Balwali

#### **UNIT II**

3. Organization of early childhood care and education centers .
  - a. Building layout of preschool
  - b. Indoor and outdoor equipments
  - c. Curriculum
  - d. Supervision and evaluation
4. Exceptional children :
  - a. Definition
  - b. Types of exceptional children

#### **UNIT III**

5. Parent child relationship : Determinants of parent child relationship.
6. Art education and activities for the preschool child.
7. Problem child : Types and corrective measures of problem child.
8. Contribution of following agencies to ECCE in India :
  - a. ICCW
  - b. IAPE
  - c. NCERT
  - d. ICDS

### PRACTICALS

Hours/week/batch :2 hrs  
Exam duration :3 hrs

Max Marks :50  
Min Pass Marks : 20

- (1) Preparation of creative album/ picture book/ children's literature for early childhood education
- (2) Story telling
- (3) Visit and report presentation (any two )
  - a. Play school
  - b. Nursery school
  - c. Anganwadi
  - d. Institutes of children with special needs
- (4) Daily, weekly and monthly planning for an ECCE centre.

#### Distribution of Marks:

1. Preparation of creative Albums, Picture Books and Children's Literature	10
2. Story telling	5
3. Planning of ECCE centre	5
4. Developmental Activities	10
5. Visits & Report presentation	5
6. File & Record	10
7. Viva voce	5
<b>Total</b>	<b>50</b>

#### References :

1. Grewal, J.S. Early Childhood Education, Foundations & Practice, 1984, National Psychological Corporation Agra.
2. Aggarwal, J.C. : History & Philosophy of Preschool Education in India, 1998, Doba House, New Delhi.
3. Kaul, V. Bhatnagar, R. (1992) : Early Childhood education A trainer's handbook, New Delhi.

4. Murlidharan, R. Asthama, S.(1991) : Stimulation activities for young children, New Delhi : NCERT.
5. Swaminathan, M. (1984) : Play activities for young children, New Delhi, UNICEF.
6. Tarapore, F., Kettis, G. Benninger, C. (1993) Childs Right to Play Pune: SNDT College of Home science.
7. Decker, C.A. & Decker, J.R. (1984) : Planning and administerig early childhood programs, Columbus, Charies . Merrill, Unit II
8. Gill, S. (1993) : Child care Programs in India. Changing trends. In saraswathi, S.S. & Kaur, B. New Delhi, Sage Publication.
9. Kaul, V. (1991) : Early Childhood Education Programme. New Delhi: National Council for Educational Research & Training.
10. National Policy on Education (1986) : New Delhi Ministry of Human resource Development.
11. Seefeldt C. (1980) : A curriculum for preschool Columbus Ohio : Bell & Howell.
12. Pankajam, G. (1994) : Preschool education, Ambala Cantt : Indian Publication.
13. Kulkarni, S.S. (1988) : Parent Education : Perspectives and approaches Jaipur Rawat Publishers.
14. Mohanty, J & Mohanty, B. Early Childhood Care & Education (ECCE) 1996, Deep & Deep Publication, New Delhi.
15. Singh, B., Preschool Education, 1997 APH Publishing Corporation, New Delhi.
16. Arni, K & Wolf G. (1999) Child Art with everyday materials, TARA Publishing.

**Scheme of Examination and Courses of Study**  
**B.Sc. Home Science, Part –III (2025-26)**  
**Duration of Theory Examinations :- 3 hrs**  
**Semester - V**

Course Particular	Course Code	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
Skill Enhancement Course					
Value Added Course					
<b>Main Papers</b>					
DSEC	BHS8501T-EO	Extention and Communication-III (Extension Program Management)	Theory	4	70+30
	BHS8501P-EO	Program Planning	Practical	2	50
DSEC	BHS8502T-EO	Food and Nutrition –IV Nutrition through life cycle	Theory	4	70+30
	BHS8502P-EO	Diet Plans for Normal Conditions	Practical	2	50
DSEC	BHS8503T-EO	Family Resource Management- III (Housing & Space Design)	Theory	4	70+30
	BHS8503P-EO	Space Designing	Practical	2	50
DSE	BHS8504T-EO	Human Development-III (Family Dynamics)	Theory	4	70+30
	BHS8504P-EO	Human Behavioural Studies	Practical	2	50
<b>Grand Total</b>					

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each ). Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Viva -Voce : 10 Marks

**Main Papers**  
**EXTENTION AND COMMUNICATION – III**  
**Extension Program Management**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Content:**

**UNIT- I**

1. Extension Administration
  - a. Meaning and Scope
  - b. Purpose and Characteristics
  - c. Principles, Functions, Problems of extension administration.
2. Program Planning
  - a. Meaning and concept
  - b. Importance of Planning
  - c. Principles of Planning
  - d. Process of planning extension program
3. Abilities needed by planner
4. Characteristics of a good program

**UNIT- II**

5. Program Execution/Implementation
  - a. Steps in Program Execution/Implementation
    - i. Publicity
    - ii. Develop a plan work
    - iii. Monitoring /Evaluation during implementation- meaning and types.
  - b. Aspects in program execution / implementation
  - c. Problems in program execution/implementation.
6. Program Evaluation
  - a. Meaning and definition of evaluation
  - b. Objectives and importance of Evaluation
  - c. Types of Evaluation
  - d. Criteria of Effective Evaluation
  - e. Steps in Evaluation
  - f. Tools and techniques of Evaluation
7. Use of results in planning (Reconsideration)

**UNIT- III**

8. Program for Rural and Urban Development –
9. On going national rural and urban development programs for women and children :  
ICDS, MGNREGA, National rural livelihood mission (NRLM), STEP (Support to

training and employment program for women) SWADHAR (Aa scheme for women in difficult circumstances).

10. Role of NGOs in developmental efforts

CAPART, CHETNA, CARE, SEWA & others

11. Self Help Group : Concept and Functioning.

### **PRACTICALS** **Program Planning**

**Duration of Examination: 3hrs**

**Hours/Week: 2 hrs/Week**

**Max Marks: 50**

**Min. Pass Marks: 20**

**Content :**

1. Study development projects in the selected area in terms of their monitoring and evaluation practices & critically examine the process of monitoring and evaluation.
2. Planning, organization, implementation and evaluation of need based extension program for women and children in selected community in relation to any one
  - a. Literacy
  - b. Income Generation
  - c. Health
  - d. Maternal & Child Care
  - e. Social evils and
  - f. Any other
3. Presentation of the report

**Distribution of Marks**

1. File and Record	10 Marks
2. Report presentation	10 Marks
3. Planning, implementation and evaluation of a need based program	25 Marks
4. Vi – Voce	05
<b>Total</b>	<b>50 Marks</b>

**References:**

1. Supe, S.V. An Introduction to Extension Education, Oxford & IBH, New Delhi, 1984
2. Mc Grath, E.H. Basic managerial Skills of all, Zavier Labour Relations Institute, Jamsedhpur
3. Dhamma, O.P. & Bhatnagar Extension and Communication for Development, Oxford and IBH Publishing Pvt. Ltd. New Delhi 1985
4. Sandhu A.S. Extension Program Planning Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996
5. GL Ray : Extension Communication and Management, Naya Prakash, Calcutta, India.

