M.A. I Home

I

Human Development

Research Methods and Statistics

M.A./M.Sc. I

Paper I

Marks Theory – 50

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.

  To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents

1. Science, scientific methods, scientific approach.
2. Role of statistics and research in Home Science discipline.

Objective of Research : Explanation, control and prediction.

3. Types of Research : Historical, survey, experimental, case study, social research, participative research.
4. Definition and identification of a Research Problem.

- Selection of research problem.
- justification
- Theory, Hypothesis, basic assumptions, limitations and deliminations of the problem.

5. Types of variables
6. Theory of probability

- Population and sample
- Probability sampling : Systematic random sampling, two stage and multi stage sampling, cluster sampling.
- Non-probability sampling : purposive, quota and volunteer sampling / snow ball sampling.

7. Basic principles of Research Design

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- Purpose of research design : Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto.
- Longitudinal and cross sectional .

8. Qualitative Research Methods

- Theory and design in qualitative research
- Definition and types of qualitative research
- Methods and techniques of data collection

- Informal group discussions
- Interviews; Key informant, in-depth interviews
- observations
- social mapping
- participatory rapid assessment
- participatory learning assessment

9. Data Gathering Instruments

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

10. Scales of measurement and the appropriate statistical techniques.

11. Critical analysis of research

12. Writing a research proposal.

13. Analysis of data and research report.

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II - MAI Home

STATISTICS & COMPUTER APPLICATIONS

M.A./M.Sc. I (Paper II) Research

Marks : Theory – 50 **Practical – 50**

OBJECTIVES

- To understand the role of statistics and computer applications in research.

Note : Students should be given hands on experiences to use appropriate software packages for selected statistical analyses.

CONTENTS :

1. Conceptual understanding of statistical measures, classification and tabulation of data, measurement of central tendency, measures of variation.
2. Frequency distribution, histogram, frequency, polygons,Oliver
3. Binominal Distribution
4. Normal Distribution – Use of normal probability tables.
5. Parametric and non-parametric tests.
6. Testing of hypothesis, Type I and Type II errors. Levels of significance.
7. Chi-square test, Goodness of fit. Independence of attributes 2 x 2 and r x c contingency tables.
8. Application of student 't' test for small samples. Difference in proportion for means and difference in means.
9. Correlation, coefficient of correlation, rank correlation. Regression and Prediction.
10. Regression and prediction
11. Analysis of variance – one way and two way classification.
12. Experimental Designs
    - Completely randamised design
    - Randomised block design
    - Latin square design
    - Factorial design
    - Trend analysis

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III -

C. D.

HISTORY AND THEORIES OF HUMAN DEVELOPMENT

M.A./M.Sc. I (Paper I) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To understand the need for theory in Human Development.
- To see theories in context.
- To examine historical perspectives in the evolution of theory.
- To discuss various theories of Human Development.\To critically evaluate the cross-cultural application of theory.

CONTENTS :

1. Early Theories

   Performationism, Locke, Rousseau, Eastern Philosphers

2. Ethological theories

   Darwin, Lorenz, Tinbergen andBowlby; cross-cultural relevance, current status

3. Freud's psychoanalytic theory

   Freudian theory, neo-freudians, cross-cultural relevance and current status of learning theory.

4. Learning theory

   Pavlov, Watson, Skinner, cross-cultural relevance and current status of learning theory.

5. Cognitive development theory

   Piaget's theory, cross-cultural relevance and current status.

   Vygotsky's theory, cross-cultural relevance and current status.

6. Social learning and social cognition theories

   Bandura's theory, cross-cultural relevance and current status.

7. Theories of the self

   Mead, Kohut, Myres BriggsType indicator, Zohar, Kakar,Hermans, Eastern Philosophy

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IV -

C. D

8. Conclusion

Humanistic Psychology and developmental theory

METHODS OF STUDYING HUMAN DEVELOPMENT

M.A./M.Sc. I (Paper IV) Core

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To study different methods and techniques of understanding Human Development
- To apply the various methods studied in a practical context.

CONTENTS :

1. Understanding the self

   Administration, scoring and evaluation of any test about the self, e.g. Myers Briggs Type Indicator, the subjective well-being inventory (WHO)

2. Observation method

   Theoretical perspectives; use of checklists, establishing reliability in observations, maintaining an observation record, report writing and evaluation.

3. Interview method

   Theoretical perspectives, development of different types of interview protocols, analysis and coding of interview data

4. Questionnaire method

   Theoretical perspectives, development of different types of questionnaire protocols, analysis and coding of questionnaire data.

5. Some psychometric methods

- Scales for infant assessment
- The Wechsler battery of tests\draw a man test
- House-Tree-Person
- Raven's Progressive Matrices
- Self-Esteem Inventory,
- Sex-Role Inventory

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6. Case study method

Theoretical perspectives, development of different types of case study protocols, analysis and coding of data

ADVANCED STUDY IN HUMAN DEVELOPMENT - I

M.A./M.Sc. I (Paper V) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To undertake an advanced study of the stages in human development with special focus on stages from prenatal development to adolescence;
- To understand the principles and factors influencing human development in these stages

CONTENTS :

1. Principles and Concept of Development
- Principles of growth and development
- Developmental tasks
- Basic concepts of development – maturation and learning, sensitive periods, individual difference, nature – nature issue
- Secular trend in growth
2. Prenatal development
- Recapitulation of stages in prenatal development, genetic and environmental factors : maternal conditions and teratogens. Significance of the genome project for understanding human development.
- Importance of Indian practices during pregnancy.
3. Infancy: (birth – 2 years)
- The newborn: birth process and the neonate. Physical description, sensory capacities and reflexes. Becoming coordinated – feeding, sleeping, crying.
- Imitation, object permanance and other cognitive accomplishments
- Early language development
- Social relationships during infancy

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- The cultural experience of being an infant

4. early childhood (2-6 years)

- Transition from infancy to childhood
- Physical and motor development
- Play and social relationships. The emerging self
- Language, cognition and emotions in early years
- Early childhood education
- Early socialization, parenting and cultural processes

5. Middle childhood (7-11 years)

- Physical and motor development: changes and challenges
- Sense of industry and personality development.
- Social relationships – peers, siblings and parents
- The experience of schooling – academic achievement

6. Adolescence (11-18 years)

- Transition from childhood to sexual maturity – puberty and its consequences. Emotional changes.
- Development of Formal operations – Adolescent thought, Integration of the self –issues of identity.
- Role of family, peers, community and ethnic group.
- Moral reasoning and judgement
- Health, sexuality, mental health, delinquency conformity

VI C.D

MANAGEMENT OF PROGRAMMES FOR CHILDREN AND FAMILIES

M.A./M.Sc. I (Paper VI) Core

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To understand the purpose, scope and challenges in the management of programmes for children and families.
- To understand the various approaches to programme management

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- To offer students the opportunity to apply & translate the theoretical knowledge into practice.
- To offer students the opportunity to apply & translate the theoretical knowledge into practice.
- To organise, implement & Evaluate programmes for children & family.
- To critically evaluate & review programme models.

CONTENTS :

1. Management
- Meaning and importance of management.
- Management skills.
- Review of success & failure of different programmes.
2. Programmes for children
- Identification of Specific Programmes for Children.
- Types of programmes & their management
3. Programmes for family
- Identification of specific programmes for family.
- Types of programmes & their management
- Family Counselling

VII - C.D.

ADOLESCENCE AND YOUTH

M.A./M.Sc. I (Paper VII A / Group A) Elective

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To understand the stages of adolescence and youth in human development.
- To study the major developmental characteristics of these stages.
- To study the issues of identity, developmental tasks and problems associated with these stages.

CONTENTS :

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1. The adolescent stage

- Its link with middle childhood and youth.
- The concept of adolescence in India.
- Developmental tasks of adolescence.

2. Theoretical perspectives

   G. Stanley Hall, Anna Freud, Erik Erikson, James Marcia, Kagan and Margaret Mead. Indian perspectives.

3. Physical and sexual development

- Puberty, development of primary and secondary sex characteristics.
- Psychological response to puberty.
- Gender differences. Sexuality, sexual needs and sex education.

4. Cognitive development

- Formal operations – Piaget's theory. Intellectual development at adolescence and youth.
- The Information – Processing view.
- Reasoning, thinking critically, reflective judgement, moral reasoning and judgement.

5. Identity formation

- Different perspectives; construct of self and development of self – concept; Daniel offer.
- Indian views on adolescent's identity

6. Social and emotional development

- Family, peers and friendships, Interpersonal relations. Emotional competence.
- Conflict with authority.

7. School, college, work and career

- Adolescence and youth in the context of differential opportunities for education and formal training.
- Importance of academic achievement and failure, related issues.
- Training for career and work.

8. Important agents of influence

- Family, community and culture.
- Electronic media.

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9. Marriage

- Legal age and its relationship to development. Marriage as a family/individual issue.
- Marriage choices and significance of marriage in human development.

10. Delinquency and disturbance

- Juvenile delinquency; causes and prevention.
- Psychological disturbances; depression, suicide, substance abuse.
- Causes of HIV/AIDS and prevention

PARENTING IN EARLY CHILDHOOD

M.A./M.Sc. I (Paper VII Group A) Elective

Marks : Theory – 50 Practical – 25

OBJECTIVES

- To understand the significance of parents role in early childhood.
- To develop skills to involve parents in early childhood education programmes.
- To learn to conduct parent education programmes.

