

Deen Dayal Upadhyay Gorakhpur University

Gorakhpur

Home Science

Syllabus for M.Sc. Foods and Nutrition

M.Sc. Previous Year		Max. Marks	Min. Marks
Paper I	Research Methodology	50	17
Paper II	Applied Physiology	50	17
Paper III	Nutritional Biochemistry	50	17
Paper IV	Food Science and Preservation	50	17
Paper V	Maternal and Child Nutrition	50	17
Paper VI	Clinical and Therapeutic Nutrition	50	17
Total		300	102
Group A	Practical	75	25
Group B	Practical	75	25
Total		150	50

Paper I

RESEARCH METHODOLOGY

1. Science and scientific methods
2. **Research -**
Definition and scope in home science.
3. **Type of Research -**
Historical, Survey, Experimental and Case study.
4. **Definition and identification and identification of a research problem -**
Selection of problem, theory, hypothesis, basic assumptions and the limitations of the problem.
5. **Basic principles of research designing -**
Purpose of research design, modals of research design.
6. **Data collection tools -**
Questionnaires, interviews, observation sealing method, reliability and validity of measuring instruments.
7. **Sampling -**
Type of samples, selection of sample benefits of sampling, evaluating a simple.
8. **Analysis of the data -**
Categorization, coding, tabulation and statistical testing.
9. Presentation and interpretation of the General guidelines for presenting data. Tables, graphs and Illustrations.
10. **Conclusion and recommendations -**
Summary techniques. Conclusions and recommendations.

11. Report Writing -

Presentation of report-format, footnotes, bibliographical citations-

- a). Preparation of an abstract
- b). Paper for publication

Practicals -

Based on above topic.

References -

1. Good, C. V. and Carter D. E., method of research, Educational, Psychological, Sociological Applications, century crafts, New York, 1954.
2. Best, J. W., Research in Education, Prentice Hall New Delhi, 1983.
3. Doby, J. T. An Introduction to social Research, Appleton Century Crafts, 1967.
4. Kerlinger foundations of behavioral Research, New York, Holt Rinehart and Winston Inc., 1966.
5. Philips, B.S., Social Research strategy and tactics Mac Millan, 1977.
6. Yong, P. V. and Schmid, C. F. Scientific Social Survey and research. Prentice Hall, New Delhi, 1968.
7. Davdas, R. P. and Kulandaivel. K., Hand book of Research methodology. Sri Ramakrishna Mission Vidyalaya, 1971.

Paper II

APPLIED PHYSIOLOGY

1. Cell structure and function -

General cell structure. Structure and functions of the organelles, cell membrane.
Review of structure and function of tissue, organs and systems.

2. Nervous System -

Review of structure and function of neuron, nerve, conduction of nerve impulse, synapse, and neurotransmitters.

- a). General organization of the nervous system, protection structure and function of brain and spinal cord. Cerebrospinal fluid.
- b). Structure, function and role of sensory organs (skin, eyes, ears, nose and tongue) in perception of stimuli.

3. Endocrine System

Review of structure and function of endocrine glands.

Mechanism of hormonal action. Control of hormonal secretion.

Function and different syndromes resulting from hypo and hyper secretion of Endocrine gland.

Mainly pituitary, adrenal, thyroid, ovary, testes, Pancreas, parathyroid.

4. Digestive system

Review of structure of gastrointestinal tract and accessory organs. Secretory, Digestive and absorptive function of GIT. Role of Liver, Pancreas and gall bladder and their dysfunction. Hormones of GIT. Mechanism of absorption of carbohydrates, Proteins and fats.

5. Respiratory System

Review of structure and function. Physiology of respiration. Exchange of gases and transport through bloo. Role of hemoglobin and buffer system. Pulmonary volume. Pulmonary Capacities.

6. Circulatory System

Structure and function of Heart, Blood vessels.

Blood - Characteristics, Composition, Structure, function and life span of components. Blood clotting. Blood groups. Homeostatic. Erythropoiesis, Blood Pressure.

7. Excretory System

Structure and function of nephron. Anatomy and function of Kidney.

Urine formation. Electrolyte and acid base balance.

8. Immune System

Cell mediated and humeral immunity. Antibody formation.

9. Musculo Skeletal System

Structure and function of bone, cartilage and connective tissue.

Types of muscles, structure and function.

10. Reproduction

Male and female organs of reproduction. Spermatogenesis, Mensural Cycle.

Pregnancy, Parturition. Menopause, Mammary glands and location.

Practicals :

Based on above topics.

References :

1. Kale, C. A. and Nail, E. Samson Wright's Applied Physiology, Oxford University press, 1994.
2. Griffins, M. Introduction to Human Physiology, Mac Millan and Co. 1974.
3. Green, J. H. An introduction to human physiology, Oxfords University Press 1972.
4. Best C. H. and Taylor N. B. the living body, Asia publishing House, 1975.

Paper III
NUTRITIONAL BIOCHEMISTRY

1. Metabolism -

- a). Structure and physiological significance of carbohydrates and its metabolism.
- b). Structure, function and physiological significance of lipids, steroid Saponification. Metabolism of lipids.
- c). Metabolism of Proteins and Amino Acids Biosynthesis of Nutritionally non essential Amino Acids. Catabolism of Proteins and Amino Acid nitrogen. Catabolism of carbon skeleton of Amino Acids.

2. Enzymes -

General properties mode of action enzyme kinetics and regulation of enzyme activity.

3. Hormones -

Mechanism of action of hormones Hormonal imbalances and hormone therapy.

4. Nucleic Acids -

Structure and function of Nucleic Acids DNA Organization, replication and repair. Type of RNA and their synthesis. Synthesis of Proteins and Genetic Code. Regulation of Gene Expression. Recombinant DNA technology and its application in human welfare.

5. Biochemistry of Extra cellular and Tetra cellular communication Biomembranes structure and function.

6. Metabolic Disorders -

- a). Diabetes.
- b). Disorders of lipid metabolisms
- c). Metabolic disorders of alcohols.
- d). Major Minerals and Vitamins deficiencies Disorders
- e). Allergy.

Practicals -

- 1. Estimation of Glucose in Blood.
- 2. Estimation of protein in food Stuffs.
- 3. Estimation of ascorbic acid in foods.
- 4. Estimation of moisture in foods.
- 5. Estimation of fiber in foods.
- 6. Estimation of ash in foods.
- 7. Effect of amylase on starch.

References -

- 1. Lehninger, A. L. *Biochemistry*, Worth Publishers, Inc. 1975.
- 2. Mazur, A. and Harrow, B. *Text book of Biochemistry*, W. B. Saunders. Co., 1971.
- 3. Mahler, H. R. and Cordes, E. H. *Biological Chemistry*, Harper and Row and John Weather Hill Inc. 1969.
- 4. Martin, D. W., Mayes, P. A. and Rodwell, V. W. *Harper's Review of Biochemistry*, Lange Medical Publication, 1981.

Paper IV
FOOD SCIENCE AND PRESERVATION

1. Physical and physiochemical changes in foods -

Colloids and their properties, gelatinization, gel formation emulsions, foams, denaturation of proteins solo and gels, browning reactions enzymatic and non enzymatic, crystallization.

2. Carbohydrate Cookery -

I. Sugar cookery -

Properties of sugar, stages of Sugar cookery manufacturing process of sugar, sugar products, storage and care sweeteners.

II. Starch cookery -

Structure and composition of cereals, structure of starch, gelatinization and factors affecting it, flours and flour Qualities (especially baking), bread making, leavening agents. Breakfast puffed and flaked cereals, batter and dough.

3. Protein cookery -

I. Milk and milk products :

Composition, Physical and chemical properties of milk, pasteurization, Homogenization, Sterilization. Coagulation of milk protein. Dairy product butter, yogurt, cheese, concentrated and dried products.