**Journal –**

1. Journal of Rural Development, The National Institute of Rural Development Rajendra Nagar, Hyderabad, 500029
2. Social Welfare, Control Social Welfare Board, Samaj Kalyan Bhawan, B-12, Tona Crescent Institutional Area, South of IIT & New Delhi, 110016
3. Kurukshetra, Director, Publications, Division, Ministry of 1 and B, Government of India, Patila House, New Delhi 110001
4. Yojna, Director, Publications, Division, Patila House, New Delhi, 110001
5. Indian Journal of Extension, Division of Agriculture Extension 1 A.R.I, New Delhi, 110012

**FOOD AND NUTRITION - IV  
Nutrition Through Life Cycle**

**Hours/Week – 4 hrs /week**

**Duration Examination – 3 hrs**

**Max Marks : 100**

**Min Marks :40**

**Objectives-** This course enable student to

1. Understand the concept of an adequate diet and the importance of planning
2. Know the factors affecting the nutrients needs and RDA during life cycle and learn Dietary management for various age groups

**Content:**

**UNIT I**

1. Concept of nutritionally adequate diet- balanced diet
2. Meal Management –
  - i. Some concept and definitions
  - ii. Factors to be considered while planning meals
  - iii. Nutritional Adequacy – planning of nutritionally balance diet
    - a. Food cost & Economy- Matching meal to family income. Characteristics of meals for low, moderate and liberal cost. Food budgets, economizing in meal management
    - b. Matching meals to available time and energy
    - c. Acceptability of Meals
      - i. Sensory factors – eye appeal, taste, aroma, flavour, texture, temperature etc
      - ii. Physiological Satisfaction – hunger, appetite and satiety value
      - iii. Likes and dislikes
      - iv. Other factors – availability , variety, food habits, tradition, culture, religion, food fads and fallacies

## UNIT II

3. Nutrition for adults – at different activity levels and socio economics levels.
4. Pregnancy- physiology of pregnancy, factors affecting pregnancy outcomes, importance of adequate weight gain during pregnancy, nutritional requirement during pregnancy and modification of existing diet. Deficiency of Nutrition and its impact-energy, iron, folic Acid, protein, calcium, iodine etc . Common problems of pregnancy and their management – nausea, vomiting, pica, food aversion, induces hypertension(PIH), Adolescent Pregnancy
5. Lactation – Nutritional requirements and dietary management , Galactogogues.

## UNIT II

6. Infancy – nutritional requirement of infants, Breast feeding-colostrum-its composition and importance in feeding, Advantages of exclusive breast-feeding. Nutritional and other advantages of breast – feeding, Bottle feeding- circumstances under which bottle feeding is to be given, Care and Sterilization of bottles. Preparation of formulas – modification of non-human milk for infant feeding. Mixed feeding – breast feeding and artificial feeding, weaning, Introduction of Complementary foods, food supplements at various stages.
7. Nutritional needs and dietary management of Toddlers, Preschool, School going children.
8. Adolescents, Establishment of good food habits
9. Nutrition during old age- physiological changes, nutritional needs and dietary modification.

## PRACTICALS

### Diet Plans for Normal Conditions

Duration of Examination: 3hrs  
Hours/Week: 2 hrs/Batch/Week

Max Marks: 50  
Min. Pass Marks: 20

### Objectives :

This course will enable students to –

1. Plan and prepare nutritionally adequate diet in relation to age, activity levels, physiological state and socio economic status
2. Make therapeutic modifications of normal diet for common disease condition

### Content:

1. Market Survey for availability and course of foods.
2. Finding out the cheaper sources of nutrients, calculating how much of the nutrient a rupee can buy from different sources.
3. Food exchange for energy, protein, fats and carbohydrates

4. Food presentation and table setting
5. Planning and preparation of diets for different age group level at different – socio-economic and activity levels in relation to special nutrient requirements
  - a. Adults
  - b. Pregnancy
  - c. Lactation
  - d. Infancy
  - e. Preschool child
  - f. School Child
  - g. Adolescent
  - h. Old Age
6. Menu planning for various festivals:  
Holi, Diwali, janmastami, id , Christmas

**Distribution of Marks-**

1. Files, Records etc.	10 Marks
2. Planning	
a. Diet	7 Marks
b. Menu for Given Occasion	3 Marks
3. Preparation of two dishes including one compulsory dish (8+7)	15 Marks
4. Service	5 Marks
5. Method of Work	5 Marks
6. Vice Voce	5 Marks

**Total****50 Marks****Reference-**

1. Robinson, CH, And lawler, MR: Normal and Therapeutic , Nutrition, MacMillan Publishing Co.
2. IHE ( Gupta, S. Seth, R: Khanna, Kumud & Mahna R.) : The art and science of cooking – A student manula, Blaze Publishers & distributor Pvt. Ltd.
3. Sethi, M. Malhan, S. (1993) : Catering Management: An integrated approach, Wilsey Eastern : New Delhi
4. B.Shri Lakshmi (2019) Dietetics, 8<sup>th</sup> edition, New Age International Publishers, New Delhi.
5. [REDACTED] (2011), [REDACTED] [REDACTED], [REDACTED] [REDACTED], [REDACTED] I
6. [REDACTED] [REDACTED] (2009) [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED], [REDACTED]
7. [REDACTED] [REDACTED]-[REDACTED] [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED]

**FAMILY RESOURCE AND MANGEMENT -III**  
**Housing and Space Design**

**Hours/Week** – 4 hrs /week

**Duration Examination** – 3 hrs

**Max Marks : 100**

**Min Marks :40**

**UNIT - I**

1. Residential Space Design
  - i. Meaning of Housing
  - ii. Difference Between Home and House
  - iii. Need of Housing
2. Self Built Home, Rented Home –Advantages and Disadvantages
3. Factors influencing selection and Purchase of site for house building
  - i. Legal Aspects and funds for Housing
  - ii. Natural features: Orientation ,Site, Land, Size, Drainage
  - iii. Structure of Home-Exterior open Space, Foundation, Plinth, Walls, Roof, Floor, Stairs, Doors And Windows, Ventilation
  - iv. External Services- Supply of Water ,Electricity, Sanitation Facility, Approach to Roads, Work Place

**UNIT- II**

4. House Planning & Space Designing
  - i. Types of Houses: Apartment(Flat), **Bungalow**, duplex & row houses
  - ii. Principles of Planning the residential space : aspect, prospect, Functionalism, grouping of rooms, privacy, flexibility, spaciousness,.
5. Kitchen planning- Types, Orientation, Internal & External features, work center, triangle and storage

**UNIT - III**

6. Construction And Finishing Materials-
  - i. Building Materials for Rural and Urban Housing:  
Mud, Straw, Lime Stone Powder, Steel, Cement, Concrete, Binding Wires, Stone, Bricks, Wood etc
  - ii. Finishing Materials For Housing :  
Colours, Paints and Varnish, Lime Stone Powder, Sealants, wall papers , wood , glass etc

**PRACATICAL**  
**Space Designing**

Duration of Examination: 3hrs

Hours/Week : 2 hrs

Max Marks: 50

Min. Pass Marks:20

**Content:**

1. Market survey for various construction and finishing materials



- f. Problems in adolescence
- g. Education system in adolescence
2. Personality-
  - a. Definition, meaning, determinants of personality.
  - b. Classification of personality - according to ayurveda, C.S. Jung and Shaleton.
3. Erickson's psychological theory

### UNIT -II

4. Adulthood : characteristics of Adulthood
5. Marriage :- mate selection, dating, courtship, engagement and marriage
6. Functions of marriage
7. Marital adjustment
  - i. Reasons of Marital maladjustment
  - ii. Adjustment from in law's, adjustment with life mate, sexual adjustment.
8. Divorce, Singlehood, live in relationship, Sel
9. Freud's psycho- analytical theory

### UNIT -III

10. Old age:
  - i. characteristics of old age
  - ii. Physical changes during old age
  - iii. Problems of old age
  - iv. solutions to the problems of old age
11. Woman :
  - i. Empowerment of women: women and law
  - ii. Working woman : Effect of home maker's, employment on family relationship.
12. Agencies working for the aged - Helpage India, Senior citizen association, Missionaries of charity etc.

