

APPENDIX – 8 (R)
UNIVERSITY OF MADRAS
M.Sc. DEGREE COURSE IN HOME SCIENCE - FOOD SERVICE
MANAGEMENT AND DIETETICS
CHOICE BASED CREDIT SYSTEM (w.e.f.2013-2014)

1. That in the Regulations relating to M.Sc. Degree Course in Home Science – Food Service Management and Dietetics under Regulation No.6-Scheme of Examinations of I to IV semesters be modified as follows:

REVISED SCHEME OF EXAMINATIONS:

FIRST SEMESTER

COURSE COMPONENT	SUBJECT	SEMESTER	INST. HOUR	CREDITS	EXAM HRS	MAX MARKS	
						CIA	EXTERN
CORE	PAPER I RESEARCH METHODOLOGY AND APPLIED STATISTICS	I	6 HRS	4	3	25	75
CORE	PAPER II HUMAN PHYSIOLOGY	I	6 HRS	4	3	25	75
CORE	PAPER III ADVANCED FOOD SCIENCE	I	6 HRS	4	3	25	75
CORE	PAPER IV SELECTED TOPICS IN FOOD SERVICE MANAGEMENT	I	6 HRS	4	3	25	75
CORE	PAPER V COMMUNITY NUTRITION	I	6 HRS	4	3	25	75
	Soft Skill - I	I	2 HRS		3	40	60

SECOND SEMESTER

COURSE COMPONENTS	SUBJECT	SEMESTER	INST. HOURS	Credits	EXAM HRS	MAX MARKS	
						CIA	EXTERN
CORE	PAPER VI QUANTITY FOOD PRODUCTION AND SERVICE	II	6 HRS	4	3	25	75
CORE	PAPER VII PHYSICAL FACILITIES FOR FOOD SERVICES	II	6 HRS	4	3	25	75
CORE	PAPER VIII NUTRITION THROUGH LIFE CYCLE	II	6 HRS	4	3	25	75
ELECTIVE INTER DISCIPLINARY	PAPER IX FOOD MICROBIOLOGY	II	6 HRS	3	3	25	75

COURSE COMPONENTS	SUBJECT	SEMESTER	INST. HOURS	Credits	EXAM HRS	MAX MARKS	
						CIA	EXTERN
EXTRA DISCIPLINARY	PAPER X EXPERIMENTAL FOODS	II	6 HRS	3	3	25	75
SOFT SKILL II		II	2HRS	2	3	40	60

Internship will be carried out during the summer vacation of the first year.

THIRD SEMESTER

COURSE COMPONENTS	SUBJECT	INST. HOURS	CREDITS	EXAM HRS	MAX. MARKS	
					CIA	EXTERN
CORE	PAPER XI FINANCIAL AND MARKETING MANAGEMENT	6	4	3	25	75
CORE	PAPER XII THERAPEUTIC NUTRITION	6	5	3	25	75
CORE	PAPER XIII PHYSIOLOGICAL AND METABOLIC CHANGES IN DISEASE	6	3	3	25	75
CORE	PAPER XIV DIETETICS INTERNSHIP	-	3	3	25	75
ELECTIVE Inter Disciplinary	PAPER XV ENTREPRENEURIAL DEVELOPMENT	5	3	3	25	75
ELECTIVE Extra Disciplinary	PAPER XVI FUNDAMENTALS OF CHILD GUIDANCE & COUNSELING	5	3	3	25	75
SOFT SKILL III		2	2	3	40	60

FOURTH SEMESTER

COURSE COMPONENTS	SUBJECTS	INST. HOURS	CREDITS	EXAM HRS	MAX. MARKS	
					CIA	EXTERN
CORE	PAPER XVII THERAPEUTIC NUTRITION PRACTICAL	6.	5	3	25	75
CORE	PAPER XVIII DISSERTATION	-	8	3	25	75
ELECTIVE Extra Disciplinary	PAPERXIX HOSPITAL ADMINISTRATION	5	3	3	25	75
ELECTIVE Extra Disciplinary	PAPER XX NUTRITION IN SPECIAL CONDITIONS	5	3	3	25	75
ELECTIVE Inter Disciplinary	PAPER XXI CATERING INTERNSHIP	5	3	3	25	75
SOFT SKILL IV		2	2	3	40	60

ii. The above amendments to the Regulations (w.e.f. 2013-14 and thereafter). (A.C.S.'13)

APPENDIX - 8(S)
**M.Sc. DEGREE COURSE IN HOME SCIENCE - FOOD SERVICE
MANAGEMENT AND DIETETICS**

**REVISED SYLLABUS
(w.e.f.2013-2014)**

SEMESTER I

PAPER I - RESEARCH METHODOLOGY AND APPLIED STATISTICS

OBJECTIVES:

1. To apply statistical procedure to analyze numerical data and draw inference
2. Understand the fundamental principles and techniques in Research Methodology
3. Get an overview of the methodologies used in educational research

UNIT I CONCEPT OF RESEARCH

- a. Meaning of Research-purpose and types
- b. Methods of Research- observation, interview, questionnaire and opinionaires.
- c. Reliability and validity of Research tools

UNIT II SAMPLING

- a. Sampling- sampling and sampling design, methods of sampling
- b. Hypothesis- formulation of hypothesis
- c. Classification and tabulation of data- types of classification and tabulation

UNIT III INTERPRETATION OF THE DATA

- a. Measures of central tendency- mean, median, mode and merits
- b. Measures of dispersion – range, quartile deviation, variable and standard deviation
- c. Relative measures of dispersion – coefficient of variation, percentile, percentile scales, skewers' s and kurtosis (concepts only)

UNIT IV TEST OF SIGNIFICANCE

Null hypothesis – calculation of t-Test, critical ratio, chi-square test, f-distribution and analysis of Variance (one way and two way)

UNIT V DIAGRAMATIC AND GRAPHIC REPRESENTATION

- a. Types of graphs, diagrams, techniques of constructing graphs, advantages and limitation
- b. Report writing – style, manual, format, evaluating a research report, foot notes, plagiarism, technical and popular reports

REFERENCE BOOKS:

- a. S.P.Gupta (2001), “statistical methods”, Sultan Chand and co, educational publishers, Daryaganj, New Delhi
- b. A.N.Sadhu and Amarjit Singh, (1992), “Research Methodology in Social Sciences”, Himalaya publishing house, Bombay
- c. ICMR (2000) Guidelines for Research on Human subjects and animals
- d. John .W. Best and James V. Kahn, (2000) “Research in Education” Seventh edition, Prentice Hall of India, pvt Ltd, New Delhi.
- e. Lokesh Kaul (1998), “Methodology of Educational Research”, Third edition, Vikas publishing house, pvt ltd, New Delhi
- f. Rajammal P. Devadas (1983), “A Handbook on Methodology of Research”, latest edition, Sri Ramakrishna mission.

WEBSITE, E-LEARNING RESOURCES:

- www.wikipedia.com

PAPER-II HUMAN PHYSIOLOGY

OBJECTIVES:

1. To learn about different cells and their structure and composition
2. To learn about the various organs in the body

UNIT I The General and Cellular Basis for Physiology

Body fluid compartment- membrane potential- inter cellular communication –
Homeostasis- Aging.

Nervous System: Excitable nerve and muscle tissue- transmission reflexes, cutaneous and deep visceral sensation, vision- central regulation of visual function, learning and equilibrium- smell and taste, Arousal mechanism – Techniques in determination of electrical activity of the brain- control of posture and movement – the autonomic nervous system – neural basis of instinctual behavior and emotions.

UNIT II Endocrinology and reproductive function

Pituitary, Thyroid, Pancreas, Adrenal medulla and Adrenal cortex. Development and functions of reproductive organs.

Gastro-intestinal system- Digestion and absorption, regulation and gastro intestinal function.

Circulation- circulating body fluid – origin of heart beat and electrical activity of heart. ECG – interpretation. Latest development in cardiac condition. Angioplasty and Echocardiogram. Cardio vascular regulatory mechanism and Homeostasis.

UNIT III Respiration:

Review of respiratory organs – pulmonary function – gaseous transport in lungs and tissues– regulation – respiratory adjustment in health and disease.

UNIT IV Excretory system

Review of skin and kidney – renal function, latest findings in renal therapy.

UNIT V Immune system:

Innate and acquired immunity – antigen, antibody reaction, role of lymphocytes, cell mediated immunity.

REFERENCE BOOKS:

- a. Guyton, A.C (2001), “Functions of the Human Body”, W.B. Saunders Company, Philadelphia, Latest edition.
- b. Guyton, A.C. and Hall (2001), “Textbook of Medical Physiology”, Xth edition, Harcourt Asia Pvt. Ltd., Singapore.
- c. Hoffman, J. F. and Jamieson, J. D. (1997), “Cell Physiology”, Oxford University Press, New York.
- d. Chakrabarti , (1994), “Human Physiology”, The New Book Stall, Calcutta.
- e. Joshi, V. D. (1995), “Physiology – Preparation Manual for Undergraduates”, Churchill Livingstone, New Delhi.
- f. Jain, A. K. (2003), “Textbook of Physiology”, Arichal Publishing Company.
- g. Chaudhari, A. R. (2000), “Textbook of Practical Physiology”, Paras Publishing, Hyderabad.
- h. Brown, H. (1997), “Physiology and Pharmacology of the Heart”, Oxford Blackwell Science, New York
- i. Mackenna and Callender (1998), “Illustrated Physiology”, Churchill Livingstone, New York.