II. Meat and Poultry :

Structure and composition. Postmortem changes. Processing and preservation, methods of cooking meat, Tenderizers.

III. Eggs :

Structure and composition, selection and grading of egg. Coagulation of egg protein. Functional properties of eggs. Use in cookery.

IV. Fish :

Types and composition, storage, changes during processing.

V. Pulses and legumes :

Structure and composition. Methods of cooking and processing

Toxic constituents.

4. Fruits and Vegetables -

Structure and Composition pigments, plant acids, enzymes flavor constituents.

Texture, pctic substances effect of storage, processing and preservation.

References -

1. Meyer's I. H. Food chemistry, Van Nostrand, Reinhold Co. 1969.
2. Amerine, M. A. Panborn, R. N. and Rossler, E. B. Principles of Sensory Evaluation of Food Academic Press 1965.
3. Pecklam, G. G. Formation food Preparation. The MacMillan Co. 1969.
4. Fox. B. A. and Camoron, A. G. Food Science and chemical Approach, University of London, 1970.
5. Derrosier, N. W., the Technology of Food Preservation, Avis Public, Co. 1976.

Paper V

MATERNAL AND CHILD NUTRITION

1. Current nutrition and health status of women and children in India.
2. Importance of maternal Nutrition.
Importance of nutrition prior to and during pregnancy. Effect of under nutrition mother child health and foetal growth and development.
3. Complications of pregnancy and management and importance of antenatal care.
4. **Nutrition in lactation -**
Physiological and psychological implication of lactation, impact of nutrition on efficiency of milk production, nutrient and food requirement during lactation, impact of lactation on the growth, development and health of infants.
5. **Nutrition in infancy -**
Role of nutrition on health and growth of infant, breast feeding human milk composition and its importance bottle feeding and preparation of bottle feed. Factors affecting breast feeding problems related to breast feeding. Supplementary feeds and feeding management.
6. **Malnutrition in mother and children -**
Etiology and management.
7. Policies and programmes for promoting maternal and child nutrition and health.

Practicals -

Based on above topic

References -

1. Williams, W. V. Nutrition in pregnancy and lactation. C. V. Mosley and Co. 1977.
2. Mc Laren, D. S. Nutrition and its disorders. Churchill Living Stone Medical Text Books, 1981.
3. Shanti Ghosh. The feeding and care of infants and young children. Voluntary Health Association of India.
4. Jelliffe, D. B. Assessment of the Nutritional status of the community WHO, Geneva, 1966.

Paper VI

CLINICAL AND THERAPEUTIC NUTRITION

1. Assessment of nutritional status patients, assessment of patient needs based on interpretation of patient data - Clinical, biochemical personal etc. Factors in patients case.
2. **Diet Nutrients and drug Interaction -**
 - Effect of drugs on ingestion, digestion, absorption and metabolism of nutrients.
 - Effect of food nutrients and nutritional status on drug dosage and efficiency.
3. Dietary Counseling Therapeutic adaptation of normal diet, progressive diets - Regular, soft and liquid, special feeding methods.
4. Risk factors prevalence, etiology clinical manifestations, dietary management and recent advances in the management of following.
 - Weight imbalance (underweight and overweight)
 - Cardio Vascular disorders.
 - Diabities mellitus and other metabolic disorders (gout)
 - Gastro Intestinal Disorders
 - Liver, Gall Bladder and pancreatic disorders
 - Renal Disorders
 - Cancer
 - Infection and Allergies
 - Musculo-Skeletal disorders (arthritis, osteoporosis)
 - Burns
5. Role of Dietitian.
6. Nutritional requirement and dietary management of following age group - adolescent, adult and old age.

Practicals -

1. Planning and preparation of normal diet.
2. Planning and preparation of recipes for soft/semi-solid diet.
3. Planning and preparation of low fat and low calorie.
4. Planning and preparation of high fibre recipes.
5. Planning and preparation of low fibre and low residue recipes.
6. Planning and preparation of bland diet recipes.
7. Planning and preparation of high protein diets.
8. Planning and preparation of low protein diets.
9. Marketing survey of commercial nutrition supplements and nutritional support substrates.
10. Preparation of diet counseling aids for common disorders.

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Home Science

Syllabus for M.Sc. Clothing and Textile

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Paper I	Research Methodology	50	17
Paper II	Historic Costumes, Sociological & Psychological Aspects of Clothing	50	17
Paper III	Fiber Science	50	17
Paper IV	Textile Economics	50	17
Paper V	Advanced Textile Chemistry	50	17
Paper VI	Dyeing and Printing	50	17
Total		300	102
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Paper I

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Type of samples, selection of sample benefits of sampling, evaluating a simple.
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- a). Preparation of an abstract
- b). Paper for publication

Practicals -

Based on above topic.

References -

1. Good, C. V. and Carter D. E., method of research, Educational, Psychological, Sociological Applications, century crafts, New York, 1954.
2. Best, J. W., Research in Education, Prentice Hall New Delhi, 1983.
3. Doby, J. T. An Introduction to social Research, Appleton Century Crafts, 1967.
4. Kerlinger foundations of behavioral Research, New York, Holt Rinehart and Winston Inc., 1966.
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6. Yong, P. V. and Schmid, C. F. Scientific Social Survey and research. Prentice Hall, New Delhi, 1968.
7. Davdas, R. P. and Kulandaivel. K., Hand book of Research methodology. Sri Ramakrishna Mission Vidyalaya, 1971.

Paper II
HISTORIC COSTUMES AND SOCIOLOGICAL AND
PSYCHOLOGICAL ASPECTS OF CLOTHING

1.
 - i). Origin of Clothing.
 - ii). Theories of Clothing :
Theory of modesty, immodesty, protection, adornment, combined need theory, other theories (in fashion).
 - iii). Role of Clothing in psychological and personality development of human being's self-concept, personality expressed through clothing.
 - iv). Clothing symbolism, folkways, customs, mores & laws, group & individual values, influence of colour on clothing.
 - v). Social importance of clothing, How society affects clothing choice.

2. **Costume in ancient civilization :**
Factors that influenced clothing design. Emphasis on fabric, garment features, garment structure, use of colour, decoration and accessories including head and footwear.
 - a). Egyptian b). Greek c). Roman
 - d). Babylonia e). Assyria

3. Medieval costumes of court, upper class and peasants during 12th & 15th Century A. D.
 - a). French b). Italian c). English

4. **Indian Costumes**
Historical approach from ancient period to 20th Century Indus valley period, Mauryan period, Sunga Period, Kusan Period, Gupta Period, Mughal Period.

5. Tribal costumes of India, study of Indian sarees of different types of past & present.

Practicals :

Based on above topics.

References :

1. Rosencranz, M.L., Clothing Concept - A social psychological approach, Mac Millan, New York.
2. Graef, J. L. and Storm, J. B., Concepts in clothing, Mc Graw Hill, New York.
3. Harmiet, M. Mc., Jismey, Art and fashion in clothing selection, Iowa state, University Press U.S.A. 1956.
4. Hill House, M. S., Dress selection and design, Mac Millan Co. New York 1963.

Paper III

FIBER SCIENCE

1. Molecular structure of Textile Fibers

- a). Use of X-ray diffraction methods in investigating molecular structure of textile fibers.
- b). Crystalline and amorphous regions in fibers.
- c). Inter molecular forces in crystalline regions.
- d). Effect of side chains on molecular arrangement.

2. Properties of Textile Fibers

- a). Relationship of Fibre structure to physical and chemical properties.
- b). Properties relating to appearance.
- c). **Determinable physical properties :**
Tensile strength, specific gravity, elongation & elastic recovery resilience, Abrasion resistance, Moisture regain, Electrical conductivity. Effect of heat and inflammability, effect of air & sunlight.
- d). **Chemical Properties :**
Effect of Acids, Alkalis, oxidizing and reducing agents, Dyeing Characteristics, sensitivity to microorganisms and insects.
- e). Chemical reactants and their importance in textile industry.