### PRACTICALS

#### Human behavioural studies

Hours/week/batch :2 hrs

Exam duration :3 hrs

Max Marks :50

Min Pass Marks : 20

#### Content:

1. Interviewing early and late adolescence on issues- problems, pubertal changes, friendship, Career, aspirations, self & social awareness, political awareness and mass media.
2. Teaching aids on any topic related to Family and Child Welfare.
3. A study and seminar presentation on any relevant issues of human development.
4. A survey and report presentation of agencies working for family and child welfare.

**Distributions of Marks**

1. Preparation of 2 Teaching Aids	10
2. Seminar Presentation	10
3. Survey& Report Presentation of Agencies for family & child welfare	5
4. Preparation of checks list, Interview schedule & test	10
5. File & Record	10
6. Vice Voca	5
<b>Total</b>	<b>50</b>

**References:**

1. Coleman, J.C. (1986) : Intimate Relationship, Marriage and the family; Chicago: Macmillan Publishing Co.
2. Gupta J.L. (1988): Challenges to the fair sex – Indian Women Problem Plights and Progress
3. Acchpal, B. And Verma A. (1988) : Towards Better Families : An Integrated Approach to Family Life Education, Baroda
4. TISS (1994) : Enhancing the Role of Family as Agency for Social and Economic Development, Bombay , TISS
5. Devdas T.S. (1979): Hindu Family & Marriage, Madras : University of Bombay.
6. Govt. Of India, Ministry of Human Resource Development, Department of Women and Child Development , National Perceptive Plan on Women
7. Govt. Of India, Profile of the Child in India: Polices and Program , New Delhi: Ministry of Social Welfare
8. Kapadia K.M. (1966) : Marriage and family in India, Bombay: Oxford University Press
9. Rao, Asha, et al (1986) : Children in Difficult Situation in India : A review Bombay, Tat Institute of Social Sciences
10. TISS (1991): Research in Families with Problems inIndai, Vol I & II, Bombay, TISS
11. Verma, U.S. & Singh, M.(1988): Legal rights for women & Families, New Delhi: Women’s Legal Aid Centre

**Scheme of Examination and Courses of Study B.Sc.  
Home Science, Part –III (2025-26) Duration of  
Theory Examinations:- 3 hrs  
Semester - VI**

Course Particular	CourseCode	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
Skill Enhancement Course					
Value Added Course					
<b>Main Papers</b>					
DSEC	BHS8601T-EO	<b>Food and Nutritions - V (Nutrition during various diseases )</b>	Theory	4	70+30
	BHS8601P-EO	<b>Therapeutic Diets</b>	Practical	2	50
DSEC	BHS8602T-EO	<b>Food and Nutrition –VI (Community Health and Nutrition)</b>	Theory	4	70+30
	BHS8602P-EO	<b>Community Nutrition</b>	Practical	2	50
DSEC	BHS8603T-EO	<b>Family Resource and Mangement-IV (Interior Designing)</b>	Theory	4	70+30
	BHS8603P-EO	<b>Interior Designing</b>	Practical	2	50
DSEC	BHS8604T-EO	<b>Textile and Clothing- III (Apparel making &amp; traditional Textile )</b>	Theory	4	70+30
	BHS8643P-EO	<b>Apparel Making</b>	Practical	2	50
<b>Grand Total</b>				<b>20</b>	<b>550</b>

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each ). Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Viva -Voce : 10 Marks

**FOOD AND NUTRITIONS -V**  
**Nutrition during various diseases**

**Hours/Week** – 4 hrs /week

**Duration Examination** – 3 hrs

**Max Marks : 100**

**Min Marks :40**

**Objectives-** This course enable student to

1. Gain knowledge about dietary management in common ailments .

**Content:**

**UNIT – I**

1. Basic concepts of diet therapy – Meaning and importance of therapeutic nutrition.
2. Modification of normal diet for therapeutic purposes.
  - i. Full/regular diet,
  - ii. Bland diet,
  - iii. Soft diet
  - iv. Fluid diets
3. Method of feeding patients –
  - i. Normal Feeding
  - ii. Artificial feeding
    - a) Tube Feeding
    - b) Intravenous Feeding
4. Physiological factors in feeding and problems involved.
5. Dietician – Qualities to be possessed, role and responsibilities.

**UNIT – II**

6. Engery - Identifying underweight, overweight and obese, Modification of diet and nutritional care for weight management .
7. Predisposing factors , clinical features and dietary management of Febrile diseases – acute and chronic fevers.
8. Gastrointestinal disturbances:
  - i. Indigestion
  - ii. Gastritis
  - iii. Gastric and duodenal ulcers
  - iv. Constipation and diarrhoea
9. Liver Disorders:
  - i. Functions of liver
  - ii. Hepatitis
  - iii. cirrhosis of liver

- iv. hepatic encephalopathy,
- v. cholelithiasis, cholecystics, cholecystectomy etc.

### UNIT – III

- 10. Diabetes mellitus:
  - i. Meaning and concept
  - ii. Causes and symptoms
  - iii. Types of diabetes
  - iv. Complications of Diabetes
  - v. Dietary modifications
- 11. Cardio Vascular Diseases :
  - i. Hypertension,
  - ii. atherosclerosis
  - iii. hyperlipidimias
- 12. Renal Disorders :
  - i. Glomerulonephritis- acute & chronic
  - ii. Nephrotic syndrome and uremia
  - iii. Acute and chronic renal failure.

### PRACTICAL Therapeutic Diets

Duration of Examination: 3hrs  
Hours/Week: 2 hrs/Batch/Week

Max Marks: 50  
Min. Pass Marks:20

This course will enable students to –  
Make therapeutic modifications of normal diet for common disease condition

#### Content:

- 1. Planning and preparing modified diets
  - a. Soft
  - b. Fluid
  - c. Bland
  - d. High Protein
  - e. Calorie restricted
- 2. Planning and preparing modified diet for
  - a. Fever
  - b. Diarrhea

- c. Constipation
  - d. Hypertension
  - e. Atherosclerosis
  - f. Diabetes Mellitus
  - g. Obesity
3. Planning and Preparing low cost nutrient rich dishes

**Distribution of Marks-**

1. Files, Records etc.	10 Marks
2. Planning	
a. Diet	7 Marks
b. Low cost nutritient rich dish	3 Marks
3. Preparation of two dishes including one compulsory dish (8+7)	15 Marks
4. Service	5 Marks
5. Method of Work	5 Marks
6. Vice Voce	5 Marks
<b>Total</b>	<b>50 Marks</b>

**Reference-**

1. Robinson, CH, And lawler, MR: Normal and Therapeutic , Nutrition, MacMillan Publishing Co.
2. IHE ( Gupta, S. Seth, R: Khanna, Kumud & Mahna R.) : The art and science of cooking – A student manula, Blaze Publishers & distributer Pvt. Ltd.
3. Sethi, M. Malhan, S. (1993) : Catering Management: An integrated approach, Wilsey Eastern : New Delhi
4. B.Shri Lakshmi (2019) Dietetics, 8<sup>th</sup> edition, New Age International Publishers, New Delhi.
5. [REDACTED] (2011), [REDACTED] [REDACTED], [REDACTED] [REDACTED], [REDACTED] [REDACTED] I
6. [REDACTED] (2009) [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED], [REDACTED]
7. [REDACTED]-[REDACTED] [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED]

**FOOD AND NUTRITION – VI**  
**Community Health and Nutrition**

**Hours/Week** – 4 hrs /week

**Max Marks : 100**

**Duration Examination** – 3 hrs

**Min Marks :40**

Objectives –

This course is intended to introduce students nutritional problems prevailing in the country, their causes and implications and government policies & program for control & preventions for the same. This course will enable to students to-

1. Understand the concept of health from the individual and community perspective.
2. Understand the factors that determines the availability and consumption of foods
3. Get exposed to the schemes, program and policies of Government of India to combat malnutrition.
4. Understand the concept of nutritional status and its relationship to health, know the methods used to assessment of nutritional status