CONTENTS :

1. **Introduction**

- The task of parenting and the concept of parenting skills.
- Changing concept of parenthood and childhood
- Being a competent parent.

2. **Individual Parenting Roles**

- Determinants of parenting behaviour
- Characteristics of the parenting roles.
- The mothering role
- The fathering role

3. **Developmental Interaction in Early Childhood Years**

- Parents role in developing self awareness in children
- Family relations and communication.

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VIII - C.D.

PRINCIPLES OF GUIDANCE AND COUNSELLING

M.A./M.Sc. I (Paper VII A Group B) Elective

Marks : Theory – 50 **Practical -- 25**

OBJECTIVES

- To understand the need for guidance and counselling in human development.
- To introduce basic concepts in guidance, counselling and therapy.
- To discuss the processes involved in counselling at different stages in life.

CONTENTS :

1. **Constructs of guidance, counselling and therapy**

- Basic differences,
- Guidance and counselling needs of individuals, families and systems.
- Role of culture in influencing counselling needs and practices.

2. **Nature of psychological disorders at different stages that require cousenlling and therapy**

- At childhood
- At adolescence and youth
- At adulthood
- In Old age

3. Principles of couselling and therapy

- Approaches to counselling at different developmental stages.
- Family therapy approach.

4. Qualities and skills of a cousellor
5. The process of counselling

   First contact, assessment, intervention. closure, follow up

Practicals

1. Interactions with practicing cousellors and therapists through visit to schools, clinics, women's centres and hospitals etc.
2. Learn about the counselling process- role play, mock sessions etc.

MENTAL HEALTH IN DEVELOPMENTAL PERSPECTIVE

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I st

F. N.

RESEARCH METHODS

M. A. 1 year

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.
- To understand and apply the appropriate statistical technique for the measurement scale and design.

Contents:

1. **Science, scientific methods, scientific approach.**

2. **Role of statistics and research in Home Science discipline.**
   Objectives of research: Explanation, control and prediction.

3. **Types of Research:** Historical, descriptive, experimental, case study, social research, participatory research.

4. **Definition and Identification of a Research Problem**
   - Selection of research problem
   - Justification
   - Theory, hypothesis, basic assumptions, limitations and delimitations of the problem.

5. **Types of variables**

6. **Theory of probability**
   - Population and sample

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- Probability sampling: simple random, systematic random sampling, two stages and multi stage sampling, cluster sampling.
- Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling.

7. **Basic principles of Research Design**
   - purposes of research design: Fundamental, applied and action, exploratory and descriptive, experimental, survey and case study, ex-post facto,
   - longitudinal and cross sectional, co-relational

8. **Qualitative Research Methods:**
   - Theory and design in qualitative research
   - Definition and types of qualitative research
   - Methods and techniques of data collection
     - group discussions
     - interviews: Key informants, in-depth interviews
     - observations
     - social mapping
     - participatory rapid assessment
     - participatory learning assessment

9. **Data Gathering Instruments:**
   - Observation, questionnaire, interview, scaling methods, case study, home visits, reliability and validity of measuring instruments

10. **Scales of measurement and the appropriate statistical techniques.**

11. **Critical analysis of research.**

12. **Writing a research proposal.**

13. **Analysis of data and research report.**

References

1. Bandarkar, P.L. and Wilkinson T.S. (2000): Methodology and Techniques of Social Research, Himalaya Publishing House, Mumbai.
2. Bhatnagar, G.L. (1990): Research Methods and Measurements in Behavioural and Social Sciences, Agri. Cole Publishing Academy, New Delhi.

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II

STATISTICS & COMPUTER APPLICATIONS

M.A I Year

Objectives

- To understand the role of statistics and computer applications in research
- To apply statistical techniques to research data for analysing and interpreting data meaningfully.

Note: Students should be given hands-on experiences to use appropriate software packages for selected statistical analyses.

Contents

1. **Conceptual understanding of statistical measures.** Classification and tabulation of data. **Measurement of central tendency, measures of variation**
2. **Frequency distribution, histogram, frequency, polygons, Ogive.**
3. **Binomial distribution**
4. **Normal distribution** – Use of normal probability tables
5. **Parametric and non-parametric tests.**
6. **Testing of hypothesis.** Type I and Type II errors. Levels of significance
7. **Chi-square test.** Goodness of fit. Independence of attributes 2 x 2 and r x c contingency tables.
8. **Application of student 't' test for small samples.** Difference in proportion for means and difference in means.
9. **Correlation, coefficient of correlation, rank correlation**
10. **Regression and prediction**
11. **Analysis of variance** – one way and two-way classification.
12. **Experimental Designs**
    - completely randomized design
    - randomized block design
    - Latin square design

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III Year F.N

APPLIED PHYSIOLOGY

M.A I Year

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.

Contents

1. **Cell structure and function**

   Levels of cellular organisation 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.
   - Organisation of central nervous system, structure and function of Brain and spinal cord, Afferent and efferent nerves, Blood Brain Barrier, CSF. Hypothalamus and its role in various body functions-obesity, sleep, memory.

3. **Endocrine system**
   - Endocrine glands – structure, function, role of hormones, regulation of hormonal secretion. The neuroendocrine axis. Disorders of endocrine glands. Emphasis on physiology of diabetes and stress hormones

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4. **Sense organs**
   - Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.

5. **Digestive system**
   - Review of structure and function. Secretory, Digestive and Absorptive functions, Role of liver, pancreas and gall bladder and their dysfunction. Motility and hormones of GIT.

6. **Respiratory system**
   - Review of structure and function. Role of lungs in the exchange of gases. Transport of oxygen and CO_2. Role of haemoglobin and buffer systems. Cardio-respiratory response to exercise and physiological effects of training

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 haemostasis:** Formation and function of plasma proteins. Erythropoesis. Blood groups and histocompatibility. Blood indices. Use of blood for investigation and diagnosis of specific disorders. Anemia.

9. **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

10. **The Musculo - skeletal system**
   - Structure and function of bone, cartilage and connective tissue. Disorders of the skeletal system.
   - Types of muscles, structure and function.

11. **Immune system**
   - Cell mediated and humoral immunity. Activation of WBC and production of antibodies. Role in inflammation and defence.

12. Reproduction.
Menstrual cycle, Spermatogenesis, physiological changes in pregnancy.

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IV FN.

ADVANCED NUTRITIONAL BIOCHEMISTRY

M.A I Year

Objectives

This course will enable the students to:

- Augment the biochemistry knowledge acquired at the undergraduate level
- Understand the mechanisms adopted by the human body for regulation of metabolic pathways
- Get an insight into interrelationships between various metabolic pathways
- Become proficient for specialization in nutrition.
- Understand integration of cellular level metabolic events to nutritional disorders and imbalances.

Contents

1. **Heteropolysaccharides:** Definition, classification, structure and properties of glycoproteins and proteoglycans.
2. **Plasma Proteins** – Nature, properties and functions
3. **Overview of regulation of intermediary metabolism:** Equilibrium and non-equilibrium reactions, committed steps, allosteric modifications, covalent modulation, hormonal induction and repression, cross-over theorem, starve-feed cycle, caloric homeostasis and futile cycles.
4. **Intermediary metabolism:** Reactions, standard free energy changes and regulation.
   - Carbohydrates- glycolysis, gluconeogenesis, citric acid cycle, hexose monophosphate pathway.
   - Lipids, beta–oxidation, de novo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triacylglycerol.
5. **Purines and pyrimidines** – Synthesis and breakdown.
6. **Nucleic acids** – DNA replication and transcription, DNA repair systems, DNA recombinant Genetic mutation, regulation of gene expression and protein biosynthesis.
7. **Hormones** – Mechanism of action of hormones.

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8. **Minerals** – Biological role of trace elements.
9. **Detoxification in the body** – Metabolism of foreign compounds
10. **Major alterations in carbohydrates, protein and fat metabolism in chronic nutrition - related degenerative diseases.**

Practical

Objectives

This course will enable the students to :

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

1.	**Calcium:**	Estimation of calcium in foods and serum.
2.	**Phosphorus:**	Estimation of inorganic phosphorus in foods and serum.
3.	**Ascorbic acid:**	Estimation of ascorbic acid in foods.
4.	**Proteins:**	a. Estimation of protein in food stuffs. b. Estimation of albumin, globulin and albumin/globulin ratio in serum and urine. c. Estimation of hemoglobin
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 phosphatase and transaminase
8.	**Urea and Creatinine:**	Estimation of urea and creatinine in serum and urine.
9.	**Survey of pathological laboratories:**	To obtain information about the methods used for blood/serum analysis.

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METHODS OF INVESTIGATION

M.A I Year

Objectives

This course will enable the students to :

- To understand the principles of various analytical techniques available for nutrition research.
- To familiarize with the applications of the above techniques.