3. Rayon's and Synthetic Fibers :

- a). Comparison of wet, dry and melt spinning methods.
- b). Methods of spinning filaments and staple fibres from viscous solutions of Rayon's, Acetates, polyamides, polyesters, polyolefin's, acrylics and modacrylics, polyurethanes.
- c). Delustering and spin dyeing.
- d). Modified fibers and bicomponent fibers.

4. Blended Fibers :

- a). Importance of Polyesters and Acrylics for use in Blended fibres.
- b). Reasons for manufacture of blended fibers.
- c). Properties of important blends.

5. Scientific basis of scouring and bleaching of textile fibers and fabrics

- a). Use of surface active compounds on scouring of textiles.
- b). Role of soaps and detergents, scouring agents.
- c). Different Bleaching agents used in home and industry, their importance to different textile.
- d). **Chemistry and methods of application of bleaching agents to**
 - i). Cotton ii). Wool iii). Silk
 - iv). Rayons v). Synthetics
- e). Batch and continuous methods of bleaching textiles
- f). **Optical brightening agents -**
 - Chemical nature and methods of application to natural and man made fibers.
 - Advantages and disadvantages

6. Scientific basis of Dyeing and Printing of Textile :

- a). Classification of textile dyes.
- b). Chemistry of dyeing and structure of different classes of dyes.
- c). Suitability of dyes to different textile fibers and their use in dyeing and printing.
- d). Dyeing of hydrophobic fibers.
- e). Dyeing of blended fibers.

7. Textile Finishes :

- a). Choice of finishes for different textile fibers and fabrics.
- b). Mechanical, filling and softening finishes.
- c). **Finishes involving depositions of following chemicals on textiles -**

Cellulose esters and ethers, Synthetic Resins (Internal External)
Delustrants, rubber latex, bonding and laminating.

- d). **finishes involving chemical reactions with textile -**
mercerizing, parchmentising, immunizing, chlorination and permanent setting of wool.
- e). Special purpose finishes -
Flame Retardant, Water Repellant, Antistatic, Stain and Soil Resistance, Moth Proofing.
- f). Finishes applied on worsted fabrics, Pile fabrics, hosiery, lace.
- g). Special effect finishes.

Practicals :

Based on above topics.

References :

1. Clarke, W., An Introduction to Textile Printing, Butter Worth's and Co. Ltd., London, 1974.
2. Green, D. Fabric Printing and Dyeing a practical Handbook, Mac Gibbson and Kee, London, 1972.
3. Trotman, E. R. Dyeing and Chemical Technology of Textile Fibers, Griffin, London, 1979.
4. Storey, J., Manula of Dyes Fabrics Thomas and Hindson, London, 1978.

Paper IV
TEXTILE ECONOMICS

1. Business Environment in India.
2. **Production -**
Objectives - production Function - returns to scale, law of variable proportions,
Input output analysis. Quality control.
3. Production Planning and Control including concepts of quantitative techniques.
4. Importance to Textile Industry in Indian Economy.
5. a). Factors affecting mass consumption goods.
b). **Characteristics of**
 - Highly developed, industrialized countries
 - Countries with open trade policies.
 - Developing countries.
 - Countries with restrictive trade policies.
 - Countries with priority budgeting policies.
 - Countries with economic development plans.c). Shortage and inflation ridden economics of India, the poverty group, stagflation.
6. **Role and place of textile and clothing industry related to -**
 - Gross national product.
 - Monetary policy - rate of exchange.
 - International trade.
 - Domestic consumption.
 - Employment and per capita income.
7. **The textiles and clothing industry -**
 - Cotton, wool, Silk, Rayon's and Synthetics.
 - Handloom
 - Knitwear

- Readymade
- Industrial Textiles

8. Textile and clothing product performance -

Desirable appearance and performance characteristics for

- Outwear, men, women, children, infant.
- Otherwear, undergarment, socks, sleepwear and sportswear.
- Household, table linen, bedding, towels.
- Durable textile goods, upholstery, draperies, floor covering.

Practicals :

Based on above topics.

References :

1. Clarke, W., An Introduction to Textile Printing, Butter Worths and Co. Ltd. London, 1974.
2. Green, D. Fabric Printing and Dyeing a practical Handbook, Mac Gibbson and Kee, London, 1972.
3. Trotman, E. R. Dyeing and Chemical Technology of Textile Fibers, Griffin, London, 1979.
4. Storey, J., Manula of Dyes and Fabrics Thomas and Hindson, London 1978.

Paper V
ADVANCED TEXTILE CHEMISTRY

1. General classification of Textile Fibers :

A review of structure, Chemical and Physical properties of textile fibers, Natural regenerated and synthetic fibers.

2. Textile properties :

Action of heat, light, acid, alkali, oxidizing and reducing agents on the fibers.

3. Sizing materials :

Their properties and specification for use in textile industry.

4. Basic finishes :

Shearing and cropping singeing, scouring, mercerizing, sanforising and belching of different textiles.

5. Fabric finishes :

Starch based finishes, as water proof, wash and wear, water repellent, flame proof.

6. Introduction to textile testing :

- a). Importance to Textile testing.
- b). Definition related to textile testing.

7. Fibre Testing -

- a). Fibre dimension and their measurement.
- b). Measurement of length, Staple length effective length.

8. Yarn testing -

- a). Yarn characteristics and their measurement.
- b). Twist crimp strength.

c). Yarn numbering system-tax, denier, count.

9. Fabric testing -

- a). Fabric count.
- b). Fabric thickness and fabric weight.
- c). Textile strength and tear strength.
- d). Percent moisture content and moisture regain.
- e). Introduction to drivability and abrasion resistance.

Practicals :

Based on above topic.

References :

1. Dulkar Druga 1976, Houshold Textile and Laundry Work, Delhi Atma Ram and Sons.
2. Hoseps Marjory, L., 1981, Introductory Textile Science, New York Holt, Rinchart and Winston.
3. Ling, E. M. 1975, Modern House hold Science, Mills and boom Ltd.
4. Lyle, D. S. 1977, performance of Textile - New York John Wiley and Sons.

Paper VI

DYEING AND PRINTING

1. Preparation of fabric dyeing and printing :

Scouring, bleaching and designing, Reagents used and their mode of application.
Equipment used at cottage and industrial level for yarn, fabric and piece goods.

2. Dyeing :

a). Theories of Dyeing

Colour and chemical constitution.

Chemical Classification of dyes - Dyeing with chemical dyes and pigments, dyeing auxiliaries, Dyeing machines or fibers, yarns for fabric, industrial dyeing practices.

b). Dyeing with dyeing practices.

3. Printing :

a). Methods of Printing -

i). Historical development of printing methods, Printing by blocks, stencil, screen, roller and rotary screen at cottage and industrial level.

ii). Special printing procedures - Polychromatic dyeing, Transfer or sublistatic printing, carpet printing, flock printing, batik, maya printing.

b). Thickening agents and auxiliaries for printing and their suitability to various classes of dyes and different fibers. Preparation of printing pastes for different dyes.

c). Styles of Printing :

Direct style, dyed style, resist or reserve style, discharge style and raised style. Application of different classes of dyes on different fabrics for different styles of printing.

d). Study of styles and methods traditionally used in India.

4. Finishing and after treatment on dyed and printed goods at cottage and industrial level.

5. Testing dyed Material :

Colour fastness properties. Determination and use of gray scales for expression, results.

Practicals :

Based on above topics.

