

**M.SC. (HOME SCIENCE)**  
**SYLLABUS 2014-15**  
**SYLLABUS OF SEMESTER SYSTEM**  
**FOOD SCIENCE AND NUTRITION**  
**1<sup>st</sup> SEMESTER**  
**Marking Scheme:**  
**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper I	Research methodology	80	10	10	100
Paper II	Physiology	80	10	10	100
Paper III	Food Microbiology	80	10	10	100
Paper IV	Problems in Human Nutrition	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical I	Nutrition & Food Microbiology	100

**PAPER - I**  
**RESEARCH METHODOLOGY**

Max. Marks: 80

**Objectives:**

To understand the significance of research methodology in Home Science research.

To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.

- UNIT-I**
1. Science, scientific methods, scientific approach.
  2. Role of research in Home science discipline.
  3. Objectives of research: Explanation, control and prediction.
  4. Types of research: Historical, Descriptive, Experimental, case study,
  5. Social research and survey: Meaning, definition, nature, scope, objects, types. distinction between social survey & research.
  6. Pre-testing and pilot survey.
- UNIT-II**
7. **Definition and identification of research problem.**
    - Selection of research problem.
    - Justification.
  8. **Fact, Theory and concept.**
  9. **Hypothesis :** Definition, sources, characteristics, importance, main difficulties in formation of hypothesis, disadvantages, Limitations and Delimitations of the problems.
  10. **Types of variables.**
- UNIT-III**
11. **Basic principles of research design:**
    - Purposes of research design: fundamental, applied and action, exploratory, and descriptive, experimental, ex-post facto.
    - Longitudinal and cross sectional, co-relational.
  12. **Data gathering instrument.**
    - Observation,
    - Questionnaire,

- Interview,
- Scaling method,
- Case study,
- Home visits,
- Reliability and validity of measuring instruments.

**UNIT-IV 13. Theory of probability:** Non-probability sampling: purposive, Quota and volunteer sampling/snow ball sampling

**14. Sampling :** Population and sample, Meaning, Characteristics, advantages and disadvantages.

**Types :**

- Probability sampling
- Random sampling (Simple random, systematic random sampling,)
- Purposive sampling
- Stratified sampling
- Other sampling methods (two stages and multistage sampling, cluster sampling).

**UNIT-V 15.** Classification and tabulation of data.

**16.** Analysis and interpretation of data

**17.** Preparation of report

**18.** Diagrammatic presentation of data

**References:**

- Edwards: experimental design in psychological research.
- Kerlinger: Foundation of educational research.
- Bhandarkar P.L. and Wilkinson T.S. (2000) methodology and techniques of social research, Himalaya publishing house, Mumbai.
- Bhatnagar G.L.(1990) research methods and measurements in behavioral and social science Agri Cole publishing agency, New Delhi.

## PAPER - II PHYSIOLOGY

**Max. Marks 80**

**Objectives :**

This course will enable students to:

- Advance their understanding of some of the relevant issues and topics of human physiology.
- Enable the students to understand the integrated function of all systems and the grounding of nutritional science in Physiology.
- Understand alterations of structure and function in various organs and systems in disease conditions.

**UNIT-I 1 Cell structure and functions**

Levels of cellular organization and function - organelles, tissues, organs and systems brief review. Cell membrane, transport across cell membrane and intercellular communication. Regulation of cell multiplication.

**2 Nervous system**

Review of structure and function of neuron, conduction of nerve impulse synapses, role of neurotransmitters Organization of central nervous system structure and function of Brain and spinal cord, Afferent and efferent nerves, Hypothalamus and its role in various body function, obesity, sleep, memory.

**UNIT-II 3 Endocrine system**

Endocrine glands- structure, function, role of hormones, regulation of hormonal

secretion, Disorders of endocrine gland. Emphasis on physiology of diabetes and stress hormones.

**4. Sense Organs**

Review of structure and function, Role of skin, eye, ear, nose and tongue in perception of stimuli.

**UNIT-III 5. Digestive system**

Review of structure and function. Secretory, Digestive and Absorptive function. Role of liver, pancreas and gall bladder and their dysfunction.

**6. Respiratory system**

Review of structure and function. Role of lungs in the exchange of gases, Transport of oxygen and  $\text{CO}_2$ . Role of Hemoglobin and buffer systems. Respiratory quotient, hypoxia, and asthma

**UNIT-IV 7. The circulatory system**

Structure and function of heart and blood vessels. Regulation of cardiac output and blood pressure, heart failure, hypertension.

**8. Blood formation, composition, blood clotting and homeostasis:**

Formation and function of plasma proteins, Erythropoiesis, Blood groups and its compatibility. Blood indices. Use of blood for investigation and diagnosis of specific disorders Anemia.

**9. The Musculo skeletal system**

Structure and function of bone, cartilage and connective tissue, Disorders of the skeletal system.

Types of muscles structure and function

**UNIT-V 10. The excretory system:**

Structure and function of nephron. Urine formation. Role of kidney in maintaining pH of blood.

Water, electrolyte and acid base balance, diuretics.

**11. Immunity system**

Cell mediated and humoral immunity. Activation of WBC and production of antibodies. Role in inflammation and defense

**12. Physiological changes in pregnancy.**

**References :**

1. Ganong W.F. 1985: Review of Medical Physiology 2<sup>nd</sup> Edition, Lange Medical Publication.
2. Moan Camcell E.J. Dickinson C.J... Edwares C.R.N. and Sikora K. (1984): Clinical Physiology, 5<sup>th</sup> Edition .... Publication.
3. Guyton A.C. (1985):
4. Guyton, A.C. and Hall, J.B. (1996) Text Book of Medical Physiology, 9<sup>th</sup> Edition, W.B. Saneers Company... Books Pvt. Ltd. Bangalore.
5. Wilson KTW and Waugh A (1998): Ress and Wilson Antony and Physiology in Health and .... 4<sup>th</sup> Edition
6. Mc. W.D. Karen F.J. and Katch, V.L. (1996): Excericise Physiology, Energy ,....perfor-  
mance, 4<sup>th</sup> Edition, Williams and Wilkons Batimere
7. Jain A.K. Text Book of Physiiology, Vol I and II Avichal Publishing Co. New Delhi.

**PAPER - III**

**FOOD MICROBIOLOGY**

**Max. Marks: 80**

**UNIT-I 1. Bacterial morphology, structure, staining, culture media, culture method and identification of bacteria.**

**2. Growth and Nutrition of Bacteria :** Intrinsic and extrinsic parameters that affect

- microbial growth.
- UNIT-I** 3. Microorganism important in food microbiology - Mold, yeast, bacteria.
4. **Spoilage of different groups of foods:**
- a Cereals and cereal products
  - b Vegetables and fruits
  - c Fish and meat products
  - d Meat and meat products
  - e Eggs and poultry
  - f Milk and milk products
  - g Canned foods
- UNIT-III** 5. **Contamination of foods.**
6. **Food Preservation :**
- a General principles of food preservation: Asepsis, removal of micro-organism, maintenance of anaerobic conditions.
  - b Preservation by use of high temperature.
  - c Preservation by use of low temperature
  - d Preservation by drying.
  - e Preservation by food additives
  - f Preservation by radiation.
- UNIT-IV** 7. **Foods in relation to disease :**
- Food borne illness: Bacterial and viral food borne disorders. Food borne important animal parasites, mycotoxins.
8. **Fermented Foods :**
- Role of microbes in fermented foods -
- a Fermented dairy products
  - b Fermented vegetables
  - c Fermented meat
  - d Fermented fish
  - e Beverage and distilled products.
- UNIT-V** 9. **Indices of Food Sanitary Quality:**
- (i) Microbial criteria of food.
  - (ii) Microbial standards and food safety
10. Controlling the microbial quality of foods -
- (i) Quality control using microbial criteria.
  - (ii) The HACCP (Hazard Analysis and Critical Control Point) system
11. Anti microbial therapy
12. Food Laws

#### PAPER - IV

#### PROBLEMS IN HUMAN NUTRITION

**Max. Marks: 80**

- UNIT-I** 1. Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients. Identification of high risk patients. Assessment of patient needs based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)
2. **Nutritional support:** Recent advances in techniques and feeding substrates.
3. **Stress and trauma :** Diet in surgery, burns, fracture.
- UNIT-I** 4. **Diet and drug interaction:** Effect of drugs on ingestion, digestion and metabolism of nutrients.
5. **Neurological disorders:**

- (i) Neuritis - Etiology, nutritional care.
- (ii) Migraine - Diet management
- (iii) Anorexia Nervosa - Etiology, treatment.
- 6 Childhood problems :** Inborn errors of metabolism and their nutritional management.
- Maple syrup urine disease** - Tyrosinemia, Galactosemia, Phenylketonuria.
- UNIT-III 7 Musculoskeletal disorders:**
  - ⌘ Arthritis's - Nutritional care
  - ⌘ Gout - Characteristics, nutritional care
- 8 Cancer :** Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment, diet in cancer.
- UNIT-IV 9** Historical background, prevalence, etiology, biochemical and clinical manifestation, preventive and therapeutic measures for the following -
  - I PEM
  - II Nutritional anaemia
  - III Vitamin A deficiency
  - IV. IDD
- UNIT-V 10.** Osteomalacia and osteoporosis Etiology, symptoms and nutritional care,
- 11.** Rickets
- 12.** Dental caries: Etiology, nursing bottle caries.
- 13.** Nutrition in AIDS.

#### References:

- 1 Atlas, M. Ronald (1995) principles of Microbiology, 1th Edition Mosby-year Book, Inc., Missouri, U.S.A.
- 2 Topley and Wison's (1983) Principles of Bacteriology, Virology and Immunity, Edited by S.G. Wilson, A. Miles and M.T. Parkar, Vol.I
- 3 General Microbiology and Immunity, II: Systematic Bacteriology, 7<sup>th</sup> Edition, Edward Arnold Publish.
- 4 Block, J.G. (1999) Microbiology Principles and Experiments, 4th Edition John Wiley and Sons Inc.
- 5 Jay, James, M. (2000) Modern Food Microbiology, 6<sup>th</sup> Edition, Aspen publishers, Inc., Maryland.
- 6 Bansart, G. (1989) Basic Food Microbiology, 2th Edition, CBS Publisher.
- 7 Garbutt, J (1977) Essentials of Food Microbiology, 1<sup>st</sup> Edition, Arnold International Students Edition.
- 8 Doyle, P. Benhat, L.R. and Mantville, T.J. (1977): Food Microbiology, Fundamentals and Frontiers, ASM Press, Washington DC.
- 9 Bensaon, H.J. (1990) Microbiological applications, C. Brown Publishers U.S.A.
10. Roday, S. (1999) Food Hygiene and sanitation, 1<sup>st</sup> Edition, Tata McGraw Hill, New Delhi.
11. Venderzant, C and D.F. Splitts Toesser (1992): Compendium of Methods for the Microbiological Examination of Foods 3<sup>rd</sup> Edition. American Public Health Association, Washington D.C.
12. Frazier, W.C. and Westhoff, D.C. (1998) : Food Microbiology. Tata McGraw Hill Book Company, New Delhi, 4th Edition.
13. James, M.J. (1987) : Modern Food Microbiology, CBS Publishers, New Delhi, 3rd edition.
14. Peleazar, M.I. and Reid, RD. (1993) : Microbiology, McGraw Hill Book Company, New York, 5th edition.
15. Adams, M.R., Moss, M.O. (1995): Food Microbiology, New Age International (P.) Ltd., Delhi.

16. Banwart G.J. (1987) : Basic Food Microbiology, CBS Publishers and Distributors, Delhi.

**PRACTICAL - I**  
**NUTRITION & FOOD MICROBIOLOGY**      **Max. Marks: 100**

**Objectives:**

The aim of the course is to:

1. Familiarize students with basic techniques used in Studies and Research in Nutritional Sciences.
2. Acquaint students with the methods of estimating nutrient requirements.
3. Orient students towards planning of metabolic studies.

**Note: Any 10 practicals from 'Part I' and any 5 practicals from 'Part II'.**

**PART-I**

1. Estimation of protein quality using different methods PER, B.V., N.P.U., NDP-Cal%
2. Estimation of energy value of food stuffs using bomb calorimeter.
3. Estimation of Energy Requirements.
  - BMR
  - Energy expenditure on physical activities.
  - Factorial approach
4. Balance studies - Nitrogen balance
5. Assessment of micronutrient status
  - a. Iron
  - b. Vitamin 'C'
  - c. Vitamin 'A'
  - d. Vitamin from 'B' Complex group.
6. Bioavailability of selected nutrients
7. Assessment of nutritional status including Body composition.
8. Physiological parameters like heart rate and blood pressure
9. Assessment of coronary risk profile- RLSKO factor
10. Assessment of bone health
11. Planning diets and formulating dietary guide lines
  - Fitness and health
  - Prevention of chronic degenerative disorders
  - Obesity management
  - Management of diabetes mellitus and CVD
12. Review of existing alternative diet related systems for physical fitness and health.
13. Planning and preparation of diets for the elderly in health and sickness.

**Part II**

1. Preparation of common laboratory media and special media for cultivation of bacteria, yeast and moulds.
2. Staining of bacteria- gram staining, spore, capsule, motility of bacteria, staining of yeast and moulds.
3. Identification of important moulds and yeasts (slides).
4. Study of environment around us as source of transmission of micro organisms in food. Assessment of surface Sanitation of food preparation units.
5. Bacteriological analysis of milk.
6. Demonstration of available rapid methods, diagnostic kits used in identification of microorganisms or their products.
7. Visits to food processing units or any other organization dealing with advance methods in food microbiology.

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**FOOD SCIENCE AND NUTRITION**

**M.SC. PREVIOUS - 2ND SEMESTER**

**MARKING SCHEME :**

**PART I - THEORY**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper V	Statistics and Computer Application	80	10	10	100
Paper VI	Food Science	80	10	10	100
Paper VII	Food chemistry	80	10	10	100
Paper VIII	Therapeutic Nutrition	80	10	10	100

**PART II - PRACTICAL**

Practical	Marks
Practical II Food Science and Therapeutic Nutrition	100

**PART III - INTERNSHIP / FIELD PLACEMENT**

1. The student will be required to under go an internship/field placement for a total duration of six to eight weeks in their chosen area of interest after IInd semester which will facilitate their pursuing a professional career in same field.
2. This programme could be taken up either as a single block or in two different blocks. It is mandatory that the organization / institution (public/private) participating in the field.
3. Placement programme will be of good professional standing. The list may include Hospitals, state run NGO, Food industry, etc. . The student will be required to submit and present a report of the internship/field placement project after its completion. It is also envisaged that participating organization/institution will give their performance appraisal of the student work. Grade A (60% and above), Grade B (48% to 59%), Grade C (40% to 47%) should be given to the student after evaluation of field placement/ internship report by the department. The grade will be mentioned in the mark sheet of the IVth semester of the student.
4. Excursion trip/field visits should be arranged regularly by the department for the up liftment of the knowledge of the students.
5. This programme is designed with the following objectives:
  - I To enable the students to acquire an in-depth understanding of the practical aspects of knowledge and skills acquired during the course in the relevant subject/subjects.
  - II To gain hands on experience for higher proficiency in their selected area of expertise To help the students to develop and have their analytical abilities for situation and analysis and bringing about improvements

**PAPER - V**

**STATISTICS AND COMPUTER APPLICATION Max. Marks: 80**

**UNIT-I Objectives:**

1. To understand the significance of statistics and research methodology in Home Science research.

2. To understand the types, tools 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 statistical technique to the measurement scale and design.
  4. To understand the role of statistics and computer application in research.
  5. To apply statistical techniques to research data for analysis and interpreting data meaningfully
- UNIT-I**
1. **Conceptual understanding of statistical measures** - meaning, definition, scope, importance, characteristics, distrust of statistics.
  2. **Classification and tabulation of data.**
  3. **Measurement of central tendency**
    - Mean
    - Median
    - Mode
- UNIT-I**
4. **Graphic presentation of data**
    - Frequency distribution
    - Histogram
    - Frequency polygons
    - Frequency curve
    - Ogive
    - Binomial distribution
    - Parametric and non-parametric tests
- UNIT-III**
5. **Methods of Dispersion and variation**
    - Mean deviation
    - Standard deviation
    - Quartile deviation
    - Independence of attributes 2x2 and rxc contingency tables
    - Analysis of variance - one way method Direct and short cut.
  6. What is computers characteristics components of computer system, block diagram of computer, CPU, I/O devices and memory ( RAM and ROM) second storage devices (hard disk Floppy disk ,Magnetic tape etc.)
- UNIT-IV**
7. **Computer generations** -Classification of computers; Analog digital hybrid general and special
  8. **Types of computers-** Micro Mini Mainframe and super computer
    - Chi square test Goodness of it
    - Application of student 't' test for small samples
- UNIT-V**
9. **Correlation-**definition, meaning and types.
  10. **Methods of determining coefficient of correlation**
    - Product moment correlation
    - Rank correlation.
  11. **Working with MS Word**
    - Getting started with word, formatting text and paragraph.
    - Applying text and language tools, designing pages, with columns and tables, using graphics.

**References:**

1. Garrett, Henry E. 1971: statistics in psychology and education, David and co.



**PAPER - VI**  
**FOOD SCIENCE**

**Max. Marks 80**

**OBJECTIVES:**

This course is designed to:

- Provide an understanding of composition of various foodstuffs.
- Familiarize students with changes occurring in various foodstuffs as a result of processing and cooking.
- Enable students to use the theoretical knowledge in various applications and food preparations.

**UNIT-I 1 Introduction to Food Science:**

- 2 Water:** Physical properties of water and Ice, chemical, nature, structure of the water molecule.
- a) Absorption phenomena, types of water solutions and collidative properties.
  - b) Free and bound water.
  - c) Water activity and Food spoilage.
  - d) Freezing and Ice structure.
- 3 Food Dispersions**-Colloidal solutions, stabilization of Colloidal systems, Rheology of food dispersions.
- a) Gels: Structure, formation, strength, types and permanence.
  - b) Emulsions: Formation, stability, surfactants and emulsifiers.
  - c) Foams: Structure, formation and stabilization.

**UNIT-I 4 Polysaccharides, Sugars and Sweeteners**

- a) Starch: Structure, gelatinization, methods for following gelatinization changes. Characteristic of some food starches. gelatinization. Modified food starches.
- b) Non-starch Polysaccharides: Cellulose, hemicelluloses, pectins, gums, animal polysaccharides.
- c) Sugar and Sweeteners: Sugar, Syrups, potent sweeteners, and sugar products.
- d) Sweetener chemistry related to usage in food products: Structural relationships to sweetness perceptions, hydrolytic reactions, solubility and crystallization, hygroscopicity, fermentation, non- enzymatic browning.

**UNIT-III 5 Cereals and Cereal Products**

- a) Cereal grains: Structural and composition.
- b) Cereal products.
- c) Flours and flour quality.
- d) Extruded foods, breakfast cereals, wheat germ burger, puffed and flaked cereals.

**6 Fats, Oils and Related Products**

Sources, composition , effects of composition on fat properties. Functional properties of fat and uses in food preparations. Fat substitutes. Fat deterioration and antioxidants..

**UNIT- IV 7 Proteins:** Classification, composition, denaturation, non- enzymatic browning and other chemical changes.

- 8 Enzymes:** Nature of enzymes: stability and action. Proteolytic enzymes oxidizes, lipases, enzymes decomposing carbohydrates and application. Immobilized enzymes.

**UNIT-V 9 Milk and Milk Products:** Composition. Physical and functional properties De-naturation. Effects of processing and storage. Dairy products, Cultured milk,

yoghurt, butter, whey cheese, concentrated and used products, frozen desserts, dairy product substitutes

**Journals:**

1. Journal of Food Science Published by the Institute of Food Technologist, Chicago lu U.S.A.
2. Journal of Food Science and Technology published by Association of Food Sciencetists and Technologist (India) CFTRI- MYSORE.
3. Food Technology Published by the Institute of Food Technologist, Chicago lu, U.S.A.