Contents

1. **Electrolytic dissociation** – Acids, bases, salts, buffers, Hendersen- Hasselbach equation.
   Theory of indicators and principles of measurement of pH.
2. **Basics of Instrumentation– Physico-chemical principles and methodology** – Colorimetry, photometry, fluorimetry, flame photometry and atomic absorptiometry.
3. **Chromatography** – principles and application in paper (circular, ascending and descending), ion-exchange, column, thin layer, gas liquid and high performance liquid chromatographic techniques.
4. **Electrophoresis** – Principle and applications in paper and gel electrophoresis.
5. **Bioassays** – Animal studies, Human Studies, Microbiological assays.
6. **Use of Isotopes** – Radioactive and stable isotopes.
7. **NMR and its applications.**
8. **Immunological Methods** – RIA, ELISA.

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Practicals

Objectives

This course will enable the students to :

1. Orient themselves regarding the use of various analytical techniques for specific estimations.
2. Comprehend better the principles involved in different methods of investigation.
3. Become efficient in the use of some of the most commonly used techniques and instruments in High quality research.

1. **Acid and Alkalis:** Preparation of dilute solutions of common acids and alkalis and determining their exact normalities.
2. **Buffers:** Preparation of phosphate, carbonate-bicarbonate, boric acid, acetate, chloride and pthalate buffers and determination of their pH by the use of indicators and pH meters.
3. **Spectrometry:** Beer Lambert law, absorption maximum, Preparation of standard curve and nutrient estimations in UV and visible range, AAS, AES, Flamephotometry.
4. **Fluorimetry:** Estimation of thiamin and riboflavin.
5. **Chromatography:** Paper – identification of amino acids 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 β-carotene and α –tocopherol.
5. **Electrophoresis:** Fractionation of plasma proteins.

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1. Boyer, R. (2000). 3rd Ed. Modern Experimental Biochemistry. Person Education, Asia.
2. Dawes, E.A.(1980) 6th Ed. Quantitative Problems in Biochemistry. Longman Group Ltd.
3. Khosla, B.D., Garg, V.C. and Khosla, A. (1987). 5th Ed. Senior Practical Physical Chemistry. R. Chand & Co. New Delhi.
4. Oser, B.L. (1965). 14th ed. Hawk's Physiological Chemistry. Tata McGraw-Hill Publishing Co. Ltd.
5. Raghuramulu N.; Madhavan Nair and K. Kalyanasundaram, S. (1983). A Manual of Laboratory Technique. NIN. ICMR.
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VI - FN

PROBLEMS IN HUMAN NUTRITION

M.A I Year

Objectives:

The course is aimed at providing an understanding of :

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

Contents

1: **Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for the following:**
   - PEM
   - Vitamin A deficiency
   - Nutritional anemias
   - IDD
   - Rickets, osteomalacia and osteoporosis
   - Fluorosis

2: **Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for**
   - Obesity and overweight
   - Diabetes mellitus
   - CHD
   - Cancer

References

1. McCollum, E.V. (1957): History of Nutrition, Houghton Mifflin Co.
2. Waterlow, J.C. (1992): Protein energy malnutrition, Edward Arnold, A Division of Hodder & Stoughton.

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XII FN.

PUBLIC NUTRITION

M.A I year

Objectives:

This course will enable the students to:

- Develop a holistic knowledge base and understanding of the nature of important nutrition problems and their prevention and control for the disadvantaged and upper socio-economic strata in society
- Understand the causes /determinants and consequences of nutrition problems in society
- Be familiar with various approaches to nutrition and health interventions, programmes and policies.

Contents

Theory

1. **Concept of public nutrition** – relationship between health and nutrition, role of public nutritionists in the health care delivery.
2. **Sectors and Public Policies relevant to Nutrition.**
3. **Primary Health Care of the Community**
   - National Health Care Delivery System.
   - Determinants of Health Status
   - Indicators of Health.
4. **Population Dynamics**
   - Demographic transition, population structure, fertility behaviour, population policy, fertility, nutrition and quality of life inter-relationship.
5. **Food and Nutrition Security**
   - Food production, Access, Distribution Availability, Losses, Consumption, Food Security. Socio-cultural aspects and Dietary Patterns: their implications for Nutrition and Health.

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6. **Nutritional Status**
   - Determinants of nutritional status of individual and populations: Nutrition and Non-nutritional indicators: socio-cultural, biologic, environmental and economic.
7. **Major Nutritional Problems** – etiology, prevalence, clinical manifestations, preventive and therapeutic measures of:
   - Macro and micro nutrient deficiencies
   - Other nutritional problems like lathyrism, dropsy, aflatoxicosis, alcoholism and fluorosis.
   - Overweight, obesity and chronic degenerative diseases
8. **National Food and Nutrition Policy, Plan of Action and Programmes.**
9. **Approaches and Strategies for improving nutritional status and health:** Programmatic options- their advantages and demerits. Feasibility, political support, available resources (human, financial, infrastructural) Case studies of selected strategies and programmes: their rationale and context, how to select interventions from a range of possible options:
   - Health-based interventions, Food-based interventions including fortification and genetic improvement of foods, supplementary feeding, Nutrition education for behaviour change
10. Policy Analysis and Operational Research
11. Programme Design Planning, Implementation, Operations Monitoring, Surveillance and Evaluation
12. Health Economics and Economics of Malnutrition – Its impact on productivity and national development. Cost-Benefit, Cost effectiveness and Cost efficiency

Practicals

1. Comparison of rural, urban and tribal communities for: (a) determinants of malnutrition (b) socio-economic groups (c) the types of nutritional problems in different segments and age groups through analysis of secondary data
2. Critical appraisal of existing interventions and programmes in the voluntary sector and government and suggestions to improve the same vis-a-vis target groups in society and specific needs.
3. Development of a plan for a nutrition intervention project in the community (The target group(s) need to be specified).
   Development of low cost nutritive recipes suitable for various vulnerable groups at micro, meso and macro levels.
4. Field experience in operational public nutrition programmes: nutrition rehabilitation centres, fortification programmes, cost analysis.

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XIII - FN

INSTITUTIONAL FOOD ADMINISTRATION

M.A I year

Objectives

- To develop a knowledge base in key areas of Institutional Food Administration
- To provide practical field level experience in Institutional Food Administration
- To impart necessary expertise to function as a food service manager
- To equip individual to start their own food service unit leading to enterpreneurship
- To develop critical abilities and provide basic grounding in research techniques

Theory

1. **Introduction to Food Service Systems**
   - Evolution of the food service industry
   - Characteristics of the various types of food service units
2. **Approaches to Management**
   - Theories of management
   - Aspects of management
   - Styles of management
   - Management tools
3. **Strategies in Planning**
   - Conceptual strategy
   - Marketing strategy
   - Financial strategy
   - Types of plans
4. **Management of Resources**
   - Finance
     - Determining the finance needed to establish or run an unit
     - Budgets
     - Sources of finance
     - Planning adequate cash flow

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- Space & Equipment
  - Steps in planning layouts
  - Determining equipment
  - Selection and placement
  - Maintenance of equipment
  - Layout analysis
- Material
  - Menu planning
  - Planning the material needed
  - Methods of selection
  - Storage
  - Quantity food production
  - Service and modes of delivery
- Staff
  - Manpower planning
  - Manpower placement
  - Recruitment, induction, training, motivation and performance appraisal
- Time and Energy
  - Measures for utilisation and conservation

5. **Techno-economic feasibility of food production/service enterprise**
6. **Cost accounting/analysis**
   - Food cost analysis
   - Records to be maintained
   - Reports and trend analysis
7. **Marketing and sales management**
   - Marketing strategies
   - Sales analysis
   - Market promotion
8. **Quality assurance**
   - Food quality
   - Total quality management
9. **Computer aided record maintenance and management**

Practicals

1. Market survey and analysis of processed and finished products.
2. Evaluation of Food Service units – 2 Conventional, commissary.
3. Market survey of Food service equipment.
4. Layout analysis of Kitchens – 2.

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5. Planning menus for quantity.
   - Banquet
   - Outdoor catering
   - Packed meals
   - Restaurant
6. Standardizing recipes for quantity 100, 250, 500.
7. Cost Analysis of menus in
   - College canteen
   - Hostel mess
   - Hospitals (private, charitable, government)
8. Analysis of Food safety and Hygiene.

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10. Keiser, J. & Kallo, E. (1974): Controlling and Analysis Of Cost in Food Service Operations Wiley and Sons N. York.
11. Khari, W.L. (I) (1977): Introduction To Modern Food and Beverage Service. (1979) Advanced Modern Food and Beverage service. Prentice Hall Series
12. Coltman, M.M. (1977): Food and Beverage Cost Control. Prentice Hall Series
13. Levison (1976): Food and Beverage Operation Cost Control & System Management. Prentice Hall Series.

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- Demographic status, attrition in early preschool/and primary years, gender equality and equity.
- 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 and other vulnerable groups.
- Issues and concerns related to quality in early childhood and primary curriculum.
- Issue and concerns related to training of ECCE personnel and accrediation process.

3. Trends and issue related to life span development

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

4. Trends and issues related to family studies.

Note : The course would be based on current readings, understanding of researches and policies and conducted through presentations on various assigned topics by students.

ADVANCED STUDY IN HUMAN DEVELOPMENT-II

M.A./M.Sc. II (Paper I) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To undertake an advanced study of the stages in human development with specific focus on youth, adulthood and old age;
- To understand the principles and factos influencing human development in these stages.