References :

1. Clarke, W., An introduction to Textile Printing, Butter Worths and Co. Ltd. London, 1974.
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Home Science

Syllabus for M.Sc. Extension Education

M.Sc. Previous Year		Max. Marks	Min. Marks
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Paper II	Community Organization and leadership	50	17
Paper III	Rural Sociology	50	17
Paper IV	Communication, Diffusion and Adoption of Innovations	50	17
Paper V	Farm Food Production	50	17
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4. Kerlinger foundations or behavioral Research, New York, Holt Kinchart and Winson Inc., 1966.
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7. Davdas, R. P. and Kulandaivel. K., Hand book of Research methodology. Sri Ramakrishna Mission Vidyalaya, 1971.

Paper II

COMMUNITY ORGANIZATION AND LEADERSHIP

1. Concept :

Meaning and scope of community organization.

Importance of collective action and its need for improving production, improving accessibility to resources & gaining strength.

Principles of community organization.

2. Community Organizer :

Role and qualities of community organizer.

Initiative form with in or outside the community.

3. Community Organizations :

Basic rural institutions – School, Panchayat, Co-operatives.

Voluntary Organizations of people – Mahila Mandals, Youth Clubs, Farmers clubs and others.

Organization of voluntary organizations of people and its utilization in rural development.

4. Skills and Techniques :

Tools, techniques and Skills involved in Community, Organization, skills in co-ordination and public relations

5. Leadership Patterns :

Concept of leadership.

Characteristics and types of leadership – Traditional, Emerging and Farm Leadership.

Theories for Leadership.

Methods of identifying leaders and their training.

Methods of Developing Leadership.

6. Ideology of Community Organization :

Social Dynamics in the village community/Urban slums.

Social structure as basis for social dynamics in operation.

Social justice and equality - empowering the weaker section.

7. Process of Community Organization :

Phases in community organization

Preparatory Phase (approaching the community)

Setting down (specifying activities of organization).

Stabilization (specifying responsibilities)

Identifying the role of individuals in the community.

Practicals :

1. Study of the community organization in the locality.
2. Study of the leadership pattern, especially among women in rural area.
3. Study and suggest the principles of Community organization in a rural/Urban area, where it is required.

References :

1. Ross, M. G. Community Organization, Theory and Principles, Harper and Row, 1955.
2. Dahama, O. P. and Bhatnagar, O. P. Extension and Communication for Development, Oxford and IBII, 1980.
3. Gangrade, K. D. Community Organization in India, Popular Prakashan, 1971.

Journals :

1. Social Change, Council of Social Development, New Delhi.
2. Indian Journal of Extension Education, Indian Society of Extension, Education, New Delhi.

Paper III
RURAL SOCIOLOGY

1. Introduction With Rural Sociology :

Concept of Rural Sociology.

Elements of Rural Sociology.

Origin and Development of Rural Sociology and its importance in Development Programme.

2. Social Stratification (caste-system) in Indian Society :

Differential ranking of groups as superior and interior caste – groups.

Changes that have taken place/expected.

Abolition of untouchability.

Inter caste collaboration, fusion of sub castes.

Impact of reservations.

Social inequalities – extent of opposition or acceptance.

3. Rural Social Institutions in India :

Structure of rural society, family life – as a functional unit, as an association.

Patriarchal rural joint family system.

Racial Element, Status group.

Major religions in India, Marriages.

Rural Act.

4. Dynamics of change :

Concept of change.

Evolutionary and planned changes.

Gender Analysis :

Division of labour.

Access and control of resources.

5. Approaches and Methods of Socio-economic Analysis :

Rapid Rural Appraisal.

Participator Rural Appraisal.

Surveys, case studies, Observation.

Participant Observation.

Practicals :

1. Visit to a neighboring village to Study its social structure.
2. Assessment of social changes that had been taken place in the village -
Conducting a Survey.
3. Study various activities performed by rural women other hand household activities.
4. Categories various income - generating activities in a village.

References :

1. Singh, K. Principles of Sociology, Prakashan Kendra, 1977.
2. Dahama, O. P. and Bhatnagar, O. P. Extension and Communication for Development, Oxford and IBH Publication, 1980.
3. Mag, M. S. Community Development through Extension, Chugh Publication, 1979.
4. Chaturvedi, T. N. (E.d.) Panchayati Raj, IIPA, 1981.

Journals -

1. Kurukshetra, Publication Division, New Delhi.
2. Rural India, Ishwardhas Mannsion Bombay.

Paper IV
COMMUNICATION, DIFFUSION AND ADOPTION OF
INNOVATION

Section A - Communication

1. Communication :

Meaning of Communication, Process of Communication.
Communication Models (At least 5 models).

2. Perception and Learning :

Process of perception, Factors affecting perception.
Learning Process.
Social and Psychological factors in communication.

3. Media of Communication :

Meaning and Classification of Communication Media (Mass, Group, Traditional and interpersonal) their Role, Functions, Advantages and Limitations.
Cone of Experience.
Folk Media of Communication - Significance of various forms of Folk Media, Types of messages included.
Print Media of Communication - Significance, various kinds of print media, types of Messages included and barriers to effective Communication.
Electronic Media - Broadcast media (Radio), Television, Cinema Feedback in Communication.

4. Factors influencing the Communication Process :

Factors affecting.
Barriers to Communication - Social, cultural and Psychological.

Section B - Diffusion and Adoption of Innovations

1. Concept :

Concept of diffusion and adoption.
Models and theories of adoption and diffusion.

2. Innovation :

Meaning and categories on Innovation.

Factors influencing innovations and its adoption.

3. Categories of Adaptors :

Adaptors categories and their characteristics.

Adoption Curve and factors associated with adoption.

Adaptor categories and sources of information categories - wise Personal and social characteristics of adopters and non adopters.

4. Adoption Stages :

Stages of adoption.

Attribute of innovators as related to rate of adoption and sources of information.

5. Role of change Agent :

Role of change agents in adoption and diffusion.

Their characteristics, clientele system and technology.

6. Consequences of Adoption of Innovation :

Consequences of adoption of Innovations, Economics, Social and other Consequences.

Practical -

1. Visit to Radio/TV Stations. Prepare a report.
2. Script writing for Radio.
3. Prepare a script based on a selected folk format on any selected issue and enact it for community audience.
4. Preparation of a folder leaflet.
5. Study of Innovations accepted or rejected by the rural homemakers -analysis of factors associated with adoption or rejection.
6. Prepare one innovative programme after conducting a survey in rural Community/Urban slum Community.

References :

1. Rogers, E. M. and Shoemaker, P. Communication of Innovation - A cross cultural Approach, Free Press, 1971.
2. Powell, L. S. Communication and Learning, Pitman, 1972.
3. Bero, D. K. The process of communication, Holt, Rinchart, 1960.
4. Mc Quail, D. Mass Communication theory - an Introduction, Sage, 1983.

Journals :

1. Indian Journal of Extension Education, Indian Society of Extension Education, New Delhi.
2. Communicator, Institute of mass Communication, New Delhi.
3. Interaction, National Council of Developmental Communication, Karnal.

Paper V

FARM FOOD PRODUCTION

1. Introduction :

The Scope of Farm Production and its significance in increasing family resources.

2. Pattern of Cropping :

Types of soils, irrigation and drainage methods.

Cultivation of major food crops – cereals and pulses.

Manures and fertilizers.

Pests and Diseases of major crop their control measures.

3. Fruits and Vegetables Crops :

Soil and climatic requirements for the production of vegetable crops.

Preparation of nursery beds, seeds and sowing.

General Methods of propagation of fruits and vegetable plants – cutting, layering, budding fruit growing.

Cultivation of various vegetables, maintenance, harvesting handling, grading and marketing.

Inter – cropping

Seeds : Testing and storage.

Improvement of vegetable crops.

4. Dairying and Poultry :

Improvement of dairying, breeds, principles of feeding and management of cattle's.

Sanitary handling of milk production and distribution, milk products.

