

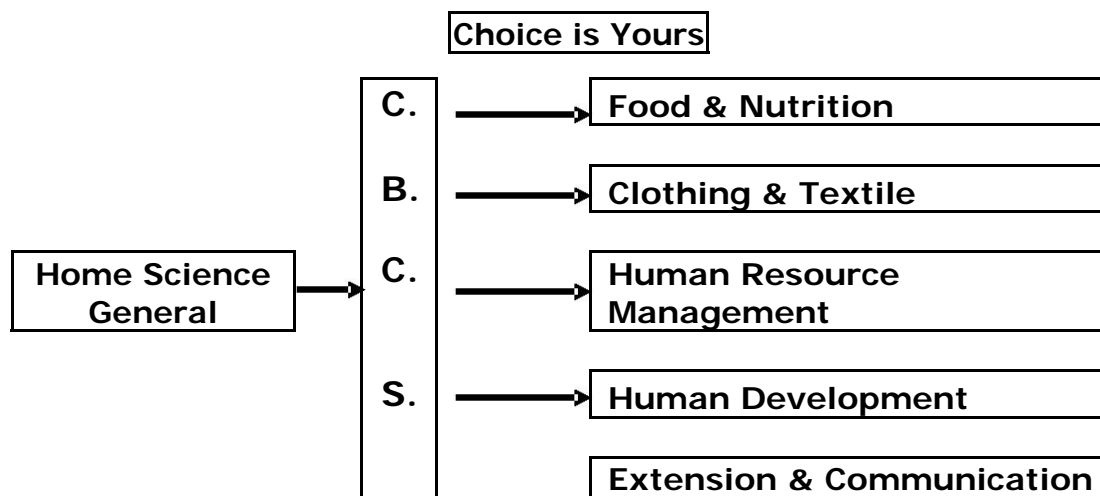
GUJARAT UNIVERSITY

HOME SCIENCE UNDERGRADUATE AND POSTGRADUATE PROGRAMMES FOR GENERAL HOME SCIENCE (COMPOSITE)

(FAMILY AND COMMUNITY SCIENCES)

CURRICULUM AS PER THE CHOICE BASED CREDIT SYSTEM

(Implemented from June 2011)



PREFACE:

Home Science (Family and Community Science) is an interdisciplinary field of studies comprising of Food and Nutrition Science, Clothing and Textile Science, Human Resource Management, Human Development and Extension and Communication. Each of this area is multi - disciplinary in nature dealing with the 'Art and Science of Living'. The individual, the family and the community are the foci of Home Science. The security and development of the family is so much part of the social fabric of individuals and communities which are reflected in the curriculum of Home Science, with due focus on gender neutral, career perspectives and region specific - urban as well as rural areas.

Home Science is a unique field of knowledge and its inter-disciplinary approach in synthesizing knowledge drawn from physical, Biological, Social Science, Arts and Humanities, Technology and Management has enriched its educational programme which prepare an individual in improving the standard of living, quality of life of individuals and communities, which contributes significantly to the economic and over all development of the individual, family and nation to meet the challenges in the global context. This is achieved through a blend of academics, research training and extension as well as industrial applications. The programme has considerable emphasis on integrated approach of combining theory and practical's and fieldwork. Competency based courses have sound market value and would lead to social and economic empowerment. Field placement would be incorporated to allow for the Integration of skills in the learning processes with

transfer of knowledge from laboratory to classroom and from classroom to field.

The programme allows flexibility in the choice of thrust areas, which student can select, based on their career goals. It is envisaged that the current scenario at the regional and national level require trained professionals in areas such as clinical and therapeutic Nutrition, Extension Management, Apparel Design and Construction, Child and Human Rights, Nutrition for Health and Fitness, Fashion Design, Interior Decoration etc.

The curriculum integrating several elective courses, besides the core, has been formulated to provide professionally competent manpower for Academic and Research activities.

Goals: To develop an integrated programme for life and career for students and enable them to develop entrepreneurial skills.

Objectives:

1. To enable the students to acquire the knowledge and skills required for holistic understanding of the field of Home Science discipline.
2. To enable the students to acquire the knowledge and competence to practice Home Science in relevant setting.

PROGRAMME DURATION: Six Semesters
PROGRAMME STRUCTURE: (Tentative)

**B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S. (REVISED)**

SEM - I

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 101	Introduction to Foods and Nutrition	3	1	-	4	4
2	Core 102	Introduction to Clothing Construction	3	1	-	4	4
3	Elective (EC-1) 101	Practical-Food Preparation	-	-	4	4	1½ /1 Cr (6 Hrs)
4	Elective (EC-1) 102	Practical-Clothing Construction	-	-	4	4	1½ /1 Cr (6 Hrs)
5	Elective (EC-2) 102	Introduction to Resource Management	1	1	-	2	2
6	Foundation	Computer Skill - 1	1	1	-	2	2
7	Soft Skill (SS-1)	Banking / Leadership Development	1	-	-	1	1
8	Comp-101	English	2	-	-	2	2
9	Comp-101	Sanskrit	2	-	-	2	2
			13	6	6	25	29

**B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S. (REVISED)**

SEM - II

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 111	Introduction to Household Equipments	3	1	-	4	4
2	Core 112	Applied Chemistry and Physics	3	1	-	4	4
3	Elective (EC-1)111	Handling of Household Equipments	-	4	4	4	1½ /1 Cr (6 Hrs)
4	Elective (EC-1)112	Practical – Chemistry and Physics	-	4	4	4	1½ /1 Cr (6 Hrs)
5	Elective (EC-2)112	Introduction to Human Development	1	1	-	2	2
6	Foundation-111	Environmental Science	1	1	-	2	2
7	Soft Skill-111	Personality Development	1	-	-	1	1
8	Comp-101	English	2	-	-	2	2
9	Comp-101	Sanskrit	2	-	-	2	2
			13	6	6	25	29

**B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S.**

SEM – III

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 201	Meal Management	3	1	-	4	4
2	Core 202	Applied Life Science	3	1	-	4	4
3	Core 203	Family Dynamics	3	1	-	4	4
4	Elective 201	Practical-Meal Planning	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Elective 202	Practical-Applied Life Science	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 201	Computer Skill – II	1	1	-	2	2
7	Soft Skill 201	General Knowledge	1	1	-	2	2
8	Comp 201	English	2	-	-	2	2
			13	5	8	26	30

**B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S.**

SEM - IV

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 211	Indian Tradition Textile and Embroidery	3	1	-	4	4
2	Core 212	Women Empowerment and Entrepreneurship	3	1	-	4	4
3	Core 213	Introduction To Community Nutrition	3	1	-	4	4
4	Elective 211	Practical-Apparel Making and Embroidery	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Elective 212	Practical- Personal Empowerment	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 211	Dress Designing	1	1	-	2	2
7	Soft Skill 211	Hospitality	1	1	-	2	2
8	Comp 211	English	2	-	-	2	2
			13	5	8	26	30

B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S.

SEM - V

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 301	Diet Therapy	3	1	-	4	4
2	Core 302	Housing And Space Designing	3	1	-	4	4
3	Core 303	Family Health	3	1	-	4	4
4	Core Elective304	Practical-Diet Therapy	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Core Elective 305	Practical-Housing And Space Designing	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 301	Sketching and Drawing	1	1	-	2	2
7	Soft Skill 301	Health Management	1	1	-	2	2
8	Comp 301	English	2	-	-	2	2
			13	5	8	26	30

B.A. HOME SCIENCE PROGRAMME

Course Structure for C.B.C.S.

SEM - VI

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 311	Food Preservation	3	1	-	4	4
2	Core 312	Textile Designing And Apparel Making	3	1	-	4	4
3	Core 313	Home Science Education and Extension	3	1	-	4	4
4	Core Elective 314	Practical –Food preservation	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Core Elective 315	Practical –Apparel making	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 311	Research Methodology	1	1	-	2	2
7	Soft Skill 311	Fundamental Duties and Rights	1	1	-	2	2
8	Comp 311	English	2	-	-	2	2
			13	5	8	26	30

(Family and Community Sciences)
Home Science Undergraduate Programme for
General Home Science (Composite)
Curriculum as per the choice based credit system
(Implemented from June 2011)

B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S. (REVISED)

SEM - I

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 101	Introduction to Foods and Nutrition	3	1	-	4	4
2	Core 102	Introduction To Clothing Construction	3	1	-	4	4
3	Elective (EC-1) 101	Practical-Food Preparation	-	-	4	4	1½ /1 Cr (6 Hrs)
4	Elective (EC-1) 102	Practical-Clothing Construction	-	-	4	4	1½ /1 Cr (6 Hrs)
5	Elective (EC-2) 101	Introduction to Resource Management	1	1	-	2	2
6	Foundation	Computer Skill – 1	1	1	-	2	2
7	Soft Skill (SS-1)	Banking / Leadership Development	1	-	-	1	1
8	Comp-101	English	2	-	-	2	2
9	Comp-101	Sanskrit	2	-	-	2	2
			13	6	6	25	29

**B.A. HOME SCIENCE
SEM - I**

CORE – 101 THEORY

INTRODUCTION TO FOODS AND NUTRITION

Lectures Per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
3	-	1	4					3.00 Hours	3.00 Hours

Focus:

This course builds upon the Fundamentals of Foods and Nutrition and provides further information regarding the role of macro and micro nutrients in human nutrition as well as basic information regarding Food Preparation and Serving.

Objectives:

This course will enable the students to

- (1) Understand basic concept of Food, Nutrition, Nutrients, Health, Nutrition Status and role of Nutrition maintaining health.
- (2) Gain knowledge regarding Food groups, Food guide pyramid, balanced diet and nutritive value of various food groups.
- (3) Gain knowledge regarding RDA, functions, sources, deficiency and excess of energy, various Macro Nutrients and Micro Nutrients.
- (4) Get familiar with various cooking methods, the process improving the quality of food and retentions of nutrients.
- (5) Get familiar with basic concept of serving the food items.

UNIT - I

Basic concept of Food and Nutrition

1. Definition of Food and Nutrition, Health, Nutrients, Nutritional Status, RDA and Balance Diet. Role of Nutrition in maintaining good health.
2. Functions of Food, Food Guide Pyramid, Basic five Food Groups & its nutritive value and their contribution to balanced diet.
3. Classification of Nutrients according need and functions - Macro and Micro, body building, protective and regulating nutrients, others - antioxidants, trace elements and phytochemicals. (In brief)

UNIT - II

Macro Nutrients

- (1) Energy in Human Nutrition - RDA, Energy Balance.
- (2) Macro Nutrients - functions, sources, RDA, Need, Deficiency and Excess - Protein, Fat, Carbohydrate & dietary fibers.
- (3) Fat Soluble Vitamins - functions, sources, RDA, Need, Deficiency and Excess - A, D, E, K.

UNIT - III

Micro Nutrients

- (1) Micro Nutrients - functions, sources, RDA, Need, Deficiency and Excess - Water Soluble Vitamins: Thiamine, Riboflavin, Niacin, Pyridoxine, Pantothenic acid, Vitamin B12, Folic Acid and Vitamin C.
- (2) Minerals - functions, sources, RDA, Need, Deficiency and Excess - Calcium, Iron, Magnesium, Zinc, Fluorine, Iodine, Selenium, Copper, Manganese.

UNIT - IV

Food Preparation and Serving

- (1) Principles, need and methods of cooking - Dry Heat and Moist Heat - their advantages, disadvantages, effect on Nutritive value and Retention of Nutrients.
- (2) Improving Nutritional quality of Food - Germination, Fermentation, Supplementation, Fortification and Enrichment, Substitution

Others: Use of -

- (1) Use of Audio-Visual aid and Internet
- (2) Assignment
- (3) Demonstration
- (4) Group Discussion

REFERENCES:

1. R. Rajalakshmi, "Applied Nutrition", Oxford, B.H. Publishing Co. Delhi.
2. Swaminathan M., "Human Nutrition and Diet", Bangalore Printing & Publishing Co...
3. Dr. L.C. Gupta, "Food and Nutrition".
4. Swaminathan M., "Handbook of Food and Nutrition".
5. Mudambi and Rajagopal, "Fundamentals of Food and Nutrition", Wiley Eastern Limited.
6. M. Swaminathan, "Food and Nutrition – Vol. I and Vol. II" Bangalore Printing & Publishing Co.
7. Gopalan, "Nutritive Value of Indian Foods", Indian Council of Medical Research.
8. jI pl xErl, Aahar iv)an.

**B.A. HOME SCIENCE
SEM - I
CORE - 102
THEORY**

INTRODUCTION TO CLOTHING AND LAUNDRY SCIENCE

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
3	-	1	4					3.00 Hours	3.00 Hours

Focus:

This course builds upon the core course fundamentals of Clothing and Textiles and it provide further information regarding the role of Clothing and Laundry Science in human health care, with special focus on clothing constructions for children.

Objectives:

This course will enable students to

1. Understand basic concept of clothing and textiles, use of sewing machine and various sewing equipments.
2. Gets knowledge regarding children clothing.
3. Recognize basic skills required for clothing construction.
4. Acquaint with materials, equipments and the process involved in laundering.

UNIT - I

INTRODUCTION TO CLOTHING

1. Concept, Importance and Scope of Clothing and Textiles
2. Sewing Machine
 - a) Parts and functions of sewing machine
 - Problems and remedies of sewing machine
 - Care of sewing machine

- b) Tools
 - Measuring Tools
 - Marking Tools
 - Cutting Tools
 - Sewing Tools
 - Miscellaneous Tools
- 5. Fabrics for Garment Making
 - Handling of different types of fabrics
 - Selection of fabrics for different garments

UNIT - II

CLOTHING CONSTRUCTION

1. General principles of Clothing Construction.
2. Drafting and paper patterns techniques.
3. Body Measurements
 - Importance and Types
 - Methods of taking body measurements for different garments
4. Laying out of patterns, Use of fabrics, design and colors in garment making for different age groups and occasions.

UNIT - III

CHILDREN CLOTHING

1. Essentials of children's clothing
 - Importance of Clothing
 - Effect of clothes and child's growth
 - Sociological and Psychological aspects of children's clothing
2. Factors to be considered while selecting and making children's garments.
3. Garments Making for Children
 - Garments for Infant Garments
 - The Creeping Age
 - Garments for the Preschooler
 - Garments for school-going child
4. Children Clothing Management according to seasons, special

needs, occasions and storage and care of children garments.

UNIT - IV

LAUNDRY SCIENCE

1. Introduction
 - Concept and importance of Laundry
 - Principles of Laundry - Hand Washing, Washing Machines
2. Equipments and Materials used in Laundry, Laundry Process and Types
3. Stain Removal
 - Classification of stains
 - Principles and Techniques of Removal
 - Types of stain removers

Others:

1. Market Survey
2. Demonstration
3. Assignment

References:

1. Durga Dealkar, "Fundamentals of Textiles and Its Care".
2. peimla vmaR, "vSa iv)an Aev> pir2an"
3. vS5 iv)an ke mUI is@2a.t, Do jl pl xErl
4. inmR5a imS al, "ixv` magRdixRka"
5. Aimta p3el, "beizk kloiz>g AeND 3e93a[l]"
6. babuwa[pl. p3el, "ixv` magRdixRka"
7. Sushila Dantyagi, "Laundry Science".
8. S. Pandit, "Manual of Children's Clothing".
9. Pandit and Tapdey, "Personal Grooming, selecting and care of clothes".
10. Dr. Sushma Gupta, Nim Gard, "Textbooks of Clothing and Textile".

**B.A. HOME SCIENCE
SEM - I
Elective – 101**

PRACTICAL- FOOD PREPARATION

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
-	3	1	4					3.00 Hours	3.00 Hours

Focus:

This course is designed to provide the skills in preparing various food items. It will provide practical based on core Theory Course - 101 Introduction to Foods and Nutrition.

Objective:

This course will enable the students to

1. Be familiar with weights and measures of food items and evaluation of food product for their quality characteristics.
2. Develop skills in preparing various food items according to five food groups and some standardize recipes.
3. Learn proper handling, preparation and service of foods.
4. Develop skills in preparing recipes rich in various nutrients.
5. Develop skills in preparing recipes according to cooking methods.
6. Apply the knowledge in maintenance of good health for individual and the family.

(Total - 28 Practical)

UNIT - I

- (1) Controlling Techniques - (6 Practical)

1. Weights and Measures - Standard and household measures for raw and cooked foods - (2 Practical)
2. Recipes and evaluation of the product - (2 Practical)
3. Food preparation according to five food groups and classifying recipes as good, moderate and poor source of specific nutrients - (2 Practical)

UNIT - II

1. Amount of ingredients to be used in standard recipes, vis - à - vis portion size
 - (A) Beverage : Tea, Coffee, Cocoa, Fruit Juice, Milk and Milk Shakes - (1 Practical)
 - (B) Cereal and flour mixes - basic preparations - (2 Practical)
 - (a) Boiled rice and rice pulao
 - (b) Chapatti, puri and paratha
 - (c) Sandwiches
 - (d) Pastas
 - (e) Pancakes
 - (f) Biscuits
 - (g) Cookies
 - (h) Cakes
 - (C) Pulses and legumes preparation using whole, dehusked and sprouted vegetables - (1 Practical)
 - (D) Milk preparation - (1 Practical)
 - (a) Porridge - Dalia
 - (b) Curd, Lassi, Srikhand
 - (c) Paneer, Whey Water
 - (d) Deserts, Pudding, Kheer, Ice cream
 - (E) Vegetables and Fruits - 2 Practicals
 - (a) Simple Salads
 - (b) Dry Vegetables
 - (c) Curries
 - (d) Use of fresh and dried fruits
 - (F) Nuts and Oil seeds - (1 Practical)
 - (a) Chikki
 - (b) Laddoo

UNIT - III

(Total 7 Practical)

1. Preparation and evaluation of recipe rich in - (1 Practical)
 - (a) Energy - (1 Practical)
 - (b) Protein - Animal, Vegetable, increasing biological value of protein - (1 Practical)
 - (c) Carbohydrate - (1 Practical)
 - (d) Roughage - (1 Practical)

- (e) Vitamins - (1 Practical)
 - i) Vitamin A
 - ii) Vitamin B₁
 - iii) Vitamin B₂
 - iv) Vitamin C
 - v) Niacin
 - (f) Minerals - (1 Practical)
 - i) Calcium and Phosphorus
 - ii) Iron
2. Low cost nutritional recipes by use of - (1 Practical)
- (a) Germination
 - (b) Fermentation
 - (c) Supplementation
 - (d) Substitution and Enrichment

UNIT - IV

(Total 7 Practical)

Use of Cooking Methods

1. Water as medium - (2 Practical)
 - (a) Steaming
 - (b) Boiling
2. Dry Heat as a medium - (2 Practical)
 - (a) Roasting
 - (b) Baking
3. Oil as a medium - (2 Practical)
 - (a) Deep Frying
 - (b) Shallow Frying

Others: Use of

1. Journals
2. Assignments
3. Group Discussion
4. Demonstration

References:

1. Gopalan; c. et.al., (1991), Nutritive Value of Indian Foods, Indian Council of Medical Research
2. Phillip, T.E. (1988): Modern Cooking for Teaching and the Trade, 4th Ed., Orient Longman, Bombay
3. Educational Planning Group (1991): Food and Nutrition, Textbook of Home Science for senior students, 3rd Ed., Aarya Publishing House, New Delhi.
4. **Aar. rajl(ml: p/yuKt po8`**
5. Neelam Buddhdev & Vaid : Human Nutrition
6. Andrews Sudhir : Food and Beverage Service, Tata Mcgraw - Hill

**B.A. HOME SCIENCE
SEM - I
Elective – 102**

PRACTICAL- CLOTHING CONSTRUCTION

Lectures Per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
-	3	1	4					3.00 Hours	3.00 Hours

Focus :

This course is designed to provide the skills in using sewing machine, sewing equipments, basic sewing techniques with special focus on construction skills in children clothes, based on core theory Course - 102 Introduction to Clothing and Laundry Science.