**PAPER - VII**

**FOOD CHEMISTRY**

**Max. Marks: 80**

- |                 |  |
|-----------------|--|
| <b>UNIT-I</b>   | <ol style="list-style-type: none"> <li>1. <b>Meat and Poultry:</b> Muscle composition, characteristics and structure. Post mortem changes processing, preservation and their effects. Heat induced changes in meat variables in meat preparation, Tenderizing treatments, meat products.</li> <li>2. <b>Eggs :</b> Structure and composition, changes during storage. Functional properties of eggs, use in cookery. Egg processing, low cholesterol egg substitutes.</li> </ol>                 |
| <b>UNIT-I</b>   | <ol style="list-style-type: none"> <li>3. <b>Fish and sea foods :</b> Types and composition, storage and changes during storage, changes during processing, by-product and newer products.</li> <li>4. <b>Pulses and Legumes:</b> Structure, composition, processing, toxic constituents.</li> <li>5. <b>Nut ad oil seeds:</b> Composition, oil extraction and by-products.</li> <li>6. <b>Protein concentrates :</b> Hydrolysates and textured vegetable proteins, milk substitutes.</li> </ol> |
| <b>UNIT-III</b> | <ol style="list-style-type: none"> <li>7. <b>Fruits and vegetables :</b> Plant, anatomy, composition, Enzymes in fruits and vegetables. Flavor constituents, plant phenolics, pigments, post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.</li> <li>8. <b>Spices and condiments :</b> Composition, flavoring extracts - Natural and synthetic</li> </ol>   |
| <b>UNIT-IV</b>  | <ol style="list-style-type: none"> <li>9. <b>Processed foods :</b> Jams, jellies, squashes, pickles, dehydrated products.</li> <li>10. <b>Beverages :</b> Synthetic and natural, alcoholic and non-alcoholic, carbonated and non-carbonated, coffee, tea, cocoa, malted drinks</li> </ol>  |
| <b>UNIT-V</b>   | <ol style="list-style-type: none"> <li>11. <b>Traditional processed products :</b> Fermented food - Cereal based, pulse based, fruit/vegetables based like vinegar, pickle</li> <li>12. <b>Leavened products :</b> Leavening agents, biologically leavened and chemically leavened products. Batters and dough, bakery products.</li> <li>13. <b>Salt and substitutes.</b></li> </ol>  |

**References:**

1. Charley, H. (1982) Food Science (2nd edition), John Wiley and Sons, New York.
2. Potter, N. and Hotchkiss, J.H. (1996) Food Science, Fifth edition, CBS Publishers and Distributors, New Delhi.
3. Belitz, H.D. and Grosch, W. (1999) Food Chemistry (2nd edition), Springer, New York.
4. Abers, RI, (Ed) (1976) Foam, Academic Press, New York.
5. Cherry, R.J.(Ed) : Protein Functionality in Food. American Chemical Society, Washington D.C.

**Journals:**

1. Journal of Food Science
2. Advances in Food Research
3. Journal of Food Science and Technology
4. Journal of Agricultural and Food Chemistry

5. Cereal Science
6. Journal of Dairy Science
7. Journal of the Oil Chemist's Society.

#### PAPER - VIII

#### THERAPEUTIC NUTRITION

**Max. Marks: 80**

- UNIT-I 1 Etiopathophysiology, metabolism and clinical aberration:** complications, prevention and recent advances in nutritional management of GIT Disorders
- a) Gastritis \_ Types, dietary modification
  - b) Peptic ulcer, etiology, symptoms, dietary modification
  - c) Intervals of feeding, bland diet, four stage diet Therapy, prevention of recurrence.
  - d) Diarrhea - Classification, dietary consideration
  - e) Constipation, classification, dietary consideration
  - f) Ulcerative colitis symptom, dietary treatment
  - g) Sprue types, dietary consideration.
- UNIT-I 2 Disease of liver and gall bladder.**
- a) Diseases of liver and gall bladder
  - b) Jaundice - classification and dietary treatment
  - c) Hepatitis - types and dietary management.
  - d) Hepatic coma - causes and dietary management
  - e) Cirrhosis- Type and dietary management
  - f) Cholecystitis- Types and dietary management
  - g) Cholelithiasis- etiology and dietary management
- 3 Pancreatic disorders:** etiology, pathogenesis and nutritional care.
- UNIT-III 4 Renal diseases**
- a) Basal renal functions, classification of renal disease.
  - b) Glomerulonephritis- Acute and chronic- symptoms and dietetic treatment
  - c) Nephrosis symptoms and principles of nutritional care.
  - d) Renal failure- Acute and chronic renal failure, dialysis.
  - e) Renal calculi- Etiology, types of stones and nutritional care acid and alkaline ash diet.
  - f) Fevers and infections-Types of fever, Tuberculosis, typhoid and malaria dietetic management
- UNIT-IV 5 Cardiovascular diseases:** Classification.
- a) Hyperlipidemia \_ Classification and nutritional care.
  - b) Atherosclerosis - Etiological factors, pathogenesis dietetic management.
  - c) Hypertension - Classification, etiology, nutritional care.
- 6 Weight Imbalance:** Regulation of energy in take
- a) obesity - Types, etiology, treatment, diet and other measures, complication of obesity
  - b) Under weight ness - causes, dietetics management.
- UNIT-V 7** Historical background, prevalence, etiology biochemical and clinical manifestation, preventive and therapeutic measures for metabolic disorders.
- 8** Diabetic Mellitus.
- a) Incidence and predisposing factors
  - b) Symptoms , types and diagnoses
  - c) metabolism in diabetes
  - d) dietary management and meal management

- e) Hypoglycemic agents and insulin
  - f) complications of diabetes
  - g) Disorders of thyroid gland: normal thyroid function
9. Hyperthyroidism \_ symptoms and treatment

#### PRACTICAL - II

### FOOD SCIENCE AND THERAPEUTIC NUTRITION

Max. Marks 100

#### Distribution of Marks:

Sessional	-	20
Viva	-	20
Practical	-	60 (Exercises two of 30 each)

#### PART- A

1. Collection and storage of biological samples for clinical investigation.
2. Market survey of commercial nutritional supplements and nutritional support substrates.
3. Commonly used test for diagnosis of various - system – wise.
  - Interpretation of patient data and diagnostic tests and drawing up of patient diet prescription, using a case study approach.
  - Follow up- acceptability of diet prescription, compliance, discharge diet plan.
4. Preparation of diet counseling aids for common disorders.
5. Planning and preparation of diets for patients with common multiple disorders and complications and discharge diet plans.

#### PART- B

1. Effect of solutes on boiling point and freezing point of water.
2. Effect of types of water on characteristic of cooked vegetables, Pulses and cereals.
3. **Sugar and Jaggery Cookery:** Relative sweetness, solubility and sizes of sugars, stages. of sugar cookery, caramelization, crystallization, factors affecting crystal formation
4. **Starches Vegetables Gums and Cereals:** Dextrinization, gelatinization, retro gradation, thickening power, Factors affecting gels. Gluten formation and factors affecting gluten formation.
5. **Jams and Jellies:** Pectin content of fruits, role of acid pectin and sugar in jam and jelly formation, Use of gums as emulsifiers / stabilizers.
6. **Fat and Oils:** Flash point, melting point and smoking point, Role of fast and oils in cookery as: Shortening agent, frying medium, Factors affecting fat absorption. Fat crystals. Plasticity of fats Permanent and semi- permanent emulsions.
7. **Milk & Milk Products:** Scalding denaturation ration. Effect of acid, salt, alkali, sugar, heat) enzymes, polyphenols on milk Khoa, curd, paneer. Cheese (ripened and unripened) .
8. **Egg:** structure assessing egg in quality. Use of egg in cookery: Emulsions air incorporation, thickening, binding, and gelling. Method of egg cookery and effect of heat white foams and factors affecting foams:
9. **Pulses:** Effect of various cooking and processing methods on various functional properties of pulses and their products.
10. **Gelatin:** Gelatin gel strength and factors affecting gelatin.
11. **Fruits and Vegetables:** Pigments: Effects of cooking metal ions, ph, effect of various cooking processes on different characteristics of vegetables. Prevention of enzymatic browning.
12. **Leavened Products:** Fermentation- Use of microorganisms ((lactic acid yeast). Steam as an agent, Egg as a chemical agent.
13. **Frozen Desserts:** Factors affecting ice crystal formation. Quality characteristics of frozen

desserts.

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**FOOD SCIENCE AND NUTRITION**

**M.SC. (HOME SCIENCE) FINAL**

**3rd SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper IX	Advanced Nutrition	80	10	10	100
Paper X	Nutritional Biochemistry	80	10	10	100
Paper XI	Nutrition for Health of Women and Children	80	10	10	100
Paper XII	Methods of Investigation	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical III	Nutritional Biochemistry	100

**PAPER - IX**

**ADVANCED NUTRITION**

**Max. Marks: 80**

**Objectives :**

This Course is designed to:

- Provide in depth knowledge of the physiological and metabolic role of various nutrients and their interactions in human nutrition.
- Enable students to understand the basis of human nutritional requirement and recommendations through the life cycle.
- Enable students to understand the pharmacological actions of nutrients and their implications.
- Familiarize students with the recent advances in nutrition.

**UNIT-I 1. Energy:** Energy content of foods. Physiological fuel value- review. Measurement of Energy Expenditure: BMR, RMR thermic effect of feeding and physical activity, methods of measurement of basal metabolism. Estimating energy requirements of individuals. Regulation of energy metabolism: control of food intake, digestion, absorption and body weight.

**UNIT-I 2. Carbohydrates:** Types, classification, digestion and transport- review, dietary fibre, fructo, oligosaccharides, resistant starch- chemical composition and physiological effects Glycemic index of foods. Sweeteners nutritive and non-nutritive.

**UNIT-III 3. Proteins:** Classification, digestion, absorption and transport- review. Metabolism of proteins: Role of muscle, liver and gastro intestinal tract.in protein metabolism. Protein quality, methods of evaluating protein quality. Protein and amino acid requirements. Therapeutic applications of specific amino acid.

4. **Lipids:** Classification digestion, absorption, transport- review - Functions of fat E.F.A. Role of n-3 n-6 fatty acids in health and disease. Requirements of total fat and fatty acids. Trans fatty acids, prostaglandins, phospholipids, cholesterol.
- UNIT- IV 5. Water:** Regulation of intra and extra cellular volume - Osmolality, water balance and its regulation.
6. **Minerals:** (Note: For each nutrient sources, bio-availability, metabolism, function, requirements, RDA, deficiency and toxicity, interactions with other nutrients are to be discussed)
7. **Macro minerals:** calcium, phosphorus, magnesium, sodium, potassium and chloride.
8. **Micro minerals:** Iron, copper, zinc, manganese, iodine, fluoride.
9. **Trace minerals:** Selenium cobalt, chromium, Cadmium, silicon ,boron, nickel.
- UNIT-V 10. Vitamins:** Historical background, structure, food sources, absorption and transport metabolism biochemical function, and assessment of status. Interactions with other nutrients. Physiological, pharmacological and therapeutic effects, toxicity and deficiency with respect to the following.
  - a Fat soluble Vitamins A,D,E, & K
  - b Water Soluble: thiamine riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, ascorbic acid, cyanocobalamin, choline, inositol, ascorbic acid.

#### REFERENCES :

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6. Hunter, J.E. and Schmidt (1990): Methods of Meta- analysis- Correcting Error and Bias in Research Findings, sage Publications London.
7. Walker, R. (1983): applied Qualitative Research, gower, London.
8. Margan, D. (1988): focus Groups as Qualitative research Sage Publication, London.
9. Creswell, J. (1994): Research Design: Qualitative and Quantitative Approaches. Thousand Oaks, CA Sage Publications.
10. Margan, D (1993): Successful Focus Groups. Sage Publications.
11. Mischler, E.G. (1986), Research Interviewing. Context and Narrative, Harvard University Press Cambridge.
12. Denzin, N.K. and Lincoln Y.S. (1994): Handbook of Qualitative Research, Sage Publications.
13. Janesick , V.J. (1993): Stretching Exercises for Qualitative researches, Sage Publications.
14. Mienert, C.L. (1986): Clinical Trials: Design, conduct and Analysis, oxford, New York
15. Schlesselman, J.J. (1982): Case control studies: Design Conduct and Analysis. Oxford New York.
16. Bryman, A. and Burgess, P. (1999) Qualitative Data Analysis for Social Scientists.
17. Bryman, A. and Burgess, P. (1999) Qualitative Data analysis with Minitabs, Rutledge,

London.

18. Cameron, M.E. and van Staveren, W.A. (1988): Manual on Methodology for Food consumption Studies, Oxford University Press Oxford.
19. Quandt. S.A. and Ritenbaugh, S. (1986): Training Manual in Nutritional Anthropology American Association of Anthropology, Washington, D.C.

#### PAPER - X

##### NUTRITIONAL BIOCHEMISTRY

**Max. Marks: 80**

- |          |     |   |
|----------|-----|---|
| UNIT-I   | 1   | Hetero polysaccharides- Definition classification structure and properties of glycoprotein, and proteoglycans.  |
|          | 2   | Inter mediatory metabolism- Reactions, standard for energy changes, and regulating, carbohydrates- glycolysis, gluconeogenesis, citric acid cycle, hexose-mono-phosphate pathway.   |
| UNIT-I   | 3   | Lipids- Beta oxidation synthesis of fatty acids. Synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids. And triacylglycerol.   |
|          | 4   | Purines and pyrimidines- Synthesis and break down source of various atoms of the purine base. salvage reaction, Biosynthesis of purines and pyrimidines.  |
| UNIT-III | 5   | Plasma proteins- Nature Properties and functions  |
|          | 6   | Nucleic acids- DNA replication and transcription method of replication fork, okazaki segment, rule of sigma factor and core enzyme, DNA recombinant-Bio medical importance, restriction enzyme cloning, libraries & libraries construction. |
|          | 7   | Protein bio synthesis, initiation, formation of UOS, complex formation of complex, elongation.  |
| UNIT-IV  | 8   | Hormones, general characteristic of hormones classification of hormones, mechanism of action. Assay of hormone, functions of Hormones, Thyroxine,TSH.LH. ACTH and insulin.  |
|          | 9   | Minerals, trace elements, their physiological function sources, absorption, excretions & deficiency of iron, copper, iodine zinc and selenium   |
| UNIT-V   | 10. | Detoxification in the body- Metabolism of foreign compounds oxidation conjugation, reduction hydrolyses.  |
|          | 11. | Major alteration in CHO protein and fat metabolism in chronic nutrition, related generative diseases diabetes, heart diseases.  |

#### PAPER - XI

##### NUTRITION FOR HEALTH OF WOMEN AND CHILDREN

**Max. Marks - 80**

- |          |   |  |
|----------|---|--|
| UNIT-I   | 1 | Role of women in national development.   |
|          | 2 | Women in family and community: Demographic changes menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging, widowhood.  |
|          | 3 | Women in society: Women's role, their resources, and contribution to family, and effect of nutritional status.   |
| UNIT-I   | 4 | Women and health: Health facilities. Disease pattern and reproductive health.  |
|          | 5 | Policies and programs for promoting maternal and child nutrition and health.   |
|          | 6 | Concept of small family. Methods of family planning-Merits and demerits.   |
| UNIT-III | 7 | Importance of nutrition prior to and during pregnancy- Prerequisites for successful outcome. Effect of under nutrition on mother and child including pregnancy outcome and maternal and child health- Short term and long term |



- effect.
8. Physiology and endocrinology of pregnancy, embryonic and foetal growth and development.
  9. Nutritional requirements during pregnancy: Adolescent pregnancy, pregnancy and T.B., TUGR, gestational diabetes.
- UNIT- IV 10.** Lactation- Development of mammary tissue and role of hormones- Physiology and endocrinology of lactation. Synthesis of milk component, let down reflex, role of hormones. Lactational amenorrhea, effect of breast feeding on maternal health.
11. Human milk composition and factors affecting breast feeding. Human milk banking.
  12. Management of lactation : Prenatal breast feeding, skill education. Rooming in problems - Sore nipples, engorged breast, inverted breast.
  13. Exclusive breast feeding.
- UNIT-V 14.** Infant physiology: Preterm and low birth weight infant- Implication for feeding and management.
15. Growth and development during infancy, childhood and adolescents.
  16. Feeding of infants and children and dietary management.
  17. Malnutrition- Etiology and management.

## PAPER - XII

### METHODS OF INVESTIGATION

**Max. Marks: 80**

- UNIT-I 1. Electrolytic dissociation :** Principle, technique and theory of electrolytic dissociation.
- 2. Hydrogen ion concentration :** Principle and measurement of pH, indicators, buffer.
- 3. Physicochemical techniques :** Principles and methodology of the following -
- (a) Diffusion
  - (b) Osmosis
  - (c) Filtration
  - (d) Surface tension
  - (e) Adsorption
  - (f) Centrifugation
- UNIT-I 4. Chromatography :** Principles, techniques and application of the following -
- (a) Paper chromatography - Circular, ascending and descending.
  - (b) Ion exchange chromatography
  - (c) column chromatography
  - (d) Thin layer chromatography
  - (e) Gas liquid chromatography
  - (f) High performance liquid chromatography
- UNIT- III 5. Electrophoresis :** Principles and techniques of paper and gel electrophoresis.
- 6. Microbiological assay :** Principle and methodology of the following -
- (a) Vitamins
  - (b) Amino acids
- UNIT- IV 7. Colorimetry :** Principle, colorimeter applications.
- 8. Radioactive isotopes :** Properties of radioactive isotopes, detection of radiations. Uses of radioactive isotopes in medical science.
- UNIT-V 9. Immunological methods :** Principle and technique of the following -
- (a) Radio Immuno Assay (RIA)
  - (b) Enzyme Linked Immunosorbent Assay (ELISA)
- 10.** Collection of biological samples.



## References ;

1. Hawk, P.B., Oser, B.K. and Summerson, W.H. Practical Physiological Chemistry. Tata McGraw Hill.
2. Varley, H. Practical Clinical Biochemistry. The English language Book Society.
3. Das, Debjyoti Biophysics and Biophysical Chemistry. Academic Publisher, Calcutta.
4. Okotore, R.O. : Basic Separation Techniques in Biochemistry. New Age International (P) Ltd. Publishers.
5. Manual of Laboratory Techniques. National Institute of Nutrition, Hyderabad.

## PRACTICAL - III

### NUTRITIONAL BIOCHEMISTRY

Max. Marks 100

#### Objectives :

This course will enable the students to

- Understand the principles of biochemical methods used for analysis of food and biological samples.
- Perform biological analysis with accuracy and reproducibility

**Note :** Any ten practical.

#### PART - A

1. **Calcium** : Estimation of calcium in foods and serum.
2. **Phosphorous** : Estimation of inorganic phosphorous in foods and serum.
3. **Ascorbic acid** : Estimation of ascorbic acids in foods.
4. **Proteins:**
  - (a) Estimation of proteins in foods.
  - (b) Estimation of albumin, globulin and albumin/globulin ratio in serum and urine.
  - (c) Estimation of haemoglobin.
5. **Glucose:** Estimation of glucose in blood and urine.
6. **Cholesterol:** Estimation of cholesterol in blood.
7. **Enzyme assay:** Estimation of activity of serum alkaline phosphates and trans aminase.
8. **Urea and creatinine:** Estimation of urea and creatinine in serum and urine.
9. **Survey of pathological laboratories.**

#### PART - B

10. **Acids and alkalis:** Preparation of dilute solutions of common acids and alkalis and determining their exact normality.
11. **Buffers** ; Preparation of phosphate, carbonate-bicarbonate, ascorbic acid, acetate, chloride and phthalate buffers and determination of their pH by the use of indicators and pH meters.
12. **Spectrometer:** Beer Lamuert law, absorption maximum, preparation of standard curve and nutrient estimations in UV and visible range, AAS, AES, flame photometry.
13. **Fluorimetry:** Estimation of thiamin and riboflavin.
14. **Chromatography:** Paper - Identification of amino acid by circular, ascending and descending methods. Ion-exchange - Separation of amino acids. column Separation of proteins. Thin layer - Identification of amino acids, Gas-liquid Estimation of fatty acids, HPLC - Estimation of  $\beta$ -carotene and  $\alpha$ -tocopherol.

15. **Electrophoresis:** Fractionation of plasma proteins.

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**FOOD SCIENCE AND NUTRITION**

**M.SC. (HOME SCIENCE) FINAL**

**4th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper XIII	Nutrition for Health and Fitness	80	10	10	100
Paper XIV	Public Nutrition	80	10	10	100
Paper XV	Geriatric Nutrition	80	10	10	100
Paper XVI	Institution Management	80	10	10	100

**PART II - PRACTICAL**

	Practical / Dissertation	Marks
Practical IV	Institution Management	100

**PAPER - XIII**

**NUTRITION FOR HEALTH AND FITNESS**

Max. Marks - 80

**Objective :** Course will prepare the student to -

- Understand the components of health and fitness and the role of nutrition in these.
- Make nutritional, dietary and physical activity recommendations to achieve fitness and well- being.
- Develop ability to evaluate fitness and well- being.

- UNIT-I**
1. Definitions, components and assessment criteria of age: specific fitness and health status.
  2. Anatomical fitness
  3. Physiological fitness
  4. Psychological fitness
  5. Physiological fitness; Growth and development ,strength ,speed skill stamina, or endurance, specific fitness, general fitness, and health status.
  6. Holistic approach to the management of fitness and health: Energy input and output. Diet and Exercise, Effect of specific nutrition on work performance and physical fitness, Nutrition, exercise, physical fitness and health inter- relationship
- UNIT-I**
7. Review of different energy systems for endurance and power activity: Endurance -Definition, classification, and factors affecting endurance. Fuels and nutrients

to support physical activity: Shifts in carbohydrate and fat metabolism mobilization of fat stores during exercise.