General characteristics of poultry.

Importance of breeds of poultry and their maintenance.

Management of small poultry units for egg and meat.

Testing, storage and preservation of eggs.

Practicals :

1. Preparing a layout for kitchen garden.
2. Preparation of nursery beds methods of sowing.
3. Manures and fertilizers and their application.
4. Cultivation of important winter vegetables –sowing, transplanting, maintenance, harvesting and grading.
5. Seed testing and storage.
6. Visits to dairy units and poultries in the locality.
7. Testing and storage of eggs.

References :

1. manorial, C. B. Agricultural problems of India, Kitab Mahal, 1982.
2. Choudhary, B. Vegetables, National Book Trust.
3. Shenai, P. V. Agricultural Development in India, (A new Strategy in Management), Vikas.
4. Singh, R. A. Poultry Production, Kalyani Publishers.

Periodical :

1. Indian Farming, Indian Council of Agricultural Research, New Delhi.

Paper VI

WOMEN ENTREPRENEURSHIP DEVELOPMENT

1. Women Entrepreneurs -

As overview stages an process; women as en Entrepreneurs in micro and small enterprise management.

2. Govt. Policies and women entrepreneurs; SSI and women entrepreneurs.

3. Analysis of case studies of women's economic organizations such as SEWA, Grameen Bank; Women's World Banking, Women's Financial Corporation.

4. Identification of viable micro-enterprise; feasibility study; survey of input supply and marketing channels with special attention on women's enterprise in formal and informal rural production system and home based production.

5. Quality control of the product.

6. Identification of various rural - urban sources to finance agro based micro and small enterprise of women.

7. Fundamentals of accounting; calculating cost of production, profit margins and net returns and marketing channels.

8. Basic Principles of Procuring and managing capital, task and responsibilities of using borrowed capital.

Practicals :

1. Planning and implementing a feasibility study for starting a micro-enterprise in rural/urban enterprise.

2. a). identification of feasible input supply and marketing channels to promote a rural women's agro-based micro enterprise/home-based commercial enterprise in a nearby city.
b). Calculation of product price profit.
3. Management of a production centre/co-operative for gaining practical experience in all aspects of managing a micro enterprise.

References :

1. Patel, V. G. 1986. A Bank for New Entrepreneurs; Entrepreneurship Development Institute of India, Ahmedabad.
2. Jain, R. 1984, Planning a small scale Industry : a Guide to Entrepreneur, S. S. Book Associates.
3. Desai, V. 1991, Entrepreneurial Development, Vol. I, II and III, Himalaya Publication, Bombay.
4. Pareek, U. and Rao, T. V. 1978. Development, Entrepreneurship; A Hand Book, Learning systems.
5. Mishra, D. N. 1990, Entrepreneur, Entrepreneurship Development and Planning. Chug Publishers, Allahabad.
6. Chandra, Shanta Kohli, 1991, Development of Women Entrepreneurship in India, Mittal Publishers New Delhi.
7. Gupta, Ramavtra 1992, Industrial Entrepreneurship, Print well, Jaipur.
8. G. Anjaneya Swamy 1988. Agricultural Entrepreneurship in India Chug Pub. Allahabad.
9. Jain, G. R. and Ansari, A. M. 1988. Self - made Making Entrepreneurs. Entrepreneurship Dev. Institute of India, Ahemaedabad.
10. Rajagopal 1990, Agri-business and Entrepreneurhsip, Anmol.
11. Gupta, M. C. 1987. Entrepreneurship in small scale Industries Anmol pub.

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HOME SCIENCE

Syllabus for M.Sc. Foods and Nutrition

M.Sc. Final Year		Max. Marks	Min. Marks
Paper I	Statistics	50	17
Paper II	Food Microbiology	50	17
Paper III	Community Nutrition	50	17
Paper IV	Advanced Nutrition	50	17
Paper V	Institutional Management	50	17
Paper VI	Seminar and Dissertation	50	17
Total		300	102
Group A	Practical	75	25
Group B	Practical	75	25
Total		150	50

Paper I

STATISTICS

1. Meaning and scope of statistics. Role of statistics in research.
2. Descriptive statistics. Classification, tabulation, frequency, distribution diagrammatic and graphics representation of data.
3. Measures of Central tendency and dispersion (absolute and relative) skewness and kurtosis.
4. Probability Definition, concept of discrete probability distribution, use of normal probability tables.
5. Elements of sample survey. Method of simple random sampling and stratified sampling.
6. Elements of testing of a statistical hypothesis.
Formulation of the problem. Definition of type 1 and type 2 errors. Level of significance. Large sample test for proportions. Difference in proportions for means and difference in mean.
7. Application of student's t-test for small sample for single mean, difference in mean. F. test for equality of variance.
8. Correlation, coefficient of correlation and its interpretation, rank correlation regression equation and predictions.
9. Non-parametric tests, application of chi-square test. Goodness of fit, independence of attributes 2×2 and $R \times C$ contingency tables.

Practicals :

1. Based on above Topics.

References :

1. D.N. Elhance, Fundamental of Statistics
2. Basic statistics by B.L. Agrawal
3. Mathematical statistics of Kapoor and Sexena
4. Agriculture statistics by Singh and Verma
5. Higher Algebra Hall and Knight

Paper II
FOOD MICROBIOLOGY

1. **Food spoilage** - Causes, Microbial growth in foods, factors affecting the growth of micro - organisms in food.
2. **Contamination and micro organism in spoilage of different kinds of foods** - Cereals and cereal products, vegetables and fruits, fish and sea foods, milk and milk products, eggs, meat and meat products, canned and bottled food.
3. **Contamination of water** - Micro organisms in contaminated water, test for contamination, standards for drinking water.
4. **Food borne disease** - sources, symptoms and methods of prevention and control.
5. **Food hygiene** - Sources of contamination of food, cleaning and sanitation in food processing in home and industry. Food plant sanitation, hygienic handling, Processing packaging and service of food.
6. Food safety and quality control.
7. Beneficial Microorganisms - Sources, characteristics biochemical activities and their use in food products.

Practicals -

1. Preparation of culture medium
2. Study of growth of micro organisms in food.
3. Staining of bacteria : Gram staining, staining of yeast and bacteria.
4. Microbiological analysis of fruits and vegetables meat, cereals and canned foods.
5. Microbiological analysis of water, milk and curd.
6. Assessment of surface sanitation and hygiene of food preparation units.

7. Visit to food processing unit or any other organization dealing with advanced methods in food microbiology.
8. Study on beneficial microorganisms and their use.

References -

1. Frazier, We Food Microbiology, Tata Mc. Graw Hill, 1978.
2. Jay .J.N Modern Food Microbiology, Van Nostrand Reinhold Co. 1978.
3. Microbiological Quality Control. Assoc. of Food Scientists and Technologists. Bombay Chapter, UDCT Bombay 1982.

Paper III
COMMUNITY NUTRITION

1. Introduction to concept of community, rural and urban communities, Community health, Community nutrition and society.
2. **Impact of the following factors on food consumption and nutritional status of the community :** Agricultural production storage and distribution, socio-cultural economic, science and technology and food toxin.
3. **Nutritional assessment and methods of identification of nutritional problems :**
 - 1) Techniques of Dietary surveys, limitation and interpretation data.
 - 2) Anthropometric, clinical and biochemical assessment.
4. **Nutrition education :**
 - 1). Meaning of nutrition education and its importance.
 - 2). Organization of nutrition education programmes for the community, problems encountered in organizing a program and how to solve them.
 - 3). Evaluation and follow up.
5. **Prevalence of Malnutrition in India :**

Ecology of Malnutrition Environmental and socio-economic factors, resources of the family, family size and composition, dietary practices, food habits, food consumption patterns, customs prejudices, ignorance, food losses nutrition and infection. Incidence of nutritional problems in infancy, pre-school children, adolescent, pregnant and lactating mothers and aged person.
6. **Other major nutritional problem :**

Etiology, symptoms, measures to control anemia, iodine deficiency, Beri-Beri, Cheilosis, Scurvy rickets, Osteomalacia and osteoporosis.