Objectives :

This course will enable students to :

1. Get skills in taking body measurement.
2. Get skills in using sewing machine, sewing equipments and machine sewing techniques.
3. Develop basic skills in children clothing construction
4. Develop entrepreneurship skill in children garment making

(Total 29 Practical)

UNIT - I

(Total 6 Practical)

1. Understanding the use of Sewing Machine - Figure, its parts and their functions, problems and their remedies (2 practical)

2. Understanding the use of Sewing Equipments - Figure and their usage. (1 Practical)
3. Taking body measurements on human body figure for different garments. (1 Practical)
4. Preparation child's basic blocks, paper pattern, drafting and paper cutting and drafting of sleeve and collars suitable for children. (2 Practical)

UNIT - II (Total 5 Practical)

1. Market Survey for understanding children garments(1 Practical)
 - Fashion
 - Fabrics – merits and demerits
 - Pattern and Style
 - Budget
 - Estimation materials required
2. Five Basic Machine Sewing Techniques (2 Practical)
 - Plain Seam
 - French Seam
 - Run & Fell Seam
 - Gathers
 - Knife Pleats
3. Five Basic Machine Sewing Techniques (2 Practical)
 - Tacking Stitch
 - Hemming Stitch
 - Running Stitch
 - Hook and Eye
 - Snap Button and Button Hole

UNIT – III (Total 14 Practical)

Drawing Diagram, Brown-paper cutting and Stitching following garments: (Two Practical for each garment)

1. Apron
2. Infant garments
 - Nappies
 - Jhabhala
3. Garments for the Creeping age
 - Panty
 - Baby Frock
4. One Garment for the Pre Schooler
5. One Garment for School-going child

UNIT – IV (Total 4 Practical)

1. Sample Collection of Laundry material and understanding its usage –(1 Practical)
2. Use of Stain Removal Techniques – (1 Practical)
3. Laundering of cotton, rayon, silk, wool, synthetics etc. (1 Practical)
4. Bleaching, whitening and starching of clothes – (1 Practical)

Others : Use of

1. Market Survey
2. Journal
3. Assignment
4. Audio-Visual aid and Internet

References:

1. Durga Dealkar, "Fundamentals of Textiles and Its Care".
2. peimla vmaR, "vSTa iv)an Aev> pir2an"
3. vSt iv)an ke mUl is@2at, Do jl pl xErl
4. inmR5a imS al, "ixv` magRdixRka"
5. Aimta p3el, "beizk kloiz>g AeND 3e93a[l"
6. babuwa[pl. p3el, "ixv` magRdixRka"
7. Dantyagi Sushila, "Laundry Science".
8. Pandit S., "Manual of Children's Clothing".
9. Pandit and Tapdey, "Personal Grooming, selecting and care of clothes".
10. Dr. Gupta Sushma, Nim Gard, "Textbooks of Clothing and Textile".

**B.A. HOME SCIENCE
SEM-I
ELECTIVE- 101
THEORY**

INTRODUCTION TO FAMILY RESOURCE MANAGEMENT

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
1	-	1	2					3.00 Hours	3.00 Hours

Focus :

This course deals with the management of resources in the family with particular reference to mobilizing all the resources for achieving the family goals. It also deals with the factors motivating management and management applied to specific resources.

Objectives

- (1) This Course will enable the students to make about management in the family, as well as to other systems.
- (2) Recognize the importance of wise use of resources in order to achieve goals.
- (3) Help to learn Simple Finance Handling & Postal Saving Procedures.
- (4) Help to learn utilize resources effectively
- (5) Develop Competences in effective time & energy management
- (6) Make aware of different reaching of work-simplification
- (7) to understand roles, responsibilities and qualities of a good 'Hone-Maker'

Unit-1

- (1) Introduction & importance of Resource Management.
 - a) Meaning & definition, Purpose of Resource management as effective Management.

Resources in the Family :

- a) Types (Human & Non-Human) Characteristic & Pressures
 - b) Factors affecting the use resources
- (3) Family Characteristics influencing management
- a) Life Style
 - b) Type of Family
 - c) Family Size
 - d) Stages of Family Life Cycle
 - E) Standard of Living
 - f) Income of the Family
 - g) Education of the Family
 - h) Occupation of the head of the house hold
 - i) Place of residence urban/ rural

Unit-II

- (1) Meaning & Steps of Management Process
 - (a) Planning – Importance, techniques & Types of Planes.
 - (b) Supervision – delegate with proper guidance.
 - (c) Organization – Organize the Plan in action
 - (d) Controlling- control the Plan if necessary
 - (e) Evaluation- Evaluate the whole process of management.
- (2) Roles, responsibilities & qualities of good 'Home-Maker'.
Roles, responsibilities & qualities of good 'Home-Maker'.

Unit-III

- (1) Time & energy management
 - (a) Time Plan (b) Peak load (c) Catch-up-Period
 - (d) Leisure Time-Importance of wise use of leisure time.
- (3) Techniques to study method of workers, work Place and Work Simplification.
 - (a) Pathway Chart (b) Process Chart (c) Micro motion Chart
- (4) Principals of Body mechanics
- (5) Fatigue- Definition, types, methods to avoid fatigue

Unit-IV

- (1) Motivating factors of Resource Management.
 - a) Values (i) Extrinsic (ii) Intrinsic
 - b) Goals (i) Intermediate (ii) Ultimate goal, (iii) Long term goals
- (2) Standards- (a) Conventional & Non Conventional
 - (b) Qualitative & Quantitative
 - (c) Definitions, Characteristics, types etc.

- (3) Family Decision Making -
Definition, characteristics & types etc. steps in Decision Making
 - (a) Individual decision,
 - (b) Group decision.

Reference Books

- (1) Family resource management & Interior decoration – Bella Bhargav
- (2) Home Management & Family Finance- Shukla Manish
- (3) Essential of ergonomics- Veena Gandotra
- (4) Home management & Family Finance – Leena Gandotra-
manish Shukla
- (5) Home Management- Ogle, Verghese George,
- (6) Elementary economics-Sundarain
- (7) Gruh Sajja our Gruhvayavastha- Dr. Ashajain- Nilima Nalayans.
- (8) Gruh Vayasthapan- Prof. Vina Gandotra, Ku. Jalpa Majmudar.

Other

- (A) Use of Assignment
 - (1) Develop a time Plan Schedule for the coming week.
 - (2) Identify ways to use your leisure time effectively
 - (3) Apply the Principles of body mechanics in a given situation.
 - (4) (a) Enlist five high order values in student's life (b) Select one person you know well and identify his/her values.
 - (5) List Five Short Term, Intermediate and long term goals. Mention the time, money and other resources required to achieve those goals.
 - (6) Drawing of a path way chart for a given activity to simplify Work
- (B) Group Discussion
 - (1) Role, responsibilities and qualities of a 'Home-Maker'
 - (2) Resources in the Family and Community.
 - (3) Standards and values as motivating factors of Resource Management.
- (C) Community Survey.

**B.A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S. (REVISED)**

SEM - II

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 111	Introduction to Household Equipments	3	1	-	4	4
2	Core 112	Applied Chemistry and Physics	3	1	-	4	4
3	Elective (EC-1)111	Handling of Household Equipments	-	4	4	4	1½ /1 Cr (6 Hrs)
4	Elective (EC-1)112	Practical – Chemistry and Physics	-	4	4	4	1½ /1 Cr (6 Hrs)
5	Elective (EC-2)112	Introduction to Human Development	1	1	-	2	2
6	Foundation-111	Environmental Science	1	1	-	2	2
7	Soft Skill-111	Personality Development	1	-	-	1	1
8	Comp-101	English	2	-	-	2	2
9	Comp-101	Sanskrit	2	-	-	2	2
			13	6	6	25	29

**B.A SEM-II
CORE-111
THEORY**

INTRODUCTION TO HOUSEHOLD EQUIPMENTS

Lectures Per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
			Theory	Practical	Theory	Practical			
3	-	1	4					3.00 Hours	3.00 Hours

Focus :

This Course intends to impart knowledge and understanding of construction of various household equipment, the Material used, selection, Criteria, their usage, operation and maintenance as well as to make them aware of good buymanship, consumer problems, consumer rights and responsibilities and consumer Laws.

Objectives :

This Course enables Students to –

- (1) Recognize base materials, finishes and insulating materials used in the construction of household equipment
- (2) Understand the Principles underlying the operation, use, care and storage of household equipments.
- (3) Understand the criteria for the selection and buying for appropriate equipment for home and suitable material for functionality.
- (4) Analyze various equipments with respect to design, cost and maintenance.
- (5) Understand to handle minor problem of repairs and maintenance

- (6) Aware of good buymanship and the factors affecting it.
- (7) Understand consumer rights and responsibilities, as well as handling consumer problems with the help of consumer services and consumer law.

UNIT-I

Materials used for household equipments

- (1) Importance of learning household equipment and new Trends in it.
- (2) Material used for household equipments.
 - a) Base materials : Aluminum, Iron, Steel, Copper, Brass, Glassware, Plastic & Potteries
 - b) Finishes : Mechanical and Applied
 - c) Insulating, materials : Mica, Fiberglass, Puff, Mineral wool, Rock wool, Plastic, Foams, Rubber etc.
- (3) Methods of forming and assembling equipments
 - a) Structural designing of the equipment and different joints used in assembling parts of the equipments.
 - b) Buying of household equipments with respect to their material, usage, time and energy saving devices and maintenance

UNIT-II

Household Equipments - Non - electrical

- (1) Classification of household equipment in term of
 - a) Portable and Non Portable
 - b) Electrical-Motor driven and heating
 - c) Food related-(cooking, cleaning, serving, preparation)
 - d) Cleaning
 - e) Laundry
 - f) Non-Electrical

- g) Personal Care
 - h) Recreation
 - i) Time and energy saving equipments.
- (2) Selection use care and store of various Non-Electric household equipments used for kitchen, Laundry and cleaning.

UNIT-III

Electrical Equipments

- (1) Selection, use, care and store of various Electric household equipment used for kitchen, Laundry, Cleaning and recreation.
- (2) Common Problems of electrical and Non-electrical equipments and their household repairs.

UNIT-IV

Consumer Education

- (1) Importance and art of good buymanship.
- (2) Factors affecting buying behavior such as :
- i) Size & Type of Family
 - ii) Income
 - iii) Stages of family life cycle
 - iv) Goals and values of family
 - v) Market gullibility
 - vi) Knowledge and post experience
 - vii) Sex of a buyers
 - viii) Place of residence
- (3) Standardization for household equipment.
- a) Importance
 - b) Procedure

- c) Role of BIS
- (4) Consumer's rights and responsibilities
- (5) Consumer's Problems
 - 1) Choice and buying problems
 - 2) Faculty weights and measures
 - 3) Miss guide by faulty able information
Advertisement and schemes
- (6) Consumer Protective Services
 - 1) Indian Standard Institution (ISI)
 - 2) Consumer Guidance Society
 - 3) Consumer Education and Research center, Ahmadabad
 - 4) Consumer Co-Operatives
- (7) Importance and types of consumer protection Law.

Others: USE of -

- (1) Assignment
- (2) Group discussion
- (3) Audio-Visual aid and Internet

REFERENCES

- 1) Peet and Thye', household equipment, john wily eastern and Company, N.y.1981.
- 2) J.K.Dehsis, Improving household equipment, Punjab Agri. University 1178
- 3) Ogle, Varghese & George, Home Management, willing esteem, Co New Delhi 1984
- 4) Pramila Mehra, good house keeping
- 5)Dr. Asha Jani, Dr. Nirmal Nalaga, g<h sJ=, AOr g<h 3VyvS4a
- 6)AacayR Aem.Aes,g<h]pkro`onl Ao5q pa>cml Aav<it, dlp
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**F.Y. B.A. HOME SCIENCE
SEM-II
(EC –1) Elective-111**

PRACTICAL-HANDLING OF HOUSEHOLD EQUIPMENT

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
-	3	1	4					3.00 Hours	3.00 Hours

Focus:

This course is basically designed of practicals based on Core-1 (111) introduction to Household Equipment and Consumer Education. It provides the basic skills of handling materials used for household equipments by applying the knowledge of principles of equipment. This course also focuses on developing skills in using, cleaning and maintaining of various electrical and non-electrical equipments.

Objective :

This course enables students to

1. Get skills in cleaning and maintaining various materials used for household equipments.
2. Develop skills in selecting, purchasing, using, maintaining and cleaning various electrical and non electrical equipments.
3. Develop skill to prepare food items by using various electrical and non-electrical equipments.
4. develop understanding regarding good by Man ship, buying behavior problems, consumer problems, consumer protective services, Consumer law by doing community survey and market survey.

(Total 30 Practical)

UNIT- I

(Total 04 Practical)

- i) Metal cleaning (Cleaning of an Articles or surface) (03 Practical)

Aluminum, Steel, Brass, Copper, Iron, Tin, Bronze, Mina Kari, Gold, Silver, Glass, Plastic.

- ii) Identify and make a list of Household equipments accordingly to various types (01 Practical)
- iii) Do a market survey and identify and list down various base material used for household equipment and writes merits and demerits. (01 Practical) **OR**
- iv) Do a Market survey and identify finishes used in household equipments. List down and write their importance and care. (01 Practical) **OR**
- v) Do a Community survey and list down various household equipments used in terms of design, selection, cost, usage, care and maintenance, time and energy saving value, storage, quality and their brands or manufacturers. (01 Practical)

UNIT – II

(Total 10 Practical)

- 1) Understanding following commonly used non-electrical equipments in laboratory in terms of –
 - a) material
 - b) finishes
 - c) use
 - d) construction
 - e) principle
 - f) cleaning
 - g) care and maintenance
 - h) common problems and its repairs
 - i) merits and demerits
 - j) types (if any)(i) Greater (ii) Pillar, (iii) Chopper, (iv) Beater, (v) Chilly Cutter, (vi) Nut Cutter, (vii) Coconut Scrapper, (viii) Juice Extractor, (ix) Kitchen Masala, (x) Chops 'n' churn, (xi) Pressure Cooker, (xii) Sandwich Toaster, (xiii) Idali Stand, (xiv) Dhokalia, (xv) Non-stick cookware (Dosa Tava, Frying Pan), (xvi) Gas Oven, (xvii) Gas Tandoor, (xviii) Cooking Range, (xxiv) Solar Cooker,
- 2) Understand and list down various equipments used for serving, cleaning and storage and write about their usage, cleaning and care. (01 Practical)

UNIT – III

(Total 10 Practical)

- 1) Understanding following commonly used electrical equipments in laboratory in terms of –
 - a) material
 - b) finishes

- c) use
- d) construction
- e) principle
- f) cleaning
- g) care and maintenance
- h) common problems and its repairs
- i) merits and demerits
- j) types (if any)
 - (i) Electric Cooker, (ii) Mixer, (iii) Hand Mixer, (iv) Refrigerator, (v) Toaster, (vi) Microwave Oven, (vii) Ice-cream Maker, (viii) Roti Maker, (ix) Electric Hot Plate, (x) Vacuum Cleaner, (xi) Washing Machine, (xii) Iron

UNIT – IV

(Total 06 Practicals)

1. Serving - Plating, Garnishing, Trays, Food Presentation - Balance, Colours, Shapes, Textures, Flavours, Portion size, Temperature etc.
(01 Practical)
2. Study the buying behavior of consumer regarding household equipment in the context of various affecting factors by doing consumer survey. (01 Practical) **OR**
3. Visit to CERC, Ahmadabad OR any Consumer organization and write the report on its functions (01 Practical) **OR**
4. Study the consumer's problems by doing consumer survey and suggest effective outcomes. (01 Practical)
5. Table setting-Indian and Western (02 Practical)
6. Flower arrangement-fresh and dry (02 Practical)

References:

- 1) P. Kotlar, Principles and Practice of Marketing Management, 6th Edition, 1996
- 2) AacayR Aem.Aes., g<h]pkr`onl Ao5q, pa>cml Aav<i|, dlp p/kaxn, vLlw iv·anqr, 1995
- 3) S.R. Sharma and Vishay Kaushik, Home Management and Housekeeping
- 4) Dr. Joshi, Market in India

Others: Use of

- 1) Demonstration
- 2) Journals
- 3) Project Work
- 4) Group Assignment
- 5) Survey

**B.A HOME SCIENCE
SEM- II
THEORY
ELECTIVE-112**

INTRODUCTION TO HUMAN DEVELOPMENT

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
1	-	1	2					3.00 Hours	3.00 Hours

Focus :

This is an attempt to guide undergraduate student is in understanding of the field of human Development in a basic way.

A Conscious deviation is taken from the stage-wise approach to the life span, So as to cover the major topics and to understand various aspects and factors important for growth and development it.