- 8 Nutrition in Sports: Sports specific requirement.
- UNIT-III** 9 Pre-game and post- game meals. Assessment of different mutagenic acids and commercial supplements. Diets for persons with high energy requirements, stress, fracture and injury.
10. Water and electrolyte balance: Losses and their replenishment during exercise and sports events, effect of dehydration, sport drink
- UNIT-IV** 11. Significance of physical fitness and nutrition in the prevention and management of weight control, obesity, diabetes mellitus, CV disorders, bone health and cancer
12. Nutrition and exercise regimes for pre and postnatal fitness.
13. Nutritional and exercise regimes for management of obesity. Critical review of various dietary regimes for weight and fat reduction. Prevention of weight cycling.
- UNIT-V** 14. Defining nutritional goals/ guidelines appropriate or health fitness and prevention and management of the chronic degenerative disorders
15. Alternative systems for health and fitness like Ayurveda, Yoga, Meditation, Vegetarianism and Traditional diets.

#### REFERENCES :

1. L.K. & Ecott Stump, S.(2000): Krause's Food Nutrition and Diet therapy. Edition, W.B. Saunders Ltd.
- 2.Sizer, F & Whitney , E. (2000); Nutrition Concepts & Controversies. 8<sup>th</sup> Edition, Wadsworth, An International Thomson Publishing Co.
3. Whitney, E.N. & rolfes, S.R. (1999); Understanding Nutrition, 8<sup>th</sup> Edition, West/ Wadsworth Thomson learning.
4. Ira Wokinsky (Ed.) (1998): Nutrition in Exercise and sports, 3<sup>rd</sup> Edition, CRC Press.
5. Parizkova, J. Nutrition, Physical activity and health in early life Ed. Wolinsky, I. CRC Press.
6. Shils, M.E. Olson, J.A. Shike N. and Ross, A.C. (Ed.) (1999): Modern Nutrition in Health & Disease 9<sup>th</sup> Edition, Williams & Wilkins.
7. McArdle, W. Katch, F and Katch, V. (1996) Exercise Physiology, Energy, Nutrion and Human Performance, 4<sup>th</sup> Edition. Williams and Wikins, Philadelphia.

#### Journals

1. Medicine and Science in Sports and Exercise.
2. International Journals of Sports Nutrition.

#### PAPER - XIV

##### PUBLIC NUTRITION

Max. Marks: 80

- UNIT-I** 1 **Concept of Public Health Nutrition :** Relationship between health and nutrition. Role of public nutritionist in the health care delivery system.
- 2 Sectors and public policies relevant to nutrition.
- 3 National health care delivery system.
- UNIT-I** 4 **Population Dynamics:** Demography, demographic cycle, world population trend, birth rates, death rates, growth rates, demographic trends in India, age pyramid, sex ratio.
- 5 **Environment and Health:**  
Water : Water pollution, surveillance of drinking water quality.  
Air : Air pollution

- UNIT-III 6. Nutritional Status:** Determinants of nutritional status of individual and populations. Factors affecting nutritional status.
- 7. Major Nutritional Problems :** Etiology, prevalence, clinical manifestations. Preventive axtherapeutic measures of -
- Macro and micro deficiencies - LBW, PEM, xerophthalmia, nutritional anaemia.
  - Other nutritional problems like lathyrism, aflatoxicosis, alcoholism and fluorosis.
- UNIT-IV 8** National Nutrition Policy
- 9** Approaches and strategies for improving nutritional status and health.
- 10.** Occupational health
- 11.** Health planning and management
- UNIT-V 12.** Communication for Health Education.
- 13.** Health planning in India.
- 14.** Health Care of the Community Concept of health care, health system, levels of health care.

**PAPER - XV**  
**GERIATRIC NUTRITION**

**Max. Marks 80**

**Objectives :**

- The course is designed to -
- Familiarize the students with the multifaceted aspects of ageing.
  - Make the students competent for nutritional and health care of the elderly.
- UNIT-I 1 Ageing :** Definition (A) Molecular changes during ageing - (i) Changes in proteins, (ii) Chromatin, (iii) Crosslinkers, (iv) Immune response, (v) Hormones, (vi) Ageing of cells in culture, (vii) Age pigment.
- 2 Mechanism of Ageing -** (A) Somatic mutation, (B) Errors in proteins (C) Gene regulation
- 3** Socio-psychological aspects of ageing - Especially problems of elderly women.
- UNIT-I 4 Nutritional and food requirement during old age -** Progress of ageing, nutritional requirements, food requirements.
- 5** Nutrition related problems of old age - (i) Osteoporosis, (ii) Obesity, (iii) Neurological dysfunction, (iv) Anaemia, (v) Malnutrition, (vii) Constipation.
- UNIT-III 6** Degenerative diseases in old age - (1) Atherosclerosis, (ii) Hypertension, (iii) Cancer, (iv) Diabetes mellitus, (v) Arthritis.
- 7** Common complaints during old age.
- 8** Dietary guidelines
- UNIT-IV 9 Drug -** Food and nutrient reaction in elderly. (a) Effect of drugs on food intake and absorption. (b) Effect of various foods and beverages on drug action. (c) Drug nutritional interaction.
- 10.** Ageing and immunity.
- 11.** Ageing and nutrition, nutrition and longevity, food habits of elderly people, stress during old age.
- UNIT-V 12.** Exercise, yoga, meditation in old age.
- 13.** Policies and programmes of the government to the elderly.
- 14.** Policies and programmes of the NGO sector pertaining to the elderly.

**References :**

- 1** Kumar V (1996): Ageing - Indian Perspective and Global Scenario. Proceedings of International Symposium of Gerontology and Seventh Conference of the Association of

- Gerontology (India).
2. Bagchi, K. and Pun, S. (Ed) (1999) Diet and Aging - Exploring Some Facets. Soc. for Gerontological Research, New Delhi and Help Age India, New Delhi.
  3. Chaudhary, A. (Ed) (2001) Active Aging in the New Millennium, Pub. Anugraha, Delhi.
  4. Shils, M.S., Olson, J.A., Shike, M. and Ross, A.C. (Ed) (1999) 9th Edition, Williams and Wilkins.
  5. Sharma, O.P. (Ed) (1999) : Geriatric Care in India - Geriatrics and Gerontology A Text book, MIS, AND Publishers.
  6. Aiken, L.R. (1978) The Psychology of Later Life, Philadelphia, WB Saunders Company.
  7. Bergmann, Klaus (1972) : Aged Their Understanding and Care, London, Wolfe Pub.
  8. Binstock, R.H. and F. Shanes (eds) (1986) : Handbook of Aging and Social Sciences, V.N. Reinhold Co., New York.
  9. Blau, Zana Smith (1983); Old Age in a Changing Society, New York Prints, New York.
  10. Bose, A.B. and K.D. Gangrade (1988) : Aging in India : Problems and Potentialities, Abhinav Pub., New Delhi.
  11. Cook Alicia Skinner (1983): Contemporary Perspectives on Adult Development and Aging, New York, MacMillan.
  12. Desai, K.G. (1985): Problems of Retired People in Greater Bombay, TISS, Series No.27.
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  14. Homban, D. (1978) Social Challenges in Aging, London, Groom Helm.
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  16. Kennedy Carroll (1988): Human Development, New York, MacMillan.
  17. Kimmel Douglas (1974): Adulthood and Aging, New York, Wiley.
  18. Mishra Saraswati (1987) : Social Adjustment in Old Age, Delhi, B.R. Pub. Corp.
  19. Pinkston, P.H. and N.K. Linsk (1984): Care of the Elderly : A family approach, New York, Pergaman Press.
  20. Schiamberg Lawrence, B. (1985): Human Development, New York, MacMillan.
  21. Sharma, M.L. and T.M. Dak (1987) : Aging in India: Challenge for the Society, Delhi, Janta Pub.
  22. Chowdhary Paul D. (1992): Aging and the aged. Inter India Pub., New Delhi.
  23. Cox Harold (1984): Later life : The Reality of Aging, New Jersey, Prentice Hall.
  24. Watson, R.R. (ed.) (2000) ; Handbook of Nutrition in Aged, 3rd edition, CRC Press, Boca Raton,
  25. Nutrition Screening Initiative (1991 and 1992): Nutrition Screening Manual for Professionals Caring for Older Americans. Washington, D.C. Green Margolis, Mitchell, Burns and Associates.
  26. Chernoff, R. (ed) (1991) : Geriatric Nutrition : The Health Professionals' Handbook, Gaithersburg, MD : Aspen.
  27. The Nutrition Screening Initiative (1994) : Incorporating Nutrition Screening and Interventions into Medical Practice: A Monograph for Physicians.
  28. Watson, R.R. (ed) (1985): CRC Handbook of vitamins in the Aged. ERC Pre Boca Raton, Florida.
  29. Bock, G.R. and Whelen, J. (eds) The Childhood Environment and Adult Disease. Chichester, U.K., Wiley.
  30. Berg, R.L. and Casells, LS. (1990): The Second Fifty Years : Promoting Health and Preventing Debility.
  31. Talwar, G.R : Textbook of Biochemistry and Human Biology.
  32. B. Srilakshmi : Dietetics, New Age International (P.) Ltd. Publishers.

**Journals:**

- 1 American Journal of Clinical Nutrition
- 2 Gerontology
- 3 Journal of American Geriatric Society
- 4 Age Ageing
- 5 Journal of Applied Gerontology
- 6 Age
- 7 Journal of Gerontology

**PAPER - XVI****INSTITUTION MANAGEMENT****Max. Marks: 80**

- UNIT-I** 1. Development and scope of food service History of Food Service.  
2 Food & Economics Money
- UNIT-I** 3 **Quantity Cookery:**  
a Purchase, Selection. Storage and handling of food in relation to cost and food value  
b Food preparation and different types of service of meals snacks. Drink etc. and their evaluation.  
c Meal planning of various institutions taking into account regional food habits.  
d Comparative study of different food groups.
- UNIT-III** 4 **Organization and Management of food services:**  
a Personnel Management. Selection training. Supervision labour laws.  
b Organization of work, space, time tables and work simplification.
- UNIT-IV** 5 **Food service planning:**  
a Selection of furnishings and equipment for institution kitchens and dining rooms.  
b Sanitation and cleaning  
c Differences in organization and management problems of hostels, annapurnas cafeteria. Hospital. School Lunch Programme with reference to food services.
- UNIT-V** 6 **Accounting procedure and cost control:**  
a Total budget and its distribution.  
b Record keeping and accounting.  
c Selling price and total incomes.  
d Profit, loss and balance sheet.

**PRACTICAL - IV****INSTITUTIONAL MANAGEMENT****Max. Marks 100**

- 1 Practical work at least in one institution related to the above topics.
- 2 Field trips
- 3 Management of a canteen in your institution.

**OPTIONAL****PRACTICAL - IV****DISSERTATION ON CURRENT TRENDS IN FOOD AND NUTRITION****Max. Marks 100**

- a Dissertation :**  
In any field of food science, nutrition and systematic writing of report along with statistical analysis of data
- b. Current trends in food and nutrition:**  
Acquaintance of the students with current trends in the field of food and nutrition.  
Collection and compilation of latest reviews.

**HUMAN DEVELOPMENT**  
**M.Sc. (HOME SCIENCE) PREVIOUS**  
**1th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper I	Research Methodology	80	10	10	100
Paper II	Theories of Human Development	80	10	10	100
Paper III	Early Childhood Education	80	10	10	100
Paper IV	Current trends and issues in Human Development	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical I	Early Childhood Education	100

**PAPER - I**

**RESEARCH METHODOLOGY**

**Max. Marks: 80**

**Objectives:**

- To understand the significance of research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.

- UNIT-I**
1. Science, scientific methods, scientific approach.
  2. Role of research in Home science discipline.
  3. Objectives of research: Explanation, control and prediction.
  4. Types of research: Historical, Descriptive, Experimental, case study,
  5. Social research and survey: Meaning, definition, nature, scope, objects, types. distinction between social survey & research.
  6. Pre-testing and pilot survey.
- UNIT-I**
7. **Definition and identification of research problem.**
    - Selection of research problem.
    - Justification.
  8. **Fact, Theory and concept.**
  9. **Hypothesis :** Definition, sources, characteristics, importance, main difficulties in formation of hypothesis, disadvantages, Limitations and Delimitations of the problems.
  10. **Types of variables.**
- UNIT-III**
11. **Basic principles of research design:**
    - Purposes of research design: fundamental, applied and action, exploratory, and descriptive, experimental, ex-post facto.
    - Longitudinal and cross sectional, co-relational.
  12. **Data gathering instrument.**
    - Observation,
    - Questionnaire,
    - Interview,
    - Scaling method,
    - Case study,
    - Home visits,

- Reliability and validity of measuring instruments.
- UNIT-IV 13. Theory of probability:** Non-probability sampling: purposive, Quota and volunteer sampling/snow ball sampling
- 14. Sampling :** Population and sample, Meaning, Characteristics, advantages and disadvantages.
- Types :**
  - Probability sampling
  - Random sampling (Simple random, systematic random sampling,)
  - Purposive sampling
  - Stratified sampling
  - Other sampling methods (two stages and multistage sampling, cluster sampling).
- UNIT-V 15.** Classification and tabulation of data.
- 16.** Analysis and interpretation of data
- 17.** Preparation of report
- 18.** Diagrammatic presentation of data

**References:**

- Edwards: experimental design in psychological research.
- Kerlinger: Foundation of educational research.
- Bhandarkar P.L. and Wilkinson T.S. (2000) methodology and techniques of social research, Himalaya publishing house, Mumbai.
- Bhatnagar G.L.(1990) research methods and measurements in behavioral and social science Agri Cole publishing agency, New Delhi.

**PAPER - II**

**THEORIES OF HUMAN DEVELOPMENT**

**Max. Marks: 80**

**Objectives :**

- To understand the need for theories in Human development.
- To see theories in context.
- To examine historical perspectives in the evolution of theory.
- To understand the practical applications of theories.
- To discuss various theories of Human development.

- UNIT-I 1** Early theory -Aristotle
- 2** Freud's psychoanalytic theory - ,
- 3** Neo-Freudian-Horney, Sullivan, Eric-fromm ,crosscultural relevance.
- UNIT-I 4** Learning theory - Pavlov, Watson, Skinner, Thorndike, cross cultural, relevance and current status of learning theory.
- 5** Social learning theory Bandura's theory
- UNIT-III 6** Theory of self - Roger's.
- 7** Field theory by Kurt Lewin.
- 8** Jung's Theory
- UNIT-IV 9** Cognitive development theory,- Piaget's theory
- 10.** Rousseau's Theory
- 11.** Motivational theory by Murray and Maslow
- 12.** Erikson's theory
- UNIT-V 13.** Personality theory by Allport and Murphy
- 14.** Adler's theory of individual psychology
- 15.** John Locke

**References:**

- 1** Baker, C.(2000), Cultured Studies, London Sage.



- 2 Berry, J.W., Pooling, Y.H. & Pandey, J. (Eds.) (1981). *Handbook of Cross Cultural Psychology: Theory Method*. Boston: Allyn and Bacon.
- 3 Berry, J.W., Pooling, Y.H., Sogull, Mane Dasen P.R. (1992). *Cross-cultural application*. Cambridge: University Press.
- 4 Berry, J.W., Dasen, P.R. & Saraswathi, T.S. (Eds.) (1997). *Handbook of Cross-cultural psychology : Processes and human development* (2 edition) Boston: Allyn and Bacon.

### PAPER - III

#### EARLY CHILDHOOD EDUCATION

**Max. Marks: 80**

#### OBJECTIVE :

- To gain knowledge and insight regarding principles of early childhood care and education.
- To develop the skills and 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.
- To understand the relevance and scope of studying creativity.
- To discuss the concept of creativity and various approaches to its study.
- To understand the role of the individual, the context and socialization in developing creativity.
- To become familiar with psychometric measurement and alternate ways of assessing creativity.
- To understand the significance of parents role in early childhood programmes.
- To develop skills to involve parents in early childhood education programmes.
- To learn to conduct parents education programmes

#### UNIT-I 1 Principles of Early Childhood Care and Education (ECCE)

- Importance, need and scope of ECCE.
- Objectives of ECCE
- Types of preschools / programmes : play centres, day care, Montessori, Kindergarten.
- Balwadi., anganwadi etc.
- Concept of non-formal, formal and play way methods.

#### UNIT-I 2 Historical trends (Overview)

- Contribution of the following thinkers to the development of ECCE. Their principles, application and limitations in the context of ECCE.
- Pestalozzi, Rousseau, Froebel, Maria-Montessori, John Dewey, Tarabai Modak, M.K. Gandhi, Rabindranath Tagore.

#### UNIT-III 3 Organisation of pre-school centres

- Concept of organisation and administration of early childhood centres.
- Administrative set-up and functions of personnel working at different levels.

- 4 **Building and equipment:** Location and site, arrangement of rooms, different types and size of rooms, playground, storage facilities, selection of different types of outdoor and indoor equipments, maintenance and display of equipment and material.

- 5 **Staff personnel service conditions and role:** Role and responsibilities, essential equalities of a care giver /teacher, other personnel.

- 6 **Record and report:** Types, aims and purpose/need, general characteristics anecdotal, cumulative, sample work, medical etc.

#### UNIT-IV 7 Programme planning: Setting goals and objectives of plans, Long term, short

term, weekly and daily planning routine and schedules.

**8 Activity for ECCE:**

- Language arts : Goals of language, types of listening and activities to promote listening various activities (Songs, object talk, picture talk, free conversation, book, games, riddles, jokes, stories, criteria and selection of activities, teachers role).
- Art and craft activities - Creative activities of expression
- Types of activities - Chalk, crayon, paints, paper work and best out of waste. Role of teacher on planning the activity. Motivating children. Fostering appreciation of art and craft activities.

**UNIT-V 9 Music:** Songs, objectives of music education, establishing goals, setting the stage and role of the teacher. Three aspects of music, making listening and singing.

- 10. Mathematics** - Goals of mathematical learning, developmental concept at different stages. Principles of teaching mathematics - First hand experience, interaction with others, using language, reflection. Mathematical concept like: Classification, conservation, seriation, comparison, counting, fraction, one to one correspondence addition and subtraction.

**References:**

1. Curran. J. et al (1977): Mass Communication and Society, London.
2. Banerjee (eds) (1985): Cultural and Communication, Parait Publishers, Delhi.
3. Ruloof, M.E. and Miller, G.R. (eds) (1987): Interpersonal Process: New Direction in Communication Research, Sage, USA.
4. Chatterjee, P.C. (1988): Broadcasting in India, New Delhi, Sage Publications

**PAPER - IV**

**CURRENT TRENDS AND ISSUES IN HUMAN DEVELOPMENT**

**Max. Marks: 80**

**UNIT-I 1 Trends and issues related to process of development**

- Perceptual development
- Cognitive development
- Socio emotional development
- Language development
- Moral development

**UNIT-I 2 Trends and issues related to process of development**

- Issues and concerns related to children in difficult circumstances.
- Street children, adopted children, girl child, single parent children.
- Refugee and migrant children, children with disability.
- Issues and concerns related to training of ECCE and accreditation process.

**UNIT-III 3 Trends and issues related to life span development**

- Infancy
- Early childhood
- young adulthood
- Adulthood
- Old age

**UNIT-IV 4 Definition of development and self**

- Linking the individual and the group, self concept and self-esteem.
- Memories of childhood and their influence.
- Family history and its impact on individual

- UNIT-V**
- 5 The self in the life span.
  - 6 Significance of birth. Role of childhood experiences, changing roles and responsibilities.
  - 7 With age the sense of self at adolescence. ,Adolescent and their problems.
  - 8 Cultural variations, achieving selfhood and adulthood.
  - 9 Influence of family peers and school on the development of self esteem.

**PRACTICAL - I**

**EARLY CHILDHOOD EDUCATION**

**Max.Marks: 100**

**Marks Distribution:**

Sessional	-	20
Viva	-	20
Two practical	-	30 each

**PART - I**

- 1 Visits to various centers, which cater to the preschool stage e.g.: Day care Centre, Balwadi, Anganwadi, Mobile Creche etc.
- 2 Preparing a resource unit file on the basic of play way method/approach.
- 3 Preparing teaching material kit and presentation in mock set up.
- 4 Story and their techniques, types of puppets and mobiles? Art and craft portfolio, song booklet and low cost musical instruments. Readiness games and material, picture tails and object talk related materials etc.

**PART - II**

- 5 Tests of creativity: Torrance Test of Creative Thinking (TTCT), Baquer Mehdi's Indian adaptation.
- 6 Use brainstorming techniques for problem solving.
- 7 Use of parme's 5 stage method creative problem solving.
- 8 In 6-10 seasons, develop a plot of a story with active participation of children and dramatize it with them as role players.
- 9 Use of consensual assessment technique to rate the creative work of children and adults (stories, poems and artwork).