**Content:**

**UNIT I**

1. Concept and Type of Community , community health and Community nutrition .Factors affecting health of the community- environmental, social,cultural,dietary,organizational,economic, political.Vulnerable groups/needs of special populations
2. Food Availability- factors affecting food availability and its consumption
  - i. Agriculture Production
  - ii. Post- harvest handling, marketing and distribution
  - iii.Population
  - iv.Economic
  - v.Region
  - vi.Socio-Cultural
  - vii.Industrialization and other factors
3. Immunity and immunization:
  - i. definition, classification of immunity
  - ii. Importance of immunization, immunization schedule of children and adults
  - iii. Importance of cold chain

**UNIT II**

4. Nutritional Assessment –  
Meaning, Objective and Importance of nutritional assessment
5. Method of assessing nutritional status and their interpretation-
  - i. Direct - Clinical examination, Nutritional Anthropometry, Biochemical test & Biophysical methods.
  - ii. Indirect – Dietary Survey, Vital Statics,- mortality rates, morbidity, ecological factors, socio-economic

6. Nutrition and Health Communications
  - a. Objectives – Principles and Scope of nutrition and health education.
  - b. Themes and message in Nutrition and Health Education

### UNIT III

7. Communicable and infectious disease control-  
Nature of communicable and infectious disease ,infection, contamination, disinfections,decontamination, transmission-direct and indirect, vector borne disease,epidemiology of infection , infecting organism and causative agents-their environmental measures and epidemiological principles of disease control.
8. Schemes and programs to combat nutritional problems in India-Objectives, focus (intervention, strategies) , target groups, mode of implementation of –
  - i. Prophylaxis Program
  - ii. Mid day meal program
  - iii. ICDS
  - iv. Other program from various sectors like agriculture, health, economic, environment etc.

### PRACTICAL Community Nutrition

Duration of Examination: 3hrs  
Hours/Week: 2 hrs/Batch/Week

Max Marks: 50  
Min. Pass Marks:20

This course will enable students to –

1. To assess the nutritional problems prevailing in the community.
2. To understand the status of nutritional programs running in the community.
3. To acquaint the knowledge of preparing aids for nutrition messages.

#### Content:

1. Prepare a vaccination schedule of voluntary and compulsory vaccines.
2. Prepare teaching aid relevant to nutrition messages for any nutritional problem.
3. Nutritional assessment of Infant.
4. Nutritional assessment of Pre schooler
5. Nutritional assessment of School going Children/ Adolescent.
6. Nutritional assessment of Adults.
7. Survey on any nutritional ongoing program in your community.

**Distributions of Marks**

1.	Preparation of Teaching Aid on topic 2	10
2.	Prepare a report on nutritional assessment on topics 3 to 6	15
3.	Report Presentation on topic 7	10
4.	File & Record	10
5.	Vice Voca	5
	<b>Total</b>	<b>50</b>

**References:**

1. K.Park.(2009) Community Health Science (for nurses).Pub. Ms Banarsidas Bhanot,Jabalpur.5<sup>th</sup> edition
2. B. srilakshmi (2018) Nutrition Science , New Age International Publisher, New Delhi.
3. Bamji MS, Rao NP and Reddy V (1998) Text Book of Human Nutrition , Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi.
4. [REDACTED] (2009) [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED], [REDACTED]
5. [REDACTED] [REDACTED] (1997) [REDACTED] [REDACTED] [REDACTED] [REDACTED] , [REDACTED] [REDACTED] [REDACTED] [REDACTED], [REDACTED]
6. [REDACTED] [REDACTED] (2006) [REDACTED] [REDACTED] [REDACTED] [REDACTED] , [REDACTED] [REDACTED] [REDACTED] , [REDACTED]

**FAMILY RESOURCE AND MANGEMENT -IV****Interior Designing****Hours/Week** – 4 hrs /week**Duration Examination** – 3 hrs**Max Marks : 100****Min Marks :40****Objectives**

- To learn about elements and principles of art and their application in interior designing.
- To gain better understanding of interior enrichment.

**UNIT I**

1. Introduction to Art-
  - i. Design – definition, types- structural and decorative and judgement of good design
  - ii. Elements of Art-line ,shape , Colour, Texture, Pattern, light, space
  - iii. Principle of Art- Proportion, balance, emphasis, harmony, rhythm
  - iv. Colour arrangement -Functions ,Characteristics ,Principles, Effect of Colour on Human Mind, Colour Schemes, Factors affecting the selection of colour in Home Decoration.
2. Wall:

- i. Classification,
  - ii. types of building walls,
  - iii. functional characteristics of walls
  - iv. Types of wall treatments
  - v. Exterior and interior wall finishes
- Types of doors and windows

### UNIT II

3. Doors and windows
  - i. Types of doors and windows
  - ii. Windows Treatment – Hard- Blind, Shades, Cornices ,Soft- Curtains, and draperies
  - iii. Window accessories
4. Flooring Material – Hard & Soft
  - i. Types of floor covering, care and maintenance
  - ii. Selection of floor covering

### UNIT III

5. Furniture-
  - i.Types , materials and finishes of furniture
  - ii.Factors affecting the selection of furniture
  - iii.Principles of Arrangements,
  - iv.Furniture arrangement in different rooms
- 6 . Arrangement of light-
  - i. Importance of lighting
  - ii. Sources of lighting
  - iii. Arrangement in Different rooms
7. Flower Arrangement –
  - i. Meaning and Importance,
  - ii. Materials used, principles involved
  - iii. Types of flower management
  - iv. Practical utility and care

### PRACTICAL Interior Design

Duration of Examination: 3hrs  
Hours/Week : 2 hrs

Max Marks: 50  
Min. Pass Marks:20

#### Content:

1. elements of art and principles of design.
2. Development of motif and design through art principles
3. Colour – colour schemes, values and intensity scale, colour wheel.
4. Market survey – different types of doors, furniture and floor coverings.
5. Furniture – care and arrangement of furniture.

6. Flower arrangement.
7. Learning different types of table setting and napkin folding.
8. Various Doors
9. Window treatment.

**Marks Distribution:**

i. Students are excepted to Submit Project report for exercise 3.	10
ii. Plan and prepare a two dimensional room with furniture arrangement	20
iii. Colour Wheel And Scheme, Picture Catalogue	10
iv. File and Record	05
v. Viva	05
<b>Total</b>	<b>50</b>

**References :**

1. Dorothi, *et al.*, (1980).Introduction to Interior Design. New York: Mc Millan.
2. Faulkner and Faulkner.(1975). Inside Today's Home. New York: Holt, Rinehart and Winston.
3. Gewther, M. (1970).The Home, its Furnishings and Equipment U.S.A. Mc. Graw Hill.
4. Mike, L. (1986). The Complete Interior Decoration. United Kingdom: Mc Donald.
5. Ruth, M. (1975). The Home and its Furnishings, U.S.A.: Mc. Graw Hill.
6. Seetharaman P. and Sethi M. (2002).Interior Design and Decoration.CBS Publishers and Distributors. New Delhi.