Objectives :

This Course enable Student to -

- 1) To Develop awareness of important aspect of growth and development during the whole life span
- 2) To become acquainted with developmental stages from prenatal period to old age
- 3) To sensitive the student to understand the issues faced and adjustments required at each stage across the life span.

UNIT-I

Orientation to growth and Development

- 1) Concept of Human development and need to study development through the life span.
- 2) Concept, General Principles and effective factors of growth and development

3) Influences of Heredity and Environment on growth and development

- 4) Individual difference in Human development and the in fluency and interaction of socio- cultural and environment factors on the stages of development.

UNIT-II

Dimension of development over the Life Span

- 1) Different Stages of Human development
- 2) Various aspects of development and inter-relationship among them (In short)
 - a) Physical development
 - b) Motor development
 - c) Social development
 - d) emotional development
 - e) mental development
 - f) personality development
 - g) Cognitive development
 - h) Cultural development
- 3) Growth and development during prenatal period and factors affecting on it.
- 4) Growth and development during infancy (0-2 Years) and factors affecting on it.
 - a) Overall development
 - b) Need and care during prenatal and infancy period
- 5) Problems and coming them during prenatal and infancy period.

UNIT-III

Growth and Development during children

- (1) Growth and Development during early Children (2 to 6 Years)
 - a) Development tasks, Significance of this period
 - b) Orientation to preschool education and significance need and care of pre-scholars.
- 2) Growth and Development during middle Children (6 to 12 Years)
 - a) definition
 - b) Developmental tasks and significance of this period
- 3) Role of School, Peer group, Care Taker, Parents, Play etc. in allover development of Children
- 4) Problems and coping with them during Childhood.

UNIT-IV

Growth and Development during Adolescence, Adulthood and Aging period

- 1) Definition and Significance of each stage
- 2) Developmental tasks of Adolescents, adult and old people
- 3) Need and care during each stage
- 4) Problems and coping with them during each stage.

Others:

- (1) Use of Audio-Visual aid and Internet
- (2) Group Discussion
- (3) Assignment
- (4) Project Work
- (5) Visit and Report Writing

Reference:

- 1) Berk, L.E., Child Development, New Delhi, Prentice Hall, 1996.
- 2) Craig, G, Human Development, NJ.; Prentice Hall, 1999.
- 3) Dr. K.C.Panda, Elements of child development
- 4) Sharma Poonam & gairda Lata, Fundamentals of Child development and child care.
- 5) Santrock, I.w. Life Span Development, Ny, Brown & Bench Mark 1997.
- 6) Lerner, R.M.& Hultseh, D.F., Human development : A Life Span Perspective, Ny. McGraw Hill

**B.A HOME SCIENCE
THEORY
SEMESTER –II
Core-112
THEORY**

APPLIED PHYSICS AND CHEMISTRY

Lectures Per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
3	-	1	4					3.00 Hours	3.00 Hours

Focus :

This builds upon the core course Applied Physics and Chemistry and Provide further information regarding organic and Inorganic Chemistry as well as biochemistry applied to human health care

Objectives :

To course will enable the students-

- (1) To Create an awareness among the students about principles & Fundamentals of Physics & their application in day today life activities.
- (2) To recognize the importance of Chemistry, Chemical reactions & their uses.
- (3) To develop Knowledge in the field of pesticides, fertilizers, fuels, chemicals in Medicines & healthcare.

PHYSICS

UNIT-I

I - Mechanics :

- State of matter-General & Specific Properties of matter (Solid, Liquid & Gas)
- Machines – Types – Simple & Complex.
- Lever-Types & their Functions.
- Pulleys-Types & Uses.
- Inclined plane, screw, jack screw.
- Force-Centripetal & Centrifugal Force.
- Friction- Types, Laws, advantages & disadvantages

UNIT-II

Light :

- Introduction to light, Propagation of Light.
- Reflection & Refraction of light – laws & Index
- Lens & Mirrors- Types
- Real Image & Virtual image.
- Image formed by concave lens & Concave Mirror
- Uses of lens & Spherical mirror.

CHEMISTRY

Unit-III

Inorganic Chemistry

I - Structure of inorganic Substance :

- Explanation of element, compound & Mixture
- Structure of atom (Only Rutherford model), Atomic weight, molecule, molecular weight, Equivalent weight, Valence, symbol, Chemical Formula, equation, Physical & Chemical Change.

II- Acid & Base :

Acid- Definition, Strength, Properties, strong & weak acid, useful acids.

Base- Definition, Strength, Properties, strong & weak Base, useful bases.

PH- Scale, explanation, measurement, importance of PH. Neutralization, Stats

III- Water

Drinking Water, Physical & Chemical Properties of water, impurities in water & their effects on health, Types of water: Hard Water-Types & its disadvantages, methods of

removing hardness of water, Methods of purification of Water.

UNIT-IV

Organic Chemistry

I Introduction to organic Chemistry :

Sources of Organic Chemical, importance of organic compounds, classification of organic compounds with examples, homologues series, functional groups.

II Pesticides :

Introduction, Types – Inset, insecticides-classification, D.D.T., B.H.C., Prevention of insects, precautions in using insecticides.

III Chemicals in Medicines & Healthcare :

Analgesics, Antiseptics & disinfectants, Anti biotic, sylph drugs, Drugs for common cold, influenza & other diseases, Hypnotic & Sedative drugs, Tranquillizer drugs, Hallucinogens, Laxatives, Antihelminthics.

Reference :

- (1) Fundamental Inorganic Chemistry – P.L.Soni (1986)
- (2) Test Book of Organic Chemistry – P.L.Soni,
- (3) Test Book of Biochemistry – west & Todd.
- (4) Test-Book of Applied Chemistry-MMJ Jacob (1996)
- (5) Chemical Technology – Chandrakant Mehta
- (6) rsay`xaSa Üg>h iv)anÝ – Ae. ke. kazl.
- (7) rsay`xaSa Üg>h iv)anÝ – Aan>d
- (8) Household Physics- Aurey Madelyn (1987) (Mac Mill- on Company Unit-1-IV)
- (9) Mechanics – Shan Kara Narayana & Chopra.
- (10) 3eknlkl rsay`xaSa poll3eknlk ma3e – poPyulr pofessR
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Others:

Physics

Heat :

- Effects of heat on matter- Solid, Liquid & gaseous Substances..
- Heat & temperature – measurement of temperature.
- Transfer or heat - conduction & Convection, uses of

- heat transfer in daily life.
- Equipment-Thermometer, Thermo flask

CHEMISTRY

- I Plastics** : Definition, types, properties & Uses.
- II Fuels** : Definition, types, characters of ideal fuel, Composition & Uses of LPG, Coal Gas, Producer Gas, Water Gas, Gobar Gas,
- III Fertilizers** : Plant Nutrients, symptoms of their deficiency.
 - Classification- Single, Mixed, Complete.
 - Types-Nitrogen, Phosphorus, Potassium. Fertilizers.
- IV Formula & Uses of Following Compound :**
 - I Inorganic Chemistry :**
 - (1) Sodium Chloride (2) Washing Soda (3) Baking Soda
 - (4) Bleaching Powder (5) Alum
 - II Organic Chemistry :**
 - (1) Glucose (2) Vinegar (3) Ethel alcohol.
 - (4) Citric acid
 - (5) Phenol.
 - * Use of Journals & Use of Assignment, Presentations & Group discussion.

**B.A HOME SCIENCE
SEMESTER-II
Elective-112**

Practical -Applied Physics & Chemistry

Lectures per Week			Total Credits	Marks per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
-	3	1	4					3.00 Hours	3.00 Hours

Focus :

This is builds upon the core course Applied Physics and Chemistry and Provide further information regarding organic and Inorganic Chemistry as well as biochemistry applied to human health care

Objectives:

To course will enable the students-

- (1) To Create an awareness among the students about principles & Fundamentals of Physics & their application in day today life activities.
- (2) To recognize the importance of Chemistry, Chemical reactions & their uses.
- (3) To develop Knowledge in the field of pesticides, fertilizers, fuels, chemicals in Medicines & healthcare.

(Total 28 Practical)

Unit-I

PHYSICS

(Total 2 Practical)

- (1) To find the Focal length of centavo mirror.
- (2) To find the focal length of convex lens.

CHEMISTRY

(Total 3 Practical)

- (3) Volumetric Analysis : (Involving one acid & one base)
- (4) To determine the acid value in (Ghee/Oil)
- (5) To determine PH of the given solution by using litmus paper & PH Paper.

(Washing Soda, Vinegar, Lemon Juice, Milk, Tomato Juice, Distilled Water)

UNIT-II

(Total 10 Practical)

- (6) Analysis of various constituents present in following vegetables & Fruits. : (1) Potato, (2) Tomato , (3) Carrot, (4) Lemon, (5) Orange, (6) Pineapple
2. Test of acidic/base solution.
3. Determine PH Value
4. Test for Starch, Carbohydrate, protein, iron, Phosphate, Calcium, Magnesium, Sodium, and Potassium.

UNIT-III

(Total 5 Practical)

- (7) To Perform analysis of qualitative Compounds :
- (8) Positive Ions : Fe^{+2} , Fe^{+3} , Ba^{+2} , Ca^{+2} , Mg^{+2} , Na^{+} Negative Ions : Cl^{-} , CO_3^{-2} , SO_4^{-2} , NO_3^{-}

UNIT-IV

(Total 8 Practical)

- (9) Organic qualitative analysis of the following Compounds :
(i) Benzoic acid (ii) Salicylic acid (iii) Acetic Acid
(iv) Glucose
(v) Urea (vi) Naphthalene
- (10) Chemical Technology (Only Demonstration)
- (11) To Prepare Tooth Powder
- (12) To Prepare detergent Powder

Others:

- (1) Group Discussion
- (2) Assignment and Journal
- (3) Project Work
- (4) Visit and Report Writing

Reference :

- (1) Fundamental Inorganic Chemistry – P.L.Soni (1986)
- (2) Test Book of Organic Chemistry – P.L.Soni,
- (3) Test Book of Biochemistry – west & Todd.
- (4) Test-Book of Applied Chemistry-MMJ Jacob (1996)
- (5) Chemical Technology – Chandrakant Mehta
- (6) $rsay`xaS a \ddot{U}g>h iv)an\acute{Y} - Ae. ke. kazl.$
- (7) $rsay`xaS a \ddot{U}g>h iv)an\acute{Y} - Aan>d$
- (8) Household Physics- Aurey Madelyn (1987) (Mac Mill- on Company Unit-1-IV)
- (9) Mechanics – Shan Kara Narayana & Chopra.

(Family and Community Sciences)
Home Science Undergraduate Programme for
General Home Science (Composite)
Curriculum as per the choice based credit system
(Implement from June 2012)

B. A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S.

SEM – III

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 201	Meal Management	3	1	-	4	4
2	Core 202	Applied Life Science	3	1	-	4	4
3	Core 203	Family Dynamics	3	1	-	4	4
4	Elective 201	Practical-Meal Planning And Preparation	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Elective 202	Practical-Applied Life Science	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 201	Computer Skill – II	1	1	-	2	2
7	Soft Skill 201	General Knowledge	1	1	-	2	2
8	Comp 201	English	2	-	-	2	2
			13	5	8	26	30

**B.A. HOME SCIENCE
SEM – III
CORE – 201**

**Meal Management
THEORY**

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
3	-	1	4					3	-

FOCUS:

This course builds upon the Fundamentals of Meal Management and provides further information regarding meal planning according to various age groups, activities, festivals etc. as well as information regarding various nutritional deficiency diseases, nutritional assessment and dietary treatment in various diseases.

Objectives:-

This course will enable the students to:

- 1) Understand basic concept of meal management, meal planning according various age groups, activities, festivals etc.
- 2) Get familiar with various nutritional deficiency diseases and dietary treatment it them.
- 3) Get familiar with meaning and various methods of nutritional Assessment.

Unit – 1

Use of Balanced diet in Meal Planning

- 1) Definition, meaning and importance of meal planning, use of basic food groups in meal planning.
- 2) Various factors affecting meal planning, nutritional requirement factors like socio-cultural, religious, geographic, economics Availability of time, material and resources physical & mental activities, special nutritional conditions / problems.
- 3) Basic meal patterns and number of servings: According to meal timing V/z – Breakfast, lunch, snacks, Dinner.
- 4) Serving-plating, Garnishing, Trays, Food Presentation – Balance, colors, shapes, Textures, Flavors Portion Size, Temperature etc.

Unit – II

Meal Planning for Different Age Groups

(Requirements, Nutritional Problems, food selection according to different activities & socio economics levels)

- 1) Infant feeding (Birth to one year)
 - a) Breast feeding
 - b) Bottle feeding
 - c) Weaning food (Supplementary feeding.
 - d) Nutrition for Infant (1 year old children)

- 2) Meal Planning for Children
 - a) Preschoolers. (2 to 5 years)
 - b) School children (6 to 12 years)
 - c) School lunch and packed lunch for children.
- 3) Meal Planning for adolescent boy & girl.
- 4) Meal Planning for Adult men and women according to their work women according to their work. (Heavy, Moderate and sedentary works)

Unit – III

Meal Planning for some special Physiological needs and Activities

- 1) Meal planning during pregnancy (According to complication occurring in pregnancy)
- 2) Meal planning during lactation.
- 3) Meal planning for old age and menopause (According to complication occurs.
- 4) Meal planning for Athletes (According to energy expenditure)

Unit – V

Dietary Treatment and Nutritional Assessment

- (A) Dietary treatment in various deficiency diseases.
 - a) Patient – deficiency – diseases
 - b) Fat and Carbohydrate deficiency diseases
 - c) Vit. A, C, B – Complex, deficiency
 - d) Iron – deficiency
 - e) Calcium and phosphorus deficiency
- (B) Menu planning for festivals like Diwali, Uttarayan, Holi
- (C) Planning for some dishes like Punjabi, South, Indian, Chinese, Mexican dishes.

References:-

- 1) Dr. M. Swaminathan, "Human Nutrition and Diet", The Bangalore Publisher, New Delhi.
- 2) R. Rajalakshmai, "Applied Nutrition", Oxford, B. H. Publishing Co. Delhi.
- 3) Shubhangi Joshi, "Nutrition and Dietetics", Tata McGraw- Hill Publishing Company Ltd., New Delhi.
- 4) Dr. Swaminathan, "Handbook of food and Nutrition", The Bangalore Publisher, New Delhi.
- 5) ykh. hks÷û{e, «Þwõík Ākku»ký, ÞwrLkðŠMkxe økútÚk rLk{koý çkkuzo, økwshkík hkßÞ, y{ĒkðkĒ-380 006.
- 6) S. R. Mudambianal M. V. Rajgopal, "Fundamental of food, Nutrition and Diet Therapy", Fifth adi. New Age International Limited, Publishers, Delhi.
- 7) zkì. su. ze. ĀkkXf, Ākku»ký rðãk, ÞwrLkðŠMkxe økútÚk rLk{koý çkkuzo, økwshkík hkßÞ, y{ĒkðkĒ-380 006.
- 8) Sohi Darshan, "A Textbook of Nutrition", 2nd Edi. (2009) S. Vikas & Comp., Jalandhar.

SEM – III

CORE - 202 THEORY

Applied Life Science

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
3	-	1	4					3	-

FOCUS :-

This build upon the core course Applied Life Science. Provide further information regarding plant morphology, physiology, microbiology, human physiology & genetics.

Objectives :-

The course will enable the students:-

- 1) To understand the knowledge about origin & evolution of life & genetics.
- 2) To understand the application of botany & horticulture in agriculture & role of micro-organism.
- 3) To understand the relation between biology & human welfare.
- 4) To understand the physiology of human body & plant physiology.

UNIT – I

(I) History of life

- 1) Origin & evolution of life.
 - a) Physico-chemical processes of early earth leading to origin of life.
 - i) Operin theory
 - ii) Miller's experiment.
 - b) Requirements for maintenance of life –
 - i) Light
 - ii) Temperature
 - iii) Water
 - iv) Air
 - c) Characteristics of life :-
 - i) Metabolism
 - ii) Growth
 - iii) Reproduction
 - d) Evolution :-

i) Evidences of evolution (1) Fossils (2) Comparative Anatomy (3) Vestigial organs (4) Embryological Evidences.

ii) Theory of evolution :- (1) Lamarck (2) Darwin.

(II) Human Genetics :-

- a) Heredity – Mendel's monohybrid experiment & their principles.
- b) Inheritance & sex determination.
- c) The genetic basis of human diseases – Hemophilia, Color blindness.
- d) Blood group – ABO System. - Rh System

UNIT – II

I-Plant Morphology

- 1) General Characters of monocot (maize) & dicot (Vinca rosea) plant.
- 2) External and internal characters of monocot seed (Maize) & dicot seed (Bean) & its germination stages.
- 3) Pollination –
 - a) Definition, Agencies, Types.
 - b) Characteristics of insect pollinated. (Hibiscus) & Wind pollinated (Maize) flowers.
- 4) Reproduction in plants :-
 - a) Vegetative propagation in plants.
 - b) Sexual reproduction in flowering plants.

II – Plant Physiology

- 1) Osmosis – Definition, Types & its importance.
- 2) Transpiration – Definition, Types, Affecting factors & its importance.

UNIT – III

(I) Microbiology

- 1) General characteristics & classification of microorganisms – Bacteria & Virus.
- 2) Advantages & disadvantages of bacteria.
- 3) Entrance of bacteria in human body.
- 4) Common parasitic infection – malaria parasite life cycle.

(II) Biology & Human Welfare

Economically useful plants

- a) Food :-
 - i) Cereal – Wheat, rice, maize
 - ii) Pulses – Tuwer, Mung.

- iii) Vegetables –
 - 1) Root – Carrot, Radish
 - 2) Stem – Potato, Amorphophallus
 - 3) Leaf – Spinach, Amaranthus
- iv) Nuts – Cashewnut, Walnut
- v) Fiber – Cotton, Jute.
- 1) Medicinal plants – Ajwain, clove, eucalyptus, penecillium, tulsi, vasaka, Zinger.
- 2) Useful animals – earth worm, fish, honey bee, Oyster, silk moth, Snake.
- 3) Life history of silk moth.