7. **Measures to overcome malnutrition :**
Application of basic principles of improved dietary practices. Need for an integrated approach. The package programme of health care delivery, nutrition and parent education and parent education.
8. National and international organizations and voluntary agencies working for eradication of malnutrition.

Practicals -

1. Nutritional assessment through various parameters.
2. Visits to different communities both rural and urban to study the dietary practices and nutritional status of Communities.
3. Conducting food and nutrition surveys on selected age groups.
4. Planning, conducting and evaluating nutrition education programmes.

References -

1. Mayer, J. Human Nutrition, Charles, C. Thomas, Spring Field, 1973.
2. Ritchie, J.A.S, Learning better Nutrition, FAO 1967.
3. King, M.H., King F.M.A., Morley, D.C. Burgess, A.P., Nutrition for Developing countries. Oxford University Press, 1972.
4. Park, J.E. and Park, K. Text book of Preventive and Social medicine. Banarshi Das Bhanot publisher, Jabalpur 1977.

Paper IV
ADVANCED NUTRITION

1. Energy contents of foods, physiological fuel value, measurement of energy expenditure by direct and indirect calorimeter, basal metabolism, B.M.R and its measurement, estimating energy requirements of individuals, regulations of energy balance.
2. Concept of body composition, calculation of body density, calculation of body water and body fat from body density. Concept of body cell mass, lean body weight and fat free body.
3. Water and electrolyte balance.
4. Nutrition, immunity and infection :
Primary and secondary lymphoid organs, cell mediated and humeral immunity, mechanism of interaction, agent, host and environmental pattern in disease occurrence. Primary and secondary infection.
5. Evaluation of protein quality, Biological value, Net protein Utilization, protein efficiency ratio, NDP-calorie present.
6. Regulation of food intake, Hunger and appetite, gastrointestinal factors in regulation, Role of hypothalamus, glucose utilization in body and fat stored in body as regulators of food intake.
7. Metabolic interrelationship between nutrients, Concept of nutritional interrelationship. Protein energy, carbohydrate fat, Niacin Tryptophan etc. Effect of carbohydrates, fat, protein and vitamin requirement. Effects of protein quality and quantity on Protein Utilization.
8. Nutritional management in special conditions.

Practical -

1. Estimation of protein Quality using different methods PER, BV N.P.V, NDP - Calorie percent.
2. Estimation of energy value of foodstuffs using bomb calorimeter
3. Estimation of energy requirement - BMR.

References -

1. Draper, H.H., Advances in Nutritional Research, Plenum Press, 1982.
2. National Academy of Sciences - National Research Council. Evaluation of Protein quality, Publication 1100, 1963.
3. Pike, R.L. and Brown, M. C., Nutrition an integrated approach, wiley Eastern.
4. Chandra R.K and Newberne, P.M., Nutrition, immunity and Infection. plenum press, 1982.

Paper V
INSTITUTIONAL MANAGEMENT

1. Introduction to Food service Institutions. Development of Food Service Institutions in India, characteristics of food service establishments.
2. **Approaches to Management -**
Theories of management, aspects of management, management tools.
3. **Personnel Management -**
Recruitment, selection and induction, recruitment, employee benefits. Training and development. Human relations, trade union Negotiation and Settlement.
4. **Cost and Management Accounting -**
Definition and scope, costs and their control management accounting, profit planning.
5. **Material management -**
Menu planning, planning at the material need, Methods of selection, storage, quantity food production, services and modes of delivery.
6. **Kitchen lay out and Equipment -**
Steps in planning and layouts. Determining equipment selection and placement, maintenance o equipment, layout analysis.
7. **Food Services -**
Service areas, methods and styles, table setting, food presentation cleaning and winding up, customer relations.
8. Food Services management.

Practicals -

1. Market survey and analysis of processed and finished products.
2. Lay out analysis of institutional kitchens.
3. Cost analysis of menus in

College Canteen

Hostel Mess.

Hospital

4. Planning means for quantity cooking.
5. Analysis of food safety and hygiene in different food institutions.
6. Running a snacks and beverage service for about 1½ – two months (for about 30 people).

References –

1. West, B.B Wood 1, Harger, V. F and Shugari G.S Food Service in Institutions, John Wiley and sons. 1977.
2. A modern Guide to Food Service Equipment, C.B.I. Publishing Inc. 1980.
3. John D.L. Hotel Accounting, John Wiley & Sons 1978.
4. Kiton and Caesarani, The theory of Catering Butler of Tanner, 1974.

References –

1. Antia, F.P., Clinical Dietetics Nutrition, Oxford University press, 1973.
2. Robinshon, C.H. Normal and Therapeutic Nutrition, Mc Millan Co. 1982.
3. Mayer, J. Human Nutrition, Charles and Thomas, 1973.
4. West, B. B. Wood I, Harger, V. F. and Shugari G. S. Food Service in Institutions, John Wiley and sons, 1977.
5. A modern Guide to Food Service Equipment, C.B.I. Publishing Inc. 1980.
6. John, D. L. Hotel Accounting, John Wiley & Sons 1978.
7. Kinton and Caesarani, The theory of Catering Butler of Tanner, 1974.
8. Doby, J. T. An Introductions to social Research, Appleton Century crafts. 1967.
9. Kerlinger foundations or behavioral Research, New York, Holt Kinchart and Winson Inc., 1966.
10. Philips, B.S., Social Research strategy and tactics MacMillan, 1977.
11. Young, P. V. and Schmid, C. F. Scientific Social Survey and research, Prentice Hall, New Delhi, 1968.
12. Devdas, R. P. and Kulandaivel, K., Hand book of Research Methodology, SriRamakrishna Mission Vidyalaya, 1971.

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HOME SCIENCE

Syllabus for M.Sc. (Clothing & Textiles)

M.Sc. Final Year		Max. Marks	Min. Marks
Paper I	Statistics	50	17
Paper II	Commercial Pattern Development	50	17
Paper III	Advance Apparel Design	50	17
Paper IV	Textile Design	50	17
Paper V	Advanced Laundry Science	50	17
Paper VI	Seminar and Dissertation	50	17
Total		300	102
Group A	Practical	75	25
Group B	Practical	75	25
Total		150	50

Paper I

STATISTICS

1. Meaning and scope of statistics. Role of statistics in research.
2. Descriptive statistics. Classification, tabulation, frequency, distribution diagrammatic and graphics representation of data.
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10. Application of student's t-test for small sample for single mean, difference in mean. F. test for equality of variance.
11. Correlation, coefficient of correlation and its interpretation, rank correlation regression equation and predictions.
12. Non-parametric tests, application of chi-square test. Goodness of fit, independence of attributes 2 X 2 and R X C contingency tables.

Practicals :

1. Based on above Topics.

References :

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2. Basic statistics by B.L. Agrawal
3. Mathematical statistics of Kapoor and Sexena
4. Agriculture statistics by Singh and Verma
5. Higher Algebra Hall and Knight

Paper II

COMMERCIAL PATTERN DEVELOPMENT

1. Categories of patterns - Body types and measurements, infants, toddlers, children pre-teen, junior, misses, women, half-size.
2. Procedure for grading block to various sizes.
3. **Pattern Making -**
 - a). Essential symbols & terms, piece identification, grain line, notches, darts, center front, center back, fold line, long lengthen/shorten.
 - b). Helpful markings, cutting line, stitching line, stitching direction, ease, gathers, pleats, tucks, hem width, edge-finishes, clip, lap line.
4. **Pattern Envelop**
 - a). Basic Format
Envelop front - Information, illustrations & different views.
Envelop back - Information, pattern representation.
 - b). Consumer Decision Information
Garment description - Fabric types, suggestions.
Pattern replica - Notions required.
Standard body measurements - special notations fabric requirements.
5. **The pattern guide sheet**
 - a). Standard instructions steps in preparing to use pattern instructions for pattern placement, transfer of markings, general construction recommendations, pressing information.
 - b). Fabric & pattern layout diagrams -
 - (i) Various fabric widths - Coordinated with sizes of patterns.
 - (ii) Fabrics with nap, one way designs, non woven.
 - c). Construction steps, statement of procedure, illustration of procedure.