**PART - III**

10. Conducting home visits and interviewing/ talking to parents.
11. Arranging workshops for parents.
12. Organizing parent education programmes based on parents needs.
13. Conducting parent-teacher meetings.
14. Reports and resource files to be maintained by students.

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**HUMAN DEVELOPMENT**

**M.Sc. (HOME SCIENCE) PREVIOUS**

**2th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper V	Statistics and Computer Application	80	10	10	100

Paper VI	Adolescent Psychology	80	10	10	100
Paper VII	Parenting in Early Childhood	80	10	10	100
Paper VIII	Management and Project Planning	80	10	10	100

#### PART II - PRACTICAL

	Practical	Marks
Practical II	Management and Project Planning	100

#### PART III - INTERNSHIP / FIELD PLACEMENT

1. The student will be required to under go an intemship/field placement for a total duration of six to eight weeks in their chosen area of interest after IInd semester which will facilitate their pursuing a professional career in same field.
2. This programme could be taken up either as a single block or in two different blocks. It is mandatory that the organization / institution (public/private) participating in the field.
3. Placement programme will be of good professional standing. The list could include hospitals (children ward/maternity ward), child care centre Angan wadi ICDS, Psychotherapy counseling centers, nursery schools, etc. The student will be required to submit and present a report of the intemship/field placement project after its completion. It is also envisaged that participating organization/institution will give their performance appraisal of the student work. Grade A (60% and above), Grade B (48% to 59%), Grade C (40% to 47%) should be given to the student after evaluation of field placement/ intemship report by the department. The grade will be mentioned in the mark sheet of the IVth semester of the student.
4. Excursion trip/field visits should be arranged regularly by the department for the up liftment of the knowledge of the students.
5. This programme is designed with the following objectives:
  - II. To enable the students to acquire an in-depth understanding of the practical aspects of knowledge and skills acquired during the course in the relevant subject/subjects.
  - III. To gain hands on experience for higher proficiency in their selected area of expertise To help the students to develop and have their analytical abilities for situation and analysis and bringing about improvements

#### PAPER - V

#### STATISTICS AND COMPUTER APPLICATION Max. Marks: 80

##### UNIT-I Objectives:

1. To understand the significance of statistics and research methodology in Home Science research.
2. To understand the types, tools 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 statistical technique to the measurement scale and design.
4. To understand the role of statistics and computer application in research.
5. To apply statistical techniques to research data for analysis and interpreting data meaningfully

- UNIT-I
1. **Conceptual understanding of statistical measures** - meaning, definition, scope, importance, characteristics, distrust of statistics.
  2. **Classification and tabulation of data.**
  3. **Measurement of central tendency**
    - Mean
    - Median

- Mode
- UNIT-I 4 Graphic presentation of data**
  - Frequency distribution
  - Histogram
  - Frequency polygons
  - Frequency curve
  - Ogive
  - Binomial distribution
  - Parametric and non-parametric tests
- UNIT-III 5 Methods of Dispersion and variation**
  - Mean deviation
  - Standard deviation
  - Quartile deviation
  - Independence of attributes 2x2 and rxc contingency tables
  - Analysis of variance - one way method Direct and short cut.
- 6 What is computers characteristics components of computer system, block diagram of computer, CPU, I/O devices and memory ( RAM and ROM) second storage devices (hard disk Floppy disk ,Magnetic tape etc.)
- UNIT-IV 7 Computer generations** -Classification of computers; Analog digital hybrid general and special
- 8 **Types of computers-** Micro Mini Mainframe and super computer
  - Chi square test Goodness of it
  - Application of student 't' test for small samples
- UNIT-V 9 Correlation-**definition, meaning and types.
- 10. **Methods of determining coefficient of correlation**
  - Product moment correlation
  - Rank correlation.
- 11. **Working with MS Word**
  - Getting started with word, formatting text and paragraph.
  - Applying text and language tools, designing pages, with columns and tables, using graphics.

**References:**

- 1 Garrett, Henry E. 1971: statistics in psychology and education, David and co.

**PAPER - VI**

**ADOLESCENT PSYCHOLOGY**

**Max. Marks: 80**

- UNIT-I 1 Understanding culture and development**
- 2 **Pubertal stage - concept and definition, classification, and characteristics.**
  - Importance of language
  - Social development
  - Personality development
  - Cognition
  - Emotion
- UNIT-I 3 The adolescent stage**
  - Its link with middle childhood and youth.
  - The concept of adolescence in India
  - Developmental task
  - Health and Psychological Hazards
- UNIT-III 4 Physical and sexual development**

- Puberty, development of primary and secondary sex characteristics
- Psychological response to puberty
- Gender differences, sexuality, sexual needs and sex education.
- Roles and responsibilities
- UNIT-IV 5 Important agent of influence**
  - Family, community and culture
  - Electronic media
  - Social and emotional development
  - Interests in adolescents
- UNIT-V 5 Delinquency and disturbance**
  - Juvenile delinquency: Causes and prevention
- 6 Psychological disturbances**
  - Depression, suicide, substance abuse
  - Causes of HIV/AIDS and prevention

## PAPER - VII

### PARENTING IN EARLY CHILDHOOD

**Max. Marks: 80**

- UNIT-I 1 Science – Activities for ECCE**
- (a) Thinking, observing, inferring, classifying, communicating.
  - (b) Concept formation - Differentiation, grouping and labeling. Role of science. Developing scientific outlook by a spirit of inquiry, objectivity and observation. Role of teacher in some important sciences experiences.
  - (c) Social studies: - Goals of social studies. Field trips of fostering good self-concept and respect for others. Promoting social studies through celebrations of festivals. Role of teachers,
- UNIT-I 2 Definition and concept of creativity**
- The role of the individual
  - Cognition, abilities, interests, attitude, motivation, intelligence, knowledge, skills, beliefs, values and cognitive styles.
  - Relationship between creativity and intelligence.
  - Influence of child bearing practices, family and culture.
  - Enhancing creativity : Brain storming, problem solving, creative dramatics and visualisation
  - Methods of assessing creativity.
- UNIT-III 3 Introduction to**
- The task of parenting and the concept of parenting skills
  - Changing concept of parenthood and childhood
  - Being a competent parent
- 4 Individual parenting roles**
- Determinants of parenting behavior
  - Characteristics of the parenting role.
  - The mothering role
  - The fathering role
  - Concept of family, the family life cycle stages.
- UNIT-IV 6 Developmental interaction in early childhood years**
- Parents role in developing self-awareness in children
  - Family relations and communication
  - Helping the child to learn to express and control emotions
  - Helping children discover personal capabilities

- Establishing routines and showing responsible behaviour.
- Learning social role and interactions with others
- Meeting the family needs during this stage
- Meeting the children's needs.

**UNIT-V 7. Techniques of parent education in preschool setting**

- Informal meeting Occasional/accidental meeting, written/printed newsletters.
- Circular, notices etc.
- Parent library, toy library
- Workshop and demonstration centre
- Parents corner
- Open house
- Large/small group meeting
- Individual meeting Home visits, individual sessions
- Working with vulnerable families.

**PAPER - VIII**

**MANAGEMENT AND PROJECT PLANNING Max. Marks: 80**

**UNIT-I 1. Management**

- Meaning ,importance ,Principles, and characteristics of management
- Management skills, review of success and failure of different programmes.

**UNIT-I 2. Programmes for children and family**

- Identification of specific programmes for children according to Indian and western educationists.
- Types of programmes and their management. Family counseling.

**UNIT-III 3. Maternal and child nutrition**

- Feeding, weaning, supplementary food, diet for preschool children.
- Nutritional problems of children
- Diet during pregnancy and lactation.
- Need and importance of women and child welfare programmes at government level.

**UNIT-IV 4. Planning**

- Basic concepts, need, purpose, feasibility, project, formulation.
- Functions of planning
- Steps in planning, define the objectives, quality, specification and
- Outcomes, decide the time frame plan, the cost, dimension, plan implementation details.

**UNIT-V 5. Project identification**

- Identification and defining the project goals.
- Project design and strategic planning
- Management of the project

**6. Monitoring and evaluation Supervisory meeting to plan overview**

- Project appraisal, feedback, follow-up meeting
- Project report

**PRACTICAL - II**

**MANAGEMENT AND PROJECT PLANNING Max. Marks: 100**

1. Prepare a project based on the information secured on an existing program in the locality (as a learning exercise on a known case).
2. Prepare short term/long term plan's for enhancing quality of any program/project that exists

- in the locality.
3. Organise and implement some activities and evaluate impact. Prepare report.
  4. Draft action plan for sustainability for any program in the locality, for women and children.

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**HUMAN DEVELOPMENT**  
**M.Sc. (HOME SCIENCE) FINAL**  
**3th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper IX	Principles of Guidance and Counseling	80	10	10	100
Paper X	Advanced Study in Human Development	80	10	10	100
Paper XI	Childhood Psychopathology	80	10	10	100
Paper XII	Child and Human Rights	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical III	Principles of Guidance and Counseling	100

**PAPER - IX**

**PRINCIPLES OF GUIDANCE AND COUNSELING**

**Max. Marks: 80**

- UNIT-I**
1. Constructs of guidance, counseling and therapy
    - Guidance Meaning, scope and needs.
    - Basic differences
  2. Guidance and counseling needs of individuals, families and system.
    - Role of culture in influencing counselling needs and practices.
- UNIT-II**
3. Principals of counseling and therapy
    - Approaches to counseling at different developmental stages.
    - Family therapy approach
  4. Qualities and skills of a counselor.
  5. The process of counseling
    - First contact, assessment, intervention, closure, follow-up.
- UNIT-III**
6. Nature of psychological disorders at different stages that require counseling and therapy
    - At childhood
    - At adolescent and youth
    - At adulthood
    - In old age
  7. Types of Guidance
    - Educational guidance
    - Vocational guidance
- UNIT-IV**
8. Basic concepts and facts about HIV/AIDS
    - Transmission of HIV infection, sign and symptoms of AIDS.
    - Diagnosis of HIV infection.



9. Management and care of HIV infected persons.
  - Prevention of HIV infection.
- UNIT-V 10. HIV/AIDS Counseling**
  - The principles of counseling, goals of HIV/AIDS counseling.
  - The pre-requisites of counseling, stages of counseling, specific counseling skills.
11. Assessment of risk behavior
  - Characteristics and attitude of a counselor, the do's and don'ts in counseling.
  - Content of communication about HIV/AIDS.

#### **PAPER - X**

#### **ADVANCED STUDY IN HUMAN DEVELOPMENT Max. Marks 80**

- UNIT-I 1. Principles and concept of development**
  - Principles and growth of development
  - Developmental tasks
  - Basic concepts of development: Maturation and learning, sensitive periods, individual differences.
- 2. Prenatal Development**
  - Recapitulation of stages in prenatal development, genetic and environmental factors, maternal conditions.
- UNIT-I 3. Infancy: (Birth - 2years)**
  - The new born Birth process and the neonate, physical description, sensory capacities and reflexes, becoming coordinated - feeding, sleeping and crying.
  - Initiation, objects permanence and other cognitive accomplishments.
  - Early language development
  - Social relationship during infancy
- UNIT-III 4. Early childhood (2 to 6 years)**
  - Transition from infancy to childhood
  - Physical and motor development
  - Play and social relationship
  - Language, cognition and emotions in early years
  - Early childhood education
- 5. Middle childhood**
  - Physical and motor development Changes and challenges
  - Personality development
  - Social relationship - Peers and parents
- UNIT-IV 6. Adolescence (11-18 years)**
  - Transition from childhood to sexual maturity, puberty and its consequences.
  - Emotional changes
  - Role of family, peers and community
  - Conformity
- 7. Youth / Young Adulthood (20-35 years)**
  - Developmental Needs - Importance of social organization.
  - Life Cycle Approach - Sexuality, marriage, marital adjustment, parenthood.
- UNIT-V 8. Middle Adulthood (35-50 years)**
  - Parenting adult off springs and their marriage
  - Menopause in women. Health and disease.
  - Work and career development, gender differences.

- 9 **Late Adulthood (50-65 years)**
  - Continuity and change in personality, the family life cycle.
  - Gerard parenthood - Inter generational relations.
  - Occupational continuity and change - Effect on identity
10. **Old Age (65+ years)**
  - Physical aspects of ageing
  - Health and disease

#### PAPER - XI

#### CHILDHOOD PSYCHOPATHOLOGY

**Max. Marks: 80**

- |          |     |   |
|----------|-----|---|
| UNIT-I   | 1   | <b>Normality</b> - Meaning, Concept and criteria's of normality <ul style="list-style-type: none"> <li>• Cultural differences in normal adaptation</li> <li>• Features of normal adaptation</li> <li>• Normal adjustment changes with age</li> <li>• Meaning and criteria's of abnormality.</li> </ul>                                  |
| UNIT-I   | 2   | <b>Stress and adaptation to stress</b> <ul style="list-style-type: none"> <li>- Nature of stress</li> <li>- Types of stress</li> <li>- Sources of stress</li> <li>- Effect of stress in psychological functioning</li> </ul>  |
|          | 3   | <b>Effect of stress on physical health</b> <ul style="list-style-type: none"> <li>- Responding to stress</li> <li>- Measurement of stress</li> <li>- Theories of stress</li> <li>- Factors of moderating the impact of the stress</li> </ul>  |
|          | 4   | <b>Mental health-</b> Definition, concept, and contents. Importance of mental hygiene.  |
| UNIT-III | 5   | <b>Introduction to psychopathology</b> <ul style="list-style-type: none"> <li>- History and different models</li> <li>- Etiology of mental disorders - Psycho-social models</li> <li>- Psychopathology of neurotic, stress related and somato form disorders.</li> <li>- Anxiety disorders</li> <li>- Dissociative disorders</li> </ul> |
| UNIT-IV  | 6   | Obsessive and compulsive disorder   |
|          | 7   | Phobic anxiety disorders  |
|          | 8   | Adjustment disorders and behavioral syndromes associated with psychophysiology disturbances.  |
| UNIT-V   | 9   | <b>Psychopathology of psychotic disorders.</b> <ul style="list-style-type: none"> <li>• Schizophrenia ,Paranoia.</li> <li>• Mood disorders</li> </ul>   |
|          | 10. | <b>Psychopathology of personality and behavioral disorders</b> <ul style="list-style-type: none"> <li>• Specific -personality disorders.</li> <li>• Habit and impulse disorders</li> <li>• Mental and behavioral disorders</li> </ul>   |

#### PAPER - XII

#### CHILD AND HUMAN RIGHTS

**Max. Marks: 80**

- |        |   |  |
|--------|---|--|
| UNIT-I | 1 | <b>Definition and Evolution of Rights</b> <ul style="list-style-type: none"> <li>- Human rights</li> <li>- Child rights</li> <li>- Women's rights</li> <li>- Policy</li> </ul> |
|--------|---|--|

- UNIT-I 2 Status of Indian children and their rights  
 3 Children in difficult circumstances  
 - Children of prostitutes  
 - Child labour  
 - Street children  
 - Refugee children
- UNIT-III 4 Status of women and their rights -  
 - Status of women in India  
 - Women and human rights  
 5 Types of violation of women rights  
 - Violence against women in home, work place and society
- UNIT-IV 6 Types of violation against women  
 - Sexual harassment  
 - Rape  
 - Crime against women  
 7 Classification of human rights  
 - Moral rights  
 - Legal rights
- UNIT-V 8 Human rights  
 - Civil and political rights  
 - Social rights  
 - Emotional rights  
 - Cultural rights  
 9 Advocacy of human rights.

#### PRACTICAL - III

#### PRINCIPLES OF GUIDANCE AND COUNSELING

Max. Marks: 100

- 1 Interaction with practicing counsellor's and therapists through visit to schools, clinics, women centres and hospitals etc.
- 2 Learn about the counselling process - Role play, mock sessions etc.
- 3 Observation in various ECCE settings e.g. day care, pre-school, ECCE centres, Anganwadi etc.
- 4 Planning programmes for various ECCE setting.
- 5 Supervising, monitoring and evaluating ECCE programmes in different settings

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#### HUMAN DEVELOPMENT M.Sc. (HOME SCIENCE) FINAL 4th SEMESTER Marking Scheme: PART I - THEORY

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper XIII	Methods of Studying Human Development	80	10	10	100
Paper XIV	Persons with Disabilities	80	10	10	100
Paper XV	Study of Family in Society	80	10	10	100
Paper XVI	Communication Technologies	80	10	10	100

**PART II - PRACTICAL**

	<b>Practical</b>	<b>Marks</b>
Practical IV	Methods of Studying Human Development	100

**PAPER - XIII**

**METHODS OF STUDYING HUMAN DEVELOPMENT**

**Max. Marks 80**

- UNIT-I 1 Different methods of studying human development.**
- Introspection method
  - Experimental method
  - Longitudinal method
  - Cross cultural method
  - Survey method
  - Field study method
- 2 Issues and concerns related to children in difficult circumstances**
- Street children, girl child, single parent children, adopted children.
- UNIT-I 3 Observation Methods -**
- Theoretical perspective, use of checklists, establishing reliability in observations, maintaining an observation record, report writing and evaluation.
- 4 Cognitive development**
- 5 Language development**
- 6 Moral development**
- UNIT-III 7 Interview Methods -**
- Theoretical perspectives
  - Development of different types of interview, protocols, analysis and coding of interviewed data.
- 8 Trends and issues related to process of development**
- Perceptual development
- UNIT-IV 9 Questionnaire Method -**
- Theoretical perspectives, development of different types of questionnaire, protocol, analysis and coding of questionnaire data.
- 10. Trend and issues related to life span development**
- Infancy
  - Childhood
  - Adulthood
  - Old age
- UNIT-V 11. Case study method**
- Theoretical perspectives, development of different types of case study, protocols, analysis and coding of data.
- 12. Some Psychometric Methods -**
- The Wechster Intelligence Scale
  - Draw a man test
  - The Kaufman Assessment Battery for children or K-ABC.
  - Binet Test
  - Relation between intelligence and creativity
  - Self esteemed test.
  - Aptitude test .
  - Interest test.

**PAPER - XIV**

**PERSONS WITH DISABILITIES**

**Max. Marks 80**

- UNIT-I 1** Various approaches to defining and understanding disabilities-
- Physical
  - Crippled or orthopaedically handicapped child
  - Unhealthy handicapped children
  - Education of physically handicapped
- UNIT-I 2** **Sensory handicapped -**
- Visually handicapped
  - Aurally handicapped
  - Speech handicapped
- 3** **Emotional**
- UNIT-III 4** **Intellectual Handicapped -**
- Nature, causes and classification.
  - Characteristics and identification
  - Diagnosis of mental retardation
  - Formal planning, treatment, educational provision
  - Education of mentally retarded children
- UNIT-IV 5** The role of context in the meaning of normality and disability, attitudes of people towards disability.
- 6** Welfare and rehabilitation for handicapped.
- 7** Guidance of the disabilities
- UNIT-V 8** Physical and social bafflers in the development of persons with disabilities. Modification of physical and social environment. Participation of persons with disabilities as a contributing member of a society.
- 9** Examples of programmes and policies for persons with disabilities.

**PAPER - XV**

**STUDY OF FAMILY IN SOCIETY**

**Max. Marks: 80**

- UNIT-I 1** **The family in social context**
- Family as a component of social system, structure and context.
  - Family as an evolving and dynamic institution
- 2** **Functions of family**
- Basic and universal functions of family
- 3** Changes in family
- UNIT-I 4** **Socio-cultural studies of family patterns in India -**
- Family structure : Traditional / Extended / Joint families
  - Nuclear families : Single parent, childless
- 5** Causes and effect of different family structure on changing role of families.
- UNIT-III 6** **Forms and types of family -**
- Modern family
  - Urban family
  - Rural family
- 7** Role of family in the development of personality
- UNIT-IV 8** **Family and society exchanges / influences**
- Work and family
  - Education and family
  - Health and family
  - Religion and family
- 9** **Contemporary Issues and Concerns -**

- Family violence, battered women, sexual abuse
- Dowry and family violence
- Child rearing and socialization

**UNIT-V 10. Family Disorganization -**

- Concept and features of family disorganization
- Causes of family disorganization
- 11. Family tension - Types of family tension
- 12. Divorce - Types and causes of divorce
- 13. Re-marriage.

**PAPER - XVI**

**COMMUNICATION TECHNOLOGIES**

**Max. Marks 80**

- UNIT-I**
1. Meaning of communication
  2. Concept of communication
  3. Scope of communication
  4. Communication process
  5. Approaches to communication

- UNIT-II**
6. Elements of Communication: Their significance and characteristics
  7. Introduction to new communication technologies
  8. Development and use of transparencies
  9. Use of video projector, slide and computers.