UNIT – IV

Human Physiology

- 1) Gastro intestinal System :-
 - a) Structure & functions of various organs of the GI tract.
 - b) Digestion & absorption of carbohydrate protein, Lipid. The role of Enzymes.
- 2) Respiratory System :-
 - a) Structure of lungs
 - b) Mechanism of respiration & its regulation.
- 3) Cardiovascular System :-
 - a) Blood & its composition
 - b) Structure & function of heart
 - c) Circulation of blood
- 4) Excretory System :-
 - a) Structure & functions of kidney
 - b) Formation of urine & its filtration process
- 5) Nervous System :-
 - a) Parts of brain & its function
 - b) Reflex action
- 6) Sensory Organs :-
 - a) Eye
 - b) Ear

References :-

- 1) Dr. Garg P. K. – Biology (S̄rđžkkLk)
- 2) Dutta A. C. – Text book of Botany
- 3) Gupta P. K. – A text book of Cyfology, Genetics & Evolution
- 4) Jain V. K. – Fundamentals of Plant Physiology
- 5) Albert F. Hill (1978) – Economic Botany
- 6) Vidarthi R.D.-A text book of Zoology

B.A. HOME SCIENCE

SEM – III

CORE - 203 THEORY

Family Dynamics

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
3	-	1	4					3	-

FOCOUS :-

This course purports to create awareness and functions of marriage and family as basic institutions. The changing trends, the dynamics of adjustment and contemporary problems and issues are to be critically analyzed for developing better understanding of needs, adjustment areas and intervention strategies.

Objectives :-

The student will

1. Acquire knowledge and insights about the dynamics of contemporary marriage and family Systems in India.
2. Become acquainted with the concept, goals and areas of adjustments in marital relationship and within the family.
3. Become aware of the Changing roles and relationships within the family.
4. Understand the dynamics of families in distress and crisis.

Unit – I

Family in India

1. Importance of Family as a social institution in India.
2. Definition, functions & characteristics of family.
3. Types of family.
 - a. Characteristic of Family.
 - b. Merits & Demerits of Joint of family.
 - c. Merits & Demerits of Extended family.
 - d. Merits & Demerits of Nuclear family.

Unit – II

Engagement & Wedding

1. Mate Selection :-
 - a. Characteristics of an ideal life partner.
 - b. Importance of certain essential once e.g. permanence, fidelity, companionship, love happiness, ego support, approved sexual expression.
 - c. Understanding & achieving one's own self.
 - d. Achieving emotional maturity
2. An Engagement :-
 - a. It's Importance.
 - b. The courtship period.
 - c. The engagement period.
 - d. Sex before marriage.
 - e. Factors for breaking of engagement.
 - f. The problems arise due to break of engagement.

UNIT – III

Concept of Happy marriage & Adjustment in marriage life

Concept of marriage

1. Meaning, definition, function of marriage
2. Types of marriage
 - (A) Arrange marriage
 - (B) Love marriage
- B. Wedding Ceremonies.
 1. Types of ceremonies observed in different communities in India.
 2. Importance of wedding ceremonies.
 3. Good & harmful ceremonies.
- C. Happy marriage & adjustment in marriage life.
 1. Factors affecting happy marriage Sacrifices, economics status, religious, sex emotion.
 2. Achieving adjustment in marriage life
 - (A) Way of achieving adjustment
 - (B) Sexual adjustment in marriage
 - (C) Adjustment to parenthood.
 3. Changing role of women- adjustment in marriage

UNIT – IV

Social Act & family crisis

- A) Social act :-
- 1) Dowry prohibition act.
 - 2) Child marriage prohibition act.
 - 3) Female feticide act.

- 4) Sex Determination act.
- 5) Household fortune act.
- B) Family Crisis- reasons, effect on family & remedies.
 - 1) Unmarried person.
 - 2) Old age & their problems.
 - 3) Illness & Death.
 - 4) Divorce.
- C) Mechanisms for Solution of crisis.
 - 1) Planning for the future.
 - 2) Family counseling service.
 - 3) Legal remedies.

OTHERS :-

- 1) Assignments.
- 2) Group Discussion.
- 3) Seminar.

References :-

- 1) Dampatya Jeevan Nu Anukoolan – Leelaben Shah.
- 2) Langa Ane Kautumbic Sambandho – Leelaben Shah.
- 3) Kutumb Kalyan – A. G. Shah
- 4) Bharat Ni Samajik Sansthao – University Granth Nirman Board.
Patel Raval Prakashan, A. G. Shah & J. K. Dave (Anda Prakashan
- 5) Lagna Kutum Ane Samayojan – Dheeraj Dhakan.
- 6) Bhari me Parivan Vivah or Natedari Shobhna Jaine.
- 7) Mahila Bal Kalyan – Bipinchandra Vaishn.
- 8) Vyakti Samayojan Vigyem – Dr. C. T. Bhopatkat
- 9) Vyakti Samayojan Vigyem – Manovaigyanic Kadic.
- 10) Verm, V. S. Q. Singh M. (1988) Legal Rights for women and families. New Delhi Women's Legal end contor.
- 11) Govt. of India Ministry of H.R.D. Department of Women and Child Development Annual Report.
- 12) Fousece M. B. (1991) : Counseling for married Happiness Bombay Menaktalas unit VIII Centre book.
- 13) Agustione V. M. (ed) 1982 The Family Transition New Delhi – Vikas Publishing house.
- 14) Coleman J. C. (1998) intimate relationship marriage & The family Chicago.
- 15) Cuppy G. G. (1970) family & Social Change in Modern India – New Delhi.

B.A. HOME SCINCE

SEM – III

Elective – 201

Practical-Meal Planning and preparation

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
-	4	-	4					-	3

FOCUS :

This course based on core course- 201. It is designed to provide the skills in preparing various food items according meal planning of various age groups, activity, festivals etc. as well as dealing nutritional deficiencies of nutrients.

Objectives :-

This course will enable the students to :

- 1) Be familiar with weights and measures of food items, raw food & cooked food.
- 2) Develop skill in planning a menu for various age groups & activities.
- 3) Develop skills in preparing food items according meal planning of various age groups & activities.
- 4) Develop skills in preparing and evaluating recipes according to various festivals and regions.
- 5) Develop skill in preparing and evaluating recipes according to nutritional deficiency disorders.

(Total 29 practicals)

Unit – I (6 Practical)

1. Standardization (1 Practical)
2. Serving – plating Garnishing frays, Food presentation – Balance, Colour, Shapes, Textures, flavors, portion, size temperature etc. (1 Practical)
3. Planning for infant including weaning foods (1 Practical)
4. Planning for pre-School (1to3 years) Children (1 Practical)
5. Planning for school children including packed lunch (3 to 5 years and 5 to 10 years) (2 Practical)

Unit – II (8 Practical)

1. Planning for Adolescence girl and boy (2 Practical)
2. Planning for adult man/women (any one- heavy/ moderate and sedentary work) (2 Practical)
3. Planning for pregnant and lactating women (2 Practical)
4. Planning for old age (1 Practical)
5. Planning for Athlete (1 Practical)

Unit – III (9 Practical)

1. Planning for festivals- Diwali, Holi, Uttarayan (3 Practical)
2. Planning for Gujarati dishes (1 Practical)
3. Planning for Punjabi dishes (1 Practical)
4. Planning for South Indian dishes (1 Practical)
5. Planning for Chinese dishes (1 Practical)
6. Planning for Mexican dishes (1 Practical)
7. Planning dishes for occasions- Birthday, Marriage (1 Practical)

Unit – IV (7 Practical)

1. Planning for Protein-Calorie malnutrition (1 Practical)
2. Planning for Vitamin-A deficiency (1 Practical)
3. Planning for Iron deficiency (1 Practical)
4. Planning for Vitamin B₁, B₂, B₇ deficiency. (1 Practical)
5. Planning for Vitamin C deficiency. (1 Practical)
6. Planning for Vitamin D deficiency. (1 Practical)
7. Planning for Calcium, Phosphorus deficiency. (1 Practical)

References :

- 1) Robinson, C. H., Lawler, M. R., Chenoweth, W. L. and Garwick, A. E. (1986), "Normal and Therapeutic Nutrition, 17th ad., MacMillan Publishing Co.
- 2) Raheena, Begum (1989), "A textbook of Food, Nutrition and Dietetics," Sterling Publishers, New Delhi.
- 3) Sohi Darshan, "A Textbook of Nutrition." 2nd adi. (2009), S. Vikas & Comp., Jalandhar.
- 4) S. R. Mudambi and Rajagopal, "Fundamentals of Food, Nutrition & Diet Therapy," Fifth adi., New Age International Limited Publishers, Delhi.
- 5) zki. Su. Ze. ĀkkXf, Ākku»ký rōāk, ÞwrLkōŠMkxe økútÚk rLk{koý çkkuzo, økwshkík hkßÞ, y{ĒkōkĒ.

- 6) ykh. hks÷û{e, «Pwõík Ãkku»ký, ÞwrLkðŠMkxe økútÚk
rLk{koý çkkuzo, økwshkík hkßP, y{ËkðkË.
- 7) yLkuhe – LkPLkk þkn, LkðLkeík ÃkÂç÷fupLMk.
- 8) MðkË Mkheíkk – «rík yuLk. X-h.

**B.A. HOME SCINCE
SEM-III
Elective - 202**

Practical -Application of Life Science

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
Theory	Practical	Other	Theory	Practical	Theory	Practical	Theory	Practical	
-	4	-	4					-	3

FOCUS :

This is build upon the CORE-202 course Applied Life Science provide to guide the undergraduate student to understanding of the field of plant physiology, morphology, human physiology, genetics & evolution.

Objectives :-

This course will enable the students to :

- 1) To get familiar with cell structure, concepts & their important role in life processes.
- 2) To understands the different parts of plants & their uses in daily life.
- 3) To help to learn the identification of blood group & the role of enzymes in digestion in human being.
- 4) To recognize different of human body systems & their functions.

Unit – I

History of Life & Human Genetics – Total – 5

- 1) To study the Onion cell.
- 2) Study of Potato starch grain.
- 3) To study the hydrolysis of starch with Salivary enzyme ptyalin (Amylase)
- 4) To study the identification of Blood group through ABO method.
- 5) To study the identification of Blood group through Rh factor method.

Unit – II

Plant Morphology Total – 9

- 6) Study of various parts of flowering monocot ledonous (maize/wheat) plant.
- 7) Study of various parts of flowering dicotyledonous (Vinca rosea) plant.

- 8) Study of external & internal characteristics of monocot (maize) seed.
- 9) Study of growth & development in plants through germination stages of monocot (maize)
- 10) Study of external & internal characteristics of dicot (Bean) seed.
- 11) Study of growth & development in plants through germination stages of dicot (Bean) seed.
- 12) Study of insect pollinated (Hibiscus) & wind pollinated (maize/wheat)
- 13) To study vegetative reproduction :
 - i) Cell division – Paramecium (slide).
 - ii) Fragmentations – Spirogyra (slide).
 - iii) Adventitious buds – Potato, Zinger.
 - iv) Runner – Grass.
 - v) Offset – Pistia, Ichornea.
 - vi) Stolon – Nephrolepis (fern).
- 14) To study sexual reproduction on flowering plants through slides :-
 - i) T. S. of anther
 - ii) T. S. of Ovule.

Unit – III

Microbiology & Human Welfare :- Total – 4

- 15) To study of life history (Metamorphosis) of silk moth through preserved specimen.
- 16) Study the economically useful plants through (fresh/Preserved) Specimens (Based on theory).
- 17) To study the medicinal plants through fresh/preserved specimens (Based on theory).
- 18) To study the useful animals through specimens (Based on theory).

Unit – IV

Human Physiology & Plant Physiology. Total – 13

- 19) Study of Digestive organs of human body through Model/Chart.
- 20) Study of human Heart through Model/Chart.
- 21) Study of human Eye through Model/Chart.
- 22) Study of human Ear through Model/Chart.

Demonstration Practical

- 23) To study the process of Osmosis through Thistle funnel experiment.
- 24) To study the process of Osmosis through Potato Osmoscope experiment.

- 25) To study the process of Osmosis through Endosmosis.
- 26) To study the process of Osmosis through Exosmosis.
- 27) To study the process of Transpiration in plants through Belier experiment.
- 28) To study the process of Transpiration in plants through Ganong's potometer experiment.
- 29) To study the process of Transpiration in plants through four leaf experiment.
- 30) To study the process of Transpiration in plants through Cobalt Chloride paper experiment.
- 31) To study the process of Transpiration showing the relation between Transpiration absorption experiment

Reference Books :

- 1) Dr. Garg P. K. Biology – (Sđ rđĵkkLk)
- 2) Trivedi J. J. & Dr. Vaidya R. M. – «kĀkurøkf SđhMkkĀýĀĵ
- 3) Dr. Sukkawala V. M. & Dr. Vaidya B. S. – Practical in Biology.
- 4) Prof. Pandya M. H. & Trivedi – «kĀkurøkf đLkMĀkríkĀĵ (S.Y. B>Sc.)

**B.A. HOME SCIENCE
SEM – III**

**Soft Skill
Food and Nutrition**

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
1	-	1	2					2	-

FOCUS :-

This course builds upon the fundamentals of Foods and Nutrition and provides further information regarding the role of macro and micro nutrients in human nutrition as well as basic information regarding Food Preparation.

Objectives :-

- 1) Understand basic concept of Food, Nutrition, Nutrients, Health, Nutrition Status and role of Nutrition maintaining health.
- 2) Gain knowledge regarding Food groups, Food guide pyramid, balanced diet and nutritive value of various food groups.
- 3) Get familiar with nutritional contribution of various food groups.
- 4) Gain knowledge regarding recommended dietary and Nutritional requirements.

UNIT – I

Basic Concept of Food and Nutrition

- 1) Definition of Food and Nutrition, Health, Nutrients, Malnutrition, nutritional status, Factors affecting food and nutrition.
- 2) Role of food and nutrition in maintaining health and functions of food.
- 3) Classification and functions of Nutrients – Macro and Micro.

UNIT – II

Food Groups and their nutritional contribution

- 1) Eleven food groups – name and their selection
- 2) Nutritional contribution of eleven food groups.
 1. Cereals

2. Pulse
3. Fruits
4. Vegetables,
5. Milk & Milk Products
6. Nuts and Oilseeds
7. Meat
8. Fish and Poetry, Eggs
9. Sugars
10. Tea, Coffee, Cocoa, Chocolate and other beverages
11. Condiments and spices.

Unit – III

Recommended Dietary and Nutritional Requirements

- 1) Minimal Nutritional requirements and RDA, reference man and woman, Use of RDA in planning a balanced diet.
- 2) Nutritional requirements (ICMR table) of energy, protein lipids, carbohydrate, vitamins, minerals and trace elements water and dietary fibers.
- 3) Dietary requirements of eleven food groups (ICMR Table).

Unit – IV

Balanced Diet

- 1) Meaning and importance of balanced diet to maintain human health factors affecting balanced diet.
- 2) Steps required for planning a balanced diet.
- 3) Use of Food Exchange List and Food Guide Pyramid for planning a balanced diet.

References :-

- 1) R. Rajalakshmi, “Applied Nutrition”, Oxford, B.H. Publishing Co. Delhi.
- 2) Swaminathan M., “Human Nutrition and Diet”, Bangalore Printing and Publishing Co.
- 3) Dr. L.C.Gupta, “Food and Nutrition”.
- 4) Swaminathan M., “Handbook of Food and Nutrition”
- 5) Mudambi and Rajagopal, “Fundamentals of Food and Nutrition”

(Family and Community Sciences)
Home Science Undergraduate Programmes for
General Home Science (Composite)
Curriculum as per the choice based credit system
(Implement from June 2012)

B. A. HOME SCIENCE PROGRAMME
COURSE STRUCTURE FOR C.B.C.S.

SEM - IV

Sr. No.	Course Type	Name of Course	Credits / Week				Contact Hours
			Theory		Practical	Total	
			L	O			
1	Core 211	Indian Tradition Textile and Embroidery	3	1	-	4	4
2	Core 212	Women Empowerment and Entrepreneurship	3	1	-	4	4
3	Core 213	Introduction To Community Nutrition	3	1	-	4	4
4	Elective 211	Practical-Apparel Making and Embroidery	-	4	4	4	1½ 1 Cr (6 Hrs)
5	Elective 212	Practical- Personal Empowerment	-	4	4	4	1½ 1 Cr (6 Hrs)
6	Foundation 211	Dress Designing	1	1	-	2	2
7	Soft Skill 211	Hospitality	1	1	-	2	2
8	Comp 211	English	2	-	-	2	2
			13	5	8	26	30

**B.A. HOME SCIENCE
SEM – IV
Core – 211**

THEORY

Indian Traditional Textile and Embroidery

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
3	-	1	4					3	-

FOCUS :

This course builds upon the core course Indian Traditional Textile and it provides detail information. It gives some basic concept of embroidery.

Objectives :-

This course will enable the students to :

- 1) Understand basic concept of Indian Traditional Textile, use of machine and hand embroidery.
- 2) Get knowledge regarding different state Textile.
- 3) Basic skills required for embroidery.

Unit – I

Traditional Textile of India

- 1) Traditional Textile of India.
 - Kadamkari painted and block printed.
 - Patala – Rajkoti and Patan’s patola.
 - Pochampally of Andhra Pradesh.
 - Bandhani – Gujarat.
- 2) Woven Textile of India.

- Brocades – its types like kinkhab. Ab-e-rava (Ahmadabad, Surat and Banaras
- Shawls of Kashmir
- Silk of Karnataka
- 3) Woven Sarees of India
 - Madhya Pradesh – Maheswari and Chanderi
 - Maharashtra – Paithani and Narayan peth
 - Bengal – Balushari and Mekhala, Tant
 - Orissa – Sambalpuri (Ikkat)
 - Utter Pradesh – Banarasi Sari

Unit – II

Fundamentals of Embroidery

- 1) Meaning of Embroidery
- 2) Types of Embroidery
- 3) Suitability of Embroidery
- 4) Study of the types of various contemporary embroideries like – Shadow work, Cut work, Drawn Thread work, Smoking & Appliqué work.

Unit – III

Knitting and Khadi

- 1) Knitting
 - Technology
 - Types of knits and their use
 - Merits and demerits
- 2) Khadi
 - Requirement of Khadi for benefit of women begins.
 - Advantages of Khadi Production.
 - Different Handloom products of Khadi.
 - Khadibhandar.

Unit – IV

Colour and Design

- 1) Colour :-
Colour wheel, Colour combination and its use in various embroidery
- 2) Design :-
Principals and its Application on Embroidery
- 3) Types of Threads
- 4) Types of Needles, use on different fabric.