6. Catalogue & promotional material, composition of catalogue, catalogue layout, catalogue updating, accompanying promotional material, fashion sheets, salient features, posters, display items.
7. Preparation of Portfolio
 - Grading standard size block to different size.
 - Comparing commercial patterns from U.S. & Europe.
 - Preparing 2 patterns with complete sets of markings.
 - Designing & preparing pattern envelope information front & back.
 - Preparing 5 different pattern layouts for 4 different fabric widths.
 - Completing 1 page modle for pattern catalogue.
 - Completing 1 accompanying pattern promotional item.

Practical -

Based on above topics.

Reference -

1. Cookiline, Gerry, Pattern of grading for children's Cloth, The technology of sizing, black well, Science, Oxford 19991.
2. Lockward, Gillan, 1970, Making cloth for young children, London, Studio vista.
3. Natali, Bray, Dress Fitting, Crosby lockwood Staples, Granada, Publishing New York 1978.

Paper III
ADVANCE APPAREL DESIGN

1. **Role of a designer in garment industry.**
 - a). **Interpreting Themes**
 - (i) Fabric – Silhouette, hand, texture and scale of design.
 - (ii) Details – Opening, necklines, buttons etc.
 - b). Coordination of design and fabric silhouette, basic structural feature; details and design features utilization.
 - c). Developing fashion lines
 - (i) Scope of lines
 - (ii) Line Portfolio
 - d). Garment Design and cost of production
 - (i) Relationship of raw materials to unit cost.
 - (ii) Relationship of time and labour to unit cost.
 - (iii) Apparel of unusual designs -
Positive & Negative aspects.
2. **Fashion and its role in garment industry.**
 - a). Fashion concepts, fashion cycle, psychology of fashion, factors determining fashion trends, changes. Futuristic trends in fashion, their anticipation & implementation.
 - b). Couture Today – French, Italian, American, Japanese.
3. **Flat pattern Design**
 - a). Half scale designs & patterns.
 - (i). Tailored dresses
 - (ii). Emphasis on decorative details, bindings, pockets, collars.
 - (iii). Formal wear
 - b). Layouts & fabric requirement estimates.

4. Design through Draping

- a). Basic draping principles and techniques.
 - (i). Blouse design – basic & variations sleeves, necklines & collars.
 - (ii). Skirt Designs
- b). Developing Designs
 - (i). Special Design
 - (ii). Disproportionate figure
 - (iii). Silhouette emphasis
- c). Problems in draping.

Practical –

Based on above topics.

Reference –

1. Zarakar, K.R. Zarakar System of cutting, Bombay.
2. Thompson and Res, 1949, Clothing for children, John Wiley & sons New York.
3. Tata and Grissom, Family Clothing.
4. Tanous, Helen nichol, Designing Dress pattern, 1991, I number is, Chas A. Bennitto.

Paper IV

TEXTILE DESIGN

1. **Design Analysis**
 - a). Principles of Design - Harmony, Balance, proportion, Rhythm & Emphasis.
 - b). Elements of Design - Line & form, colour & texture.

2. **Basic sketching & painting sources : Fauna & Flora**
 - a). nature
 - b). Architecture
 - c). Traditional Arts & Crafts
 - d). Religions & Mythology

3. **Process of designing -**
 - a). Motif Development - Geometrical, simplified, naturalized, stylized and abstract.
 - b). Growth of Motif - Enlarging and reducing motifs.
 - c). Colour application - Colour harmonies and colour ways.
 - d). Placement and repeats.
 - e). Types of patterns - Central line, continuous, flowing geometrical, abstract, decorative with fruit, flowers, foliage and with birds, animals & fruits etc.

4. **Design Application -**
 - a). Design suitability for different fabrics & for specific articles of clothing and household use.
 - b). Media of application.

5. Preparation of Portfolio.

Practical -

Based on above topics.

Reference -

1. Bava. A (1974), Tailoring Me Graw Hill.
2. Bave, A. 1979, Flat pattern Design, Me Graw hill.
3. Bray Nathalie, 1978, Dress Pattern Designing, London, Crosby lockwood & Staples.

Paper V
ADVANCED LAUNDRY SCIENCE

1. Introducing

- a). Classification and introduction to laundry process -
 - (i) Wet and
 - (ii) Dry cleaning
- b). Materials and equipment in Laundry.

2. Water -

Hard and Soft water - Temporary and permanent hard water. Problems caused by hard water. Methods of softening water.

3. Soaps and detergents -

Definition, Chemical Moisture, Manufacture, Properties and their cleansing action.

4. Bleaches -

Classification, Commercial products application of bleaches to various fibre. Fabrics.

5. Starches, Stiffening and softness -

various types and their characteristic.

6. Principles of laundering -

Hand washing methods, Washing machines types and uses.

7. Additives used in laundry -

Optical Brightness : Agents

8. Care labels -

The two international system of labeling. Laundering procedures for various fiber, fabrics, Precaution to be taken.

9. Dry Cleaning -

Technology - Agents - Classification.

10. Stain Removal -

Classification of stains. Principles of removal. Types of stains removers.

11. Preservation and storage

Apparel and Household linen.

Practical

Based on above topics.

References

1. Huelkar Durga 1976, Household Textile and Laundry Work, Delhi Atma Ram and Sons.
2. Hosheps Marjory, L. 1981, Introductory Textile Science, New York Holt, Rinchart and Winston.
3. Ling, E.M. 1975, Modern House hold Science London, Mills and boom Ltd.
4. Lyle, D.S. 1977, performance of Textile - New York John Wiley & sons.

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Home Science

Syllabus for M.Sc. Extension Education

M.Sc. Final Year		Max. Marks	Min. Marks
Paper I	Statistics	50	17
Paper II	Community Development Perspectives And Approaches	50	17
Paper III	Rural Development Administration And Evaluation	50	17
Paper IV	Indian Rural Economy	50	17
Paper V	Project Management Theory	50	17
Paper VI	Dissertation and Seminar	50	17
Total		300	102
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Paper I

STATISTICS

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3. Mathematical statistics of Kapoor and Sexena
4. Agriculture statistics by Singh and Verma
5. Higher Algebra Hall and Knight

Paper II

COMMUNITY DEVELOPMENT PERSPECTIVES AND APPROACHES

1. Community Development :

Concept of community development.

Objectives of Community development in rural India.

Importance of Community development in rural India.

2. Historical Perspective of Development Approaches :

a). The Capitalistic Approach

b). The Welfare Approach

c). The Gandhi an Approach

d). The institutional and social justice Approach

e). The socialistic Approach

f). The Marxist Approach.

3. Five Year Plans and Community Development :

History of planning in India.

Five year plans and their focus.

Fifth five year plan and Community development projects – targets, progress, people’s participation.

4. Critical Development Issues :

Massive poverty

Population growth

Food security

The environment

Programmes for poverty alleviation for rural and urban Areas.

Employment generation & social inputs.

Current programmes for rural and urban poor.

5. Community Development in India :

Evolution of community development programme in India since independence.
Structure and functions of community development at different levels.

6. Support structures and their function :

Central Social Welfare Board (CSWB).