**TEXTILE AND CLOTHING - III**  
**Apparel Making and Traditional Textiles**

**Hours/Week** – 4 hrs /week

**Duration Examination** – 3 hrs

**Max Marks : 100**

**Min Marks :40**

**Content:****UNIT I**

1. Family Clothing:
  - a. Wardrobe Planning
  - b. Clothing Budget according to needs of the family and factors influencing needs
  - c. Clothing requirements of different age groups
    - Infant and Toddler
    - Preschooler
    - School age children
    - Adolescent
    - Adult and Senior citizen

2. Fitting Problems:
  - a. Fitting factors affecting good fit
  - b. common problems and remedies related to sleeves, skirt , shoulder and bodice

### UNIT-II

3. Design
  - a. Elements of design – line, colour and texture.
  - b. Principle of design – balance, proportion, rhythm, emphasis and harmony.
  - c. Structural and applied design in relation to fabric and apparel.
4. Traditional Textiles of India
  - a. Dyed and printed textiles
    - i. Kalamkari
    - ii. Patola of Gujrat and Tie and Die of Rajasthan.
    - iii. Telia – Rumals of Andhra Pradesh
  - b. Traditional sarees of India : Jamdani, Pochampalli, Patola, Ikat, Kanjivaram, Chanderi , Maheshwari and Brocades

### UNIT III

5. Paper pattern and layout:
  - i. Difference between, draft and paper pattern
  - ii. Different type of layouts : crosswise, longitudinal, open and combination
  - iii. Preparation of fabric for cutting and layout of paper pattern on different fabrics – patterns including plain, bold print lines, plaids and checks.
  - iv. Calculating of material required
6. Drafting, flat patterns, draping , principles and rules.
7. Readymade garments : meaning, advantages and limitations
8. Selection and buying fabrics for various uses in the home
9. Consumer problems and their remedies

### PRACTICALS Apparel Making

Duration of examination: 4hrs  
Hours/Week: 4 hrs/ batch/week

Max Marks: 50  
Min Pass Marks : 20

1. Drafting and construction of –
  - i. Frock- Aline, gathers, party wear frocks
  - ii. Skirts,
  - iii. Skirt Top

- iv. Saree blouse,
  - v. Churidar/Salwar ,
  - vi. Ladies Kameez/ Kurta, Development of paper – patterns
2. Embroidary –Making of samples for Traditional embroideris and any one household article  
Phulkari, Kashmiri Kasheeda, Kantha, Chickankari, Kutchh kadhai, Kasuti
  3. Visiting the textile museums.

**Distribution of Marks:**

1. Record and File	10 Marks
2. Traditional Embroidery sample (any one)	10 Marks
3. Construction and Finishing of any one garments (complete)	30 Marks
<b>Total</b>	<b>50</b>

**References :**

1. Lewis Bowers and Keltunen Clothing, construction and wardrobe planning – MacMillan Co. New York
2. Thompson and Rea – Clothing for Children John Wiley and sons
3. Wintage B. Isabel- Textiles fabrics and their selection – Prentice Hall, New York
4. Latze, Alpha and Hosletter Helen P- The wild World of Clothing. The Ronald Press Company , New York
5. Dongarkamy Kamala S. Romance of Indian Embroidery – Thacker & Co. Mumbai
6. Pandit Savitri – Indian Embroidery,- Its Variegaled Charms.

**Scheme of Examination and Courses of Study**  
**B.Sc. Home Science, Part –II (2024-25)**  
**Duration of Theory Examinations:- 3 hrs**  
**Semester - III**

Course Particular	Course Code	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
<b>Skill Enhancement Course</b>			Theory	2	70+30
<b>Main Papers</b>					
<b>DCC</b>	<b>BHS8301T-CO</b>	<b>Food and Nutrition II (Food Science)</b>	Theory	4	70+30
	<b>BHS8301P-CO</b>	<b>Food Science</b>	Practical	2	50
<b>DCC</b>	<b>BHS8302T-CO</b>	<b>Family Resource Management -II ( Consumer Economics)</b>	Theory	4	70+30
	<b>BHS8302P-CO</b>	<b>Consumer Economics</b>	Practical	2	50
<b>DCC</b>	<b>BHS8303T-CO</b>	<b>Textile and Clothing- II (Textile &amp; Laundry Science )</b>	Theory	4	70+30
	<b>BHS8303P-CO</b>	<b>Textile &amp; Laundry Science</b>	Practical	2	50
<b>Grand Total</b>				<b>20</b>	<b>550</b>

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each) . Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Attendance : 10 Marks

**Main Papers**  
**Paper 1**  
**Food and Nutrition -II**  
**(Food Science)**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Objectives :**The course will enable the students to

1. Get acquainted with the composition of different foodstuffs.
2. Understand the chemistry of foods.
3. Apply the theoretical aspects in ensuring food quality.

**Contents :**

**UNIT I**

1. **Physio-chemical properties of foods.** – Concepts of Colloids, osmotic pressure, hydrogen ion concentration (pH) and bound water in foods.
2. **Sensory Evaluation** –Definition, Use of Sensory analysis in product evaluation, Methods of Sensory Evaluation (in brief).
3. **Carbohydrate foods** –
  - a. **Starchy Foods-**
    - i. Structure of Starch Cell
    - ii. Changes produced in starch cell during cooking
    - iii. Factors requiring control during starch cookery
    - iv. Various preparations using starchy foods.
  - b. **Cereals**
    - i. Processes done before cooking – Elementary knowledge of milling, polishing, parboiling, flaking, and parching, roasting.
    - ii. Various ways of using cereals – whole grain, flour-coarse, fine & refines, convenience foods, cereal food products.
  - c. **Sugars-**
    - i. Basic knowledge of manufacturing process of sugar and Jaggery
    - ii. Properties of sugar.
    - iii. Sugar Cookery – Behavior of sugar in concentrated solutions, uses and various preparations of Sugar and Jaggery.

**UNIT II**

4. **Protein foods** –  
**(A) Animal Sources :**

**a. Milk and milk products :**

- i) Preparation of milk products in brief: curd , khoa, paneer , cheese and milk powder
- ii) Processing techniques – Pasteurization and Homogenization.
- iii) Use of milk in food preparations – Effect of heat, acid, enzymes and salt, various uses.

**b. Eggs :**

- i) Measures of quality and grading of eggs.
- ii) Egg Cookery – Factors affecting whipping quality of eggs and heat coagulation of egg protein.
- iii) Uses of egg in cookery.
- iv) Methods of cooking egg and egg dishes.

**c. Flesh foods : (meat, fish and poultry) –**

- i) Postmortem changes and aging of meat.
- ii) Factors affecting tenderness.
- iii) Meat cookery – changes during cooking , Curing Process.

**(B) Vegetable Sources :**

**a. Legumes and Pulses :**

- i. Effect of methods like soaking, germination and fermentation
- ii. Effect of acid and soda during cooking.
- iii. Various preparations, incorporation of pulses with other food groups

**5. Fats and Oils :**

- a. Types of Fats and Oils.
- b. Manufacturing process – separation/ extraction, refining process and hydrogenation.
- c. Importance in cooking.
- d. Change in fats and oils on heating. Storage of used oils.
- e. Rancidity of fats.

**UNIT III**

**6. Protective Foods : Fruits and Vegetables**

- a. Changes occurring during maturation and ripening.
- b. Pigments present.
- c. Changes that take place during cooking : Effect of heat, acid and alkali.
- d. Pectin, gum and applications in food processing.

**7. Phytochemicals**

**8. Food additives : Types, and functions.**

**PRACTICAL  
Food Science**

Hours/week ; 2 hrs  
Exam duration : 3 hrs

Max Marks :50  
Min Pass Marks : 20

1. **Organoleptic evaluation of foodstuffs.**
2. **Starch and Cereal Cookery :-**
  - a. Examination of starches under the microscope.
  - b. Various preparations showing.
    - i. Dextrinisation, gelatinization and thickening abilities – effect of heat, types of starch, concentration of starch, fat, acid, protein, heating, agitation, and ingredients.
    - ii. Gluten formation and factors influencing its formation.
  - c. Preparation of selected common recipes.
3. **Sugar – Cookery :**
  - a. Preparation showing syrups of various strengths.
  - b. Preparation in which :
    - i. Size of crystals is controlled.
    - ii. Crystal formation is prevented.
    - iii. Some functions of sugars are shown.
4. **Pulses , Nuts and oilseeds :**
  - a. Effect of acid and alkali on texture and doneness of pulses.
  - b. Use and preparation of selected recipes.
  - c. Ways of improving nutritive quality of proteins.
5. **Cooking with fats and oils :**
  - i) Studying different factors affecting fat absorption.
  - ii) Suitability of different fat sources to different products.
6. **Egg cookery :**
  - a. Preparation showing functions of egg in cooking – as foaming, coating, binding, flavouring and colouring agent.
  - b. Effect of time, temperature, salt and acid on coagulation of egg protein.
  - c. Egg white foam – factors contributing to volume and stability.
  - d. Various ways of using egg: boiled, poached , fried, scrambled, plain and puffy omelets, egg curry, etc.
7. **Vegetable cookery:**
  - a. Effect of acid, alkali, heating, covering and cooking on the colour and doneness of vegetables.
8. **Cooking of flesh foods :**Preparation of selected common recipes using meat, fish, and poultry. (Optional)
9. **Frozen desserts :** Souffle and Ice creams.