- UNIT-III**
10. Innovation
  11. Factors influencing innovation
  12. Diffusion of innovation and communication
  13. Characteristics of innovation
  14. Innovation adoption process

- UNIT-IV**
15. Mass media of communication : Development of mass communication
  16. Different media, their characteristics and use -  
A. Press B. Radio C. Television D. Films E. e-mail
  17. Inter-dependence of mass media on communication
  18. Mass media of communication and advertisement.

- UNIT-V**
19. Designing -  
(a) Leaflets (b) Pamphlets (c) Newspaper  
(d) Photograph (e) Posters (f) Flash card  
(g) Slide and film strip (h) Television (i) Puppets
  20. Presentation using Power Point

**PRACTICAL - IV**

**METHODS OF STUDYING HUMAN DEVELOPMENT**

**(Any Six)**

**Max. Marks: 100**

1. Study of social developmental behaviour through observation method.
2. Know about the child through interview method.
3. Case study based on street children and their problems.
4. Case study regarding problems behaviour of the child.
5. To study the curriculum and management of pre-primary standard children in your area.
6. Development and use of transparencies.
7. Designing - Leaflets/Pamphlets/Cover pages/Posters
8. Self concept test.
9. Personality test.
10. Vocational interest test.

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**RESOURCE MANAGEMENT**  
**M.Sc. (HOME SCIENCE) PREVIOUS**  
**1~~st~~ SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper I	Research Methodology	80	10	10	100
Paper II	Theory of Management	80	10	10	100
Paper III	Consumer Economics	80	10	10	100
Paper IV	Environment Management	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical I	Communication Technology	100

**PAPER - I**

**RESEARCH METHODOLOGY**

**Max. Marks: 80**

**Objectives :**

- To understand the significance of research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.

- UNIT-I**
1. Science, scientific methods, scientific approach.
  2. Role of research in Home science discipline.
  3. Objectives of research: Explanation, control and prediction.
  4. Types of research: Historical, Descriptive, Experimental, case study,
  5. Social research and survey: Meaning, definition, nature, scope, objects, types. distinction between social survey & research.
  6. Pre-testing and pilot survey.
- UNIT-I**
7. **Definition and identification of research problem.**
    - Selection of research problem.
    - Justification.
  8. **Fact, Theory and concept.**
  9. **Hypothesis :** Definition, sources, characteristics, importance, main difficulties in formation of hypothesis, disadvantages, Limitations and Delimitations of the problems.
  10. **Types of variables.**
- UNIT-III**
11. **Basic principles of research design:**
    - Purposes of research design: fundamental, applied and action, exploratory, and descriptive, experimental, ex-post facto.
    - Longitudinal and cross sectional, co-relational.
  12. **Data gathering instrument.**
    - Observation,
    - Questionnaire,
    - Interview,
    - Scaling method,

- Case study,
- Home visits,
- Reliability and validity of measuring instruments.

**UNIT-IV 13. Theory of probability:** Non-probability sampling: purposive, Quota and volunteer sampling/snow ball sampling

**14. Sampling :** Population and sample, Meaning, Characteristics, advantages and disadvantages.

**Types :**

- Probability sampling
- Random sampling (Simple random, systematic random sampling,)
- Purposive sampling
- Stratified sampling
- Other sampling methods (two stages and multistage sampling, cluster sampling).

**UNIT-V 15.** Classification and tabulation of data.

**16.** Analysis and interpretation of data

**17.** Preparation of report

**18.** Diagrammatic presentation of data

**References:**

- Edwards: experimental design in psychological research.
- Kerlinger: Foundation of educational research.
- Bhandarkar P.L. and Wilkinson T.S. (2000) methodology and techniques of social research, Himalaya publishing house, Mumbai.
- Bhatnagar G.L.(1990) research methods and measurements in behavioral and social science Agri Cole publishing agency, New Delhi.

## **PAPER - II**

### **THEORY OF MANAGEMENT**

**Max Marks - 80**

**Objectives :**

- To understand the significance of management in the micro and macro level organizations.
- To know the conceptual human & scientific aspects of management functions.
- To develop the ability to evaluate the management efficiency & effectiveness in the family & the other organisations.
- To enhance the understanding of the similarities among all areas of management education & research & dissemination of the professional knowledge, skills & attitude.
- To acquaint the students with housekeeping department & it's management in the hospitality industry.
- To enable students to manage resources in the housekeeping department to fulfill the hospitality function.

**UNIT-I 1 History and development of management in India & else where**

- Industrial
- Farm & Agricultural
- institutional
- Household
- Education

**2 Managements System**

- Definition
- Elements



- Types
- Advantages and limitations of systems approach
- Application in Family Resource Management
- UNIT-I 3. Management Abilities**
  - Conceptual
  - Human
  - Technical
- 4. Decision making**
  - Meaning
  - Types of decision
  - modes of decision – making
  - Techniques and tools for decision making Decision tree
  - Cost benefit analysis
- UNIT-III 5. Management Functions and Processes**
  - Planning – Objectives, Principles, policies, strategies
  - Organising, - Purpose, Principles, processes, delegation authority, responsibility & accountability.
  - Staffing, purpose, principles, recruitment, appraisal
  - Guiding, directing, leadership, motivation, . Communication
  - Controlling, tools for management control, feedback
  - Appraisal/evaluation – Tools & Techniques.
- UNIT-IV 6. Human Behaviour in Organisation**
  - Personality, attitudes, motivating factors.
  - Group behaviour and dynamics
  - Team management
  - Stress & Conflict Management
- UNIT-V 7. Ends Sought through Management**
  - Goals– factors affecting, ends
  - Values – Sources of value patterns, status, security
  - Standards – Quality control, Total Quality Management
  - Harmony Ethics

**PAPER - III**  
**CONSUMER ECONOMICS**

**Max. Marks - 80**

**Objectives:**

- To Familiarize the students with the changing economic environment and the rising consumerism.
- To enhance the understanding of the marketing system and the marketing strategies.
- To have an overview of the consumer behaviour and the consumer movement.
- To help them to become wise consumer for judicious use of resources in the present market systems and environment.
- To Become aware of the socio-economic environment of the families.
- To become aware of the aspects of financial management.
- To familiarize the students with the changing economic environment and the rising consumerism.
- To develop an understanding of the marketing system & marketing strategies keeping in view the consumers.
- To know the techniques of consumer decision making and the aid for wise decision making.

- UNIT-I 1 Consumer and the Indian Economic Environment –**
- Definition and characteristics of consumers.
  - Definition, role, types and how does an economy function, problem of economy.
  - Background of Indian economic environment.
  - Role of consumer in the economy of the nation.
- 2 Contemporary Economic Environment –**
- Introduction of market Meaning, definition, characteristic, types.
  - Changing business environment – Tele markets, global, privatization of monopolistic services, e-business and e-commerce.
- UNIT-I 3 Consumer Behaviour -**
- Understanding Consumers and their wants.
  - Determinates of consumer behaviour- Opinion, leadership, group influence, social class and culture, consumer dissatisfaction.
  - Market strategies influencing consumer behaviour.
  - Guidelines for wise purchasing practices.
- 4 Market practices that exploit consumers**
- Types of exploitation – Adulteration, packaging, label, weights & measures, advertising & sale gimmicks.
  - Causes of exploitation.
  - Consumer problems & their solutions.
- UNIT-III 5 Consumer protection Need & Rationale**
- a History of consumer movement in India- Origin, growth, causes for slow growth.
  - b Role of consumer organisations – National, regional and international.
  - c Role of government agencies, legislation
  - d Empowerment of consumers.
  - e Ways of promoting consumerism.
- UNIT-IV 6 Socio-economic environment**
- National income.
  - Income distribution, per capital income
  - Inequalities of Income
  - Consumer price index
  - Inflation Vs. Deflation
  - Wages & earnings principles of wages determination
  - Waste differentials
- 7. Financial Planning and implementation**
- a Budgeting – allocation of resources, identifying aspiration, expectations and goals, objectives, advantages of budgeting, control in the context of changing economic conditions.
  - b Purchase storage cost reduction.
  - c Planning a budget for a Family
  - d Family of fixed income
  - e Restaurant / hostel / any selected organisation
  - f Boutique
  - g Small industry
- UNIT-V 8 Record keeping and Accounting -**
- Fundamental principles of accounts
  - Income and expenditure accounts

- Revenue and capital items of expenditure.
- Balance sheet/ledger
- Ratio analysis, cash flow, Fund flow
- 9 Financing of enterprises / consumer durables.**
  - Housing
  - Automobile
  - Equipment
  - Education
  - Small Scale Industry

**PAPER - IV**  
**ENVIRONMENT MANAGEMENT & LANDSCAPING**

**Max Marks - 80**

**Objectives:**

- a) To be aware of the holistic ecological approaches to environment.
- b) To be aware of the environmental problems, hazards and risks.
- c) To understand tile aspect of environmental pollution and waste management.
- d) To be aware of the environmental policies, movements and etics.
- e) To study and to Understand the Landscape designing and its appropriate application.
- f) To get familiar with the various materials related to landscaping.

**UNIT-I 1 Fundamentals of environment**

- a) Environment definition. Scope of environment studies.
- b) Life and the environment. Physico-chemical factors in the environment changes in the environment – anthropogenic and non anthropogenic.
- c) Environmental hazards and risks.
- d) Natural resources – conservation and sustainable development.

**2 Eco-system – Earth, Man and Environment**

- a) Ecosystem of the world.
- b) Forest ecology.
- c) Pathways ill ecosystem.
- d) Environment implications of energy use.
- e) Problem of sustainability of ecosystems.

**UNIT-I 3 Population and Environment**

- a) Carrying capacity: Limits to population growth.
- b) Population growth and natural resources.
- c) Impact of population growth on economic development and environment.

**4 Land and water resources of the earth**

- a) Land resources of tile earth
- b) Land Use
- c) Water resources of the earth.

**5 Factor affecting changes in ecosystem and environment (Socio, economic, cultural and geographic)**

**UNIT-III 6 Population and environment with reference to Air, Water, Soil, Noise**

- a) Source of pollution
- b) Effect of pollution
- c) Remedies to control pollution

**7 Environment and Public Health**

- a) Environmental population and community health
- b) Water borne diseases

- d) Air borne diseases
- d) Chemical insecticides and its impact on health
- e) Toxic actions of metals and biological substances
- UNIT-IV 8 Waste Management**
  - a) Types of waste
  - b) Methods of waste management
  - d) Water pollution and treatment of waste
  - d) Solid waste management
  - e) Air pollution control technology
- UNIT-V 9 Environmental Control Measurement**
  - a) Environmental legislation
  - b) Environmental polices
  - d) Human rights issues relating to environment
  - d) Environment movements
  - e) Women and environment
  - f) Environment ethics
  - g) Role of Municipal authority, government agencies in propitiating better health environment.

### PRACTICAL - I COMMUNICATION TECHNOLOGY

**Max. Marks 100**

#### DISTRIBUTION OF MARKS

Sessional	-	20
Viva	-	20
Two Practical	-	60

1. Concept of communication, Scope of communication process, approaches to communication.
2. Different media, their, characteristics and use.
3. Use of video projector, slide/filmstrip Projector computers.
4. Introduction to new communication technologies.
  - Satellite distribution and broadcast networking.
  - Developing close circuit television package on (CC TV) topics
  - Incorporating the use of video films in presentation i.e. The selected clippings.
  - Slides : Making use of slides with audio commentaries for presentation.
  - Development and use of transparencies.
  - Digital method of communication.
  - Computer Graphic Designing.
5. Preparation of graphics for research reports /seminars/other presentation.
6. Designing- leaflets/pamphlets/booklets/cover pages! posters.
7. Presentation using power points.

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**RESOURCE MANAGEMENT**  
**M.Sc. (HOME SCIENCE) PREVIOUS**  
**2nd SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper V	Statistics and Computer Application	80	10	10	100
Paper VI	Hospitality Administration	80	10	10	100
Paper VII	Public Finance	80	10	10	100
Paper VIII	Landscaping	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical II	Landscaping	100

**PART III - INTERNSHIP / FIELD PLACEMENT**

- The student will be required to under go an intemship/field placement for a total duration of six to eight weeks in their chosen area of interest after IInd semester which will facilitate their pursuing a professional career in same field.
- This programme could be taken up either as a single block or in two different blocks. It is mandatory that the organization / institution (public/private) participating in the field.
- Placement programme will be of good professional standing.. The student will be required to submit and present a report of the intemship/field placement project after its completion. It is also envisaged that participating organization/institution will give their performance appraisal of the student work. Grade A (60% and above), Grade B (48% to 59%), Grade C (40% to 47%) should be given to the student after evaluation of field placement/ intemship report by the department. The grade will be mentioned in the mark sheet of the IVth semester of the student.
- Excursion trip/field visits should be arranged regularly by the department for the up liftment of the knowledge of the students.
- This programme is designed with the following objectives:
  - To enable the students to acquire an in-depth understanding of the practical aspects of knowledge and skills acquired during the course in the relevant subject/subjects.
  - To gain hands on experience for higher proficiency in their selected area of expertise To help the students to develop and have their analytical abilities for situation and analysis and bringing about improvements

**PAPER - V**

**STATISTICS AND COMPUTER APPLICATION Max. Marks: 80**

**Objectives :**

- To understand the significance of statistics and research methodology in Home Science research.
- To understand the types, tools 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 statistical technique to the measurement scale and design.
  4. To understand the role of statistics and computer application in research.
  5. To apply statistical techniques to research data for analysis and interpreting data meaningfully
- UNIT-I**
1. **Conceptual understanding of statistical measures** - meaning, definition, scope, importance, characteristics, distrust of statistics.
  2. **Classification and tabulation of data.**
  3. **Measurement of central tendency**
    - Mean
    - Median
    - Mode
- UNIT-I**
4. **Graphic presentation of data**
    - Frequency distribution
    - Histogram
    - Frequency polygons
    - Frequency curve
    - Ogive
    - Binomial distribution
    - Parametric and non-parametric tests
- UNIT-III**
5. **Methods of Dispersion and variation**
    - Mean deviation
    - Standard deviation
    - Quartile deviation
    - Independence of attributes 2x2 and rxc contingency tables
    - Analysis of variance - one way method Direct and short cut.
  6. What is computers characteristics components of computer system, block diagram of computer, CPU, I/O devices and memory ( RAM and ROM) second storage devices (hard disk Floppy disk ,Magnetic tape etc.)
- UNIT-IV**
7. **Computer generations** -Classification of computers; Analog digital hybrid general and special
  8. **Types of computers-** Micro Mini Mainframe and super computer
    - Chi square test Goodness of fit
    - Application of student 't' test for small samples
- UNIT-V**
9. **Correlation-**definition, meaning and types.
  10. **Methods of determining coefficient of correlation**
    - Product moment correlation
    - Rank correlation.
  11. **Working with MS Word**
    - Getting started with word, formatting text and paragraph.
    - Applying text and language tools, designing pages, with columns and tables, using graphics.

**References:**

1. Garrett, Henry E. 1971: statistics in psychology and education, David and co.

**PAPER - VI**

**HOSPITALITY ADMINISTRATION**

**Max. Marks 80**

- UNIT-I**
1. Types of institution offering hospitality services.
  2. Hospitality functions

- Role of housekeeping in hospitality industry.
- Housekeeping in relation to commercial and welfare sections.
- UNIT-I 3** Management of housekeeping department.
- UNIT-I 4** Layout of housekeeping department:
  - Planning, organizing and communication of housekeeping activities.
  - Coordination with other departments
  - Roles/responsibilities of personnel in the housekeeping department.
- UNIT-III 5** Administrative policies:
  - Personnel management : Recruitment , training ,handling personnel promotion, evaluation, distribution of jobs , Job analysis.
  - Money Management, Budget
- UNIT-IV 6** Safety, security and sanitation: Safety, fire fighting, first aid, safety in equipment use, pest control, sanitation standard.
- 7** Uniform, types, selection, distribution and control.
- 8** Hostess training
- 9** Banquet Management
- UNIT-V 10. Energy and water management:** Power requirement, flushing system, music and television.
- 11. Maintenance:** Repairs and redecoration programmes.
- 12. Human behaviour in organization:**
  - Personality, attitudes, motivating factors
  - Group behaviour and dynamics
  - Team management
  - Stress and conflict management

#### References:

- 1 Kapur, S.K. (1996) Professional Management, S.K. Publishers, New Delhi.
- 2 Deacon, R.E. and Firebaugh F.M. (1975) Home Management : Context and Concept. Houghton Mill Boston.
- 3 Deacon, R.E. and Firebaugh, F.M. (1981) Resource Management Principles and Application, Allyn and Bacon & Bacon, Boston.
- 4 Sherman, A.W. et al (1988) Managing Human Resources, South Western Publication Co., Cincinnati.

### PAPER - VII PUBLIC FINANCE

**Max. Marks 80**

- UNIT-I 1 National income:**
- Income distribution, per capita income
  - Inequalities of income
  - Consumer price index
  - Inflation vs Deflation
  - Wages and earning principles of wage determination
  - Wage differentials
- UNIT-I 2 Financial planning and implementation:**
- Budgeting : Allocation of resources, identifying aspiration, expectations and goals, objectives and advantages of budgeting, control.
  - Planning a budget for a:
    - Family of fixed income
    - Restaurant/hostel/ any selected organization

- Boutique
- Small industry
- UNIT-III 3 Tax planning:**
  - Types of taxes
  - Principles and procedures of income tax
  - Preparation of statement of income and filling of income tax in case of returns.
  - Individuals (Salary class)
  - Knowledge of various exemptions and deductions
- 4 Channel of distribution:**
  - Meaning and types of channels of distribution
  - Advantage and disadvantage of types of channels
  - Factors considered in the selection of channels
- UNIT-IV 5 Saving and investments:**
  - Importance of savings components
  - Savings facilities and investment opportunities
  - Evaluations of savings components
  - Economics security and components
  - Economics security and financial alternatives
- 6 Impact of globalization and direct foreign investment on business opportunities in India.**
  - Income and property rights - Wills, trusts and legal aspects of economic insecurity.
  - Unemployment, its nature and causes. Government programmes designed to increase family financial security.
- UNIT-V 7 Markets and Marketing:**
  - Basic concept of market and marketing
  - Types of markets : Wholesale, retail, speciality, local, residential.
  - Changing nature of the business world i.e. e-business and c-commerce.
  - Marketing environment, marketing theories, models.
- 8 Markets and prices:**
  - Definition and types of market prices
  - Pricing under perfect and imperfect competition and monopoly.

## PAPER - VIII

### LANDSCAPING

**Max. Marks 80**

- UNIT-I 1** Introduction of landscaping from interior design point of view.
- 2** Historical references of landscape.
- 3** Location & Orientation.
- 4** Climatic condition
- 5** Land Profile
- 6** Soil types.
- UNIT-I 7** Availability of Water sources
- 8** Understanding of various materials for paving, walk way etc. (Stone masonry Brick masonry).
- 9** Fencing to entrance gate and other gates.
- 10.** Tree guards sit-outs.
- UNIT-III 11.** Open franie sheds for semi-shady plants.
- 12.** Green House



13. Gazebo
14. Pedestals, monuments, status, abstract etc.
15. Pergoles in various materials.
16. Study of Indoor & outdoor plant species. (Natural / Artificial)
17. Variety of Shrubs, Creepers grass etc. (Natural / Artificial).
- UNIT-IV** 18. Drainage
  - a Storm water drains
  - b Troughs potted plants
  - c Rain water form race
  - d Waterproofing & checking the strength of Terrace slab for terrace garden
19. Water Bodies : a. Natural & Artificial
20. Garden Furniture
- UNIT-V** 21. Study of indoor and outdoor plant species (Natural/artificial)
22. Variety of shrubs, creepers, grass etc. (natural/artificial).
23. Pot Culture.