CONTENTS :

1. Youth/Young adulthood (20-30 years)

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- Introduction : Biological, cultural and developmental perspectives on yough and adulthood.
- Developmental needs, importance of social organization.
- Culmination of identify formation.
- Life cycle approach – sexuality, marriage, marital adjustment, parenthood.
- Census data on adult population in India.

2. Middle adulthood (30-35 years)

- Physical continuity and changes. Adlt intelligence. Personality development – role in family
- Development of the self. Inter – generation relationships, maintaining family relationships.
- Friendships.
- Parenting adult offsprings and their marriage.
- Menopause in women. Health and disease, adult sexuality. Work and career development – gender differences.

3. Late adulthood (50-65)

- Continuity and change in personality – the family life cycle.
- Social relationships.
- Grand parenthood – integenerational relations.
- Occupational continuity and change – effect in identity.
- Retirement from formal work.
- Health and disease.

4. Old age (65+ years)

- Physical aspects of aging.
- Change in cognitive abilities and creativity.
- Psychosocial development.
- Changes in family life cycle. Health and disease.
- Dean, dying and bereavement.

II C.D. EARLY CHILDHOOD CARE AND EDUCATION

M.A./M.Sc. II (Paper II) Core

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IInd, CP

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To gain knowledge and insight regarding principles of early childhood care and education.
- To development the skills and techniques to plan activities in early childhood care and education and to work effectively with parents and community.

CONTENTS :

1. **Principles of Early childhood Care and Education**

- Importance, need and scope of ECCE.
- Objectives of ECCE
- Types of preschools/programmes; play centres, day care, Montessori. kindergarten, balwadi, anganwadi etc.
- Concepts of non-formal and play ay methods.

2. **Historical Trends (overview)**

- Contribution of the following thinkers to the development of ECCE (their principles, applications and limitations) in the context of ECCE.
- Pestalozzi, Rousseou, Froebel, Maria Montessori, John Dewey, Gijubhai Badheka, Tarabai Modak, M.K. Gandhi, Rabindranath Tagore

3. **ECCE in India**

Pre independence period, post independence – Kothari Comssion, contribution of the five-year plans to ECCE – Yashpal Comittee, Maharashtra Preschool Centre Act.

4. **Contribution of the following agencies/programmes to ECCE in India**

ICCW, IAPE, NCERT, ICDS, UNICEF, NCTD, Mobile Crech etc.

5. **Organisation of pre-school centres**

- Concept of organisation and administration of early childhood centres.
- Administrative set up and functins of personnel working at different levels.
- Building and equipment: Location and site, arrangement of rooms, different types and size of rooms, play ground, storage facilitis, selection of different types of outdoor and indoor equipment, maintenance and display of equipment and material.

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- Staff/Personnel service conditions and role: Role and responsibilities, essential qualities of a care giver/teacher, other personnel.
- Record and Report: Types, aim and purpose/need, general characteristics e.g. anecdotal, cumulative sample work, medical etc.

6. Programme planning

- Planning: Setting goals and objectives of plans long term, short term, weekly and daily planning, routine and schedules.

7. Activities for ECCE

- Language Arts : Goals of language, types of listening and activities to promote listening various activities (songs, object talk, picture talk, free conversation, books games, riddles, jokes, stories, criteria and selection of activities, teacher's 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 in planning the activity, motivating children. Fostering appreciation of art and craft activities.
- Music, songs, objectives of music education, establishing goals, setting the stage and role of the teacher. Three aspect of music, making, listening and singing.
- Mathematics: Goals of mathematical learning, developmental concepts at different stages; principles of teaching mathematics – first had experience, interaction with others, using language, reflection. Mathematical concepts like : classification, conservation, seriation, comparison, counting, fraction, one to one correspondence, addition and subtraction.
- Science; a) thinking; observing, inferring, classifying, communicating, b) Concept formation: differentiation, grouping, labeling, role of science, developing observation. Role of teacher in some important science experiences.
- Social studies: Goals of social studies, field trips. of promoting social studies through celebrations of festivals. Role of teacher.

Practicals

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1. Visits to various centres, which cater to the preschool stage e.g.: Day care centre, Balwadi, Anganwadi, Mobile Creche etc.
2. Preparing a resource unit file on the basis of play way method/approach.
3. Preparing teaching material kit and presentation in mock set up:
    - Story and their techniques
    - Types of puppets and mobiles
    - Art and craft portfolio
    - Song booklet and low cost musical instruments
    - Readines games and material
    - Picture talks and object talk related material etc.
4. Preparing a programme of activities for children with special abilities.
5. Planning and executing activities in ECCE centres.
6. Role play of home visits and conducting a home visit to a family known through practice teaching.
7. Planning of a parent eacher meeting: Stimulation of meeting/event/function – Planning programme-evaluating and reporting the programme.

III Sd CD
Paper 6

CULTURE AND PSYCHOLOGY

M.A./M.Sc. II (Paper III) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To understand the basic concepts related to culture and psychology with specific reference to cross cultural psychology.
- To understand concerns and issues related to study of culture and psychology.
- To befamiliar with research trends in the field of culture and psychology.
- To perceive the need for indogenization and development of humanistic approach in study of culture and psychology.

CONTENTS :

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1. **Understanding the concepts and process related to culture and psychology**

- Understanding the premise of basci concepts
- Developmental psychology and culture
    - Epistemological consideratios.
    - Positivist and post-positivist approach
    - Critical Theory

      Constructivist approach

      Socio-historical approach

2. **Understanding Culture and Development**

- Importance of Language
- Social development
- Personality development
- Cognition
- Emotion

3. **Methodological Issues and theoretical concerns in study of culture and psychology**

- Biological approaches
- Cultural approaches
- Theoretical concerns
- Methodological issues

TY CD

STUDY OF FAMILY IN SOCIETY

M.A./M.Sc. II (Paper IV) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To understand family as a component of socio-cultural milieu and context.
- To familiarize students with developmental perspective in family life cycle.
- To realize and appreciate universals and variations in family life patterns across cultures and sub-cultures.

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- To create awareness regarding philosophy, structure, function, needs and strengths of families with specific reference to the Indian family.
- To understand theoretical and methodological concerns related to family studies.

CONTENTS :

1. **Family in social context**

- Family as a component of social system, structure and context.
- Family as an evolving and dynamic institution
- Functions of family

2. **Socio-cultural studies of family patterns in India**

- Family structure : Traditional extended/joint families.
- Alternate families – single parent, childness, female headed
- Unitary families
- Cause and effect of different family structures on changing roles of family.

3. **approaches and theories in family studies**

- Developmental approach
- Interactional approach
- Institutional approach
- Systemic approach
- Family life-cycle approach
- Cyclical theory
- Progressive theory
- Structural functional theory

4. **family and societal exchanges/influences**

- Work and family
- Education and family
- Health and family
- Religion and family
- Ecology and family
- Government and family

5. **Contemporary issues and concerns**

- Family violence, battered women, child maltreatment, sexual abuse.

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- Dowry and family violence.
- Child rearing and socialization
- Gender roles.
- Divorce and remarriage.

ECD PERSONS WITH DISABILITIES

M.A./M.Sc. II (Paper V) Core

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To become aware of various impairments and the manner in which these affect the lives of individuals.
- To identify the physical and social barriers which create difficulties for people with disabilities.
- To understand that there is a wide a variation between people with disabilities and they are not a single group.
- To realise that the experiences of individuals with disabilities are related to their age, gender and also shaped by the context.
- To become aware of experiences of persons with disabilities and recognize that having an impairments is only one aspect of their lives.
- To develop an understanding gained from the experiences of people with disabilities in planning service for them.

CONTENTS :

1. Various approaches to defining and understanding disability
   Philanthropic, medical, administrative, legal and the social.
2. Different types of impairments, causes and effects on individuals

- Physical
- Intellectual
- Emotional
- Sensory

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3. The role of context in the meaning of normality and disability, attitudes of people towards disability.
4. The philosophy of inclusion.
5. Techniques of identification and assessment.
6. Physical and social barriers in the development of persons wit disabilities. modification of physical and social environment, enabling participation of persons with disabilities as a contributing member of society.
7. Use of assistive devices.
8. The shared and varied experiences of those so affected.
9. The rights versus needs of persons with disabilities.
10. Examples of programmes and policies for persons with disabilities.
11. Issues inplanning inclusive programmes for persons with disabilities.

Practical

1. Review and critique of portrayal of persons with disabilities in the media.
2. To and approaches to assessment.
3. Case study of two persons with disability – a child and an adult.
4. Case study of an organisation with particular reference to its physical and social environment.

VI CD

SCIENTIFIC WRITING

M.A./M.Sc. II (Paper VI) Core

Marks : Theory – 50 **Practical –**

OBJECTIVES

- To be able to appreciate and understand importance of writing scientifically.
- To develop competence in writing and abstracting skills.

CONTENTS :

1. **Scientific writing as a means of communication**

- Different forms of scientific writing.
    - Articles in journals, research notes and reports, review articles, monographs

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- Dissertations, Bibliographies, Book chapters and articles.

2. How to formulate outlines

- The reasons for preparing outlines :
    - As a guide for plan of writing
    - As skeleton for the manuscript
- kinds of outline
    - topic outlines
    - conceptual outlines
    - sentence outlines
    - combination of topic and sentence outlines

3. Drafting titles, sub titles, tables, illustrations

- Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.
- Formatting tables : Title, body stab, stab column, appendix : use and guidelines.