Reference Books :-

- 1) Pramila Verma, “Vastra Vighnan evam Pridhan.”
- 2) Durga Deakae, “Fundamentals of Textile and its care.”
- 3) Amita Patel, Anita Patel “Kashida”
- 4) Vrunda Singh, “Vastra evam tantu vignan.”

**B.A. HOME SCIENCE
SEM – IV**

**CORE – 212
THEORY**

Women empowerment & Entrepreneurship

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
3	-	1	4					3	-

FOCUS :

This course is designed to provide the skills in various articles and awakers regarding personal grooming.

Objectives :-

- 1) To enable students for development of balanced personality & Stress management.
- 2) To enable students to achieve the goal of women empowerment & motivated for self-improvement.
- 3) To develop understanding for beauty care & maintaining physical fitness in scientific manner.
- 4) To enable students to take up entrepreneurship as a career.
- 5) To develop skill for production of various handicraft articles leading to entrepreneurship.

Unit – 1

Personal Growth & Personality by Development

- 1) The challenges understanding & meaning oneself being aware of one's strength & weakness.
- 2) Personality development & concept, factors & influences emotional & motivational aspects, assertion vs. aggression.
- 3) Conflicts & Stress, simple, coping strategies.
- 4) Keys to development of balanced personality.

Unit – II

Personal grooming & Etiquette.

- 1) Significance concept personal grooming.

- 2) Areas of personal grooming.
 - i) Physical fitness, body care & beauty-treatment.
 - ii) Yogasan & Physical Exercises
 - iii) Healthy Habits.
- 3) Concept & significance of manners & etiquette.
- 4) Adoption of manners & etiquette at –
 - i) Daily life.
 - ii) Educational institutions
 - iii) Work place
 - iv) Party place
 - v) Meal tables
 - vi) Religious function & places
 - vii) Telephone talk

Unit – III

Women empowerment

- 1) Concept, need & importance of women-empowerment.
- 2) Women & development the personal, social & national perspectives.
- 3) Capacity building for women education decision making abilities & opportunities, awareness & information on legal & political issues, gender issues, and substance abuse.
- 4) Role of Home Science education for personal growth & professional development.

Unit – IV

Entrepreneurship development

- (A) (a) Definition, need, scope & characteristics of entrepreneurship;
Types of industries.
 - (b) Area of Entrepreneurship under Home-Science.
 - (c) Contemporary government policies for entrepreneurship development.
- (B) (a) Preliminary preparations to start small scale industry.
 - (b) Steps for selecting of products.
 - i) Market Survey
 - ii) Visualizing the risks
 - iii) Identification of the product
- (C) Resource management & Budgeting
- (D) Production & marketing
- (E) Quality control & Taxation

Reference books :

- (1) Antony M. J. (1989) women's rights, New Delhi.
- (2) Bhattacharya R. Career Management, A new Challenge Vol : 1, New Delhi.
- (3) Chandra Shekhar ® 1992 – Women's Resource & National Development A – Perspective New Delhi – (Publishing House)
- (4) Gove. M. S. India Youth – Process of Socialization – New Delhi, 8, Vishva Yuvak Kendra.
- (5) Gupta J. L. (1988) Challenge to their Sex, Indian women's problems.
- (6) Khandwala P. (1984) Fourth Eye : Excellence Through Creativity, Allahabad – A. W. Wheeler.
- (7) Rathus S. & Brid J. (1983) Adjust & Growth : The challenge of life : New Yowrk : C. B. S. College Publishing Co.
- (8) Singh R. N. – Sky is the limit _ Practical guide on – effective career planning Bombay – Bombay Schandra Publications.
- (9) Batra G. S. (1999) Entrepreneurship & small scale industries. Deep & deep Pub., New Delhi.
- (10) Dargulkar M. D. (1983) Udyogdeep, Udyog Sachitra, Prakashan, Mathora sadan, Bombay.
- (11) Kulshrestha (1999) Successful Entrepreneurship Karishka Pub. Co. New Delhi.
- (12) Mathew J. Marimulla (1999) Enter. Theory at crossword, whuler Pub. Co. New Delhi.
- (13) Patri C. N. (1999) Self-employment & Successful entrepreneurship, Kanishta Pub. Co. New Delhi.

**B.A. HOME SCIENCE
SEM – IV**

**CORE – 213
THEORY**

Introduction to Community Nutrition

Lectures Per Week			Total Credits	Markes Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
			Theory	Practical	Theory	Practical	Theory	Practical	
3	-	1	4				3	-	

FOCUS :

This course is intended to student's nutritional problems prevailing in the country, their causes and implication and the Government policies and programmes for control and/or prevention of the same.

Objectives :-

This course will enable the students to :

- a) Be familiar with the basic concept of community Nutrition and role of Home Science to impart nutrition education in community.
- b) Be familiar with the communal problems of the community, their causes, symptoms, treatment and prevention.
- c) Be familiar with the schemes, programmes and policies of Government of India to combat Nutritional problem.
- d) Be aware of importance and aims of Nutritional assessment.
- e) Get exposed to the role of National and International agents in combating Nutritional problems, in India.

Unit – 1

Basic concept & scope of community Nutrition

- (A) Definition, Concept & importance of community Nutrition, public Health, community programmes.
- (B) Role of Home-Science in community Nutrition.
- (C) Importance, aims and methods of Nutritional Assessment
 - a) Anthropometric methods
 - b) Clinical methods
 - c) Biochemical methods
 - d) Diet survey.

Unit – 2

Nutritional problems of community

- (A) Common problems in India.
- (B) Causes (Nutritional and Non- Nutritional)
- (C) Incidence of Nutritional problems as signs and symptoms, treatment, prevention
- (D) Mal Nutrition, PEM, Micro- Nutrient deficiencies (Vit. – A) Iron, Iodine, Fluoric.

Unit – 3

Notational Schemes and Programmes

- (A) ICDS
- (B) Midday Meal Programme
- (C) Nutritional Anemia Control Programme
- (D) Vitamin-A prophylaxis Programme
- (E) National Iodine deficiency disorder.

Unit - 4

National and International agencies

- (A) Role of National and International agencies in combating Nutritional problems in India.
- (B) Nutrition policy in India & plan of action.

References :-

- 1) Shri Laxmi, "Dietetics", New age International (P) Limited Publisher, New Delhi.
- 2) Shukla P. K., Nutritional Problems of India.
- 3) Rabinson, C.H., Lawler, M. R. , Chenoweth, W. L. and Garwick, A. E. (1986); "Normal and Therapeutic Nutrition", 17th Ed., MacMillan Publishing Co.
- 4) Anderson, L., Dibble, M.V., Turkki, P.R. Mitchell, (1982), "Nutrition in Health and Disease", 17th ed. J. B. Lippincott & Co., Philadelphia.
- 5) çkwæÄËüð Lke÷{ yLku ðiã ¼kðLkk, VLzk{uLx÷ ykuV VwzTMk yuLz LPwrxÜpLk. (2004) «ðey ÄkwMíkf ¼tzkh, hksfkux.
- 6) zkì. su. ze. ÄkkXf, Äkku»ký rðãk, ÞwrLkðŠMkxe økútÚk rLk{koy çkkuzo, økwshkík hkßÞ, y{ËkðkË-380 006.
- 7) zkì. Äkxu÷ W{k, Äkku»ký yLku yknkh, (MktË¼o fkuþ), çkk÷økku®ðË «fkpLk, økktÄe{køko, y{ËkðkË.

B.A. HOME SCIENCE
SEM – IV

Elective – 211
Practical -Apparel Making and Embroidery

FOCUS :

This course is designed to provide the skills in using embroidery, basic embroidery, techniques with special embroidery stitching in Hand and Machine embroidery to design party wear cloths.

Objectives :-

This course will enable the students to :

- 1) Get skills in embroiders.
- 2) Get skills in using sewing machine for embroidering.
- 3) Develop basic skills in children clothing.
- 4) Develop entrepreneurship skill in Hand and Machine embroidery.

Total : 29 Practicals

Unit – I

Design and colour –

8 practical

- 1) Preparation of colour wheels -1 practical
 - Basic
 - Primary
- 2) Application of design for different cloths – 1 practical
- 3) Methods of designing – 2 practical
 - a) Tracing
 - b) Block
 - c) Use of carbon paper
- 4) Prepare Consumer Garment using Machine Embroidery.
 - A) Hand Bag with Running Stitch – 1 Practical
 - B) Pillow covers (2 piece) with Round stitch – 1 practical.
 - C) Dining Table Mats (4 piece) with patch work – 2 practicals

Unit – II

Apparel Making -

6 Practicals

- (1) Baby Frock with Smocking or Honeycomb – 2 practicals
- (2) Half Pant for a boy (5 to 7 years) 2 practicals
- (3) Shirt for a boy (5 to 7 years) – 2 practicals

Unit – III

8 practicals

Make one-one sample each of Hand Embroideries from North Zone.

- | | | |
|---------------|----|------------------|
| 1) Kashmiri | 4) | Shadow work |
| 2) Phulkari | 5) | Kantha |
| 3) Luckhanavi | 6) | Silver and fancy |

Unit – IV

7 practicals

Make one-one sample each of Hand Embroideries from South Zone.

- | | | |
|--------------------|----|--|
| 1) Rabari – Mirror | 4) | Gold |
| 2) Kuttchi | 5) | Make any one sample by crochet |
| 3) Dharwadi | 6) | Make any one sample by two niddle knitting |

Reference Book

- 1) yuBçkúkuEzhe zÙuMk rzpkELk^aøk – rLk{o÷k Mke. {e†e
- 2) «u{e÷k ð{kø, ð† rð¿kkLk yuðt ãkrhÄkLk.

**B.A. HOME SCIENCE
SEM – IV**

**Elective – 212
Practical - Personal Empowerment**

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical	Theory	Practical
-	4	-	4					-	3

FOCUS :

This course is designed to provide the skills in various articles and awareness regarding personal grooming.

Objectives :-

This course will enable the students to :

- 1) To be Similar with various artistic articles.
- 2) To develops skill in preparing various decorative articles and gift articles.
- 3) Develop skills in preparing paper articles and candle making.
- 4) Develop skill in preparing artificial ornaments.
- 5) Develop skill to bring awareness regarding personal grooming.
- 6) To bring awareness regarding working procedure of Bank.

Unit – I

(29Practicals)

- 1) Glass Painting on flat glass.
- 2) Frame work – (any one)
- 3) Pot Decoration
- 4) Fabric painting – Basic Techniques on handkerchiefs.
- 5) Fabric painting – Utility Garment (any one)

Unit – II

- 6) Gift packing with Paper & Cloth.

- 7) Molded Candle
- 8) Soft Toy – any one
- 9) Paper Bag – any one
- 10) Cards with envelopes – Two

Unit – III

- 11) Bookmarks – Five
- 12) Traditional Ornament Set
- 13) Western type ornament set
- 14) Jute article
- 15) One article incorporating artificial flower.

Unit – IV

- 16) Project Proposal for entrepreneurship development (group work)
- 17) Producing any Product in group and writing report (group)
- 18) A visit to bank (group)
 - a. To understand procedure of banks.
 - b. To understand loan related points to Start small scale Industry.
- 19) Table-mats. (Either Embroidery / Fabric Painting)
- 20) Nail art (Basic)

Body and Beautician (Demonstration only)

- 1) Facial (Normal and Herbal)
- 2) Mahanadi (Simple)
- 3) Tattoo (Simple)
- 4) Threading
- 5) Waxing
- 6) Make-up (basic and bridal)
- 7) Meni cure
- 8) Pedicure

**B.A. HOME SCIENCE
SEM – IV**

Foundation-212

Dress Designing

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
				Theory	Practical	Theory	Practical		
1	-	1	2					2	-

FOCUS :-

Systematized garment-making calls basic for knowledge skill in sewing techniques, development of designs, selection of suitable fabrics and supplies, effective colour combination, a minimum fabric consumption stitching and finishing. This course is designed to provide basic knowledge and understanding of dress designing.

Objective :-

- 1) To enable the students to improve the Skill in garment making.
- 2) To acquire Skills of preparation of drafts, sleeves, collars etc. used in garments.
- 3) To enable the students to equip them with the techniques of Body Measurement.
- 4) To develop and understand the Principles of pattern making though. Flat pattern and draping.

Unit – 1

Introduction to Dress Designing

- 1) Principles of figure drawing and sketching of body Features.
- 2) Elements and Principles of Design.
- 3) Body Measurements.
 - 1) Anthropometric measures.
 - 2) Methods of taking measurements for different garments.

Unit – 2

Fabrics and pattern for garment making

1) Techniques, Flat pattern, Draping, principles and application of Flat patterns for different styles.

2) Fabric :-

1) Handling of different types of fabrics.

2) Estimation of material required for different garments.

3) Selection of Fabrics for different garments.

Unit – 3 :

Preparation of Garment

1) Dart manipulation and dart concealment techniques.

2) Various types of basic stitches, fasteners, sleeves. Yolks Neck line and collars used in garments.

Unit – 4 :

Fitting and Draping.

1) Fitting :-

1) Factors affecting good fit.

2) Common problems, encountered and remedies for fitting defects.

2) Introduction to draping and silhouette of the individual – Dress form, Elements of Fabric – woven and knitted.

References :-

1) Vastra Vigyan evm paridhan – Pramila Verma.

**B.A. HOME SCIENCE
SEM – IV**

**Soft Skill
HOSPITALITY
Theory**

Lectures Per Week			Total Credits	Marks Per Paper				Duration of Exam Hour	
Theory	Practical	Other		Internal		External		Theory	Practical
			Theory	Practical	Theory	Practical			
1	-	1	2					2	-

FOCUS :-

This course builds upon the fundamentals of Hospitality, Hospitality Management and Hospitality Resources Managements.

Objectives :-

- (1) Understand basic concept of Hospitality and Hospitality Management
- (2) Gain knowledge regarding Hospitality Resources Managements.

UNIT – I

Introduction to Hospitality

1. The Definition and importance of Hospitality and Hospitality Management.
2. Growing field of hospitality- hotels, restaurants, casinos, museums, airports, institutional dining services, conventions, conferences, amusement parks, weddings, Travel & Tourism, Restaurant & Fast – Food Industry, Contract Catering Industry, Hospitals etc.
3. Factors Involved in Hospitality Managements- Customer Service, Team Leadership Skills, Multitasking Skills, Problem-Solving Skills, Financial Savvy, Creativity, Multi-tasking skills, Teamwork, Vision etc.

UNIT – II

Resources Management

1. Finance Management - Budgets, Sources of Finance, Planning adequate cash flow, Cost Accounting / Analysis -Food cost analysis
2. Space & Equipment Management - Step in planning layouts, Determining equipment, Maintenance of equipment, Layout analysis
3. Material Management - Menu planning, Purchase, Storage, Gauntly Food production, Service and modes of delivery
4. Time and Energy Management - Measures of utilization and conservation

UNIT – III
Human Resources Management

1. Manpower planning
2. Recruitment induction, training, Motivation and performance appraisal
3. Role And Responsibilities

UNIT – IV
Quality Assurance in Hospitality Industry

1. Food Quality
2. Total Quality management

References :-

- 1) T. Knowles. (1994) : Management of Hospitality, Pitman Publishing, London.
- 2) Knootz, H.O. Donnel C.(1968) : Principles of management McGraw Hill book Company.
- 3) West, B. Bssie & Wood, Levelle (1998)
Food Service in Institutions 6th edition. Revised by Harger FV, Shuggart SG & Palgne Placio JUNE MacMillan Publication Company. New York.
- 4) Sethi Mohini (1993) Catering management An Intefrated approach 2nd Edition Wiley Publication.
- 5) Brodner, J. Maschal, H.T, Carlon, H.M (1982): Profitable Food and Beverage operation 4th edition, hoydenBook company, New Jersey.
- 6) Green, E.E Darke, G.G Sweeny, F.F. (1978) Profitable Food
- 7) and Beverage Management . planning, operations, Hayden Book company, New Jersey.

**M. A. HOME SCIENCE
SYLLABUS FORMATE CBCS
IMPLIMENTED FROM –
JUNE 2011**

SEMESTER – I

Course No	Name of the Subject	Teaching hours per week			Credits
		Lectures	Others	Total	
HSC 401	Research, Methods	3	1	4	4
HSC 402	Food Science -1	3	1	4	4
HSC 403	Institutional Food Administration	3	1	4	4
HSC 404	Entrepreneurship Management -1	3	1	4	4
HSC 405	Practical -Food Science- 1	-	-	6	4
HSC 406	Practical -Institutional Food Administration-	-	-	6	4
	Totals	12	4	28	24

**M. A. HOME SCIENCE
SEMESTER I
PAPER NO. HSC 401
RESERCH METHODS**

Objective :-

- (1) To understand the significance of statistics and research methodology in Home Science Research.
- (2) To understand the types, rules and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- (3) To understand and apply the appropriate statistics technique for the measurement scale and design.

UNIT – I

- (1) Science, scientific methods, scientific approach.
- (2) Role of Statistics and research in Home science discipline.
 - Objective of research : Explanation, Control and prediction.
- (3) Types of research : Historical, Descriptive, Experimental, case study, social research, participatory research.

UNIT - II

- (1) Definition and identification of Research Problem.
 - Selection of research problem
 - Justification
 - Limitations and delimitations of the problem.
- (2) Types of Variables.

UNIT - III

- (1) Theory of Probability.
 - Population and sample
 - Probability sampling : simple random, systematic random sampling, two stages and multistage sampling cluster sampling.
 - Non-probability sampling purposive quota and volunteer sampling snowball sampling
- (2) Basic principles of research Design.

- Purposes of research design, Fundamental applied and action, exploratory and descriptive experimental, survey and case study, ex-past facto.
- Longitudinal and cross sectional, co-relational.

UNIT IV

(1) Qualitative Research Methods.

- Theory and design in qualitative research.
- Definition and types of qualitative research.
- Methods and techniques of data collection
 - Group Discussions
 - Interviews : Key in formats , in-depth interview
 - Observation.
 - Social Wapping
 - Participatory rapid assessment
 - Participatory learning assessment

(2) Data Gathering Instruments

- Observation, questionnaire, interview scaling methods, case study, home visits, reliability and validity of measuring instruments.

(3) Writing a research proposal.