10. **Baked Products** : Cakes and Biscuits.

11. Visit to a food – processing Unit.

**Distribution of Marks**

1. Files & Records	10
2. Planning (2 Problems)	10
3. Preparation of recipes	12
4. Method of work & cleaning.	5
5. Service	5
6. Identification of (a) Starch grains (2)	3
7. Viva voce	5
<b>Total</b>	<b>50</b>

**References ;**

1. Peckham, G.C. : Foundations of Food Preparation. MacMilln Publishing co.
2. Potter, N.N. : Food Science CBS Publisher and Distributers N. Delhi.
3. Swaminathan M. (1995)Food Science –Chemistry and Experimental Foods , BAPCO, Banglore.
4. Sethi, M. and Rao, ES. (2001): Food science, Experiments and Applications. CBS Publications and Distributors, N. Delhi.
5. Srilakshmi, B. (1997) : Food Science, New age International (P) Ltd., Publishers , N. Delhi.
6. Khader, V. (2001) : Textbook of Food Science and Technology. ICAR, N. Delhi.
7. [unclear] [unclear] (2019) : [unclear] [unclear], New Age International Publishers, New Delhi.

**Paper 2**  
**Family Resource Management -II**  
 ( Consumer Economics)

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**UNIT I**

**1. Consumer Economics :**

Definition of consumption and consumer, types of consumer, factors affecting consumer.

2. **Wants** –definition, classification, characteristics ,factor affecting wants
3. **House hold Income** – meaning, types and sources of income,factors affecting family income,ways of supplementing family income.

**UNIT-II**

4. **Family budget**-definition, importance and steps in making budget

5. **Family expenditure**- meaning, types, importance and factors affecting family expenditure.
6. **Saving and investment**- meaning, importance, types and factors determining saving, criteria for judging good investment and saving
7. **Market** :- Definition, types, characteristics, channels of distribution.

UNIT III

8. **Consumer education** –Rights and responsibilities of consumer, consumer protection act 1986, consumer legislation, consumer redressal mechanism, citizen charter and right to information act.
9. **Entrepreneurship**- definition, need and significance of entrepreneurship development in India, challenges faced by women entrepreneur, major steps in setting up a small scale project.

**PRACTICALS**  
**Consumer Economics**

Hours/week ; 2 hrs  
Exam duration : 3 hrs

Max Marks :50  
Min Pass Marks : 20

**PRACTICAL**

1. Study the function of –Retail store, Mobile retailer, Cooperative stores, Super market, Big malls, Multiplex, Credit Card, Direct Marketing, Tele marketing, Mail Order, Vending machines and e-shopping.
2. Conducting case studies of citizen charter in Utilization of Services.
3. Planning and implementation of consumer guidance and counseling centre.
4. Preparation of small scale plan.

**Marks Distribution :**

- |  |          |
|--|----------|
| 1. Students are expected to submit files and reports of market survey. | 10 Marks |
| 2. Viva  | 10 Marks |
| 3. Practical related to topic No.2,3                                   | 15 Marks |
| 4. Practical related to topic No.4                                     | 15 Marks |

**Total** **50 Mark**

**References :**

1. Leland, J. Gordon Stewart, Lee (1974) Economics and Consumer – 7<sup>th</sup>ed D'Von Nostrand Co N.Y.
2. Om Welers (1974): Who Buy – A study of the consumer.
3. Sherlekar, S.A. (1986) : Track Practices and Consumers, Himlayan Publishing House (Unit I, VI)

4. Kolter Philip, Armstrong Gary (1992) : Principles of marketing 5<sup>th</sup> – ed Prentice Hall of India New Delhi.
5. David H. Bangs, Jr: The market planning guide 3<sup>rd</sup> ed. Gangotera Pub.
6. Sarkar A : Problems of consumer in modern India, Discovery publishing House.
7. Jones, Bridget (2000) Entertain in istyle, London ; Annes Publishing Ltd.
8. Gill, Robert, W. (1984) Rendering with paper nd ink 2<sup>nd</sup> Ed.
9. Willar Mak (1960) Know how to draw, London B.T. Batiford Ltd.
10. Chaudhary Rohit (editor) English Lettering and alphabets, New Delhi, Gaurav Publishing House.

**Paper-3**  
**TEXTILES AND CLOTHING - II**  
**Textiles and Laundry Science**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Contents :**

**Unit 1**

**1. Fabric construction**

- a. Weaving
- b. loom and its parts
- c. types of weaves-
  - i. construction, properties and uses of plain, twill, satin and sateen
  - ii. introduction to complex weave-double cloth weave and pile weave
- d. Knitting technology - warp knitting and weft knitting.
- e. Blends - definition, properties and stages of blending.
- f. Felting - properties and stages of felting

**Unit 2**

**2. Fabric finishes**

- a. Introduction and need
- b. Basic finishes - bleaching, scouring, sizing, mercerizing, calendaring, tantering.
- c. Texturing finish - flocking and embossing
- d. Functional finishes – water proofing, fire proofing

**3. Dyeing and printing**

- a. Classification of dyes.
- b. Stages of dyeing equipment used advantage and limitations.

**4. Printing**

- a. Style of printing - direct, resist and discharge.
- b. Methods of printing – block, roller and screen.

**Unit 3**

**5. Laundry science**

- a. Materials and equipments used in laundry.
  - b. Soaps and detergent – classification, chemical nature, manufacturing properties and their cleaning action
- 6. laundering aids**
- a. Stiffening agents - their types, methods of preparation and uses.
  - b. Solvents and absorbents - their types, methods of preparation and uses.
  - c. Stain removal - types and methods of removal of stains
  - d. Care and storage of laundered clothes.

**PRACTICALS**  
**Textiles and Laundry Science**

Duration of examination – 3 hours

Max marks: 50

Hours/week: 2 hrs

Min Pass Marks: 20

1. Identification of weaves and their design, interpretation on graph.
2. Evaluation of colour fastness.
3. Preparation of samples of tie and dye, batik and printing techniques.
4. Preparation of starches by various stiffening agents and their uses.
5. Removal of stains.
6. Introduction to computer aided designing for weaving software.
7. Visit to texting mills, museums and garment factories.