4. The writing process

- Getting started
- Use outline as a starting device
- Drafting
- Reflecting, Re-reading
    - Checking organization
    - Checking headings
    - Checking content
    - Checking clarity
    - Checking grammar
- Brevity and precision in writing
- Drafting and re-drafting based on critical evaluation

5. Parts of dissertation/research report/article

- Introduction
- Review of literature
- Methods

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- Results and discussion
- Summary and abstract
- References
  - Ask questions related to : content, continuity, clarity, validity internal consistency and objectivity during writing each of the above parts.

6. Writing for Grants

- The question to be addressed
- Rationale and importance of the question being addressed
- Emperical and theoretical framework.
- Presenting pilot study/data or background information
- Research proposal and time frame
- Specificity of methodology
- Organization of different phases of study
- Expected outcome of study and its implications
- Budgeting
- Available infra-structure and resources
- Executive summary

VII (A) - CD

DEVELOPMENT OF CREATIVITY

M.A./M.Sc. II (Paper VII A/Group A) Elective

Marks : Theory – 50 Practical – 25

OBJECTIVES

- 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 socialisation in developing creativity.
- To become familiar with psychometric measurement and alternate ways of assessing creativity.

CONTENTS :

1. **Definition and concept of creativity**

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- Types and degree of creativity (everyday creativity and eminent creativity)
- Domains, insight and problems solving as related to creativity.

2. **Relevance and scope of the study of creativity**
3. **Approaches to the study of creativity**

- Mystical approach (divine gift)
- Psychology-dynamical approach (Freud)
- Psychometric approach (Guilford & Torrance),
- Cognitive approach (Weisbert)
- Social personality approach (McKinnon)
- Confluence approach (Gardner)

4. **The role of the individual**

- Cognition, abilities, interests, attitude, motivation, intelligence, knowledge, skills, beliefs, values and cognitive styles.

5. **Relationship between creativity and intelligence**
6. **Influence of child-rearing practices, family and culture**
7. **Enhancing creativity – brainstorming problem solving, creative dramatics & visualisation.**
8. **Measurement**

- Psychometric and alternate methods of assessing creativity.

Practical

1. Tests of creativity: Torrance test of Creative Thinking (TTCT), Baqer Mehdi's Indian adaptation.
2. Use of brainstorming techniques for problem solving.
3. Use of pame's 5 stage method of creative problems solving.
4. In 6-10 seasons, develop a plot of a story with active participation of children and dramatise it with them as role-players.
5. Use of consensual assessment technique to rate the creative work of children and adults (stories, poems and artwork).

CARE OF THE ELDERLY

M.A./M.Sc. II (Paper VII B/Group A) Elective

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- To identify organisational goals and project objectives.
- To assess the functioning of an ongoing project.

CONTENT

1. **Planning**

- Basic concepts; need, purpose, feasibility, project formulation.
- Functions of planning.
- Steps in planning; define the objectives, quality specifications and outcomes,
- Decide the time frame, plan the cost dimensions, plan implementation details.

2. **Project identification**

- Identifying and defining the project goals
- Project design and strategic planning

3. **Management of the Project**

- Monitoring and evaluation: supervisory meetings to plan overview.
- Project appraisal, feedback, follow-up meetings,
- Project report

4. **Project sustainability**

- Factors and Components of Project sustainability.
- Action plan for sustainability

Practicals

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

VII. B. C.D.

CURRICULUM FOR EARLY YEARS

M.A./M.Sc. II (Paper VII D/Group A) Elective

Marks : Theory – 50 **Practical – 25**

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VII B

OBJECTIVES

- To realise the importance of early years and why childhood matters.
- To understand the need for curriculum planning in early years and developing understanding of ECCE curriculum models and approaches.
- To develop understanding of current trends, issues, researches, theories and practices of ECCE programmes.
- To understand theories of play, value of play and its implication for ECCE programmes.
- To enable students to:

- Plan programmes for various ECCE settings and implement the same.
- Supervise participants in ECCE laboratory settings.
- Monitor and evaluate different ECCE programmes.

CONTENTS

1. **Early Childhood matters**

- The need and importance of Early Childhood Development (ECD) and Early Childhood Care and Education (ECCE).
- Determinants of Child Survival and Development.
- Ensuring quality and effectiveness in ECD programmes.
- Provision of equity and access to programmes.
- Diversity in programme conceptualization, training and implementation.

2. **A. Contributions of Indian educators and its implications for Programme Planning in India Context**

   - Christian Missionaries, Arundales
   - Indian innovations of western theories; Gijubhai Badheka Tarabhai Modak.

   B. ECCE curriculum and intervention models and innovative programmes and approaches across countries.

   C. Programmes and approaches be studies with reference to

   - Programme content
   - Learning environment
   - Role of teacher
   - Role of Learner and parents

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3. **Contemporary theories, practices and policies in ECCE.**
4. **Current research and trends in ECCE.**
5. **Role of parents and community in Early, Child Development (ECD) Programmes**

- Developing sensitivity to cultures and traditions community.
- Methods and strategies for parent and community
- Reasons for involvement and need assessment
- Effective use of involvement to monitor and enhance programme quality.

6. **Understanding importance and value of play. Theories of play and their implications for planning ECCE programmes.**
7. **Planning ECCE programmes**
8. **Issues and concerns related to ECCE/ECD programme**

- Coverage of populations, reaching the unreached
- Gender equality and equity
- Quality and sustainability
- Training of personnel
- Accreditation

9. **The need and role of advocacy for quality and ECCE programmes**

- consultancy and advocacy among ECD professionals.
- Advocacy role with NGOs Government Institutions, national and international organisations/agencies, policy planners and media.

Practicals

1. Observations in various ECCE settings e.g. day care pre-schools, primary schools, ECCE centres, anganwadis etc.
2. Planning programmes for various ECCE settings.
3. Implementing plannes programmes in specific settings.
4. Supervising, monitoring and evaluating ECCE programmes in different settings.

MONITORING AND EVALUATION OF PROGRAMMES

M.A./M.Sc. II (Paper VIII A/Group B) Elective

Marks : Theory – 50 **Practical – 25**

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- Stake holders in evaluation : agency, clients, professional and other staff, community, funding agency.
- Baseline or benchmark survey
    - Formative, summative, ex-post evaluation
    - Internal and external evaluation
    - Result oriented evaluation
- Methods of evaluation
    - Participatory Rapid Assessment (PRA)
    - Participatory Learning Assessment (PLA)
    - SWOC Analysis
    - Culurally adapted/appropriate evaluation techniques.

5. Economic Evaluation

- Effective use of resource
- Achieving value for resources/money
    - Time Management efficiency
    - Opportunity cost
    - Cost minimization analysis (CMA)
    - Cost benefit analysis (CBA)
    - Cost utility Analysis (CSA)
- Steps in Economic Evaluation
    - Identification of costs and consequences
    - Measurement of costs and consequences
    - Valuation of costs and consequences
    - Incremental analysis
    - Sensitivity analysis
    - Strengths and weaknesses of economic evaluation.

Practicals

Note: Practicals would include observations of functioning of agency/agencies and conducting a small study of monitoring/evaluation of selected agencies.

VIIAC D.

CARE OF CHILDREN WITH DISABILITIES AND ILLNESSESS

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VIII (A) / C D

Case of Children with Disabilities and Illnesses

M.A./M.Sc. II (Paper VIII B/Group B) Elective

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To gain information on different impairments and illnesses that affect children.
- To be sensitive to desires and wishes of children.
- To identify and assess impairment, illness, disability and the child's physical and social environment.
- To plan for inclusive education programmes for children and involving the disables child in the process.
- To become sensitive to concerns of parents of children with disabilities and collaborate with them for children's education and development.
- To interact and relate sensitively with children with disability, accepting individual differences and enable others to do so.

CONTENTS

1. Different types of impairments and serious illness, causes and the effects on children.

- Physical, intellectual, sensory and emotional impairments.
- Illnesses such as juvenile diabetes, asthma

2. The philosophy of inclusion.
3. Attitudes of others in the family and community.
4. techniques for identification, and recording progress.
5. Physical, organisational and social barriers in the development of children with disabilities.

- Modification and adaptation of physical and social environment, the meaning of inclusion, enabling participation of children with disabilities in the school and community so that they have a sense of belonging as well a opportunity to become contributing members.

6. Use of assistive devices.
7. Listening to children and including their views in life at school and home.

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8. care of the child in the family, role of parents, siblings and other members.
9. The rights versus needs of he children.
10. Examples of programmes for children with disabilities, innovative projects.
11. Issues in planning inclusive care programmes.

Practicals

1. Planning and working with children and parents.
2. Case study of a child with disability.
3. Case study of an organisation for young children with disabilities with particular reference to its physical and social environment.

VIII (B) C

HIV/AIDS COUNSELLING

M.A./M.Sc. II (Paper VIII C/Group B) Elective

Marks : Theory – 50 **Practical – 25**

OBJECTIVES

- To create awareness of the basic concepts in counselling of persons with HIV/AIDS
- To make them understand psycho-social aspects of HIV/AIDS in relation to family and community life.
- To develop the skills for counselling for behaviour change in persons living with HIV/AIDS.
- To develop skills for home based card and counselling for family members.