References:-

- 1) Bandarkar, P.L and Wilkinson T.S (2000): Methodology and Techniques of social Research, Himalaya publishing home, Mumbai.
- 2) Bhatnagar, G.L (1990) Research Methods and measurements in behavioural and social sciences, agri. Cole publishing academy : NEW Delhi.
- 3) Dooley, D (1995) : strategies for interpreting qualitative data; sage publications, California.
- 4) Gay. L.R (1981, 2nd Edi.) : Educational Research, Charles, E. Merill, Colurbus, Ohio.
- 5) Hong, J.S. (Ed) (1988) : common Problems proper solutions : Avoiding Errors in Qualitative research, Beverly Hills, Sage publications.
- 6) Mukherrgee, R. (1989) : The quality of life valuation in social research, sage publication, New Delhi.
- 7) Stranss, A. and carbin, J. (1990) : Basis of Qualitative research grounded theory procedures and techniques, sage publication California.
- 8) “ સંશોધન પદ્ધતિઓ” – ડો.કે.જી.દેસાઈ ગુજરાત યુનિવર્સિટી ગ્રંથ નિર્માણ બોર્ડ.
- 9) “ સંશોધન પદ્ધતિઓ” – દિપક શાહ - સી.જમનાદાસ પ્રકાશન

**M. A. HOME SCIENCE
SEMESTER I
PAPER NO. HSC 402**

**THEORY
FOOD SCIENCE - I**

OBJECTIVES

- 1) Provide an understanding of composition of various food stuff.
- 2) Familiarize students with changes occurring in various food stuff as result of processing and cooking.
- 3) Enable students to use the theoretical knowledge in various applications and food preparations.
- 4) Provide adequate theoretical background and understanding about sensory evaluation of food.

UNIT – I

- 1) Sensory evaluation of foods:
 - a. Introduction to sensory analysis
 - b. Types of tests
 - i. Discrimination / Difference test :- paired test, triangle test, duo-trio test, for multiple samples.
 - ii. Quantitative difference tests: - Ranking Numerical, scoring test
 - iii. Preference test grading charts.
 - iv. Quality tests: - Grading charts, flavor, and profile method.
 - c. Factors affecting accuracy of test
 - d. Panel
 - i. Selection of panel members.
 - ii. Training of the judges
 - iii. Size of panel
 - e. Sampling of foods
 - i. Preparation of samples for scoring
 - ii. Number of samples
 - iii. Environment for evaluation

UNIT – II

- 1) Colloid chemistry :
 - a. Denaturation and coagulation protein
 - b. Emulsion and forms
 - c. Gelatinization & Gel Formation
 - d. Browning reactions.
- 2) Leavening agents.

UNIT – III

- 1) Egg cookery structure and composition use of egg in cookery.
- 2) Cereals: General structure, composition, nutritive value storage.
 - a. Use of flour for bakery products.
 - b. Preparation of matt, starches (including gel formation)
 - c. Maize and rice processed products like puffed rice, flakes, popcorn, ready to eat mixes and self raising flours etc.

- d. Batter and Dough – General methods for mixing batter and dough structure.

UNIT – IV

- 1) Pulses:
Composition, Nutritive value, milling preparation of flour, use of flour, storage of pulses.
- 2) Oil Seeds
Classification, composition, Nutritive value of oil seeds like Ground nut, soya bean (legume) sesame seed, cash walnut, Almond, Pista etc.

Reference Books:

1. Food Science – Bshrelaxmi, New Age International (p) ltd.
2. Exprimental cooking – Lawe Badie.
3. Foods selection and preparation, Sweedom and Makeller.
4. Hand Book of Food Science and Experimental.
5. Food – By M. Swaminathan
6. Food Science (2nd edition) charles. H. John wiley & sons. New york.
7. Food packing – sacharew & griffin a & publication
8. Food Packaging – Robert son. G.I. New yourk, Marsell Dekker, Inc.
9. Food science (3rd Edition) portar Norman New Delhi, CBS Publishers.
10. Dairy Technology – s. kumar
11. Experimental cookery – belle leave (1853) new yourk john wiley & sons. Inc.
12. Food chemistry – Liljon Mayar (1960) New york reinhold.
13. Quantity food management : principales & application – subject publication.
14. Professional food and beverage service managements Brain verghese Mac Millan Indian Ltd.
15. Experimental Foods laboratory manual by Margaret Me. Williams subject pub.
16. પ્રયોગાત્મક રાંધણકળા – ડૉ. ઉમાબેન પટેલ
17. આકાર વિજ્ઞાન – ડૉ. ઉમાબેન, જાનકી પટેલ
18. Home scale preparation of soaked & sprovted Bengal Gram . Dr. Uma Patel.

M. A. HOME SCIENCE
SEMESTER I
Paper No. HSC 403

THEORY
INSTITUTIONAL FOOD ADMINISTRATION

OBJECTIVES:

1. To developed a knowledge base in key areas of institutional food administration.
2. To provide practical field level experience in institutional food administration.
3. To impart necessary expertise to functional as a food service manager.
4. To equip individual to start their own food service unit leading to entrepreneurship.
5. To develop critical abilities and provides and provide basic grounding in research techniques.

UNIT – I

1. Introduction to food service systems.
 - Evolution of the food services industry.
 - Characteristics of the various types of food services units.
2. Approaches to management.
 - Theories of Management.

UNIT – II

1. Management of Resources.
 - A. Finance
 - Budgets.
 - Sources of Finance
 - Planning adequate cash flow
 - B. Space & Equipment
 - Step in planning layouts.
 - Determining equipment.
 - Maintenance of equipment
 - Layout analysis.
 - C. Material
 - Menu planning
 - Purchase
 - Storage
 - Gauntly Food production.
 - Service and modes of delivery.
 - D. Staff
 - Manpower planning
 - Recruitment induction, training, Motivation and performance appraisal
 - E. Time and Energy
 - Measures of utilization and conservation.

UNIT – III

1. Cost Accounting / Analysis

- a. Food cost analysis
- 2. Marketing and sales management
 - a. Marketing strategies
 - b. Sales analysis
 - c. Market promotion.

UNIT – IV

- 1. Quality Assurance
 - a. Food Quality
 - b. Total Quality management

References:-

- 8) West, B. Bssie & Wood, Levelle (1998)
Food Service in Institutions 6th edition. Revised by Harger FV, Shuggart SG & Palgne Placio JUNE MacMillan Publication Company. New York.
- 9) Sethi Mohini (1993) Catering management An Intefrated approach 2nd Edition Wiley Publication.
- 10) Kotas Richard & Jayawardardene, C. (1994): Profitable Food and Beverage management, hodder & Stoughton Publication.
- 11) Brodner, J. Maschal, H.T, Carlon, H.M (1982): Profitable Food and Beverage operation 4th edition, hoydenBook company, New Jersey.
- 12) Green, E.E Darke, G.G Sweeny, F.F. (1978) Profitable Food and Beverage Management . planning, operations, Hayden Book company, New Jersey.
- 13) Knootz, H.O. Donnel C.(1968) : Principles of management McGraw Hill book Company.

**M. A. HOME SCIENCE
SEMESTER- I**

**THEORY
Paper No. HSC 404**

ENTREPRENEURSHIP MANAGEMENT

OBJECTIVES:

1. To provide conceptual inputs regarding entrepreneurship management .
2. To sensitize and motivate the students towards entrepreneurship management.
3. To Orient and impart knowledge towards identifying and implementing entrepreneurship opportunities.
4. To develop management skills for entrepreneurship management.

UNITS – I

1. Conceptual Framework
 - Concept, need and process in entrepreneurship development.
 - Role of enterprise in national and global economy.
 - Types of enterprise – merits and demerits.

UNIT – II

2. The entrepreneur
 - Entrepreneurial motivation – dynamics of meaning and motivation.
 - Entrepreneurial competency – concepts
 - Developing entrepreneurial competencies – requirements and understandings the process, interpersonal skills, creativity, assertiveness achievement, factors affecting entrepreneur’s role.

UNIT - III

3. Launching and organizing an enterprise.
 - Environment scanning – information sources, schemes of assistance, problems.
 - Enterprise selection, market, assessment, enterprise feasibility study, SWOT Analysis.
 - Resource mobilization – finance, Technology raw material, site and manpower.
 - Costing and marketing management and quality control.
 - Feedback, Monitoring and evaluation.

UNIT – IV

4. Project Work Planning resource mobilization and implementation
5. Government policies and schemes for support in enterprise development and management.

Reference :-

- 1) Meredith, G.G et al (1982) : Practice of Entrepreneurship, ILO Geneva.
- 2) Patel V.C. (1987) : woman Entrepreneurship – Developing, New Entrepreneurs Ahmedabad EDII

- 3) Akhuri, M.M.P. (1990) Entrepreneurship for women in india, NIESBUS, New Delhi
- 4) Hisrich, R.D. and perers, M.P. (1995) : Entrepreneurship starting, developing and managing a new enterprise.
- 5) Hisrich, R.D. ad Brush C.G. (1986) : The women entrepreneurs, D.C. Health & Co. Toranto.

**M. A. HOME SCIENCE
SEMESTER –I**

**Paper No. HSC 405
Practical -Food Science-I**

OBJECTIVES:

1. Planning a sensory Evaluation.
 - I. Designing Questionnaire
 - II. Designing Score card
 - III. Discrimination test
 - a. Paired
 - b. Triangle
 - c. Duo-trio
2. Cereal cookery
 - I. Starch – Gelatinization of starch – comparison of fluting content from wheat flour.
 - II. Malt –preparation of malt and use of it in cookery – a comparative study.
 - III. Leavened products : (Use of any four)
 - a. Fermentation – use of micro organisms
(Lactic acid, Yeast)
 - b. Chemical agents
 - c. Egg.
 - d. Steam
3. Egg.
 - I. Use of egg as Binding, thickening, and emulsifying agent
 - II. Effect of heat on egg.
4. Pulse cookery
 - I. Comparative study of cooking dry, soaked and sprouted pulses in various medium, water time and temperature.
 - II. Cooking of soaked pulses in various metal.
5. Thickening Agents. Use of any four thickening agents in cooking from following.
 - I. Gram Flour
 - II. Corn Flour
 - III. Egg
 - IV. Custard powder
 - V. Maida
6. Binding agents (use of any four)
 - I. Egg
 - II. Bread Crumb
 - III. Any Flour
 - IV. Sago
 - V. Suji
 - VI. Bread

**M. A. HOME SCIENCE
SEMESTER I
PAPER NO. HSC 406**

Practical –Institutional Food Administration

OBJECTIVES:

1. Market Survey and analysis of processed and finished products.
2. Evaluation of food services unit – 2 conventional, commissary.
3. Market survey of food service equipment
4. layout analysis of Kitchens -2
5. Planning means for quantity
 - Banquet
 - Outdoor catering
 - Packed meals
 - Restaurant
6. Standardizing recipes.
7. Cost analysis of menu in
 - College canteen
 - Hostel mess

**M. A. HOME SCIENCE
SYLLABUS FORMATE CBCS
IMPLIMENTED FROM – JUNE 2011
SEMESTER – II**

Course No	Name of the Subject	Teaching hours per week			Credits
		Lectures	Others	Total	
HSC 407	Statistics & Computer Application	3	1	4	4
HSC 408	Food Science -2	3	1	4	4
HSC 409	Practical - Computer Application	-	-	6	4
HSC 410	Practical-Food Science -2	-	-	6	4
HSC 411 E-A	Hospitality Administration	3	1	4	4
HSC 411 E-B	Development Project Management				
HSC 412 E-A	Advertising and Marketing	3	1	4	4
HSC 412 E-B	Food Packaging				
Totals		12	4	28	24

M. A. HOME SCIENCE

**SEMESTER II
PAPER NO. HSC 407**

**THEORY
Statistics and Computer Application**

OBJECTIVES:-

1. To understand the role of statistics and computer applications in research.
2. To apply Statistical techniques to research data for analyzing & interpreting data meaning fully.

CONTENTS: -

UNIT – I

1. Conceptual understanding of statistical measures, classification and tabulation of data measurement of central tendency measures of variation.
2. Frequency distribution, histogram, frequency, polygons, ogive.

UNIT – II

1. Binomial distribution
2. Normal distribution – use of normal probability tables.

UNIT – III

1. Parametric and non-parametric tests
2. Testing of hypothesis Type I and Type II errors. Levels of significance

UNIT – VI

1. Chi-square test, goodness of bi independence of attributes 2 X 2 and r x C contingency tables.
2. Application of Students‘t’ tests for small samples. Difference in proportion for means and difference in means.

Reference:-

1. Dooley, D (1995) Strategies for interpreting Qualitative, sage publication; California.
2. Gay, L.R. (1981 2nd Edition) Educational Research; Charles. E. Mershall, Columbus, oh
3. Long; J.S. (Ed) (1988); common problems, Proper solutions Avoiding errors in quantitative research; Beverly Hills; Sage publication; California.
3. Mukherjee. R. (1989) The Quality of life valuation in social research Sage publication New Delhi.
4. Stranss, A and carbin. J (1990) Basis of Qualitatives research. Gsrounded theory Procedures and Techniques; Sage Publication; California.

M. A. HOME SCIENCE SEMESTER II

Paper No. HSC 408

THEORY Food Science II

OBJECTIVES:-

1. Provide an understanding of composition of various food stuff.
2. Familiarize students with changes occurring in various food stuff as a result of processing & cooking.
3. Enable students to use the theoretical knowledge in various applications and Food preparations
4. Provide adequate theoretical background and understanding about sensory evaluation of food

CONTENTS:

UNIT – I

1. Fruits and vegetables:
 - Composition, pigments, nutritive value, storage, spoilage, browning, reaction, preservation, techniques, garlic paste, cordials, pectin, gels.
2. Spices and Contiments :
 - Definition, classification, composition.
 - Major and minor Indian spices.

UNIT – II

3. Milk and Milk product
 - Composition, processing and product of milk, types of milk & milk products.
 - Dairy products – yogurt, butter, cheese, ghee, milk powder, khoya paneer, creame and curd.

UNIT – III

4. Beverages:
 - Classification, Soft drinks and its importance in relation to nutrients, alcoholic and non- alcoholic
5. Processed Food:
 - Confectioneries and chocolate products, Bakery products, Dehydrated products.

UNIT - IV

6. Sugar cookery:
 - a. Foams of sugar – Granulated, powdered khandsari, Mollasses, Maple and loaf Sugar.
 - b. Process of Crystallization
 - c. Types of candies to include consistency of sugar syrup.
 - d. Non crystalline – chikkies, Barfies

Reference:-

1. Food Science - B sharelaxmi, new Age International (p) ltd. Publishers. New Delhi.
2. Experimental cooking – lewe Badie.
3. Foods Selection and preparation, Sweedom and makeller.
4. Hand book of food Science and Experimental
5. Food – By M. Swaminathan
6. Food Packing – Sacharew & Griffin A Vi Publication.
7. Food Science (2nd Edition) Charles. H John Wiley & sons New york.
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12. Food chemistry – litjon mayar (1960) new york reinhold
13. quantity food management Principles & application subject publication.
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17. આકાર વિજ્ઞાન – ડૉ. ઉમાબેન, જાનકી પટેલ
18. Home scale preparation of soaked & sprovted Bengal Gram . Dr. Uma Patel.

**M.A. HOME SCIENCE
SEMESTER – II**

PAPER NO. - HSC – 409

PRACTICAL - Computer Application

- (A). MS Office
- MS Word
 - MS Excel
 - MS PowerPoint.

M.A. HOME SCIENCE
SEMESTER – II
PAPER NO. HSC - 410
PRACTICAL - FOOD SCIENCE – II

- (A). Fruits and Vegetables :
- (1). Effects of cooking on pigments in various mediums (Any Four from following) – Acid, Alkali, Distil water, sugar, salt, Aluminum vessel.
 - (2). Effect of cooking on fruits and browning reaction.
- (B). Milk :
- (1). Effect of acid, Alkali, sugar and heat on milk cookery.
 - (2). Preparation of Paneer and curd by various methods.
- (C). Sugar Cookery :
- (1). Preparation of crystalline and non – crystalline candies like –
 - (i) - Fudge and Fondent
 - (ii) - Chikkies and Barfies.
 - (2). Preparation of various consistency of sugar syrup - Make any three preparation from it.
 - (3). Caramallization use in cookery.

M.A. SEMESTER – II
PAPER NO. HSC 411 E – A

THEORY
HOSPITALITY ADMINISTRATION

OBJECTIVES :

- (1). To acquaint the students with house keeping department and its management in the hospitality industry.
- (2). To enable students to manage resources in the house keeping department to fulfill the hospitality Function.

UNIT - I

- (1). Types of institutions of facing hospitality Services.
- (2). Hospitality Functions.
 - (i) - Role of housekeeping in hospitality industry.
 - (ii) - Housekeeping in relation to commercial and welfare section.

UNIT – II

- (1). Management of housekeeping department.
 - (i) - Layout of housekeeping department.
 - (ii) - Planning, Organization and communication of housekeeping activities.
 - (iii) - Co – ordination with other department.
 - (iv) - Roles/ Responsibilities of personal in the housekeeping department.
- (2). Hostess Training.

UNIT – III

- (1). Administrative Policies.
 - I – Personnel Management : Recruitment training, handing, Personnel Promotion evaluation, distribution of jobs, Schedules job analysis.
 - II - Procurement Policies, buying techniques stores, stock control.
 - III - Cost control, inventory management, budget process, controlling expiries.
 - IV - Safety, security and sanitation, safety fire fighting, first aid safety in equipment use, pest control sanitation standarol.
 - V - Uniforms, types selection, distribution and control.
- (2). Banquet Management.

UNIT – IV

- (1). Energy and water management
Power requirements, flushing system, water control taps, waste water circulation.
- (2). Communication system, public address system, intercom system, music and television.
- (3). Maintenance, Repairs and redaction programmes.

References : -

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- (11). Andrews snoher (1978) Hotel Housekeeping Training Manual, Tata Mc Grew Hill Publication co. ltd. New Delhi.
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**M.A. HOME SCIENCE
SEMESTER – II
PAPER NO. HSC - 411 E – B**

**THEORY
DEVELOPMENT PROJECT MANAGEMENT
OBJECTIVES: -**

The enable students:

To get an insight related to components of project planning.

- 1) To provide an overview of the significance of general approach and methods and techniques and –
- 2) To impart skills in project planning.

UNIT – I

Basic concepts of project planning.