State Social Welfare Board (SSWB)

National Level Voluntary Agencies such as CAPART, KVIC.

Elected Panchayats.

7. Community Development Programme Approaches :

Multipurpose

Target group

Growth centered

Area

Minimum needs

Antyodaya

Integrated

Critical reflection on these community development efforts.

8. Home Science & Community Development :

Scope of H.Sc. Extension for meaningful participation in community development in India.

9. Role of NGO :

Need for participation of Non-Government organizations in developmental efforts

Encouragement given to NGO's Role of CAPART.

10. Appraisal of the Efforts :

Examining the impact of the developmental efforts in selected rural and urban areas.

Qualitative improvement and quantitative achievements of Programme.

Study of the evaluation reports of the various departments.

Practicals :

1. Prepare a programme on critical issues of development in the community.
2. Conducting baseline survey in the rural community to find out where Home Science Extension work is required.
3. Study the community development programmes running in your locality.

References :

1. Staley. John (1982) : People in Development : A training Manual for Groups, SEARCH, Bangalore India.
2. Desai, Vasant (1988) : Rural Development (volumes 1-6) : Programs and Strategies, Himalaya publishing House, Bombay.
3. Patnayak, Rama (1990) : Rural Development in India, Anmol Publication, New Delhi.
4. Baidyanath, Misra (1991) : Poverty Unemployment and Rural Development, Himalaya Publishing House Bombay.

Paper III

RURAL DEVELOPMENT ADMINISTRATION AND EVALUATION

Section A - Rural Development Administration

1. Concept :

Meaning, Nature and purpose of administration in extension and rural development.

2. Principles of Administration

Principles of administration and organization
Personnel Management
Competencies needed by extension personal.

3. Coordination

Importance of Co-ordination.
Methods of bringing about co-ordination in extension work.

4. Supervision

Importance of supervision in extension work.
Difference between supervision and control.
Techniques of supervision.

5. Rural Development Administration :

The administration setup, functions and specific programmes of various departments - Agriculture, Animal husbandry, Industries, Co-operation, Social welfare, Health, Education, Adult education, Finance etc.

Section B - Evaluation in extension

6. Concept :

Meaning and purpose of evaluation in extension.
Type of evaluation - built in evaluation, self evaluation and external evaluation.

7. Techniques of evaluation :

Criteria for evaluation.

Tools for evaluation – interview schedule, observation schedule, rating scale, Attitude scale, Score card, checklist, Records etc.

8. Documentation :

Need for reporting and recording in extension.

Aspects to be stressed, records and registers to be maintained by extension personnel.

9. Follow - up :

Need for follow-up, methods of follow - up, making the Programme self sustaining.

Practicals :

1. Study of the set up at different levels and functions of different hierarchs.
2. Placement at Block level to observe the role of different functionaries.
3. Developing and testing tools for evaluation.
4. Study of the records and registers maintained by various extension personnel.
5. Preparation of reports.

References -

1. Sharma, D. P. Public Administration in Theory and practice, Kitab Maha, 1976.
2. Dhama, O. P. and Bhatnagar, O. P. Education and Communication for Development and IBH Publishing, 1980.
3. Franlin, J. L. and Thrashes, J. M. An Introduction to Programme Evaluation, John Wiley, 1976.
4. Desai, D. K. Management in Rural Development, Oxford & IBH, 1983.

Paper IV
INDIAN RURAL ECONOMY

1. Indian Rural Economy – An Introduction :

Main features of Rural Economy.
Dependence on agriculture.
Low income and low living standards.
Nature and Significance of agriculture in the economy.

2. Economy Background of Indian Agriculture :

Principle crops, low productivity size and distribution of land holdings.
Pattern of ownership sub-division & fragmentation.
Land Reforms Agricultural, Policy and Five Year Plans, Problem of Agriculture,
Causes of low productivity
Role of Women in farming

3. Farm Management :

Type of Operating units.
Relative costs of Production
Relationship of Farm inputs and outputs.
Farm labour and mechanism of agriculture.

4. Rural Industries :

Cottage and small scale industries, their rate in economic development.
Supplementary occupations.
Decay of cottage industries – causes and effect
Efforts taken to promote cottage and Small scale industries.

5. Co-operation :

Principles of co-operation.
Progress of co-operative movement in India.

Types of Co-operatives.

Co-operation in the development of the weaker sections

6. Agricultural marketing and rural Credit :

Marketing organization.

Regulation and Stabilization of prices – Sources of credits, rural indebtedness, methods of solution – co – operative, credit and marketing.

7. Rural Industrialization :

Concept of Rural industrialization

Role and function of different public agencies in rural industrialization.

Practicals

1. Study the occupational pattern in the rural areas.
2. Analysis of the role of women in agriculture.
3. Study of Economical Principles Applied in Farm Management.
4. Visits to cottage and small scale industries and co-operation.

References :

1. Dutt, R. M. and Sundaram, K. P. M., Indian Economy, Niraj Prakashan, 1877.
2. Agrawal, A. N. Indian Economy – Problems of Development and Planning, Vikas, 1983.
3. Dhingra, I. C. The Indian Economy – Resources planning, Sultan Chand, 1983.
4. Sundram, K. P. M., Introduction to Indian Economy, R. Chand, 1983.

Journals –

1. Yojana, Publication Division New Delhi.
2. Kurukshetra, Publication Division, New Delhi.
3. Social change, Council of social Development New Delhi.

Paper V

PROJECT MANAGEMENT THEORY

1. **Project Management system -**

Conceptual Framework Meaning of Project.

Task of the Project.

The Components of Project Management system -

a). **Planning and Design -**

Setting objectives, listing activities, assessing resources and costing.

b). **Implementing.**

c). **Evaluation -**

Ongoing and impact evaluation.

d). **Human elements in Project Management.**

2. **Project implementation Plan - logical framework :**

The log frame - uses

i). **Ordering and naming objectives, goals, purposes, outputs, inputs.**

ii). **Indicators -**

Signals of achieving the objectives - Goal indicators, Purpose indicators, input indicators, output indicators.

iii). **Means of Verification of indicators -**

onsite observation, sales records bank statements and financial records, research documents, Importance of base - line data - significant features of the solution.

iv). **Assumptions made about variables that could impact on the implementation of the project (Political upheaval, policy changes, natural disasters, cultural resistance etc.)**

v). **Special consideration -**

Ways the project might impact on its environment other than anticipated objectives - positive/negative.

3. The implementation Plan – Work breakdown.

Determining the project activities to achieve the objectives.

Listing, grouping and sequencing these activities.

Identification of responsibilities and co-ordinations requirements.

Using tools for the above activities – work breakdown structure, bar charts and responsibility and co-ordination charts.

4. Budgeting and financial Management :

Financial Accountability.

Preparing the budget – (types/donors/fund).

Performance to budget – book keeping, project payments, Accounting for donated services, performance to budget statements, revising project schedule and budget, automating budgeting.

5. Monitoring and management of information :

Meaning of Monitoring.

Skills required in monitoring – collecting needed information, studying deviation, planning for corrective measures.

Aspects to be monitored – schedule of implementation – budget expenditures, physical progress and utilization of resources.

Report writing.

Social Accountability and sharing of report.

Practicals :

1. Study the importance of managing relationships in any one project management system.
2. Prepare a project Management System considering basic needs of locality.
3. Study the Financial management in any one Project Management system.
4. Role of maintaining in the project management system.

References

1. Mc Grath, E. H. (1978) : Basic Managerial Skills for All, Jamshedpur, Xavier Labour Relations Institute.

Journals :

1. Changing Villages, PPS gussain for Consortium on rural Technology. D-320, Laxmi Nagar, New Delhi - 110092.
2. Indian Journal of Extension Education. The Indian Society for Extension Education, Division of Agricultural Extension, IARI, New Delhi - 110012.