CONTENTS

1. **Basic concepts and facts about HIV/AIDS**

- Transmission of HIV infection, signs and symptoms of AIDS
- Diagnosis of HIV infection
- Management and Care of HIV infected persons
- Prevention of HIV infection
- Ethical issues and dilemmas

2. **Understanding sexuality, reproductive health and the gender perspective**

- The human reproductive organs and sexual characteristics

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- Meeting the needs of childhood sexuality
- Forms of sexual practice, the harmful side of sex : Sexual abuse

3. Psychological aspects of HIV/AIDS. What it means to be a HIV positive

4. HIV/AIDS counselling

- The principles of couselling, goals of HIV/AIDS couselling
- The prrequisities of couselling, stages of couselling, specific couselling skills
- Assessment of risk behavior
- Characteristics & attitudes of a cousellor, the do's and don'its in couselling
- Content of communication about HIV/AIDS

5. Some specific counselling situations

- The activities of pre-test couselling, the concept of informed consent.
- The types of post-test couselling, the activities of the various types of post-test couselling
- The psycho-social issues linked with positive diagnosis

6. Coping strategies of HIV/AIDS person

7. Legal Issues, rights and ethnics

Practicals

1. Visit (and write the report) any two HIV/AIDS couselling centres.
2. Collect five case studies and analyse the psycho-social problems in each. Prepare case reports. Identify the various high-risk behaviours and discuss the link with HIV transmission, coping with the changing family dynamics.
3. Plan and organise life style education programs for adolescents to over nutrition and diet. Exercise for physical and mental health, healthy and responsible sexual behaviour and practices.
4. Role plays and street plays to discuss an understand on the following:

- Dealing with stigma
- Pre and post-test couselling
- Enhancing values and self-regulation
- Behaviour change
- Laws and ethics

5. Collect five success stories of effective coping and discuss in the classroom.

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I F.N.

ADVANCES IN FOOD MICROBIOLOGY

M.A II Year

Objective

This course will enable the student to :

- Gain deeper knowledge of role of micro-organisms in humans and environment.
- Understand the importance of micro-organisms in food spoilage and to learn advanced, techniques used in food preservation.
- Understand the latest procedures adopted in various food operations to prevent food- borne. disorders and legal aspects involved in these areas.

Contents

1. **Introduction to historical developments** in food preservation, spoilage, infections and legislation.
2. **Micro-organisms of importance in food:** Their primary sources in foods, morphology, cultural characteristics and biochemical activities.
3. **Factors affecting the growth of microorganisms in food.** Intrinsic and Extrinsic parameters that affect microbial growth.
4. **Methods of Isolation and detection of microorganisms or their products in food.**
   - Conventional methods
   - Rapid methods (Newer techniques)
   - Immunological methods: Fluorescent, antibody, Radio Immunoassay, ELISA etc.
   - Chemical methods: Thermostable nuclear, ATP measurement and PCR (Polymers chain reactions) - only principles in brief.
5. **Spoilage of different groups of foods:** Cereal and cereal products, vegetables & fruits, meat & meat products, eggs and poultry, fish and other sea foods, milk and milk products, canned food.
6. **Food Preservation:** Physical methods – Drying, freeze drying, Cold storage, Heat treatments, Irradiation, High pressure processing.

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Chemical preservatives and Natural antimicrobial compounds.
Biologically based preservation systems and Probiotic bacteria.

7. **Food borne diseases:** Bacterial, and viral food-borne disorders, Food-borne important animal parasites, Mycotoxins.
8. **Indicators of food safety and quality:** Microbiological criteria of foods and their significance.
9. **The H A C C P system and food safety used in controlling microbiological hazards.**
10. **Role of microbes in fermented foods and genetically modified foods.**

Practicals

1. **Preparation of common laboratory media and special media** for cultivation of bacteria, yeast & molds.
2. **Staining of Bacteria:** Gram's staining, acid-fast, spore, capsule and flagellar staining, Motility of bacteria, Staining of yeast and molds.
3. **Cultivation and Identification of important molds and yeast.** (slides and mold culture).
4. **Study of environment around us as sources of transmission of microorganisms in foods.** Assessment of surface sanitation of food preparation units' swab and rinse techniques.
5. **Isolation of microorganisms:** Different methods and maintenance of cultures of microorganisms.
6. **Bacteriological analysis of Foods:** Both processed and unprocessed like vegetables and fruits, cereals, spices and canned foods, using conventional methods, yeast and mold count in foods.
7. **Bacteriological analysis of water and milk**, Total count, MPN Coliform (Count) and MBRT, IMVIC etc.
8. **To perform various biochemical tests used in identification** of commonly found bacteria in foods: IMVIC urease, H_2S, Catalase, coagulase, gelatin and fermentation (Acid/gas)
9. **Demonstration of available rapid methods and diagnostic kits used in identification of microorganisms or their products.**
10. **Visits (at least two) to food processing unit or any other organization dealing with advanced methods in food microbiology.**

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II F.N.

RESEARCH METHODS IN FOODS AND NUTRITION M.A II Year

Objectives

This course is designed to:

- Understand the scientific approaches used in accumulating knowledge in the field.
- Understand the various designs used vis-à-vis the research problem.
- Be able to identify sources of variability and uncertainty in research in this field.

Contents

I. Quantitative and Qualitative Research in Foods and Nutrition – an overview

II. Quantitative Research

1. Design Strategies in Research – Descriptive Studies
   Brief overview of types of descriptive studies
   - correlational studies (Populations/individuals)
   - case reports and case studies
   - cross sectional surveys

   Use of descriptive studies in research
   Hypothesis formulation from descriptive studies
   Issues in the design and conduct of descriptive studies

2. Design Strategies in Research – Analytic Studies I
   Analytic studies
   - Observational studies
   - Case-control studies
   - Cohort studies – retrospective and prospective
   - Intervention trials (Clinical trials)

   Use of analytic studies
   Issues in the design and conduct of case control studies, definition and selection of cases.

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selection of control, ascertainment of disease and exposure status
Issues in Analysis and Interpretation of case-control studies

3. **Design Strategies in Research – Analytic Studies II**
   - Overview of types of Cohort studies and Intervention Studies
   - Issues in the design of Cohort studies (selection of the exposed population, selection of comparison groups, sources of data, sources of exposure information, sources of outcome data)
   - Issues in the design and conduct of clinical trials (selection of study population, allocation of study regimens, maintenance and assessment of compliance, issues of factorial design, sample size considerations: statistical power etc.)
   - Issues in Analysis and Interpretation of Cohort studies (role of bias, effect of loss to follow-up effect of nonparticipation)
   - Strengths and limitations of intervention studies
   - Unique problems of intervention studies
   - Issues in analysis and interpretation of clinical and community trials

III. Qualitative Research in Foods and Nutrition
   - Types of qualitative research
   - Tools, techniques and methodologies
   - RRA, PRA, PLA
   - Data Analysis and Interpretation
   - Rapid Assessment Procedures: Use of rapid assessment procedures for Nutrition programme planning, design, training, assessment
   - Project reorientation and evaluation

IV. Summarizing Data, Analyzing Trend data

V. Application of non-parametric tests

VI. Introduction to meta-analysis

VII. Study design issues, sample size and power

VIII. Criteria for evaluation of research problem/programme

IX. Ethics in research

References

1. Scrimshaw, N.S. and Gleason, G.R. (1992): Rapid Assessment Procedures. Qualitative Methodologies for Planning and Evaluation of Health-related Programmes. International Nutrition Foundation for Developing Countries, Boston.

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F.N.

ADVANCED NUTRITION

M.A I year

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 requirements and recommendations through the life cycle.
- Enable students to understand the pharmacological actions of nutrients and their implications.
- Familiarise students with the recent advances in nutrition.

Contents

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. Estimating energy requirements of individuals and groups. Regulation of energy metabolism: control of food intake, digestion, absorption and body weight.
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.
3. **Proteins**: Classification, digestion, absorption and transport – review. Metabolism of proteins: Role of muscle, liver and gastro intestinal tract. Protein quality, methods of evaluating protein quality. Protein and amino acid requirements. Therapeutic applications of specific amino acids: Branched chain, glutamine arginine, homocysteine, cysteine, taurine.
4. **Lipids**: Classification, digestion, absorption, transport – review. Functions of EFA. Role of n-3, n-6 fatty acids in health and disease. Requirements of total fat and fatty acids. Trans fatty acids. Prostaglandins.

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5. **Water**: Regulation of intra and extra cellular volume. Osmolality, water balance and its regulation.
6. **Minerals:** (Note: For each nutrient sources, bioavailability, metabolism, function, requirements, RDI/ESADDI, deficiency and toxicity, interactions with other nutrients are to be discussed).

   Macro minerals: calcium, phosphorus, magnesium, sodium, potassium and chloride.

   Micro minerals: Iron, copper, zinc, maganese, iodine, fluoride.

   Trace minerals: Selenium, cobalt, chromium, vanadium, silicon, boron, nickel.
7. **Vitamins**: Historical background, structure, food sources, absorption and transport, metabolism, biochemical function, 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.
8. **Non-nutritive food components with potential health effects:** Polyphenols, tannins, phytate, phytoestrogens, cyanogenic compounds, lectins and saponins.
9. **Nutritional regulation of gene expression.**
10. **Nutrition management in special conditions**: Space travel, high altitudes, low temperatures, submarines.