- Basic concepts : Need problem, project feasibility, planning, project formulation, forecasting, appraisal, PRA importance and objectives of project formulation, project development cycle and its stages, project classification.

UNIT – II

Project Identification – Identification of project opportunities, government policy, regulations, incentives and restrictions methods and techniques of project identification, prioritization of projects with peoples participation, prefeasibility, study.

UNIT – III

Project Formulation : Feasibility study and opportunity study – techno – economic analysis. Project design and network analysis – input analysis – Financial analysis – social cost – benefit analysis.

UNIT – IV

- Project Appraisal – Comprehensive appraisal of the key components of the project – project appraisal techniques – decision matrix, system analysis – urgency and risk analysis break even
- Point analysis, pay back period analysis, rate of return. MPV Profitability and IPR analysis, risk analysis and social cost benefit analysis.
- Project Format : Common Format analysis :
Proposal – basic and supportive information required for a project, rules governing the preparation of project, proposal writing up a project proposal.

References : -

- 1) Bhargava, B.S. et al.(1977) Project Identification Formulation and Appraisal, Metropolitan Book House; New Delhi.
- 2) Chavada, P. (1992). Project Preparation, Appraisal, Budgeting and Implementation. Tara McGraw Hill, New Delhi.

- 3) Emburger et al. (1990). Case Studies of Project sustainability, implications for policy and operations from Asian Experia. World Bank.
- 4) Goel, E.B. (1991). Project Management. Tara Mcgrew Hill, New Delhi.
- 5) Gupta, R.C. (1990). Management Information Systems. CDs Publishers; New Delhi.
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**M.A. HOME SCIENCE
SEMESTER – II
PAPER NO. HSC. 412 E – A**

**THEORY
ADVERTISING AND MARKETING**

OBJECTIVES :-

- 1). To become aware of different market organizations in our economy.
- 2). To understand the different marketing functions and the distribution system in our economy.
- 3). To familiarize with the marketing strategies and market research.
- 4). To understand the role of advertising in sales promotion.

UNIT – I

- 1) Market Economy
 - Markets, marketing, marketing functions.
 - Marketing environment, marketing research, market segmentation.

UNIT - II

- 1) Product Development & Forecasting
 - Developing , testing and launching new products.
 - Idea generation, screening and business analysis.
 - Understanding market demand and consumer adoption process.
 - Labeling and packing.
 - Stages in product life cycles.
- 2) Pricing practices and consumer interest pricing.

UNIT – III

- 1) Advertising and sales promotion.
 - Advertising objectives, functions, benefits.
 - Advertising budgets and costs of sales promotions.
 - Types of Advertising.
 - Evaluation of advertising effectiveness.

UNIT – IV

- 1) Personal selling and sales management.
 - Characteristics and importance.
 - Creative selling process.
 - Organizing sales force, training personnel
 - Motivation, evaluation and control of sales force.
- 2) Service Marketing
 - Marketing strategies.
 - Maintaining quality in services.

References :-

- 1) Barnolia, G.R. & Sharma N.K. (1998). Effective Advertising, Marketing and Sales management, Mangaldeep Publications, Jaipur.
- 2) Dhar, P.K. (1991). Indian Economy – its growing. Dimensions, Kalyan Publishers, New Delhi.
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- 7) Maz, M. Parahkas V.N. Montegia (1994). Advertising (4th Edition). Vishal Prakashan Publication.
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- 10) Woo, J.P. (1958). The story of advertising. The Roynalds Press, New York
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- 12) Memorria, C.B. Principles and Practice of Marketing in India, Kitab Mahal.
- 13) Vorkey V.O. – Handbook on Marketing Management Everest Publishing House, Mumbai
- 14) Jelliwani, J. (2001): Advertising, Phoenix Publishers, New Delhi.
- 15) Marketing Management 2nd Edition, P.M. Joshi at alc Jamanadas & Co.
- 16) Marketing Principles R.C. Patel 5th Edition, popular Prakashan Suchi.
- 17) Vechan kala and Vigyapan 3rd Edition P.M. Joshi at alc jamanadas & Co.

**M. A. HOME SCIENCE
SEMESTER II
PAPER NO. HSC 412 EB**

**THEORY
Food Packaging**

OBJECTIVES:-

This course is designed to enable students to :

- Gain knowledge about various packaging materials and importance of packaging.
- Be familiar with testing and evaluation of packing media
- Be familiar with packaging laws and regulations
- Be able to select appropriate packaging material for preventing environment degradation.

UNIT – I

1. Packaging:
 - Concepts, Definition, classification, Packaging – Development.
2. Packaging of Food:
 - Fresh and processed
 - General characteristics & food preservation.

UNIT – II

1. Primary Packaging media:
 - Properties and application-
 - Proper boards, metals, plastics, wood & glass
 - Labels, ceps adhesives
2. Testing and Evaluation of packing media
 - Retail packs [including shelf life evaluation] and transport packages.

UNIT – III

1. Packaging systems and methods for food products – vacuum packaging gas flush packaging, bag in box etc.
2. Food Products General classification and packing types, varieties trends.

UNIT – VI

1. Storage, handling and distribution of packages (foods including palletisation & containerization)
2. Food marketing and role of packaging.
3. Packaging – Laws & Regulation – FDA. PFA, Packaging commodity Rules, Weight & measures act etc.

Reference:-

1. Sacharow & griffin, food Packing – AVI a publication.
2. Hotchikess food & packaging interaction American chemical society.
3. Stanley & Sacharow food packaging.
4. Darry, R & T, Blackie : Principles & Application of MAP- academic & Professions.
5. Bhatia S.C Cannitig & preservations of fruits & Vegetables – new Delhi India.
6. Dalzelt J.M. food Industry & the environment chapmann & how, London.
7. Robertson G.L food packaging new york marcell dekker Inc.
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**M. A. HOME SCIENCE
SYLLABUS FORMATE CBCS
IMPLIMENTED FROM – JUNE 2011**

SEMESTER – III

Course No	Name of the Subject	Teaching hours per week			Credits
		Lectures	Others	Total	
HSC 501	Advance Nutrition – 1	3	1	4	4
HSC 502	Apparel Design & Construction	3	1	4	4
HSC 503	Practical-Advance Nutrition & Apparel Construction	6	-	6	4
HSC 504 E- A	Child and Human Rights	3	1	4	4
HSC 504 E – B	Problems in Human Nutrition				
HSC 505 E – A	Communication Technology & Extension	3	1	4	4
HSC 505 E – B	Nutrition and Health of Women				
HSC 506	Seminars/Projects Related to Sub. 501, 502	4	-	4	4
	Totals	22	-	4	24

M.A. HOME SCIENCE
SEMESTER III
Paper No. HSC. 501
THEORY
ADVANCE NUTRITION

Objective: -

This course will enable the students to

1. Augment the biochemistry knowledge acquired at the undergraduate level.
2. Understand the mechanisms adopted by the human body for regulation of metabolic pathway.
3. Get an insight in to interrelationship between various metabolic pathway.
4. Become proliferation for specialization in nutrition.

UNIT – I

1. Energy Metabolism
 - a. Determination of energy value of Food: Bomb calorimeter and oxy calorimeter.
 - b. Basal metabolic rate: Measurement and factors affecting basal metabolic rate.
 - c. Measurement of energy requirement of an individual with reference to man and women.

UNIT – II

1. Carbohydrates.
 - a) Chemistry and classification.
 - b) Digestion and absorption.
 - c) Metabolism : Glycolysis, TCA Cycle, gluconeogenesis glycogen synthesis.
 - d) Regulation of carbohydrates metabolisms, General mechanical, Hormonal regulation Blood glucoses Homeostasis.
 - e) Sweeteners (Nutritive and non-nutritive)
2. Proteins
 - a) Chemistry and classifications
 - b) Amino acids – structure and classification.
 - c) Digestion and absorption.
 - d) Metabolism citric acid cycle.
 - e) Evaluation of protein quality.

UNIT – III

1. Nucleic acids and Nucleoproteins.
 - a) Classification of nucleic acid RNA & DNA.
 - b) Metabolism and Biosynthesis of Nucleic acid pyrimidine and purine synthesis.
 - c) Genetic engineering : Recombinant DNA, RNA Synthesis (Transcription)
2. Enzymes and digestive Secretions.
 - a) Enzymes: Nature of enzymes. Mechanism of action of enzymes, Physical factor affecting activity, classification and no mandatory.
 - b) Digestive juices: Saliva, Gastric, Juice, Pancreatic Juice, intestinal Juice, the bile etc.

UNIT – IV

1. Lipids
 - a) Composition and classification.
 - b) Characteristics of Fats, Hardness, Hydrogenation, Emulsification, Saponification Rancidity, Effect of Health.
 - c) Digestion and absorption.
 - d) Types of fatty acids, nutritional significance.
 - e) Requirements of Fat.

M.A. HOME SCIENCE
SEMESTER III
Paper No. HSC – 502
THEORY
APPAREL DESIGN AND CONSTRUCTION

OBJECTIVES :

1. To impart an in depth knowledge of style reading pattern making and garment construction techniques.
2. To develop and understand the principles of pattern making through flat pattern and draping.

UNIT – I

1. Detailed study of industrial machines and equipment used for –
 - Cutting
 - Sewing
 - Finishing
 - Embellishment

UNIT – II

1. Study the interrelationship of needs, Thread stitch, Length and Fabric
2. Methods of Pattern making.
 - Drafting
 - Flat Pattern
 - Draping

UNIT – III

1. Developing Paper Pattern
 - Understanding the commercial paper pattern.
 - Layouts on different fabrics, widths and Types.
2. Readymade garments.

UNIT – IV

1. Garments and Garment Details :
 - a. Necklines and collars
 - b. Sleeve details
 - c. Skirts and Pants
 - d. Blouses, coats and Jackets
 - e. Frills, Fringes and gathers, cowls & cascades
 - f. Hemlines and insertions
 - g. Lacing, macrames and patch work
 - h. Pleats, quilling and ties
 - i. Shirring, Smoking and Zips
 - j. Yokes and underskirts
 - k. Tassels and tucks
2. Basic Rendering Techniques :
 - a. Colour matching using different mediums.
 - b. Stripes
 - c. Checks gingham and plaids

- d. Patterns and textures
- e. Reducing a Print
- f. Shading

References :

1. Armstrong Pattern making for Fashion Desing.
2. Gioello and Berke : Figure Type and size Ramnge, Fairchild Publications, New York.
3. Grate and storm : Concepts in clothing, Mc Graw Hill Book, New York.
4. Bina Abling, Fashion sketch Book, Fairchild Publications, New York.
5. Claire Shaeffers: Fabric sewing Guide, Chilton Book Company, Radnot, Pennsylvania
6. Harold Carr and Barbara Lthan: The technology of clothing manufacture, Oxford BSP Professional Book London.
7. Slampler, Sharp & Donnell: Evaluating Apparel Quality – Fairchild Publications, New York
8. Natalle Bray: Dress fitting published by Black Well Science Ltd.
9. Margohs Design your own pattern published by Double Day and Co. Inc. New York.

M.A. HOME SCIENCE
SEMESTER III
Paper No. HSC – 503

Practical-Advance Nutrition & Apparel Construction

Practical based on 501

1. Designing through flat pattern- Dart Manipulation
2. Development of variation in sleeves
 - a. Sleeves and bodice combination
3. Development of variation in collars
 - a. Roll over collar
 - b. Collar with bodice (Shaw)
4. Necklines and Facings
 - a. Scooped Necklines
 - b. Built-up Necklines
 - c. Eowl Necklines
5. Plackets
 - a. Center button closing
 - b. Asymmetrical closing
 - c. Double breasted
6. Development of Paper Pattern and Construction of Garments (Using checks, stripes, unidirectional and novelty fabrics)
7. Designing through draping
 - a. Basic draping Principles and Techniques
 - b. Developing a Pattern
8. Fashion Sketching
9. Term Garments – 2

Practical based on 502 Advanced Nutrition – 1

This course will enable the students and be familiar with qualitative test and quantitative determination.

1. Reaction of monosaccharide and their identification
2. Reaction of disaccharides and their identification
3. Reaction of Polysaccharides and their identification
4. Estimation of lactose in milk
5. Estimation of reducing sugar in food
6. To find our organic constituents of milk, egg and wheat flour
7. Bleeding time and clotting time
8. Estimation of blood protein by biuret method
9. Reaction of protein in food denaturation, coagulation
10. Determination of acid value, saponification and Iodine value of natural fat and acid

M.A. HOME SCIENCE
SEMESTER III
Paper No. HSC - 504 E – A
THEORY
CHILD AND HUMAN RIGHTS

Objectives:

- To develop awareness and perspective of Human Rights as a professional in the field of Human Development
- To develop sensitivity to Human Rights with specific reference to children's rights
- To gain knowledge about charter on Human and Children's Rights
- To work with women and children to create awareness about their rights and to guide them to access their rights

CONTENTS:

UNIT I

Definition and Evolution of Rights

- Human rights
- Child rights
- Woman's rights
- Charter
- Convention
- Policy

UNIT II

Status of Indian Children and their Rights

- Gender disparities (infanticide , foeticide, girl child)
- Children in difficult circumstances (children of prostitutes, child prostitutes, child labour, street children, refugee children and child victims of war.)
- Children with special needs.

UNIT III

Status of Women and their Rights

- Status of women in India
- Women and Human Rights
- Forms of violation of women's rights
 - Violence against women in home, work, places and societySexual harassment, rape
 - Crime against women
 - Political discrimination
 - Health and Nutrition based deprivations

UNIT IV

Human Rights

- Moral Rights
- Legal Rights

Advocacy for Human Rights

References:-

1. Butterworth, D. and Fulmer, A (1993). Conflict, Control Power. Perth : Child and Family Consultants.
2. Bruner, T. (1986). Actual minds – possible words. London ; Harvard University Press.
3. Digumarti, B.R. Digumarti, P.L. (1998). International Encyclopedia of Women (Vol.1), New Delhi : Discovery.
4. D'Souza, C. and Menon, J. Understanding Human Rights (Series 1-4) Bombay: Research and Documentation Centre, St. Pius College.
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10. Kudchedkar, S. (Ed.)(1998). Violence against Women : Women against violence. Delhi : Percraft International.
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13. National Institute of Urban Affairs (1993), Urban Child: Issues and Strategies In collaboration with Planning Commission, Ministry of Urban Development and UNICEF, New Delhi.
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15. National Commission for Women (2001). A Decade of Endeavour (1990-2000), New Delhi; National Commission for Women.
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20. UNICEF (1990). Children and Women in India: A Situation Analysis: 1990, New Delhi.
21. UNICEF India (1993). Annual Report on Country Situation: 1993, New Delhi.
22. UNICEF India (1993). Annex to the Annual Report on Goals and Indicators, New Delhi.
23. UNICEF India (1993). Policy on Child Labour, New Delhi.
24. Weiner, Myron (1991). The Child and the State in India, U.K. : Oxford University Press.
25. Manav Adhikar and Sanyukta Rastra Sangh, Satis Chaturvedi
26. Manav Adhikar , A N Karia, C Jamanadas & Co.
27. Bal Adhikar and Kayado , Dr. K C Ravl, Guj. Uni. A'bad.
28. Mahila Jagruti And Kanun, Prakes Narayan.
29. Strio and Samaj, A. G. Shah, J. K. Dave.

M.A. HOME SCIENCE
SEMESTER III
Paper No. HSc - 504 E – B
THEORY
PROBLEMS IN HUMAN NUTRITION

OBJECTIVES:

The course is aimed at providing an understanding of:

- Nutritional problems/nutrition – related diseases prevalent among the affluent and the less privileged groups, reference to their incidence, etiology and public health significance
- Biochemical and clinical manifestations, preventive and therapeutic measures of the same

CONTENTS:

UNIT – I

1. Historical background prevalence etiology biochemical and clinical manifestations, preventive and therapeutic measures for the following:
 - PEM
 - Vitamin – A deficiency
 - Nutritional anemias

UNIT - II

- IDD
- Rickets, osteomalacia and osteoporosis
- Fluorosis

UNIT - III

2. Historical background prevalence etiology biochemical and clinical manifestations, preventive and therapeutic measures for the following:
 - Obesity and Overweight
 - Diabetes Mellitus

UNIT - IV

- CHD
- Cancer

References:

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2. Waterlow, J.C. (1992): Protein energy malnutrition, Edward Arnold, A Division of Hodder & Stoughton.
3. Bauernfeind, J. Christopher (Ed). (1986): Vitamin A deficiency and its control, Academic Press.
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5. Rajiv Gandhi National Drinking Water Mission (1993) prevention and control of Fluorosis Ministry of Rural Development

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15. World Health Organisation's Reports, Monographs and Technical Report Series.
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**M.A. HOME SCIENCE
SEMESTER III
PAPER NO. HSC 505 E – A
THEORY
COMMUNICATION TECHNOLOGY AND EXTENSION**

OBJECTIVES:

- To impart knowledge and understanding of various communication systems.
- To provide a sound knowledge base for the relevance and applicability of the various media used in human communication and their complementary role towards each other.
- To enhance the versatility of the students in the selection and use of media in different socio-cultural environments
- To provide basic knowledge of concept of advertising and use of media in advertising.
- To impart skill in preparation of various Computer Aided Media messages.

CONTENTS:

UNIT I

Communication Systems

- Types of communication systems – concept, functions and significance. Interpersonal, organizational, public and mass communication.
- Elements, characteristics and scope of mass communication.

UNIT II

- Mass communication – models and theories;
- Visual communication – elements of visual design – colour, line, form, texture and space;
- Principles of visual design – Rhythm, Harmony, Proportion, balance and emphasis.
- Visual composition and editing.

UNIT III

Media Systems: Trends & Techniques

- Concept, scope and relevance of media in society.
- Functions, reach and influence of media.
- Media scene in India, issues in reaching out to target groups.
- Contemporary issues in media – women and media, human rights and media, consumerism and media.
- Historical background; nature characteristics, advantages and limitations and future prospects of media.
- Traditional media; role in enhancing cultural heritage, co-existence with modern media systems and applicability in

education and entertainment – puppetry, folk songs, folk theatre, fairs.