**Distribution of Marks:**

- |   |          |
|---|----------|
| 1. Record & File                                | 10 marks |
| 2. Identification of weaves                     | 10 marks |
| 3. Tie & Dye / block Printing / Batik (any one) | 10 marks |
| 4. Stain removal (2)                            | 10marks  |
| 5. Viva voce                                    | 10 marks |

**Total**

**50 Marks**

**References**

1. Joseph Marjory L: Introductory Textile Science Holt, Tichard and Winston, N. York
2. Wintage, Isabel B. : Textile fabrics and Their Selection Prentic Hall, Inc., Englewood Cliffs, N. Jersy
3. Joseph Marjory L: Essentials of Textiles Hold, Rinehart and Winston, New York
4. Hess, Katherinc Paddock: Textiles Fabrics and their uses Oxford and IBH –Publishng co. New delhi
5. Corbman Bernard: Textile fiber to Fabric: Mcgraw Hill book Company New York

6. Hollen Norma, Saddle Jane, Angford Anna – Textiles; Macmillan Publishing Co. Inc. N. York
7. Deulkar Durga : Household Textiles and Laundry Work : Atma Ram & Sons, N. Delhi
8. Dhatyagi; Sushella : Fundamentale of Textiles and their Care Oriented Longmans , Bombay
9. Smith Betty F. Block Ira- Textiles in Perspective – Prentice Hall INC Englewoodeliffe Jersey.

**Scheme of Examination and Courses of Study**  
**B.Sc. Home Science, Part –II (2024-25)**  
**Duration of Theory Examinations: --3 hrs**  
**Semester -IV**

Course Particular	Course Code	Course Nomenclature	Theory/ Practical	Credit	EoSE/ C
<b>Program: Undergraduate Certificate, BSc. Home Science</b>					
<b>Skill Enhancement Course</b>			Theory	2	70+30
<b>Main Papers</b>					
DCC	BHS8401T-CO	<b>Food and Nutrition -III</b>	Theory	4	70+30
	BHS8401P-CO	<b>Nutritional Biochemistry</b>	Practical	2	50
DCC	BHS8402T-CO	<b>Extension and Communication-II</b>	Theory	4	70+30
	BHS8402P-CO	<b>Community Development</b>	Practical	2	50
DCC	BHS8403T-CO	<b>Human Development - II</b>	Theory	4	70+30
	BHS8403P-CO	<b>ECCE Activity Planning</b>	Practical	2	50
<b>Grand Total</b>				<b>20</b>	<b>550</b>

**Note:- Practical work load is to be counted - 1:1**

**Note \*:** Each theory paper is divided into two parts . Part A and Part B

**Part A :** (20 marks) is compulsory and contains 10 questions at least 3 questions from each unit.(50 words each ). Each question is of 2 marks.

**Part B:** (50 marks) Contains 10 questions at least 3 questions from each unit . Candidate is required to attempt any 5 questions selecting at least one question from each unit (400 words each). Each question is of 10 marks.

**Note \*:** For Internal evaluation (30 Marks)

- i) Assignment : 10 Marks
- ii) Term Test : 10 Marks
- iii) Attendance : 10 Marks

## Main Papers

### Paper 1

#### Food and Nutrition -III (Nutritional Biochemistry)

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

**Objectives :** The Course lays the foundation for understanding the functioning of metabolic processes at cellular level, and the role of various nutrients in these processes. This course will enable students to

1. Develop an understanding of the principles of biochemistry (as applicable to human nutrition)
2. Obtain an insight into the chemistry of major nutrients and physiologically important compounds .
3. Understand the biological processes and systems as applicable to human nutrition.

#### Contents :

##### UNIT I

1. **Introduction to biochemistry** - Definition, Objectives
2. **Carbohydrates** –
  - a. Definition, Composition and Classification
  - b. Structure and properties of mono-di-and poly- saccharides
  - c. Functions of Carbohydrates.
3. **Lipids** –
  - a. Definition, Composition, Classification
  - b. Physical and Chemical properties
  - c. Hydrogenation and Emulsification of fats.
  - d. Acid value, iodine value and saponification value.
  - e. Functions of Lipids.
  - f. Rancidity of Fats
  - g. Lipoproteins – types
4. **Proteins** –
  - a. Definition, Composition, Classification
  - b. Essential and non-essential amino acids
  - c. Structure and functions of proteins.

##### UNIT II

5. **Enzymes** –
  - a. Definition
  - b. Classification of enzymes,
  - c. Specificity of enzymes

- d. Factors affecting velocity of enzyme
  - e. Enzyme inhibition.
  - f. General properties of enzyme and functioning
6. **Molecular aspects of transport** - Passive diffusion and active transport.
7. **Vitamins**
- a. Structure and biochemical role of vitamins
  - b. Fat soluble – A, D, E and K
  - c. water soluble – B<sub>1</sub>, B<sub>2</sub>, niacin, B<sub>6</sub> and C.
8. **Minerals** – Biochemical role of inorganic elements – calcium, phosphorous, magnesium, iron, copper, sodium, potassium, iodine, fluorine and zinc.

### UNIT III

9. **Intermediary metabolism** –

Elementary study of intermediary metabolism of Carbohydrates lipids and proteins : Glycolysis, gluconeogenesis, glycogenesis, glycogenolysis,  $\beta$  oxidation and biosynthesis of fatty acids, synthesis of ketone bodies, ketosis, general reactions of amino acid metabolism – deamination, transamination, decarboxylation and entry of amino acid into TCA cycle, urea cycle, Citric acid cycle (TCA)..

10. **Introduction to genetic control of metabolism** –

- a. Nucleic acids- Types, Composition and Structures.
- b. Replication and Transcription

### PRACTICALS

#### Nutritional Biochemistry

Hours/week : 2 hrs

Duration of Examination : 3 hrs

This course will enable the students to

1. Be familiar with qualitative tests and quantitative determinations.

**1 : Carbohydrates**

- Reactions of mono, di and polysaccharides and their identification in unknown mixtures.

**2: Fats**

- Reactions of fats and oils.
- Determination of Acid value, Saponification value and Iodine number of natural fats and oils.
- Demonstration on estimation of crude fat content of foods by Soxhlet's method.

**3: Proteins**

- Reactions of amino acids and their identification in unknown mixtures.
- Demonstration on estimation of total N of foods by Kjeldahl method.

**4: Vitamins**

- Estimation of ascorbic acid content of foods by titrimetric method and colorimetric method.

**5: Minerals**

- Estimation of calcium in CaCO<sub>3</sub> by EDTA titrimetric method.
- Estimation of chloride in table salt by titrimetric method.
- Estimation of phosphorous by colorimetric method.

**Distribution of Marks**

i.	Files, Records etc.	10 Marks
ii.	Qualitative analysis (two compounds)	20 Marks
iii.	Quantitative analysis	
	a. Principles and methods	-6
	b. Observation & calculation	-8
	c. Results & precautions	-6

**Total - 50 Marks**

**Note :** Atleast one observation of each experiment should be checked by one of the examiners.

**References :**

1. Conn, E.E. Stumpf P.K. Brueing, G. And Doi R.H. : Outlines of Biochemistry, John Willy & Sons, N. York.
2. Indian Standards Institutions, (1985) ; ISI Handbook of food Analysis, Parts I – XI, Manak Bhawan, New Delhi.
3. Lehninger, A.L., elson, D.L. and Cox, M.M. (1993) : 2<sup>nd</sup> Ed. Principles of Biochemistry, CBS Publishers and distributors.
4. Murray , R.K. Granner, D.K. Mayes, P.A. and Rodwell , V.W. (1993) : 23<sup>rd</sup> Ed. Harper’s Biochemistry. Lange Medical Books.
5. Rao, K.R. : Textbook of biochemistry, Pentice 4 Hall of India Pvt. Ltd. NewDelhi.
6. Sundararaj , P. and Siddhu, A., (1995) : Qualitative test and quantitative procedures in Biochemistry – a practical Manual, Wheeler Publishing.
7. White, A Handler P., Smith E.L., Stelten, D.W (1959): 2<sup>nd</sup> Ed. Principles of Biochemistry, Mc Graw Hill Book Co.
8. Swaminathan, Ms (1985) : Essential of Food and Nutrition VI : Fundamentals aspects VII : Applied Aspects. Banglore Printing Co. Ltd.
9. Deb, A.C.(.) :Fundamentals of Biochemistry, New Central Book Agency Pvt. Ltd. , West Bengal.
10. □□□□ □□□□ □□ □□□□□□□□ □□□□ (2013): □□□ □□□□□, □□□□□□□□ □□□□ □□□□□ □□□□□ □□□□□ □

## Main Papers

### Paper 2

#### Extension and Communication - II (Community Development)

Hours/Week – 4 hrs /week

Duration Examination – 3 hrs

Max Marks : 100

Min Marks :40

#### Unit I

1. **Extension System in India:** Extension efforts in Pre-Independence era:- (Sriniketan, Marthandam, Sevagram, Gurgaon. Post-Independence era:- Firka development, Etawah Pilot Project & Nilokheri Experiment
2. **Rural Development:**
  - i. Definition, and Concepts
  - ii. Objectives and Importance of rural development.
  - iii. Problems in rural development.
  - iv. Social Structure & System: Society, Community, Institutions, Social Groups, Family & Marriage.
  - v. Impact of Industrialization & urbanization on Indian Social Structures.