Practicals

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.

Contents

1. Estimation of Protein Quality using different methods PER, B.V, N.P.U. NDP-Cal %.
2. Estimation of energy value of foodstuffs using bomb calorimeter.
3. Estimation of Energy Requirements:
   - BMR
   - Energy expenditure on physical activities
   - Factorial approach

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4. Balance Studies
   a. Nitrogen balance
5. Assessment of micronutrient status:
   a. Iron
   b. Vitamin C
   c. Vitamin A
   d. Vitamins from B-complex group
6. Bioavailability of selected nutrients

References

1. Annual Reviews of Nutrition. Annual Review Inc, California, USA.
2. Shils, M.E.; Olson, J.; Shike, M. and Roos, C. (1998): Modern Nutrition in Health and Disease. 9th edition. Williams and Williams. A Beverly Co. London.
3. Bodwell, C.E. and Erdman, J.W. (1988) Nutrient Interactions. Marcel Dekker Inc. New York
4. World Reviews of Nutrition and Dietetics.
5. WHO Technical Report Series.
6. Indian Council of Medical Research. Recommended Dietary Intakes for Indians - Latest Recommendations.
7. Indian Council of Medical Research. Nutritive Value of Indian Foods - Latest Publication.
8. Berdanier, C.D. and Haargrove, J.L.(ed) (1996): Nutrients and Gene Expression: Clinical Aspects. Boca Raton, FL CRC Press.
9. Baeurle, P.A. (ed) (1994) Inducible Gene Expression. Part I: Environmental Stresses and Nutrients. Boston: Birkhauser.
10. Chandra, R.K. (ed) (1992): Nutrition and Immunology. ARTS Biomedical. St. John's Newfoundland.

Journals

1. Nutrition Reviews
2. Journal of Nutrition
3. American Journal of Clinical Nutrition
4. British Journal of Nutrition
5. European Journal of Clinical Nutrition
6. International Journal of Vitamin and Nutrition Research
7. International Journal of Food Science and Nutrition
8. Nutrition Research
9. Ann Nutr Metab

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FOOD SCIENCE

M.A II Year

Objectives

This course is designed to:

- Provide an understanding of composition of various food stuffs
- Familiarise 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.

Contents

1. **Introduction to Food Science:** Evolution of the Food Industry and Allied Industries. Development of Food Science as a discipline.
2. **Constituents of Foods:** Properties and significance
3. **Water and Food Dispersions:** Physical properties of water and ice, chemical nature, structure of the water molecule.
   - Sorption phenomena, types of water, solutions and colligative properties.
   - Free and bound water
   - Water activity and Food spoilage
   - Freezing and Ice structure
   - Colloidal salts, stabilization of colloidal systems, Rheology of food dispersions
   - Gels: Structure, formation, strength, types and permanence.
   - Emulsions: Formation, stability, surfactants and emulsifiers.
   - Foams: Structure, formation and stabilization.
4. **Polysaccharides, Sugars and Sweeteners**
   - Starch: Structure, gelatinization, methods for following gelatinization changes. Characteristics of some food starches. Effects of ingredients and conditions on gelatinization. Modified food starches.

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- Non-starch Polysaccharides: Cellulose, hemicelluloses, pectins, gums, animal polysaccharides.
- Sugars and Sweeteners: Sugars, syrups, sugar alcohols, potent sweeteners, sugar products.
- Sweetener chemistry related to usage in food products: Structural relationships to sweetness perceptions, hydrolytic reactions, solubility and crystallization, hygroscopicity, colligative properties, textural contributions, fermentation, non-enzymatic browning.

5. **Cereals and Cereal Products**
   - Cereal grains: Structure and Composition
   - Cereal products:
   - Flours and flour quality
   - Extruded foods, breakfast cereals, wheat germ, bulgar, 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. Radiolysis. Inter-esterification of fats.
7. **Proteins:** Classification, composition, denaturation, non-enzymatic browning, and other chemical changes.
8. **Enzymes:** Nature of enzymes, stability and action. Proteolytic enzymes, oxidases, lipases, enzymes decomposing carbohydrates and applications. Immobilised enzymes.
9. **Milk and Milk Products:** Composition. Physical and functional properties. Denaturation, Effects of processing and storage.
   Dairy products: Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.
10. **Meat and Poultry:** Muscle composition, characteristics and structure. Post mortem changes. Processing, preservation and their effects. Heat-induced changes in meat. Variables in meat preparation. Tenderizers. Meat Products.
11. **Eggs:** Structure and Composition. Changes during storage. Functional properties of eggs, use in cookery. Egg processing. Low cholesterol egg substitutes.
12. **Fish and Sea Food:** Types and Composition, Storage and changes during storage. Changes during processing. By-products and newer products.
13. **Pulses and Legumes:** Structure, composition, processing. Toxic constituents.
14. **Nuts and Oilseeds:** Composition, Oil extraction and by-products.
15. **Protein Concentrates, hydrolysates and textured vegetable proteins, milk substitutes.**
16. **Fruits and Vegetables:** Plant anatomy, gross composition, structural features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents. Plant

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phenolics. Pigments. Post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.

17. **Spices and Condiments:** Composition, flavouring extracts – natural and synthetic.
18. **Processed Foods:** Jams, Jellies, Squashes, Pickles.
    Beverages: Synthetic and natural, alcoholic and non-alcoholic, carbonated and non-carbonated, coffee, tea, cocoa. Malted drinks.
    Confectioneries and chocolate products, bakery products, dehydrated products.
19. **Traditional Processed Products:** Fermented Foods-cereal-based, pulse – based, fruit/vegetable - based, vinegar, pickles.
20. **Leavened Products:** Leavening agents. Biologically leavened and chemically leavened products. Batters and dough.
21. **Salt and substitutes.**

Practicals

1. Effect of solutes on boiling point and freezing point of water
2. Effect of types of water on characteristics 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, Vegetable Gums and Cereals:** Dextrinization, gelatinization, retrogradation, 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 fats 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 and Milk Products:** Scalding, denaturation. Effect of acid, salt, alkali, sugar, heat, enzymes, polyphenols on milk. Khoa, curd, paneer, cheese (ripened and unripened).
8. **Egg:** Structure, assessing egg quality. Use of egg in cookery:- Emulsions, air incorporation, thickening, binding, gelling. Method of egg cookery and effect of heat. Egg white foams and factors affecting foams.
9. **Pulses:** Effect of various cooking and processing methods on various characteristics, functional properties of pulses and their products.
10. **Meat and Poultry:** Methods affecting tenderness of meat, effect of various methods of cooking and ingredients on colour, volume, texture, flavour, aroma and water holding capacity.
11. **Fish and Sea Food:** Effects of different cooking methods on various fish and seafoods.
12. **Gelatin:** Gelation, gel strength and factors affecting gelation. Ability to foam.

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13. **Fruits and Vegetables:** Pigments: Effects of cooking, metal ions, pH. Effect of various cooking processes on different characteristics of vegetables. Prevention of enzymatic browning.
14. **Leavened Products:** Fermentation – Use of micro organisms (lactic acid, yeast), steam as an agent, egg as an agent, chemical agents.
15. **Beverages:** Factors affecting quality of beverages.
16. **Frozen Desserts:** Factors affecting ice crystal formation. Quality characteristics of frozen desserts.

References

1. Charley, H. (1982): Food Science (2nd edition), John Wiley & 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, R.J. (Ed) (1976): Foam, Academic Press, New York.
5. Cherry, J.P. (Ed) (1981): Protein Functionality in Foods, American Chemical Society, Washington, D.C.
6. Pomeranz, Y. (Ed) (1991): Functional Properties of Food Components, (2nd edition), Academic Press, New York.
7. Duckworth, R.B. (Ed) (1978): Water Relation to Foods, Academic Press, London.
8. Parihar, P., Agarwal, R., Jain, D.K. and Mandhyan, B.L. (1977): Status Report on Dehydration of Eggs, PHT/CAE/Publishers.
9. Marshall, K.R. and Harper, W.J. (1988): Whey Protein Concentrates, IDF Bulletin No. 233.
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11. Julians, B.O. (Ed) (1985): Rice Chemistry and Technology, (2nd edition), American Association of Cereal Chemists, St. Paul Mimesota, USA.
12. Bowers, J. (1992): Food Theory and Applications, (2nd edition), MacMillan Publishing Co., New York.
13. Peckham, G. and Freeland – Graves, G.H. (1979): Foundations of Food Preparation.
14. Becker, P. (1965). Emulsions: Theory and Practice, Reinhold, New York.

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 Chemists' Society

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V

ASSESSMENT OF NUTRITIONAL STATUS M.A II Year

Objectives

The course is designed to:

- Orient the students with all the important state-of-the-art methodologies applied in nutritional assessment and surveillance of human groups.
- Develop specific skills to apply the most widely used methods.

Contents

Theory:

1. Nutritional assessment as a tool for improving the quality of life of various segments of the population including hospitalized patients.
2. Current methodologies of assessment of nutritional status, their interpretation and comparative applications of the following:
   - *Food consumption*
   - Anthropometry
   - Clinical and Laboratory
   - Rapid Assessment & PRA
   - Functional indicators such as grip strength, respiratory fitness, Harvard Step test, Squatting test.
3. Nutritional Surveillance – Basic concepts, uses and setting up of surveillance systems.
4. Monitoring and Evaluation

Practicals

1. Training in all assessment techniques applicable for individuals and community, including ones used for hospital – based patients
   - validity and reliability of these techniques.