**PRACTICAL - II**  
**LANDSCAPING**

**Max. Marks 80**

Sessional	-	20
Viva	-	20
Two Practical	-	60

1. Designing of Terrace Garden.
2. Designing of partly outdoor & Indoor Landscaping.
3. Preparation of Herbarium file-shrubs, creepers, flowers & grass.
4. Water bodies- natural & artificial.
5. Garden Furniture.
6. Kitchen garden & horticulture Making scheme.
7. Bonsai

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**RESOURCE MANAGEMENT**  
**M.Sc. (HOME SCIENCE) FINAL**  
**3rd SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper IX	Ergonomics	80	10	10	100
Paper X	Entrepreneurship	80	10	10	100
Paper XI	Housing	80	10	10	100
Paper XII	Fuel Technology	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical III	Ergonomics	100

**PAPER - IX**  
**ERGONOMICS**

**Max. Marks 80**

- UNIT-I** 1. **Ergonomics :**
- Definition and meaning of Ergonomics
  - Scope of Ergonomics in home & other occupations.
  - Nature of work in household & other occupations.
  - Importance of Ergonomics study.
2. Sources of Energy for muscular work
3. Energy requirement for muscular work & eftic
- UNIT-II** 4. Physiological Aspects of Work
- Structure & function of the muscles and joint
  - Physiological Factors involved in muscular
    - \* Carbohydrates ,*fats* & proteins
    - \* Oxygen
    - \* Cardio Vascular & respiratory system
- UNIT-III** 5. Thermo regulatory system.
6. Energy expenditure for different activities.
7. Anthropometry and Bio-mechanic
- Definition, Scope
  - Human body as a system of levers
- UNIT-IV** 8. Identification and analysis of postures, Types of postures
9. Effect of wrong postures on cardio vascular & muscular skeletal system
10. correct techniques of lifting &. carrying weights
- UNIT-V** 11. Environment
- Physical
  - Heat
  - Heat regulation of the body at rest
12. Factors responsible for exchange heat between body & surrounding
- Heat strers
  - Thermal comfort

**References:**

1. Astrand P.O. and Rodahi, K. (1986): Textbook of Work Physiology, McGraw Hill, New York
2. Haupt. W.Q. and Feinleis, ME. (1979): Physiology of Movements, Vol. 7, Verlog Publications ; Berlin Spinger.
3. Grandjean, E. (1968): Fitting the Task to the Man; A Textbook of Occupational Ergonomics: Taylor and Francis, London.
4. McArdle, 11W. Katch, F.l. and Katch, V.L. (1981 & 1991): Exercise Physiology, 4th Edition, Henry Kempton Publishers, Baltimore.
5. Chaffin, D.B. and Anderson GB. (1984): Occupational Siomechanics, John Wiley and Sons.
6. Wells, K. and Luttgens Kathryn (1978): Kinesiology: Scientific Basis of Human Motion th Edition.
7. Davies, DR. and Shackleton, V.J. (1975): Psychology of Work, Motunen & Co. Ltd.
8. Eastman Kodak Company (1986); Ergonomic Design for People at Work, Vol. 1 & 2, Van Nostrand Reinhold New York.
9. Obome David (1980): Ergonomics at Work;; John Wiley and Sons, New York, London
10. Nag, P.K. (1996): Ergonomics and Work Design: Emerging Issues in Organisational Science, New Age International (P) Ltd. New Delhi.

11. Kumar Shrawan (1997): Perspectives in rehabilitation ergonomics: Taylor & Francis, London.
12. Steidle and Braton : Work in Home.
13. Close Guy (1980): Work Improvement, John Wiley and Sons ,New York.
14. Grandjeans Ettiens (1978): Ergonomics of the Home, Taylor and Francis , London.
15. Murell, K.F,H. (1965): Ergonomics, Champman Hall, London.
16. Anshel, Jeffrey (1993): Visual Ergonomics in the Workplace, Taylor and Francis; London.
17. Maclead, Dan (1996): The Ergonomics edge: Improving Safety, Quality and Productivity, : Van Nostrand Reinhold New York,
18. Crossman, Richard (1995): Ergonomics Pocket Guide, Genium Publication.
19. Dul, Jan and Weerdmeester Bernard (2001): Ergonomics for Beginners: Taylor & Francis, London.
20. Parsons, K.C. (2001): Human Thermal Environments: Taylor & Francis, London.
21. Ringdah! Lars Harms (2001): Safely Analysis: Taylor & Francis; London.
22. Jordan, P.W. (2001): Pleasure with Products: Taylor & Francis; London.
23. Norris, B. and Wilson, J.R. (2001); Designing Safety into Products: Taylor & Francis, London,
24. Wilson, J.R. and Covlett, N. (2001): Evaluation of Human Work. A Practical Ergonomics Methodology: Taylor & Francis, London.
25. Pheasant Stephan (2001): Body Space, Anthropometry, Ergonomics and the Design of Work, : Taylor & Francis London
26. Jordan Pat (1998): Human Factors in Product Design: Current *Practice* and Future Trends; Taylor & Francis London.
27. Wogalter, M. DeJoy, O. and Laugherty, K. (2001): Warnings and RiskCommuncanon; Taylor & Francis London.

**PAPER - X**  
**ENTREPRENEURSHIP**

**Max. Marks 80**

**Objectives:**

- To provide conceptual inputs regarding entrepreneurship management.
- To sensitize motivate the students to wards entrepreneurship management.
- To orient and impart knowledge towards identifying and implementing entrepreneurship opportunities.
- To develop management skills for entrepreneurship management.

**UNIT-I 1 Conceptual Framework**

- A. Entrepreneurship
  - i Concept, nature & types of Entrepreneurship.
  - ii Development of Entrepreneurship in India,
  - iii Entrepreneurship and socio-economic development.

**UNIT-I 2 Entrepreneurship**

- Institutional finance and Entrepreneurship orgnaisation, concept, nature process and importance of organisation.

**3 The Entrepreneur:**

- i Meaning, definition, characteristics and function, ii Social responsibility of an Entrepreneur, iii Effectiveness of Entrepreneurs.

**UNIT- III The Entrepreneurs:**

- 4 Organisation supporting Entrepreneurs
- 5 Licensing & regulation of industries
- 6 Infrastructure facilities

- UNIT-IV 7** Launching & organising Entrepreneurship  
     *i* Economic and sociological view points.  
     *ii* Entrepreneurial development programmes

- UNIT-V 8** Preparation of a new project  
     9 Project report  
     10. Start and expansion of a new business.

**References:**

- 1 Meredith, G.G. et al (1982): Practice of Entrepreneurship. ILO, Geneva.
- 2 Patel, V.C. (1987): Women Entrepreneurship – Developing New Entrepreneurs, Ahmedabad ED!!.
- 3 Akhauri, M.M.P. (1990): Entrepreneurship for Women in India, NIESBUD, New Delhi.
- 4 Hisrich, RI. and Peters, M.P. (1995): Entrepreneurship – Starting, Developing and Managing a New Enterprise, Richard O., Irwin, INC, USA.
- 5 Hisrich, RD. and Brush, C.G (1986) The Women Entrepreneurs, D.C. Heath & Co., Toronto.

**PAPER - XI  
HOUSING**

**Max. Marks 80**

**Objectives :**

To enable the students to:

- Recognize the role of housing for national development
- Be aware of the housing problems in India and the measures for alleviating the problems.
- Understand and apply the principles of design in housing.

- UNIT-1 1** History of Housing  
**2** Housing – Needs definition and importance.  
**3** Changes in Housing needs & standards.  
**4** Housing In India As Affected by Trends In  
     - Population  
     - Establishment of Households  
     - Level of Income Per Households  
     - Occupation  
     - Family Mobility  
     - Technological Development

- UNIT-I 5** Present Housing Condition in India  
     - Rural L& Urban  
     - Cost of Housing  
     - Quality of Housing Available.  
**6** Private and Public Housing  
     - Various Housing Schemes & Local Government Programs, Industrial Housing.  
**7** Study of building materials.

- UNIT-III 8** Factors To Be Considered While Designing  
     - Orientation  
     - Grouping of user's area  
     - Circulation between & within user's area  
     - Light & Ventilation  
     - Flexibility  
     - Privacy  
     - Roominess

- Services
  - Aesthetics
  - Cost
- UNIT-IV 9** Study of various Types of fixtures fitting used in interiors their use, selection and case.
10. Types of Floor
  11. False Ceilings – Different types in various materials.
  12. Kitchen Platform and types.
  13. Storage areas – Need and Rules for storage.
    - Storage arrangements in different rooms.
- UNIT-V 14.** Socio-Economic environment impact of families and organisation.
15. Environmental Issues – Human & Environment.
  16. Entrepreneurship management.
  17. Housing Research
    - Agencies for research & Development
    - Methods & Techniques

#### References:

1. Ambedkar. V.N. & Modak, N.Y. (1971): Town & Country Planning & Housing Orient Longmafl.
2. Deshpande, R.S. (1974): Modern Ideal Homes for India, United Book Corporation.
3. Faulkner, S. (1979): Planning a House, Holt, Richard & Wirison.
4. George, D: (1981): How to be your own Electrician, Saence Stall Book, Harper and Row.
5. Graham, L (1982): Lighting your Home, Wills and Boofls Ltd.
6. Rangwala, S.C. (1974): Town Planning: Charotar Book Stall, Anand.
7. Publication of Housing Boards, NBO, ISL, HUCPO etc.
8. Chudley, B. (1985): Construction Technology, Vol 1 to 5.
9. Chafra. J.O. and Callendar, J.H. (1980): Time Saver Standard for Building Types, McGraw Hill , New York.
10. Agan, T., The house – Its Plan and Use.

### PAPER - XII FUEL TECHNOLOGY

**Max. Marks 80**

#### Objectives :

- To understand the potential and limitation of different energy sources and environment impacts of their use.
  - To understand the need and the ways of energy conservation.
  - To study the innovation in fuel technology and energy management.
- UNIT-I 1** Sources of energy and their classifications, non-renewable us renewable. Alternative, conventional vs non conventional commercial Vs Non - Commercial.
- 2** Energy Consumption Pattern.
- UNIT-I 3** Fossil fuels power; Fossile fuels – The theories of their formation.
- 4 Fuel** - Introduction, what is a Fuel?, Classification of fuel, solid liquid & Gaseous origin & Artificial fuel, Solid , Liquid & Gaseous their properties and composition.
- UNIT-III 5 Solar Energy**
- Solar radiation reaching the earth surface.
  - Characteristics of Solar Energy.
  - Application of Solar Energy to system for.
    - i. Water heating
    - ii. Refrigeration
    - iii. Cooking
- UNIT-IV 6** Air Energy – Introduction, Use , Air Rotator, Air Energy in India.

- UNIT-V 7.** Energy from Bio-mass Thermal conversion processes available for obtaining gaseous and liquid fuels from bio-mass, Bio-gas plant and advances gasohol. Energy plantations.
- 8** Energy Conservation
- Principles of improving the efficiencies of 1) Combustion, 2) heat exchange, 3) energy conservation, 4) waste heat recovery and utilisation etc.
  - Proper use and maintenance's of domestic heating, cooking, lighting and other appliances.
  - Energy conservation in the transport sector.

**References:**

1. Rai, G.D. (1996): Non-Conventional Energy, Khanna Publishers, New York
2. Chaman Kashkari: Energy Resources Demand and Conservation – Tata McGraw Hill.
3. Chatterji Manas (1981): Energy and Environment in Developing Countries, John Wiley, Chichester.
4. Duikerley, J. (1990): Patterns of Energy use in Developing Countries.
5. Jam, H.C. (1986): Non-conventional Sources of Energy, Sterling Publication, New Delhi.
6. Parich, J.K. (1980): Energy, Systems and Development, OUP, New Delhi.
7. Dayal, M. (1989): Renewable Energy, Environment and Development, Konark Publishers.
8. Gusain, P.P.S. (1990): Renewable Energy in India, Vikas Publishing House, New Delhi.
9. Agarwal, M.P. (1985): Solar Energy. S. Chand & Co., New Delhi
10. Sukhatme, S.P. (1985): Solar Energy; Principles of Thermal Collection and Storage, Tata McGraw Hill, New Delhi.
11. Deshpande, B.G. (1992): The World of Petroleum, Wiley Eastern Ltd., New Delhi.
12. Twidell, J. & Wier (1986): Renewable Energy Resources. E&F.N. Spon Ltd., New York.
13. Reddy, B.S. (1998): Urban Energy Systems, Concept Publishing Co., New Delhi,,

**PRACTICAL - III**

**ERGONOMICS**

**Max. Marks 100**

**Distribution of marks**

Seasonal	-	25
Work Book	-	35
Practical Work	-	20
Viva	-	20

**Contents :**

1. Use of instiunais employed in ergonomics research (any five)
  - Treadmill, step-stool
  - ECG, Heat rate monitor
  - Noise level meter, environment kit
  - Skin thermometer
  - Sphygmomanometer
  - Height & weight measuring instruments
  - Stopwatch
2. Determination of workload using heart rate - Treadmill or By-cycle ergo meter
3. Determination of workload of some selected household activities by using
  - Pulse rate techniques
  - Time and motion study
  - Energy cost
  - Temporal cost
4. Postures
  - Identifying the types of posture assumed by women during work, analysis &

interpretation to risks.

**5** Analysis of individual approaches

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**RESOURCE MANAGEMENT**

**M.Sc. (HOME SCIENCE) FINAL**

**4th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper XIII	Residential and Establishment	80	10	10	100
Paper XIV	Consumer Education	80	10	10	100
Paper XV	Space Design	80	10	10	100
Paper XVI	Management of Human Recourses	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical IV	Housing & Space Science	100

**PAPER - XIII**

**RESIDENTIAL AND ESTABLISHMENT**

**Max. Marks 80**

**Objectives :**

- To familiarise the students with the various services in residences and other establishments.
- To analyse the services the respect to design cost and maintenance.

**UNIT-I 1 Water supply system**

- Water supply system to commercial and residential buildings.
- Water pipes and traps used in water supply system.
- Types of water supply system.
- Water supply to bathrooms, Toilets, W.C. and Kitchen.

**UNIT-I 2 Drainage System**

- Drainage system – with municipal drain line.
- Septic tank
- Soak pit
- Drainage system using septic tank and soak pit
- Types of drains, pipe size for drain.

**UNIT-III 3 Electrical layout and wiring system**

- Types of lamps and light fixtures
- Types of wiring system

**4 Air Conditioning**

- General purposes
- System of Air Condition
- Essentials of A/c System

**UNIT-IV 5 Building safety constructions**

- Termite proofing - Essentials of Termite Proofing, Method of Termite Proofing

- Damp prevention - Sources of damp, Effects of damp, Techniques of damp prevention, Methods of damp prevention
- Heat Insulation – Definition, Principles, Materials
- UNIT-V 6** Fire fighting
  - General measures of fire safety in building.
- 7** Building Disaster Management
  - Anti disaster constructions.
- 8** Garbage Disposal
  - Vermi composting
  - Vermi culture

**References:**

- 1** Rangawala S.C. (1992) Water supply and Sanitary Engineering, Charotar publishing House, Anand.
- 2** Patil S.M. (1995) Plumbing Engineering , Seama Publication Bombay.
- 3** Kamala A and Khanthrao, D.L. ( 1988), Environmental Engineering water supply. Sanitary Engineering and pollution Tata McGraw Hill Publication company Ltd. New Delhi.
- 4** Hussain S.K. ( 1974) Text book of water supply sanitary engineering oxford & TBH Pub. Co.Pvt. Ltd., New Delhi.

**PAPER - XIV**  
**CONSUMER EDUCATION**

Max. Marks 80

**Objectives :**

- To sensitize the students with the need for consumer education.
- To develop an understanding of market environment and business strategies for better consumption practices.
- To strengthen the consumer knowledge and to equip them to face challenges in the market situations.

- UNIT-I 1** Consumer Education
- a Brief History, b. Definition, concept and significance / need.,
  - c Objectives
- UNIT-I 2** Approach to consumer education – Economic, environment, sociocultural, health & safety and legal.
- 3** Action line for consumer education
- a Action plan – knowing situation, formulating plan of action, implementing, evaluation and follow –up.
  - b Methods for imparting lucation – Role-plays and games, project testing and evaluation
- UNIT- III 4** Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment.
- 5** Resources – Media- Written, audio and visual. Market place, government agencies consumer organisations.
- 6** Problems faced and remedial measures.
- 7** Classification selection.
- UNIT- IV 8** Teaching Consumerism
- a Plans for teaching better consumption practices, factors affecting.
  - b Consumer aids – Meaning, Classification types.
  - c Consumer Rights and responsibilities.
- UNIT-V 9** Consumer Protection
- a Need, measures and methods.



- b Role of consumer organisations- National and International.
- c Consumers International regional Office at Pune India.
- d Consumer laws- Role and Provisions of the acts – Implications.

**PAPER - XV**  
**SPACE DESIGN**

**Max. Marks: 80**

**Objectives :**

- To understand the factors influencing space design organization for optimum comfort and functionalism.
- To understand the application of anthropometric data in designing interior.
- To evaluate ergonomically residential interior space for various activities.
- To provide adequate facility for work, relaxation, rest, comfort, privacy, care aesthetics etc. through interior space designing.
- To study the materials along with fittings and fixtures used in residential interiors.
- To develop skills of drawing the working details and execution drawings.

**UNIT-I 10. Analysis of Housing Design**

- i Selection of site
- ii Analysis of Plan – Needs and definition importance
- iii Process of Map making.
- iv. Site plan & floor plan

**UNIT-I 11. Types of Designs**

- i Structural design decorative design Styles of Interior Designs, Traditional style, cottage style, modern style.
- ii Design and Colour, Colour theory, dimensions of colour, classification of colours, Psycho-social and physical effects of colours, types of colour schemes.
- iii Decoration : History of development of decoration. Object of decoration.

**UNIT-III 12. Furniture Design – Fundamentals of Furniture arrangement in various rooms.**

**13. Classification selection.**

- 14. Residential Furniture – Sketch, form and sizes of all and details of any 6 items, such as sofa, diwan, chairs, buffet centre table , wall unit, dining table , side board, kitchen Unit, bed, wardrobe, dressing table etc.**

**UNIT-IV 15. The Special Needs**

- Division of Rooms and their arrangement.
- Circulation in building.
- Space needs in relation to furniture and fittings
- Space in room and passage.

**16. Layout and dimensions of rooms**

- Entrance wall & front door.
- Living & drawing Room
- Bedroom & Children Room
- Guest Room
- The Kitchen Dining Room
- Bathroom & W.C.

**UNIT-V 17. Current Trends in Interior Design**

- Place of Art in the Home.
- Use of Principle of Art in the decoration
- Uses of colour in Home decoration.
- Current trends of Indian decorative regional art.

**References:**

1. Alexander, N.J., Mercoust Brace (1972): Designing 'Interior Environment. Havanovich Inc.
2. Ball, Victoria K1655 (1980): The Art of Interior Design. Mc Millan & Co. New York.
3. Bhatt, P.D., Goenka S. (1990): Foundation of Arts Design, Lakhari Book Depot. Bombay.
4. Butler Margaret G.E. Grecks Berlyt S. (1980): Fabric Furnishing, E.T. Badsford Ltd., London.
5. Chudley, R. (1978): Construction Technology Vol.1-2 (-lBS Long Man Ltd., New York.
6. G.V. Robert (1983): Rendering with Pen + Ink. Thames, Hudson. London
7. Gustafsan karen arid Yes Robert (1983): Corporate Design, Thomas and Hudson. . London
8. Grandjean Ettiens (1978): Ergonomics of the Home, Taylors and Fracis Ltd., London
9. Grandjean Ettiens (1979): Human Dimensions and Interior Space Whitney, New York
10. Laoch, Ski Del Har , Techniques of Interior Design, Rendering and Presentation, McGraw Hill, New York.
11. Leinbac (1986): Visualisation Techniques, McMiIIan (Prentice Hall), New Jersey.
12. Rangawala, N., Building Materials.
13. Encydopaedla of Interior Design

#### **PAPER - XVI**

#### **MANAGEMENT OF HUMAN RESOURCES      Max. Marks 80**

##### **Objectives :**

- To increase awareness of human beings as resource potentials of attaining goals of maily life and as an important national resources
- To acquire ability to use scientific facts and principles for decisions related to use of time and energy.
- To develop the ability to use and reevaluate , to improve human resources.
- To recognise the need for further research in practical life in relation to use of human resources.

##### **UNIT-I 1 Principles of human resources use.**

- 2 Fatigue and impairment in man Physiological – Causes and remedy  
Phychological – Causes and remedy

##### **UNIT-I 3 Motivation**

- Meaning of motivation
- Nature and characteristics of Motivation
- Process of motivation
- Methods of motivation
- Importance of motivation
- Factors of Motivation.

##### **4 Productivity**

- Meaning of Productivity
- Factors in productivity
- Effect of motivation on productivity.

##### **UNIT-III 5 Methods and techniques for improving resources use**

- Development of labour saving device
- Improvement of working conditions
- Changing of attitudes
- Development of efficient work methods.