#### Unit II

3. **Various rural development programmes launched by Govt. of India**
  - i. Community Development Program: Meaning, Definition of Community, Development & Community Development, objectives, & Principals of Community Development
  - ii. Panchayati Raj System: Concept, Objectives & Challenges, Structural Organization & Role in Community Development
4. **Community Development Programme Approach**
  - i. Multi - Purpose
  - ii. Target Group
  - iii. Growth Centered
  - iv. Minimum needs
  - v. Antyodaya
  - vi. Integrated

#### Unit III

5. **Approaches & Methods of Socio-economic Analysis**
  - i. Survey
  - ii. Case studies
  - iii. Observations
  - iv. Rapid Rural Appraisal

v. Participatory Rural Appraisal

**6. Diffusion & Adoption of Innovations: Meaning & Definition**

i. Process & Stages of Adoption

ii. Adopter's Category

**7. Cyber Extension/ E-Extension**

**PRACTICALS  
Community Development**

Duration of Examination : 3hrs

Max Marks : 50

No. of Hours/Wk - 2 hr

Min Pass marks :20

1. Visit to the rural/urban community where some community development/extension programmes are going on.
2. Assess any one ongoing programme in that area.
3. Presentation of the report on the programme and socioeconomic condition of the area.
4. Practical use of RPA/PRA methods.

**Distribution of Marks :**

- |                           |          |
|---------------------------|----------|
| 1. File & Record          | 20 marks |
| 2. Presentation of Report | 20 marks |
| 3. Viva Voce              | 10 marks |

**Total :50 marks**

**References :**

1. Dhama, O.P. & Bhatnagar, O.P. : Extension and Communication for Development, Oxford and IBH Publishing Co., New Delhi, 1985.
2. Singh, R; Text Book of Extension Education, Sahitya Kala Prakashan, Ludhiyana, 1987.
3. Patnayak R; Rural Development in India, Anmol Publication, New Delhi 1990.
4. Reddy, A.; Extension Education, Sri Lakshmi Press, Bapatala, 1987.
5. Baidyanath M; Poverty, Unemployment and Rural Development, Himalaya Publishing House, Bombay, 1991.
6. Thingalaya, N.K. ; Rural India-Real India, Himalaya Publishing House, Bombay, 1986.
7. Alminyso, Social Change and Development, Sage Publications Pvt. Ltd., Madras, 1990.
8. Desai V.; A study of Rural Economics System Approach, Himalaya Publishing House, New Delhi, 1990.
9. □□ □□□□ □□□□ □□ □□□□ □□□□□□, : □□□□□□ □□□□□□,□□□□□□ □□□□□□ □□□□□□ I
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**Journals.**

1. Changing Villages, PPS Gussain for consortium on Rural Technology, D-320, Laxmi Nagar, New Delhi - 110092.
2. Journal of Rural Development, The National Institute of Rural Development, Rajendranagar, Hyderabad - 500029.
3. Social Welfare, Central Social Welfare Board, Samaj Kalyan Bhavan, B- 12, Tona Crescent, Institutional Area South of IIT , New Delhi - 110016.

## **Main Papers**

### **Paper 3 Human Development – II (Early Childhood Care & Education)**

**Hours/Week** – 4 hrs /week  
**Duration Examination** – 3 hrs

**Max Marks : 100**  
**Min Marks :40**

#### **Content:**

#### **UNIT I**

1. Introduction to early childhood education .
  - a. Meaning and nature of early childhood education
  - b. Need and importance of ECCE
  - c. Objective of early childhood education
2. Types of curriculum models of early childhood education
  - a. Kindergarten
  - b. Montessori
  - c. Nursery
  - d. Balwali

#### **UNIT II**

3. Organization of early childhood care and education centers .
  - a. Building layout of preschool
  - b. Indoor and outdoor equipments
  - c. Curriculum
  - d. Supervision and evaluation
4. Exceptional children :
  - a. Definition
  - b. Types of exceptional children

#### **UNIT III**

5. Parent child relationship : Determinants of parent child relationship.
6. Art education and activities for the preschool child.
7. Problem child : Types and corrective measures of problem child.
8. Contribution of following agencies to ECCE in India :
  - a. ICCW
  - b. IAPE
  - c. NCERT
  - d. ICDS

### PRACTICALS

Hours/week/batch :2 hrs  
Exam duration :3 hrs

Max Marks :50  
Min Pass Marks : 20

- (1) Preparation of creative album/ picture book/ children's literature for early childhood education
- (2) Story telling
- (3) Visit and report presentation (any two )
  - a. Play school
  - b. Nursery school
  - c. Anganwadi
  - d. Institutes of children with special needs
- (4) Daily, weekly and monthly planning for an ECCE centre.

#### Distribution of Marks:

1. Preparation of creative Albums, Picture Books and Children's Literature	10
2. Story telling	5
3. Planning of ECCE centre	5
4. Developmental Activities	10
5. Visits & Report presentation	5
6. File & Record	10
7. Viva voce	5
<b>Total</b>	<b>50</b>

#### References :

1. Grewal, J.S. Early Childhood Education, Foundations & Practice, 1984, National Psychological Corporation Agra.
2. Aggarwal, J.C. : History & Philosophy of Preschool Education in India, 1998, Doba House, New Delhi.
3. Kaul, V. Bhatnagar, R. (1992) : Early Childhood education A trainer's handbook, New Delhi.

4. Murlidharan, R. Asthama, S.(1991) : Stimulation activities for young children, New Delhi : NCERT.
5. Swaminathan, M. (1984) : Play activities for young children, New Delhi, UNICEF.
6. Tarapore, F., Kettis, G. Benninger, C. (1993) Childs Right to Play Pune: SNDT College of Home science.
7. Decker, C.A. & Decker, J.R. (1984) : Planning and administerig early childhood programs, Columbus, Charies . Merrill, Unit II
8. Gill, S. (1993) : Child care Programs in India. Changing trends. In saraswathi, S.S. & Kaur, B. New Delhi, Sage Publication.
9. Kaul, V. (1991) : Early Childhood Education Programme. New Delhi: National Council for Educational Research & Training.
10. National Policy on Education (1986) : New Delhi Ministry of Human resource Development.
11. Seefeldt C. (1980) : A curriculum for preschool Columbus Ohio : Bell & Howell.
12. Pankajam, G. (1994) : Preschool education, Ambala Cantt : Indian Publication.
13. Kulkarni, S.S. (1988) : Parent Education : Perspectives and approaches Jaipur Rawat Publishers.
14. Mohanty, J & Mohanty, B. Early Childhood Care & Education (ECCE) 1996, Deep & Deep Publication, New Delhi.
15. Singh, B., Preschool Education, 1997 APH Publishing Corporation, New Delhi.
16. Arni, K & Wolf G. (1999) Child Art with everyday materials, TARA Publishing.