- Print media; books, newspapers, magazines leaflets and pamphlets.
- Electronic media-radio, television, video, computer based technologies.
- Outdoor Media: exhibition, fairs and kiosks.
- Media Planning and Scheduling, selection of media on the basis of suitability, reach, impact frequency and cost
- Introduction to ethics in mass media, freedom of speech, expression and social responsibility
- Political and Government controls on the media

UNIT IV

Advertising

- Definition, concept and role of advertising in modern marketing system and national economy.
- Inter-relation of advertising and mass media systems.
- Types of advertisements – commercial, non-commercial, primary demand, selective demand, classified and display advertising, comparative and co-operative advertising.
- Techniques of preparation of effective advertisements for various media.
- Ethics in advertising.

Reference:

1. Corner, J. Communication Studies – In Introductory Reader.
2. Defluers and Dennis (1994): Understanding Mass Communication.
3. Gupta S.S.: Cases in Advertising and Communication Management in India.
4. Harper and Row (1989): Main Currents in Mass Communication, Agee, Adut and Emery.
5. Joseph, D. (1993): The Dynamics of Mass Communication.
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8. Ravindran, R.K. (2000) : Media in Development Area.
9. Schramm, W. (1988): The Story of Human Communication, from cave painting to the Microchip.
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M.A. HOME SCIENCE
SEMESTER III
PAPER NO. HSC 505 E – B
THEORY
NUTRITION AND HEALTH OF WOMEN

OBJECTIVES:

This course aims to enable students to:

1. Be acquainted with status of women in Family and Society
2. Understand how various factors influence the health and nutritional status of women
3. Plan and undertake various activities to improve the status of women
4. Understand how health of women influence family, community and national development

CONTENTS:

UNIT I

1. Role of women in National Development
2. Women in family and community
 - a. Demographic changes, menarche, marriage, fertility, morbidity, mortality life expectancy, sex ratio, aging and widowhood, female-headed families.

UNIT II

1. Women and Work
 - a) Environmental stress, production activities, nutrition, health and gender, living conditions, occupational health, health facilities,
2. Women's nutritional requirements and food needs.

UNIT III

1. Women and Society
 - a. Women's role, their resources and contribution to family and community and effect on nutritional status
 - b. Effect of urbanization on women
 - c. Impact of economic policies, industrialization and globalization on women
2. Women and Health
 - a. Health facilities
 - b. Disease patterns and reproductive health
 - c. Gender and health
 - d. Health seeking behavior
 - e. Women- pregnancy and lactation
 - f. Safe motherhood
 - g. Care of at-risk mothers
 - h. Family planning
 - i. Women and aging – special concerns in developed and developing societies: Menopause, osteoporosis, chronic degenerative diseases, neurological problems

UNIT IV

1. Women and Nutrition
 1. Situation of women in global, national and local context improving the nutritional and health
 2. Policies and Legislations
 - a. CEDAW (Convention on Elimination of all forms of Discrimination Against Women), women's Right to Life and Health (WRLH)
 3. Empowerment of Women
 - a. Role of Education and various national schemes.

References:

1. ACC/SCN Policy Discussion Papers
2. Wallace, H.M. and Giri, K (1990): Health care of women and children in Developing Countries, Third Party Publishing Co. Oakland California
3. UNICEF (1994): The urban poor and household food security, UNICEF
4. IDRC (1993): Gender, Health and Sustainable Development
5. NGO Committee on UNICEF (1997): Women and Children in urban poverty – what way out?
6. Census Reports, Government of India
7. NFHS Reports
8. UNICEF – State of the world's children
9. Weil DEC, Alicbusan AP, Wilson JF, Reich M.R. and Bradley D.J.(1990) The impact of development policies on health, A review of the literature world health organization, Geneva
10. International Nutrition Foundation – Micronutrient Initiative (1999): Preventing iron Deficiency in women and children: Technical consensus on key issues
11. Gopalan, C. and Kaur, S (Eds) (1989): Women and Nutrition in India, Nutrition Foundation of India

**M. A. HOME SCIENCE
SYLLABUS FORMATE CBCS
IMPLIMENTED FROM – JUNE 2011**

SEMESTER – IV

Course No	Name of the Subject	Teaching hours per week			Credits
		Lectures	Others	Total	
HSC 507	Advance Nutrition -2	3	1	4	4
HSC 508	Advance Apparel Construction	3	1	4	4
HSC 509	Practical -Advance Nutrition & Apparel Construction	6	-	6	4
HSC 510 E - A	Early Childhood care & Education	3	1	4	4
HSC 510 E - B	Food Processing & Technology				
HSC 511	Dissertation	-	-	8	8
	Totals	15	3	26	24

M.A. HOME SCIENCE

SEMESTER IV
PAPER NO. HSC 507
THEORY
ADVANCED NUTRITION – II

OBJECTIVES:

This course will enable the students to:

1. Augment the biochemistry knowledge acquired at the undergraduate level
2. Understand the mechanisms adopted by the human body for regulation of metabolic pathway
3. Get an insight in to interrelationships between various metabolic pathways
4. Become proliferation for specialization in nutrition

CONTENTS:

UNIT I WATER AND ELECTROLYTE BALANCE

1. Water and Electrolyte Balance
 - Chemistry, distribution and composition of body fluids
 - Osmotic pressure of body fluids
 - Water balance and electrolyte balance – active transport across cell membranes
2. Mineral Balance
 - Sodium, Potassium and chloride: absorption, intake and output regulations
 - Other macro minerals – calcium, phosphorus and magnesium. Absorption, metabolism and regulation

UNIT II VITAMINS

1. Structure, absorption, transport and metabolism biochemical functions and interaction with other nutrients
 - Fat soluble vitamins – A,D,E and K
 - Water soluble vitamins – B complex and Ascorbic acid

UNIT III BLOOD

1. Functions of Blood
2. Composition of blood
3. Blood components (RBC, WBC and Platelets)Of bloods
4. Coagulation
5. Information regarding hemoglobin, sickle Cell Anemia and Thalassemia

UNIT IV

A. Hormones

- Definition, characteristics and biological role of Hormones
- Pituitary gland
- Adrenal gland
- Thyroid gland

- Pancreas

B. Food Toxicities

- Naturally occurring Toxicants in foods
- Chemical contaminants in foods

References:

1. Food and Nutritions by M.S. Swaminathan, Vol. I & II
2. Normal and Therapeutic Nutrition by Robinson
3. Berits, H.D. and Grosch (1999), Food Chemistry New York
4. Potter, N. and Hotch Kiss, Food Sciences – CBS Publisher, New Delhi.

**M.A. HOME SCIENCE
SEMESTER IV
PAPER NO. HSC 508
THEORY**

ADVANCED APPAREL CONSTRUCTION

OBJECTIVES:

- To help develop skills in pattern making and construction
- To create awareness of quality assurance norms and evaluating of quality in apparel

CONTENTS:

UNIT I

1. Fitting – factors affecting good fit, common problems encountered and remedies for fitting defects (upper and lower garments)
2. Clothing for people with special needs
 - a. Maternity and lactation period
 - b. Old age
 - c. Physically challenged

UNIT II

1. Evaluating the quality of apparel
 - a. Identification of the components of apparel
 - b. Fibre content, shaping devices, underlying fabrics, pockets, necklines, hem treatments, decorative details and alteration potential
 - c. Standards for evaluating the various components

UNIT III

1. Elements used in creating design
 - a. Concept and scope of fashion, design, classification of fashion
2. Composition
 - a. With one element
 - b. With more than one element

UNIT IV

1. Colour
Its sensitivity and composition in dress
2. Harmony
In form of space coverage to design of dress
3. Fashion Forecasting

References:

1. Slampler, Sharp & Donnell : Evaluation Apparel, Quality – Fairchild Publications, New York.
2. Natalie Bray : Dress Fitting Published by Blackwell Science Ltd.,
3. Margolis Design your own Dress pattern published by Double Day and Co. Inc., New York.

**M.A. HOME SCIENCE
SEMESTER IV
PAPER NO. HSC 509**

Practical -Advance Nutrition & Apparel Construction

1) ADVANCE NUTRITION – II

1. Estimation of ascorbic and content of foods by titrimetric method.
2. Estimation of Vitamin – A
3. Enzymes – Effect of pH and temperature on Enzyme activity of amylase on starch.
4. Alkali and acid. – Preparation of dilute solution of common acid and alkali and determining their exact normality.
5. Estimation of Hb from blood.
6. Estimation of RBC and WBC from blood.
7. Estimation of urea and uric acid and creatinine in urine.
8. To prepare chart for normal content of blood.
9. To prepare chart for normal content of urine.
10. Thin layer chromatography identification of amino acids.

2) ADVANCED APPAREL CONSTRUCTION

1. Development of slopers for skirt variations.
 - Low and high waist
 - A line, flared, circular, pleated, yoked with godet / peplum
2. Pockets.
 - Slashed pockets – welt, bound flaps
 - Inseam pockets – closed and open
3. Placket
 - Fly front opening
 - Zipper in seam without seam
4. Designing, drafting and construction of skirt
5. Fashion sketching
6. Term garment.

M.A. HOME SCIENCE
SEMESTER IV
PAPER NO. 510 E – A
THEORY
EARLY CHILDHOOD CARE & EDUCATION

OBJECTIVE :

1. To gain knowledge and insight regarding Principles of early childhood care and education.
2. To develop the skills techniques to plan activities in ECCE centers of different types to conduct activities in early childhood care and education and to work effectively with parents and community.

CONTENTS

UNIT - I

1. Principles of Early childhood care and education.
 - a. Importance need and scope of ECCE
 - b. Objectives of ECCE
2. Types of Preschools/Programmes : Play centers, day care, Montessori, kindergarten, balwadi, anganwadi etc.
3. Concepts of non – formal, formal and play way methods.

UNIT - II

1. Historical Trend (Overview)
 - a. Contribution of the following thinkers to the development of ECCE (their principles, application and limitation) in the content of ECCE.
 - b. Pestalozzi, Rousseau, Proebel, Maria Montessori, John dewey, Gijabhai Badheka, Tarabai modak, M.K. Gandhi, Ravindranath Tagore.
 - c. ECCE in India : Pre independence period, Post independence Kothari commission, contribution of five year plans to ECCE – Yashpal committee, Maharashtra preschool center Act.

UNIT - III

1. Organization of Pre School Centers.
 - a. Concept of organization and administration of early childhood centers.
 - b. Administrative set up and functions of personnel working at different levels.
2. Building and equipment location and arrangement of rooms: play ground selection of different types of outdoors and indoor equipment.
3. Staff / personnel service conditions and roles: role and responsibilities, essential qualities of a care giver/teacher their personal records and report.

UNIT - IV

1. Activities For ACCE

- a. Language Arts : Goal and Language, types of listening and activities to promote listening various activities – (Songs, Object talk, picture talk, Free conversation, books, games, riddles jokes stories and teacher's role.)
- b. Art and Craft activities (creative activities of expression)
Types of activities – Chalk, crayon, paints, paper work and best out of waste. Role of teacher in planning the activity, Motivating children, Fostering, appreciation of art and craft activities.
- c. Music : Songs, Objective of Music education establishing, goals, setting the stage and role of the teacher. Three aspects of music, making listening and singing.
- d. Mathematics : Goals of mathematics, learning developmental concepts at different stage : Principles of teaching mathematics.
- e. Science : Role of teacher in some important science experiences.

References :

1. Bhatia & Bhatia (1995). Theory & Principles of education, Daalsa House, Delhi.
2. Brewer. J.A. (1998). Introduction to early childhood education. (3rd Ed) Boston : Allyn & Bacon.
3. Canol. E.C. and Jan Allen (1993). Early childhood curriculum, University of Tennessee, New York : Macmillan.
4. Day Barbara (1983) Early childhood education, New York, Macmillan.
5. Gordon & Browne (1989). Beginning and Beyond, Second edition, Delman Pub.
6. Grewal. J.S. (1984) Early childhood education, Agra National Psychological corporation pub.
7. Hildebrand Verna (1981). Introduction to early childhood education. N.Y. : Macmillan.
8. Hildebrand Verna (1985). Guiding the young Child, N.Y. : Macmillan.
9. Jenkins. E. (1997). A practical guide to early childhood curriculum, C.V. Moshey Co.
10. Judith. E and Meyers, R.G. (2000). Early childhood counts : A programming guide on early childhood care for development, Washington: The World Bank. (Learning Resource Service.)
11. Kaul. V.(1997). Early childhood education programme, New Delhi.: NCERT.
12. Kohn Ruth (1972). The exploring child. Mumbai : Orient Longman.
13. Kulkarni. S. (1988). Parent Education perspective and approach. Jaipur : Ravat Publications.
14. Maxim G. (1980). The very young, California : Wordsworth.
15. Mohanti & Mohanti (1996). Early childhood care & education. New Delhi : Deep & Deep Publication.

16. Moyley. J.R. (1996). Just Playing, The role and status of play in early childhood Education. Miltron Kaynens : Open University Place.
17. Murlidharan. R. (1991). Guide to nursery school teacher. New Delhi : NCERT
18. Pankajam. G. (1994). Preschool Education. Ambala Indian Pub.
19. Rao. V.K. and S. Khurshid – ul – Islam (eds.) (1997). Early childhood: care and Education. New Delhi : commonwealth Pub.
20. Read Katherine (1980). The Nursery school. Halt Rinehart & Winston.
21. Saraswathi. T.S. (1988). Issues in child Development, curriculum & other Training & Employment, Mumbai : Somaiya.

**M.A. HOME SCIENCE
SEMESTER IV**

**PAPER NO. 510 E – B
THEORY
FOOD PROCESSING AND TECHNOLOGY**

OBJECTIVES:

This course is designed for students to :

- Impact systematic knowledge of basic and applied aspects of food processing & technology.
- Provide the necessary knowledge of basic principles and procedures in the production of important food products.

UNIT – I

1. Introduction: main crops grown in the country – importance and storage.
2. Physical principles in food processing –
 - a. Refrigeration – Refrigeration, cold storage, cool storage with air circulation, humidity control and gas modification.
 - b. Freezing – Changes during freezing, choice for final temperature for frozen foods, freezing methods.
 - c. Dehydration – methods of dehydration.

UNIT – II

1. Cereals and Pulses : -
 - a. Corn wet milling, corn starch products.
 - b. Storage and quality of cereal grains.
 - c. Rice processing, paraboiled rice, Rice based instant foods.
 - d. Pulses – processing elimination of toxic factors, quick – cooking dals, fermentation and germination.

UNIT – III

1. Fruits
 - Structure, composition, physiological and biochemical changes during ripening, handling and storage.
- 2). Vegetables
 - Harvesting, Post Harvest processing, Canning Freezing, Pickles and chutneys.
- 3). Spices
 - Processing and extraction of essential oils and colours, storage and preservation.

UNIT – IV

1. Fermentation Technology : -
 - a. Fermentation technology, Yeast, Milk products, fermented vegetables, Beer, Vinegar
 - b. Enrichment and fortification technology, High protein food technology.

2. Additives and Preservatives : -
 - a. Definition of food additives, acids, bases, sweeteners, stabilizer and thickeners.

Reference: -

1. Gould , G.W. (1995), New Methods of food preservation, Blackies Academic & Professional London
2. Connor, J.M. and schick, W.A. (1997), Food processing an individual powerhouse in transition, John Wiley and Sons, New York.
3. Stradelman, W.J. and Cotterill, D.J. (1986), Egg. Science and technology, AVI publishing & Co., INC, Westpost.
4. Arthey, D. and Ashurt, P.R. (1996), Fruit processing, Blackies academic professional, London.
5. Philip, R.D. and finley, J.W. (1989). Protein quality and effect of processing, Marcel Dekkern INC, New York.
6. Inglett, G.C. and Munel, L. (1980). Cereals for food and Beverages, Academic Press. New York.
7. Jelen, P. (1985). Reston Publishing Co., INC, A prentice Hall Co., virgina.
8. Hirasa, K and Takenasa, M. (1998), Spice science and technology, Lion Corporation, Tokyo, Japan.
9. Kap, K. Lorenz, K and Brummer, I. (1995). Frozen and Refrigerated dough and batters, American Association of sereal chemists INC. St. Paul. Minnesola.
10. Von Loeseoke, H.W. (1998). Food Technology Series : Drying and dehydration of Foods, Applied Scientific Publishers.
11. Matz, S.A. (1996). Bakery technology and Engineering, Third Edition CBS Publishers, New Delhi.
12. Follows, P.J. (2000), Food processing Technology, Principles and Practice, second edition, CRC Woodhead Publishing Ltd, Cambridge.
13. Hosney, R.C.(1996). Principles of cereal science and technology, second edition, American Association of cereal chemists, St. Paul, Minnosota.
14. Salunkhe, D.K. and S.S. kadam (1995). Handbook of fruit science and technology: Production, composition storage and processing Moncel Dekket INC. New York
15. Askan, A. Freptor, H. (1993). Quality Assurance in Tropical fruit processing, springer – Berlin.
16. Oliveira , A.R. Oliveira, J.C.(1999). Processing food quality optimization and process arressment, CRC, Boca raton.
17. Peter Fellours (Ed.) (1997), Traditional food, processing for profit Intermediate Technology Publications, London.
18. Harris, R.S. and Karmas. E. (1975). Nutrition Evaluation of Food Processing, AVI Publishing Co., WestPost, Connecticut.
19. Febriani, G and Lintas, C. (1988). Durum Wheat. Chemistry and technology, American association of cereal chemist,INC.

20. Fennema, O.R. Powrie, W.D. marth, E.H. Low Temperature preservation of food and living Mather, Marcel Dekker INC. New York.
21. Tannarbaum, S.R. Nutritional and safety Aspects of food processing, Marcel Dekket INC, New York.
22. Van – Beynnau, G.M.A. and Roles, J.A. starch conversion technology, Marcel Dekket INC, New York.
23. Ting, S.V. and Rouself, R.L. Citrus fruits and their products; Analysis and Technology.
24. Mathews, R.H. Legumes : Chemistry, Technology and Human Nutrition. Marcel Dekket Inc, New York.
25. Kokinin, J.L. Ho., C.T. and Karwe, M.Y., Food Extention Science and Technology, Marcel Dekket INC, New York
26. Akoh, C.C. and Swanson, B.G. carbohydrate Polysters and fat salsitutes, Marcel Dekket INC, New York.
27. Srephen, A.M. Food Polysaecharides and their application, Marcel Dekket INC, New York.

**M.A. HOME SCIENCE
SEMESTER IV
Paper No. 511
Dissertation / Project / Seminar**

**Subject for Paper – 511 Dissertations or Project or Seminar
should be selected from any related topic of syllabus.**

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