##### **6 Personality & Development of Manager**

- Introduction and Definition
- Types of personality
- Development of Manager's
- Development methods of Executive Management

#### UNIT-IV 7. Training

- Introduction and definition
- Objectives of Training
- Characteristics of Training
- Principles of training
- Value of Training
- Methods of training

#### 8 Leadership

- Introduction
- Quality of leader
- Styles of leadership

#### UNIT-V 9 Training for personality development & Leadership

##### 10. Goals of training and development

##### 11. Efficiency in use of human resources

- Concept of efficiency Vs effectiveness
- Types of efficiency
- Factors affecting efficiency
- Factors affecting effectiveness

#### References:

1. Cascio Wayne, F. (1985): Managing Human Resource, McGraw 1-1111 Book Co, New York.
2. Rae, NP. (1986); Human Resource Development in Management and Administration, B.K. Publishers, Delhi.
3. Rao, T.V. (1992): Appraising and Developing Managerial Performances, Academy of Human Resource Development. BK. Publishers. Delhi.
4. Singh, P.N. (1993): Developing and Managing Human Resources, Suchāridm Publishers Ltd. , Bombay.
5. Leap, T.L and Curio, M.D. (1990) Personnel! HRM-, Macmillan Pub. Co. New York.
6. Kamilc, V.O. (1984): Personnel Management, Jaico, Bombay.
7. Mamoria, G.B. (1982): Personnel Management: Management of Human Resources Himalaya, Bombay.
8. Sāiyadin Mirza (1988): Human Resources Management., Chaitanya Publishing. Alahabad.
9. Kuchal, S.C. (1982): Financial Management An Approach and Conceptual Approach., Tata McGraw Hill, New Delhi.
10. Soloman, E. and Pringle, J.D. (1978): Introduction to Financial Management, Prantice Hall of India, New Delhi.

#### PRACTICAL IV- HOUSING & SPACE DESIGN

<b>Distribution of Marks :</b>	Seasonal	-	25
	Work Book	-	35
	Practical Work	-	20
	Viva	-	20

1. Floor Plan Evaluation
2. Drawing house plan for various income groups.
3. Study of building materials.
4. Drawing sketches of interior decorative aspect like – Interior schemes of rooms.
5. Color Schemes.
6. Analysis rate of certain items like stool, tables etc.
7. Preparation of art object.

8. Collection of false ceiling material.
9. Floor decoration – Alpna, Rangoli and Flower medium.

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**TEXTILES AND CLOTHING**  
**M.Sc. (HOME SCIENCE) PREVIOUS**  
**1~~st~~ SEMESTER**

**Marking Scheme:**

**PART I – THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper I	Research Methodology	80	10	10	100
Paper II	Textile Chemistry	80	10	10	100
Paper III	Fashion Retailing	80	10	10	100
Paper IV	Textile Designing	80	10	10	100

**PART II – PRACTICAL**

	Practical	Marks
Practical I	Textile Chemistry	100

**PAPER – I**  
**RESEARCH METHODOLOGY**

**Max. Marks: 80**

**Objectives :**

- To understand the significance of research methodology in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.

- UNIT-I**
1. Science, scientific methods, scientific approach.
  2. Role of research in Home science discipline.
  3. Objectives of research: Explanation, control and prediction.
  4. Types of research: Historical, Descriptive, Experimental, case study,
  5. Social research and survey: Meaning, definition, nature, scope, objects, types. distinction between social survey & research.
  6. Pre-testing and pilot survey.
- UNIT-II**
7. **Definition and identification of research problem.**
    - Selection of research problem.
    - Justification.
  8. **Fact, Theory and concept.**
  9. **Hypothesis :** Definition, sources, characteristics, importance, main difficulties in formation of hypothesis, disadvantages, Limitations and Delimitations of the problems.
  10. **Types of variables.**
- UNIT-III**
11. **Basic principles of research design:**
    - Purposes of research design: fundamental, applied and action, exploratory, and descriptive, experimental, ex-post facto.
    - Longitudinal and cross sectional, co-relational.
  12. **Data gathering instrument.**

- Observation,
- Questionnaire,
- Interview,
- Scaling method,
- Case study,
- Home visits,
- Reliability and validity of measuring instruments.

**UNIT-IV 13. Theory of probability:** Non-probability sampling: purposive, Quota and volunteer sampling/snow ball sampling

**14. Sampling :** Population and sample, Meaning, Characteristics, advantages and disadvantages.

**Types :**

- Probability sampling
- Random sampling (Simple random, systematic random sampling,)
- Purposive sampling
- Stratified sampling
- Other sampling methods (two stages and multistage sampling, cluster sampling).

**UNIT-V 15.** Classification and tabulation of data.

**16.** Analysis and interpretation of data

**17.** Preparation of report

**18.** Diagrammatic presentation of data

**References:**

1. Edwards: experimental design in psychological research.
2. Kerlinger: Foundation of educational research.
3. Bhandarkar P.L. and Wilkinson T.S. (2000) methodology and techniques of social research, Himalaya publishing house, Mumbai.
4. Bhatnagar G.L.(1990) research methods and measurements in behavioral and social science Agri Cole publishing agency, New Delhi.

## PAPER - II

### TEXTILE CHEMISTRY

**Max. Marks: 80**

**Objectives :**

1. To acquaint the student about the polymers of which the textile fibers are made.
2. To understand the chemistry, production and fundamental properties of natural and synthetic fibers.
3. To familiarize with the chemical processing from desizing to finishing of textiles and x-principals.
4. To acquaint the students with some advance textile technology.
5. To develop an understanding of the methods and techniques used to analyze textile fiber, yarns, and fabric for end-use performance.
6. To acquire knowledge and understanding of various structural properties of textiles and relate them to end fabric performance and product.

**UNIT-I 1. Introduction:**

- Why study of textile chemistry is needed.
- Why this subject is related to textile and clothing.

**2. Polymer chemistry:**

- Polymers, Methods of polymerization, polymerization process.
- Definition of co-polymer, oligomer, graft-co-polymer.

- Degree of polymerization, Molecular weight of polymers and its determination.
- Characterization of polymers using chemical and instrumental method.
- UNIT-I** 3 Orientation and crystallinity of polymers, their influence on fiber properties.
- 4 **Chemistry of cellulosic fibers:**
  - Introduction to cotton, varieties, properties, longitudinal and cross-sectional view.
  - Molecular structure of cellulose, action of acids and alkalis, hydro-cellulose and oxycellulose, mercerization, liquid ammonia treatment.
- 5 **Regenerated cellulosic fibers:** viscose rayon, cuprammonium rayon cellulose acetate rayon polynosic-their manufacture, properties and uses.
- UNIT-III** 6 **Protein fibers-Wool and silk**
  - Chemical composition, molecular structure, physical and chemical properties, action of acids, alkalis and other chemicals on protein fibers.
  - Brief description on felting of wool, degumming and weighting silk, shrink proofing of wool.
- UNIT-IV** 7 Synthetic Fibers-polyester, polyamide and acrylo nitrile fibers.
- 8 Chemistry of the fibers- raw material, manufacturing process from polymer to fiber stage.
- 9 Physical and chemical properties of all the fibers and their uses Examples of commercial production in India.
- UNIT-V** 10. Blends of different fibers composition and properties and uses in textiles and clothing.
- 11. Other natural synthetic fibers-Their chemical composition, properties and uses jute, flex, hemp, tencel, polyethylene, polypropylene, carbon, polycarbonate, metallic, glass fiber and polyurethane fibers

#### References:

1. Booth.J.E: Principles of textile testing- newness, butter, worth, London.
2. Billie. J Coller and Helen H. Epps- Textile testing and analysis- Prentice hall, New Jersey.
3. John H. Skinkle- Textile testing- Booking, New York.
4. Grover and Hamby- Hand book of textile testing and quality control Wiles.
5. ASTM standards.

### PAPER - III

#### FASHION RETAILING

Max. Marks: 80

#### Objectives :

- 1 Focus on design details creation of styles and rendering techniques using the different media. Pencils, Pens, Markers, Charcoal, Brushes, colours, Papers.
  - 2 To understand the dynamics of fashion and role of fashion designers.
  - 3 To develop understanding visual merchandising and its importance in today's consumer market.
  - 4 To gain knowledge about the management aspects of retailing.
- UNIT-I** 1 The Dynamics of Fashion.  
Fashion Terminology, Fashion cycle, Fashion Adoption theories, fashion forecast, the role of designers in merchandising.
- 2 Famous national and international fashion designers.
- UNIT-I** 3 **The concept of Retailing:**
- Definitions, role of retailing in merchandising, the retail mix, retail environment, types of retail store

- Planning and budgeting for a retail store.
- UNIT-III 4 Elements and principles for Art and design:**
  - Elements of design: Colour, texture, line, form space.
  - Principles of design: Rhythm, Balance, Proportion, Emphasis, Unity.
  - Interpretation for designing a retail store.
- UNIT-IV 5** Sketching of different action croaky (based on the basic figures learnt earlier).
- 6** Maintenance and ordering of stocks, preparation of sales reports
- UNIT-V 7 Visual Merchandising.**
  - Plans and schedule -seasons, holiday promotions, sales, themes / ideas.
  - Types and displays -Window displays interior displays.
  - Elements of Display- the merchandise the backdrop walls and shelves mannequins and forms, signage lightings- illuminance levels relation to colour.

**References:**

1. Abbing Oona, Fashion Sketchbook, Fairchild Publishers, New York.
2. McKolvey Kathryn, Illustrating Fashion Blackwell Science Munslow Janine.
3. Seaman Julian, Professional Fashion Illustration, B.T. Batsford Ltd London.
4. Ireland, Patrick John, Fashion Illustration, B.T. Batsford Ltd London. Allen Anne Seaman Julian Fashion Drawing The Basic principles, B.T. Batsford Ltd. London.

**PAPER - IV**

**TEXTILE DESIGNING**

**Max. Marks: 80**

**Objectives :**

- To develop awareness and appreciation of art and aesthetics in textiles.
- To impart creative and technical skills for designing textiles with special emphasis on structural design.
- The course aims at providing in depth working -knowledge of line development and enables a student to use and practice skills and knowledge already acquired and use it to market situation.

**UNIT-I 1 Elements used in creating a design.**

- Composition
- With one element.
- With more than one element.
- Colour - Its sensitivity and composition in dress.
- Harmony - in form of space coverage to design of the dress.

**UNIT-I 2 Design analysis:**

Structural and applied design variation in fiber, yarn and fabric construction, embroidery, dyeing printing and finishes.

- 3** Sources of inspiration for basic sketching and painting: nature, religion and mythology arts and crafts architecture.
- 4** Understanding the tools and equipment and their appropriate use for sketching, painting and achieving textural effects.
- 5** Process of designing

**UNIT-III 6 Components of fashion:**

- Silhouette
- Colour
- Texture
- Trims

- Details
  - Fabric
  - Seams
- UNIT-IV 7. Motif development** -geometrical, simplified, naturalized, stylized abstract namental.
- Big and small motifs -enlargement and reduction, growth of a motif.
  - Colour consideration -colour harmonies and colour ways.
  - Creation of patterns and designs
  - Combining motifs a) big and small and b) different sources.
- 8** Placement and repeats for all over patterns.
- UNIT-V 9** Preparation of fabric for dyeing and printing.
- Scouring, bleaching, designing.
  - Reagents used and their application.
  - Specific preparatory steps for cotton, wool, silk and man made fibers.
  - Equipment used at cottage and industrial level for yarn, fabric and price goods.

### PRACTICAL - I

#### TEXTILE CHEMISTRY

**Max. Marks: 100**

- 1** Identification of fibers - cotton, polyester, viscose, polyimide, silk, wool jute, etc use of test microscopic examination, chemical tests solubility and staining tests.
- 2** Dyeing of cotton (yarn) with direct, reactive and Val dyes (one each) by exhaust method dyeing of wool and silk with an acid dye.
- 3** Use of natural dyes and mordant.
- 4** Study chemical properties of fiber as related to textile finishing
  - Chlorination of wool.
  - Mercerization in cotton.
  - Felting of wool.
  - Weighing of silk.
  - Degumming of silk.
- 5** Determination of hardness of water.
- 6** Physical Testing of Textile using appropriate standardized procedures.
  - Fibers-Length, diameter, fineness.
  - Yarn -Count, heaviness twist, crimp, strength.
  - Bursting, Water vapour permeability, cover, stiffness, drapability, crease recovery pilling abrasion.
  - Chemical testing
  - Identification of fibers.
  - Binary fabrics -Blend composition.
  - Shrinkage water, oil repellency.
- 7** Dyes
  - Identification of dye class.
  - Colour Fastness.
- 8** Mechanical Testing
  - Seam strength.
  - Identification of fabric weave, Thread count
- 9** Inspection of final Garment.
- 10.** Mill visit to acquaint students with modern chemical processing



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**TEXTILES AND CLOTHING**  
**M.Sc. (HOME SCIENCE) PREVIOUS - FINAL**  
**2nd SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper V	Statistics and Computer Application	80	10	10	100
Paper VI	Quality Control in Textiles	80	10	10	100
Paper VII	Fashion Illustration	80	10	10	100
Paper VIII	Dyeing and Printing	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical I	Textile Designing	100

**PART - III**

**INTERNSHIP / FIELD PLACEMENT**

1. The student will be required to under go an internship/field placement for a total duration of six to eight weeks in their chosen area of interest after IInd semester which will facilitate their pursuing a professional career in same field.
2. This programme could be taken up either as a single block or in two different blocks. It is mandatory that the organization / institution (public/private) participating in the field.
3. Placement programme will be of good professional standing. the list could include government/non-government textile industries small scale industries (handloom), garment manufacturing units, fashion designing institutes, embroidery units etc. The student will be required to submit and present a report of the internship/field placement project after its completion. It is also envisaged that participating organization/institution will give their performance appraisal of the student work. Grade A (60% and above), Grade B (48% to 59%), Grade C (40% to 47%) should be given to the student after evaluation of field placement/internship report by the department. The grade will be mentioned in the mark sheet of the IVth semester of the student.
4. Excursion trip/field visits should be arranged regularly by the department for the up liftment of the knowledge of the students.
5. This programme is designed with the following objectives:
  - I To enable the students to acquire an in-depth understanding of the practical aspects of knowledge and skills acquired during the course in the relevant subject/subjects.

**II** To gain hands on experience for higher proficiency in their selected area of expertise  
To help the students to develop and have their analytical abilities for situation and analysis and bringing about improvements

#### PAPER - V

#### STATISTICS AND COMPUTER APPLICATION Max. Marks: 80

**Objectives :**

- 1 To understand the significance of statistics and research methodology in Home Science research.
- 2 To understand the types, tools 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 statistical technique to the measurement scale and design.
- 4 To understand the role of statistics and computer application in research.
- 5 To apply statistical techniques to research data for analysis and interpreting data meaningfully

- UNIT-I**
- 1 **Conceptual understanding of statistical measures** - meaning, definition, scope, importance, characteristics, distrust of statistics.
  - 2 **Classification and tabulation of data.**
  - 3 **Measurement of central tendency**
    - Mean
    - Median
    - Mode
- UNIT-I**
- 4 **Graphic presentation of data**
    - Frequency distribution
    - Histogram
    - Frequency polygons
    - Frequency curve
    - Ogive
    - Binomial distribution
    - Parametric and non-parametric tests
- UNIT-III**
- 5 **Methods of Dispersion and variation**
    - Mean déviation
    - Standard déviation
    - Quartile deviation
    - Independence of attributes 2x2 and rxc contingency tables
    - Analysis of variance - one way method Direct and short cut.
  - 6 What is computers characteristics components of computer system, block diagram of computer, CPU, I/O devices and memory ( RAM and ROM) second storage devices (hard disk Floppy disk ,Magnetic tape etc.)
- UNIT-IV**
- 7 **Computer generations** -Classification of computers; Analog digital hybrid general and special
  - 8 **Types of computers-** Micro Mini Mainframe and super computer
    - Chi square test Goodness of it
    - Application of student 't' test for small samples
- UNIT-V**
- 9 **Correlation-**definition, meaning and types.
  10. **Methods of determining coefficient of correlation**
    - Product moment correlation
    - Rank correlation.

#### 11. Working with MS Word

- Getting started with word, formatting text and paragraph.
- Applying text and language tools, designing pages, with columns and tables, using graphics.

#### References:

1. Garrett, Henry E. 1971: statistics in psychology and education, David and co.

### PAPER - VI

#### QUALITY CONTROL IN TEXTILE

Max. Marks: 80

#### Objectives:

- 1 To familiarize with the chemical processing from designing to finishing of textiles and x-principals.
- 2 To acquaint the students with some advance textile technology.
- 3 To develop an understanding of the methods and techniques used to analyze textile fiber, yarns, and fabric for end-use performance.
- 4 To acquire knowledge and understanding of various structural properties of textiles and relate them to end fabric performance and product.
- 5 To familiarize students with the different testing equipments, their underline principles and the international accepted standards, test methods and the language of measurement.
- 6 To be able to analyze and interpret the result and predict the general textile testing.

#### UNIT-I 1 Scientific basis of dyeing and printing of textiles-

Classification of textiles dyes, commercial dyes, C.I. constitution number and C.I generic number.

- a Theory of dyeing.
- b Chemical structures of various classes of dyes.
- c Application of dyes on various substrates including blends.

#### UNIT-I 2 Textile finishing.

- Classification of finishes.
- Mechanical finishes.
- Chemical finishes-Mercerization, parchementisation, durable press, wash 'n' wear, wrinkle recovery, chlorination.
- Resins, their application and chemistry.
- Special purpose finishes
- Flame retardant, water repellent, antistatic, stain and soil release, proofing.

#### UNIT-III 3 Introduction to Testing.

- Concept and scope.
- Application areas.
- Use of statistics in data management.
- Sampling procedures.

#### 4 Standardization.

- Standards for fabric performance.
- Organization for standardization (National and International)
- Quality control of Textile products.

#### UNIT-IV 5 Properties of textiles at different stages of processing and their principle of measurement.

- Quality standards as applicable to various types of textiles (Garments, Yard- age, knits, woven, carpets, processing, dyeing).
- Fibers-Length, fineness, evenness.

- Yarn -strength, evenness, openness, load, elongation, crimp.
- UNIT-V 6 Fabrics** -strength, elongation, shrinkage, thickness, cover, air permeability, crease recovery, weight, comfort, stiffness, flammability, repellency, colour, fastness.
- 7. Garment Finishing** -colour fastness, shrinkage.
- 8** Concept of fabric faults as related to stages of manufacture and the remedies.

**References:**

- 1 Booth.J.E: Principles of textile testing- newness, butter, worth, London.
- 2 Billie. J Collier and Helen H. Epps- Textile testing and analysis- Prentice hall, New Jersey.
- 3 John H. Skinkle- Textile testing- Booking, New York.
- 4 Grover and Hamby- Hand book of textile testing and quality control Wiles.
- 5 ASTM standards.

**PAPER - VII**  
**FASHION ILLUSTRATION**

**Max. Marks: 80**

**Objectives:**

- Focus on design details creation of styles and rendering techniques using the different media. Pencils, Pens, Markers, Charcoal, Brushes, colours, Papers.
- To understand the dynamics of fashion and role of fashion designers.
- To develop understanding visual merchandising and its importance in today's consumer market.
- To gain knowledge about the management aspects of retailing

**UNIT-I 1 Garments and garment details:**

- Necklines and collars
- Frills, fringes and gathers, cowls and cascades.
- Sleeve details
- Hemlines and insertions.
- Skirts and pants

**UNIT-I 2** Lacing, macramé's and patch work

- Blouses, coats and jackets
- Pleats, quilting and ties
- Drawstring and fastenings
- Shirring, smoking and zips
- Tassels and tucks
- Yokes and underskirts.

**UNIT-III 3 Sketching of Accessories**

- Hats and head gears
- Footwear
- Bags and purses
- Jewellery

**UNIT-IV 4 Basic Rendering Techniques:-**

- Colour matching using different mediums
- Stripes
- Checks, gingham and plaids
- Patterns and textures
- Reducing a print
- Shading

**UNIT-V 5 Theme, Rendering : developing a line of garments based on a theme (any one of the following)**

- Beachwear
- Cocktail wear
- Swimwear
- Evening wear
- Casual wear
- Ramp wear
- Sportswear
- Executive wear
- Nightwear
- Traditional Indian costume

**References:**

- 1 Abbing Oina, Fashion Sketchbook, Fairchild Publishers, New York.
- 2 McKolvey Kathryn, Illustrating Fashion Blackwell Science Munslow Janine.
- 3 Seaman Julian, Professional Fashion Illustration, B.T. Batsford Ltd London.
- 4 Ireland, Patrick John, Fashion Illustration, B.T. Batsford Ltd London.
- 5 Allen Anne Seaman Julian Fashion Drawing The Basic principles, B.T. Batsford Ltd. London

**PAPER - VIII**  
**DYEING AND PRINTING**

**Max. Marks: 80**

**Objectives:**

- 1 To impart the knowledge about preparation of fabric for dyeing and printing.
- 2 To understand the theory of dyeing in relation to various classes of dyes.
- 3 Application of various dyes and properties related to it.
- 4 To introduce the concept of dyeing at commercial level.
- 5 To inculcate awareness of the different methods of printing and appreciate the technical advantages of each.
- 6 To develop technical competency in printing with different dyes on different fabrics.

**UNIT-I 1 Dyes**

- Classification, definition, components.
- Colour and chemical constitution of dyes.
- Dyeing with chemical dyes.
- Direct, reactive, vat, sulphur, azo (for cellulosic).
- Acid, metal complex, chrome mordant (for protein)
- Basic, nylomine, disperse (for man-made)

**UNIT-I 2 Dyeing with: natural dyes.**

- Use of pigments.
- Dyeing machines for fibers, yarns and fabrics.
- Industrial dyeing practices.
- Dyeing auxiliaries and their uses.
- Dyeing of blends.