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IV

MATERNAL AND CHILD NUTRITION

M.A II year

Objectives

This course is designed to enable the students to:

- Understand physiological changes in pregnancy and lactation.
- Get acquainted with growth and developmental changes from conception till adolescence.
- Understand the inter-relationship between nutrition and growth and development during life cycle.

Contents

1. **Current Nutrition and Health Status of Women and Children in India.**
2. **Changing concepts and controversies in Maternal and Child Nutrition.**
3. **Importance of Maternal Nutrition :**
   - Importance of nutrition prior to and during pregnancy.
   - Pre-requisites for successful outcome. Effect of undernutrition on mother-child dyad including pregnancy outcome and Maternal and Child Health – Short term and Long term.
   - Physiology and endocrinology of pregnancy and embryonic and fetal growth and development
   - Nutritional requirements during pregnancy
   - Adolescent Pregnancy
   - Pregnancy and AIDS
   - Pregnancy and TB
   - Intra-uterine growth retardation
   - Complications of pregnancy and management and importance of antenatal care.
   - Congenital malformation, fetal alcohol syndrome and gestational diabetes mellitus.
4. **Lactation**
   - Development of mammary tissue and role of hormones

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- Physiology and endocrinology of lactation – Synthesis of milk components, let down reflex, role of hormones, lactational amenorrhea, effect of breast feeding on maternal health
- Human milk composition and factors affecting breastfeeding and fertility
- Management of lactation – Prenatal breastfeeding skill education. Rooming in, problems – sore nipples, engorged breast, inverted nipples etc.
- Exclusive breastfeeding
- Baby friendly hospitals initiative
- Breast feeding in the age of AIDS

5. **Infant physiology and the preterm and LBW infants: Implications for feeding and management.**
6. **Growth and development during infancy, childhood and adolescence.**
7. **Feeding of infants and children and dietary management**
8. **Malnutrition in mothers and children: etiology and management (in brief).**
9. **Concept of small family, methods of family – planning, merits and demerits.**
10. **Policies and programmes for promoting maternal and child nutrition and health.**

References

1. International Food Policy Research Institute (1997). Care and Nutrition: Concepts and Measurement. International Food Policy Research Institute Washington DC., USA
2. International Child Health: A Digest of Current Information
3. Barker, D.J.P. (1998). Mothers, Babies and Health in Later Life. Edinburgh, Churchill Livingstone
4. Ward, R.H.T; Smith, S.K.; Donnai, D. (eds) (1994) Early Fetal Growth and Development. London, RCOG Press
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6. King, F.S. (1992). Helping Mothers to Breastfeed. Association for Consumers Action on Safety and Health, Mumbai
7. Wallace, H.M. and Giri, K. (1990) Health Care of Women and Children in Developing Countries. Third Party Publishing Co, Oakland.
8. Tanner, J.M. (1988) Foetus into Man: Physical Growth from Conception to Maturity. Wheaton and Co Ltd. Great Britain
9. Luke, B. Johnson, T.R.B.; Petrie, R.H. (1993). Clinical Maternal-Fetal Nutrition. Little Brown and Co, Boston
10. ACC/SCN Reports
11. WHO (1999) Nutrition for Health and Development: Progress and Prospects on the Eve of the 21st century. WHO/NHD/99.9. Geneva
12. Alderman,H.; Behrman,J.; Lavy,V.; Menon,R. (1997) Child Nutrition, Child Health and School Enrollment. Policy Research Working Paper 1700. Washington DC. World Bank

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VII

SCIENTIFIC WRITING

M.A 3 years

Objectives

To be able to appreciate and understand importance of writing scientifically.

- To Develop competence in writing and abstracting skills.
- To write either a draft research proposal or a chapter of dissertation.

Contents

1 **Scientific writing as a means of communication.**
- Different forms of scientific writing.
- Articles in journals, Research notes and reports, Review articles, Monographs, Dissertations, Bibliographies.

2 **How to formulate outlines.**
- The reasons for preparing outlines
  - as a guide for plan of writing
  - as skeleton for the manuscript
- Kinds of outline
  - topic outlines
  - conceptual outline
  - sentence outlines
  - combination of topic and sentence outlines

3 **Drafting Titles, Sub Titles, Tables, Illustrations.**
- Tables as systematic means of presenting data in rows and columns and lucid way of indicating relationships and results.
- Formatting Tables: Title, Body stab, Stab Column, Column Head, Spanner Head, Box Head
- Appendices: use and guidelines

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4 **The writing process**

- Getting started
- Use outline as a starting device
- Drafting
- Reflecting, Re-reading
  - Checking organization
  - Checking headings
  - Checking content
  - Checking clarity
  - Checking grammar
- Brevity and precision in writing
- Drafting and Re-drafting based on critical evaluation

5 **Parts of Dissertation/Research report/ Article**

- Introduction
- Review of Literature
- Method
- Results and Discussion
  - Ask questions related to: content, continuity, clarity, validity internal consistency and objectivity during writing each of the above parts.

6 **Writing for Grants**

- Clearly state the question to be addressed
- Rationale and importance of the question being address
- Emperial and theoretical conceptualization
- Presenting pilot study/data
- Research proposal and time frame
- Clarity, specificity of method.
- Clear organization
- Outcome of study and its implications
- Budgeting
- Available infra-structure and recourses
- Executive summary

References

1. APA (1984): Publication Manual of American Psychological Association (3rd Edition), Washington: APA.
2. Cooper, H.M. (1990): Integrating Research: A Guide for Literature Reviews (2nd Edition). California: Sage.
3. Dunn, F.V. & Others. (Ed.) (1994): Disseminating Research: Changing Practice. NY : Sage.

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VIII

F.N.

NUTRITION IN EMERGENCIES AND DISASTERS M.A II year

Objectives

This course is designed to:

- Familiarize students with various natural and manmade emergencies and disasters having an impact on nutrition and health status.
- Understand the special nutritional concerns arising out of these situations.
- Understand strategies for nutritional rehabilitation management of the health of emergency affected populations.

Contents

1. **Natural/Manmade disasters resulting in emergency situations:**
   - Famine, drought, flood, earthquake, cyclone, war, civil and political emergencies.
   - Factors giving rise to emergency situation in these disasters.
   - Illustration using case studies from Indian subcontinent.
2. **Nutritional problems in emergencies in vulnerable groups**
   - Causes of malnutrition in emergency situations.
   - Major deficiency diseases in emergencies
   - Protein – Energy Malnutrition
   - Specific deficiencies
3. **Communicable diseases: Surveillance and treatment.**
   - Control of communicable diseases in emergencies – Role of immunization and sanitation.
4. **Assessment and surveillance of Nutritional status in emergency affected populations**
   - Scope of assessment of malnutrition in emergencies
   - Indicators of malnutrition. Clinical signs for screening acute malnutrition

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- Anthropometric assessment of nutritional status. Indicators and cut-offs indicating seriously abnormal nutrition situation: Weight-for-height based indices, MUAC, social indicators.
- Organisation of nutritional surveillance and individual screening.

5. **Nutritional Relief and Rehabilitation**
   - Assessment of food needs in emergency situations.
   - Food distribution strategy – Identifying and reaching the vulnerable group – Targeting Food Aid
   - Mass and Supplementary Feeding
   - Therapeutic Feeding
   - Special foods/rations for nutritional relief
   - Local production of special foods
   - Local foods in rehabilitation
   - Organisation of mass feeding/general food distribution,
   - Feeding centres,
   - Transportation and food storage,
   - Sanitation and hygiene,
   - Evaluation of feeding programmes,
   - Household food security and nutrition in emergencies
6. **Public nutrition approach to tackle nutritional problems in emergencies.**

References

1. Goyet, Fish. V.; Seaman, J. and Geijer, U. (1978): The Management of Nutritional Emergencies in Large Populations, World Health Organisation, Geneva.
2. Refugee Nutrition Information System (RNIS): Newsletters UN ACC/SCN Sub-committee on Nutrition.
3. Field Exchange, Newsletters by Emergency Nutrition Network, Dept. of Community Health and General Practice, Ireland.
4. SCN News, Newsletters by UN ACC/SCN Sub-committee on Nutrition.
5. Bradley, A., Woodruff and Arabella Duffield (July, 2000): Assessment of Nutritional Status in Emergency Affected Populations – Adolescents, Special Supplement, UN ACC/SCN Sub-Committee on Nutrition.
6. Steve Collins, Arabella Duffield and Mark Myatt (July, 200): Assessment of Nutritional Status in Emergency Affected Populations – Adults, Special Supplement, UN ACC/SCN sub-committee on Nutrition.
7. World Disasters Report – Focus on Public Health, International Federation of Red Cross and Red Crescent Societies.
8. The Management of Nutrition in Major Emergencies WHO – in Collaboration with UNHCR, International Federation of Red Cross and Red Crescent Societies and WFP.
9. Disasters – International Public Nutrition and Emergencies: The Potential for Improving Practice. Special Issue – Vol. 23/4, Dec. 1999.

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