**UNIT-III 3 Textiles design through dyeing.**

- Tie and dye.
- Union and cross dyeing.
- Batik

**4 Dyeing defects and remedies.**

**UNIT-IV 5 Introduction to printing - difference between dyeing and printing.**

**6 Methods of printing**

**7 Historical development of printing -block stencil, screen roller and rotary.**

- 8 Screens used at cottage and industrial level.
- UNIT-V 9 Printing pastes  
Thickening agents and auxiliaries for printing and their suitability to various classes of dyes and fibres. Preparation of printing pastes for different dyes and different fibres.
10. Styles of printing
- Direct style, resist or reserve style, discharge style and raise style.
  - Style and methods of printing traditionally used in India

**PRACTICAL - II**  
**TEXTILE DESIGNING**  
**Marks Distribution:**

**Max. marks: 100**

Sessional	-	20
Viva	-	20
Two practical	-	30 each

- 1 Preparation of fabric for dyeing and printing.
- 2 Dyeing of yarns and fabric with different classes of dyes, in fibre and fibre blends (variables- MLR, con, temp, Leveling/exhausting agents)
  - Direct, reactive, vat, sulphur, azo.
  - Basic, disperse.
  - Acid, chrome, metal complex.
  - Natural dyes.
- 3 Preparation of fabric for printing – different fibre groups with different dyes, different styles of printing
  - Preparation of screens for printing.
  - Printing with blocks and screens on cotton, silk, wool and blends in different dye classes.
- 4 Direct style
- 5 Mordant or dyed style, Azok style
- 6 Discharge style
- 7 Resist style.
- 8 Report of visits to processing and printing units (cottage and industrial level).

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**TEXTILES AND CLOTHING**  
**M.Sc. (HOME SCIENCE) FINAL**  
**3rd SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper IX	Fabric Construction	80	10	10	100
Paper X	Apparel Design	80	10	10	100
Paper XI	Historic Textiles	80	10	10	100
Paper XII	Textile Industry	80	10	10	100

**PART II - PRACTICAL**

	<b>Practical</b>	<b>Marks</b>
Practical III	Fabric Construction & Pattern Making	100

**PAPER - IX**

**FABRIC CONSTRUCTION**

**Max. Marks: 80**

**Objectives:**

- 1 To enable the students to understand and learn methods of developing fabrics, using different fibres, yarn and fabric making techniques.
- 2 To gain knowledge and understanding of fundamentals of weaving machinery and processes.
- 3 To analyze different weave patterns and learn principles of creating design through weaving.
- 4 To enable the student to obtain perfect fit and harmony between the fabric and design of the garments.

- UNIT-I** 1 Modern developments in yarns at their manufacture.
- 2 **Modern yarn production** - Principles of spinning in production of man made fibre hot and cold drawing, spun yarn, blend yarn and bicomponent yarn.
- UNIT-I** 3 **Texturing yarn technology** - Principles method and process of variables in texturing and their effect on properties of textured yarns morphological changes induced by texture core yarns, network and film yarns and laminated yarns.
- UNIT-III** 4 **Principles of fabric manufacture** - Basic Principles, Characteristic and significance of different processes -woven knitted, non woven, laces, and braids.
- Weaving.
  - Parts and functions of handlooms
  - Types of weave -basic decorative.
- UNIT-IV** 5 **Knitting.**
- Knitting machines, types of knitting.
  - Properties.
- 6 **Felts and non wovens-different non woven**
- Knotting, braiding and lace making.
- UNIT-V** 7 Introduction to technical textiles -
- Geo textiles
  - Medical textiles-Nano technology in india
- 8 Fabric faults- Fibre ,yarn and fabric defects.and their remedies .

**References:**

- 1 Spun yarn technology- Eric oxtoby butterwall publication.
- 2 Subodh Kumar Agrawal (1980) Textile Processing and Auxillaries.
- 3 Aswani K.T. weaving mechanisms- Mahajan Book Distributors, Ahemadabad.
- 4 Amalsar D.M yarn and cloth calculation.
- 5 Amalsar handloom Weaving.
- 6 Hillhouse, M.S and Mansfield E.A dress Design, Draping and flat Patterned, London.
- 7 Helen Theory of Fashion.

**PAPER - X**

**APPAREL DESIGN**

**Max. Marks: 80**

**Objectives:**

- 1 To impart an in-depth knowledge of style readings, pattern making and garment

- construction techniques.
- 2 To develop and understand the principles of pattern making through flat pattern and draping.
  - 3 To create awareness of quality assurance norms and evaluating of quality in apparel.
- UNIT-I**
- 1 Detailed study of industrial machines and equipment used for-
    - Cutting the fabric -Objectives ,methods of cutting fabric and cutting system
    - Sewing.-Properties, types, sewing machines
    - Sewing threads-Type of fiber, thread size, thread package, thread costs, thread properties.
    - Sewing problems- Stitch formation, damage along with seam line, puckering.
    - Finishing
- UNIT-I**
- 2 Embellishment
  - 3 Study the interrelationship of needles, thread.
  - 4 Stitch length, and fabric
  - 5 Stitch Types
- UNIT-III**
- 6 **Methods of pattern making.**
    - Drafting.
    - Flat pattern.
    - Draping.
    - Coping paper pattern.
- UNIT-IV**
- 7 Understanding the commercial paper patter
  - 8 Layouts on different fabrics, widths and types
  - 9 Buying criteria for-
    - Knits, silks, denim and other special fabrics
- UNIT-V**
10. Readymade garments.
  11. Fitting- factors affecting good fit, common problems encountered and remedies for fitting, defects (upper and lower garments).
  12. Fitting problems and pattern correction

**References:**

- 1 Avis M. Dry (1961) The psychology of Jung, Methuen and Co. London.
- 2 Natalie Bray Dress Fitting published by Blackwell Science Ltd.
- 3 Armstrong, Pattern making for fashion design.
- 4 Grate and storm- Concepts of clothing, McGraw Hill Book co., New York.
- 5 Bina Abling; fashion Sketch Book, Fairchild Publications, New York.
- 6 Slampler, Sharp and donnell: Evaluating.

**PAPER - XI**  
**HISTORIC TEXTILES**

**Max. Marks: 80**

**Objectives :**

- 1 To gain knowledge of the significance developments in production of textiles in the world.
  - 2 To assess similarities and dissimilarities in different civilization in terms of fibre production, ornamentation and usage.
  - 3 To develop sensitivity and understanding towards historic silhouettes and designs.
  - 4 To learn about the designers of international fame and their contribution to the fashion of today.
- UNIT-I**
- 1 **Introduction to textiles:** Indian textile development, study of traditional textiles and embroideries of India.
    - a Chicken of U.P.
    - b Kantha of Bengal.



- |  |   |                      |   |                      |
|--|---|----------------------|---|----------------------|
|  | c | Phulkari of Punjab.  | d | Kathi of Gujarat.    |
|  | e | Manipuri of Manipur. | f | Chamba rumal of H.P. |
|  | g | Kasmiri of Kashmir.  | h | Kasuti of Karnataka. |
- UNIT-I 2 Dance costumes of India:**
- |   |               |   |            |
|---|---------------|---|------------|
| a | Bharatnatyam. | b | Kathak.    |
| c | Odissi.       | d | Kuchipudi. |
| e | Kathakali.    | f | Manipuri.  |
- UNIT-III 5 Folk dance costumes of India:**
- |   |                 |   |               |
|---|-----------------|---|---------------|
| a | Rajasthan.      | b | Maharashtra.  |
| c | Gujarat.        | d | Chhattisgarh. |
| e | Madhya Pradesh. |   |               |
- UNIT-IV 3 Development of different fibers:**  
Cotton, silk, wool, linen in India in terms of processing, tools and equipments used, design and ornamentation applied and specialties achievement
- 4 Development of dyeing and printing since ancient times:** dyes, methods of dyeing, decorative dyeing.
- 5 Methods of styles of printing- tools developed and effects achieved.**
- UNIT-V 6 Historical textiles of special significance:**
- |   |           |   |             |
|---|-----------|---|-------------|
| a | Carpets.  | b | Tapestries. |
| c | Brocades. | d | Laces.      |
| e | Shawls.   |   |             |

**References:**

- 1 John and sentence Bryan (1999), World Textiles, Thames and Hudson, London.
- 2 Harvey Janet (1996): Traditional Textiles of central Asia, Thames and Hudson, London.
- 3 Boucher Francois, A history of Costumes in the West Thames and Hudson.
- 4 Paine Sheila (1990): Embroidered Textiles Traditions, Thames and Hudson, London.
- 5 Revolution in Fashion: The Kyoto costume institute, Abbeville Presi, New

**PAPER - XII**  
**TEXTILE INDUSTRY**

**Max. Marks: 80**

- |                 |            |  |
|-----------------|------------|--|
| <b>UNIT-I</b>   | <b>1</b>   | Business Environment of India  |
|                 | <b>2</b>   | Merits and Demerits of textile industry in India   |
|                 | <b>3</b>   | Textile Industry-concept, history, Manufacturing unit and importance of knitting ,garment, and testing industry  |
|                 | <b>4</b>   | Co-operation ,co-operative societies   |
|                 | <b>5</b>   | Building customer satisfaction, value and retention.   |
| <b>UNIT-I</b>   | <b>6</b>   | Importance of textile and Clothing industry in the Indian Economy in terms of domestic consumption, employment and per capita income, gross national product and International trade   |
|                 | <b>7</b>   | Foreign Trade policy-The mechanism MFA,-History and current status, WTO,   |
| <b>UNIT-III</b> | <b>8</b>   | National Textile policy 1986-2001 change in focus over the year in terms of objective function ability regularity mechanism of futuristic trends.  |
|                 | <b>9</b>   | The Textile and Clothing industry in relation to production and consumption pattern. Local employment potential, R and D problem and prospects, cotton, wool, silk, rayon and synthetic industry, hand loom industry, readymade garment industry and technical textiles. |
| <b>UNIT-IV</b>  | <b>10.</b> | Marketing and Merchandising core concepts, marketing mix and marketing environment of. India   |
|                 | <b>11.</b> | Demographic economic ,natural .technological ,political, legal ,social,  |

12. and cultural environment
- UNIT-V** 13. Analyzing business markets and business buying behavior.
14. Corporate and division strategic planning.
15. SWOT analysis

**PRACTICAL - III**  
**FABRIC CONSTRUCTION AND PATTERN MAKING**

**Max. Marks: 100**

**Marks Distribution:**

Sessionals	-	20
Viva	-	20
Two Practical	-	30 each

1. Dart manipulation.
2. Development of various in sleeves. Sleeves and bodice combination.
3. Development of variation in collars.
  - Roll over collar.
  - Collar with bodice (shawl).
4. Necklines and facings.
  - Scooped necklines.
  - Built up necklines.
  - Cowl necklines.
5. Weaving on simple loom, plain, rib, matt, and twill structures.
6. Visit to weaving mills.
7. Fashion sketches.

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**TEXTILES AND CLOTHING**

**M.Sc. (HOME SCIENCE) FINAL**

**4th SEMESTER**

**Marking Scheme:**

**PART I - THEORY**

No.	Title	Marks			
		Theory	Test	Seminar	Total
Paper XIII	Knitting technology and Draping	80	10	10	100
Paper XIV	Apparel And Its Social, Psychological Aspects	80	10	10	100
Paper XV	Historic Costumes	80	10	10	100
Paper XVI	Fashion Merchandising	80	10	10	100

**PART II - PRACTICAL**

	Practical	Marks
Practical IV	Apparel Designing its Construction and Historic Textiles	100

**PAPER - XIII**

**KNITTING TECHNOLOGY AND DRAPING** **Max. Marks: 80**

**Objectives :**

1. To enable the students to understand and learn methods of developing fabrics, using

- different fibers, yarn and fabric making techniques.
- 2 To gain knowledge and understanding of fundamentals of weaving machinery and processes.
  - 3 To analyze different weave patterns and learn principles of creating design through weaving.
  - 4 To enable the student to obtain perfect fit and harmony between the fabric and design of the garments.
- UNIT-I**
- 1 **Woven:** sequence of operations in warp and weft preparation.
    - Various types of looms and their drive.
    - Fabric classification and analysis of fabrics for its construction weaves.
  - 2 Basic and decorative weaves plain, twill and satin derivatives.
  - 3 Dobby and jacquard shedding and weaving terry pile
- UNIT-I**
- 4 Principle of colour and design in weaving construction of pattern for Dobby and Jacquard looms, brocade, damask, tapestry, wrap and weft pile weaving.
  - 5 New developments in woven fabrics new loom and loom developments. Triaxial weaving, knit and weave construction.
  - 6 Textile design through weaving.
- UNIT-III**
- 7 Introduction to draping and silhouette of the individual -Dress Form, Elements of fabric -Woven knitted.
  - 8 Developments of the ladies block crotch line garments by drafting and draping (short, Bermudas, Trousers etc)
- UNIT-IV**
- 9 Development of pattern with variation in
    - One piece dresses.
    - Two piece dresses
    - Dart less dresses, Dart manipulation.
 (Incorporating various collars, sleeves, yokes, necklines, pockets and plackets etc.)
- UNIT-V**
10. Draping of bodice block and shirt block and their variation.
  11. Draping of symmetrical designs and preparing patterns.
  12. Pattern markings, pattern envelopes and guide sheet.

**References:**

- 1 Spun yarn technology- Eric oxtoby butterwall publication.
- 2 Subodh Kumar Agrawal (1980) Textile Processing and Auxillaries.
- 3 Aswani K.T. weaving mechanisms- Mahajan Book Distributors, Ahemadabad.
- 4 Amalsar D.M yarn and cloth calculation.
- 5 Amalsar handloom Weaving.
- 6 Hillhouse, M.S and Mansfield E.A dress Design, Draping and flat Patterned, London.
- 7 Helen Theory of Fashion.

**PAPER - IX**  
**APPAREL AND ITS SOCIAL, PSYCHOLOGICAL ASPECTS**

**Max. Marks: 80**

**Objectives :**

- 1 To impart an in-depth knowledge of style readings, pattern making and garment construction techniques.
- 2 To develop and understand the principles of pattern making through flat pattern and draping.
- 3 To create awareness of quality assurance norms and evaluating of quality in apparel

**UNIT-I** 1 Caps and Hoods

- 2 Dresses without waistline seems
- 3 Built up necklines ,Halters ,Facings
- UNIT-I** 4 Clothing for people with special needs.
  - Maternity and lactation period.
  - Old age.
  - Physically challenged.
- UNIT-III** 5 Evaluating the quality of apparel
  - Identification of the components of apparel.
  - Fibre content, shaping devices, underline fabrics, pockets, necklines, hem treatments, decorative details and alteration potential.
- 6 Standards for evaluating the various components.
- UNIT-IV** 7 **Origin of clothing.**
  - Why costumes differ all over the world, material aspects and climate.
  - Religious influence.
  - Events of the world.
  - Clothing symbols.
- 8 **Socialization and development of the self.**
  - social norms.
  - Individuality and conformity
- UNIT-V** 9 The study of dress and adornment
10. Personality and Types of Personality.
11. Determinants of Personality
12. **Personality theories**- Definition ,theories, personality traits.
  - Sigmund Freud defense mechanisms.
  - Jung
  - Murray

**References:**

- 1 Avis M. Dry (1961) The psychology of Jung, Methuen and Co. London.
- 2 Natalie Bray Dress Fitting published by Blackwell Science Ltd.
- 3 Armstrong, Pattern making for fashion design.
- 4 Grate and storm- Concepts of clothing, McGraw Hill Book co., New York.
- 5 Bina Abbing; fashion Sketch Book, Fairchild Publications, New York
- 6 Slampler, Sharp and donnell: Evaluating

**PAPER - XV**  
**HISTORIC COSTUMES**

**Max. Marks: 80**

**Objectives :**

- 1 To gain knowledge of the significance developments in production of textiles in the world.
- 2 To assess similarities and dissimilarities in different civilization in terms of fibre production, ornamentation and usage.
- 3 To develop sensitivity and understanding towards historic silhouettes and designs.
- 4 To learn about the designers of international fame and their contribution to the fashion of today.

- UNIT-I**
- 1 Clothing- Origin and functions of clothing
  - 2 Resist dyeing and ikat fabrics.
  - 3 Printed and painted fabrics.
  - 4 Banarasi saree
  - 5 Sarees of M.P.
  - 6 Costume in ancient civilization emphasize on fabric, garment features, use of

colour decoration and accessories.

- Indian
- Egyptian.
- Greek.
- Roman.

**UNIT-I 7. History of Indian state costumes for Male and Female**

- |                    |                      |                    |
|--------------------|----------------------|--------------------|
| <b>a</b> Kashmir   | <b>b</b> Maharashtra | <b>c</b> Gujrat    |
| <b>d</b> Rajasthan | <b>e</b> West Bengal | <b>f</b> Tamilnadu |

**UNIT-III 8. Costumes for men and women during 10<sup>th</sup> to 17<sup>th</sup> century** (Medieval costumes)

- |                    |                   |
|--------------------|-------------------|
| <b>a</b> India     | <b>b</b> French   |
| <b>c</b> European. | <b>d</b> English. |

**e** Costumes and China and Japan.

**UNIT-IV 9. Costumes Of 18<sup>th</sup> century to 20<sup>th</sup> century**

- Indian
- French.
- Italian.
- England.
- American.
- Japanese.
- Australia

**UNIT-V 10. Growth of costume:**

**11. Fashion-** Terminology ,fashion concepts, its creation and analysis

- Mass Production of clothing.
- Fashion Designers and his role.
- Fashion Forecasting.
- Design Development.

**References:**

- 1 John and sentence Bryan (1999), World Textiles, Thames and Hudson, London.
- 2 Harvey Janet (1996): Traditional Textiles of central Asia, Thames and Hudson, London.
- 3 Boucher Francois, A history of Costumes in the West Thames and Hudson.
- 4 Paine Sheila (1990): Embroidered Textiles Traditions, Thames and Hudson, London.
- 5 Revolution in Fashion: The Kyoto costume institute, Abbeville Presi, New York.

**PAPER - XVI**

**FASHION MERCHANDIZING**

**Max. Marks: 80**

**UNIT-I 1** Market segmentation, Targeting and Positioning (STP) concepts and methods of market segmentation need for positioning through various means, formation of positioning maps

**UNIT-I 2** Product its type and relation to fashion classification of fashion product life cycle, the process of product life cycle, the process of products development

**3** Brand management and brand image building the making of a brand.

**4** Branding strategies

**UNIT-III 5** Promotion and Distribution- Role of promotion, methods of promotion, Advertising, Sales promotion, personal selling, designing and management of different methods of promotion and their employment-in relation to cost effectiveness and product life cycle, different channels of distribution-selection and management

**UNIT-IV 6** Designing of retail outlets.

**7** Store layout and design. Front design, Interior design, Lighting design.

- 8 Elements of store environment ,Allocating space ,circulation.
- 9 Pricing-principles and methods pricing in relation to product type, product life cycle distribution outlets.
- UNIT-V** 10. Domestic vs. Export market-principles of marketing and merchandising for the domestic and export market, channels of distribution.
11. Visual merchandising
12. Types of Displays- window displays, interior displays.
13. elements of displays

## PRACTICAL - II

### APPAREL DESIGNING ITS-CONSTRUCTION AND HISTORIC COSTUMES

**Max. Marks: 100**

#### Distribution of Marks:

Sessional	-	20
Viva	-	20
Two practical	-	30 each

- 1 Development of paper pattern and construction of garments: using chocks, stripes, unidirectional and novelty fabrics.
- 2 Designing through draping
- 3 Basic draping principles and techniques.
- 4 Developing a pattern.
- 5 Designing, Drafting and Construction of skirts.
- 6 A line, flared, circular, pleated, yoked with godet.
- 7 Pockets, plackets seams, pleats, Tucks, Bows etc.
- 8 Plackets - Centre button closing
- 9 A symmetrical closing
10. Double breasted.
11. Garments- Drafting and construction of different types of blouses.
  - Choli Cut blouse.
  - Belt Blouse.
  - Plain Blouse.
12. Drafting of Salwar and Kammez with design.
  - Semi fitted Kurta.
  - A line kurta.
  - Paneled kurta.
  - Lucknowi Kalidar Kurta.
  - Flared Kurta.
13. Salwar and its different kinds.
  - Churidar.
14. Preparing samples of traditional embroidery of different states.
15. Preparing samples of novelty embroidery stitches.

## OPTIONAL

### (IN PLACE OF PRACTICAL)

Max. Marks	-	100
External	-	50 %
Internal	-	50 %

**Project work:** Current trends in textile and clothing