WEBSITE E-LEARNING RESOURCES:

- <http://members.aol.com/Bio50> - Human Physiology lecture notes
- <http://www.unomaha.edu/hpa> - Human Physiology and anatomy

PAPER – III ADVANCED FOOD SCIENCE

OBJECTIVES:

1. Understand the composition of various foods and the effects of cooking and processing on various components.
2. Learn the food laws and standards.
3. Learn the various scientific methods available for quality control of foods.

Unit I: Cereals and Legumes

- (a) Cereal cookery - gelatinization, dextrinisation and syneresis, factors affecting cooking quality of cereals.
- (b) Batters and doughs - Types of flours, factors affecting gluten formation.
- (c) Baking - Role of ingredients in baking, preparation of bread, cakes, cookies and pastry
- (d) Legumes - Germination, factors affecting cooking, toxic constituents.

Unit II: Flesh Foods and Egg

- (a) Meat and poultry - post mortem changes, methods of cooking.
- (b) Fish - Nutritional significance of fish and fish oil, methods of cooking
- (c) Egg – Factors affecting of foam formation, coagulation.

Unit III: Milk and Milk Products

- (a) Milk and Milk Products – compositions, types of milk, physical properties, nutritive value of milk, effects of heat.
- (b) Milk products – fermented and non fermented products
- (c) Processing of milk
- (d) Properties of milk, role of milk in cookery.

Unit IV: Vegetables and Fruits

Chemical components, changes during ripening, browning reaction and its prevention, effect of cooking.

Unit V: Fats and Oils, Sugars

- (a) Fats and oils - Effect of heating on fats and oil, hydrogenation, winterization and rancidity - Types and prevention, role of fats in cooking.
- (b) Sugar cookery – function of sugar, sugar related products- molasses, corn syrup, maple syrup, jaggery, honey – sugar cookery - crystallization, stages in sugar cookery, crystalline and non crystalline candies.

REFERENCES

- a. Cameron, A., Fox; B.C., 1990, "Food Science, Nutrition and Health", Edward Arnold, London.
- b. Grisworld, R.M., 1962, "The Experimental Study of Foods", Houghton Mifflin Company, Boston.
- c. Manay, S. and Shadaksharaswamy, M. (1997), Food Facts and Principles, New Age International Publishers, New Delhi.
- d. Paul, C. Palmer, H.H., 1972, "Food Theory and applications", John Wiley and sons Inc. New York.
- e. Peckham, G.C., 1975, Foundations of Food Preparation:, Macmillan and Company, London
- f. Potter, N.M., 2002, "Food Science", The AVI Publishing Company, Connecticut.
- g. Srilakshmi, B., 2003. "Food Science", New Age International Publishers, New Delhi.
- h. Sivasankar, (2002), Food Processing and Preservation, Prentice Hall of India, Pvt. Limited., New Delhi.

WEBSITE E-LEARNING RESOURCES:

- www.fao.org – Food and agricultural organization
- www.wfp.org - world food programme
- www.foodsafetycouncil.org - International food safety council
- www.cfsan.fda.gov – Center for food safety and applied nutrition
- www.pubs.acs.org - Journal of Agricultural and Food Chemistry
- www.elsevier.com - Food Quality and Preference
- International Journal of Food Science and Technology

PAPER- IV SELECTED TOPICS IN FOOD SERVICE MANAGEMENT

OBJECTIVES:

1. Understand basic principles of organization and management in food service units
2. Develop skills in food selection, purchase, storage and service of food.
3. Become conscientious caterers and train students in implementing sanitary procedures in food services.

UNIT I

1. Quantity food selection, purchase, storage, waste control, food operation management.
2. Production management – food production, recipe development.
3. Service systems.
4. Menu mechanics
5. Work Improvement and productivity – QWL

UNIT II

1. Hygiene and sanitation
2. Cleanliness and sanitation in the Food Service Unit
3. Personal cleanliness.
4. Quality food standards

UNIT III

1. Safety in food service units – causes, types and prevention of accidents.

UNIT IV

1. Environmental Management
2. Conservation of natural resources
3. Energy and water
4. Solid waste

UNIT V

1. Marketing and promotion in food service organization
2. Franchise systems in the hospitality industry.

REFERENCE BOOKS

- a. Manay, S. and Shadaksharaswamy, M. (1997), Food Facts and Principles, New Age International Publishers, New Delhi.
- b. Bennion, M.(1980), Introductory Foods, 7th ed. Macmillan Publishing Co. USA
- c. Finch C.F. (1984), Food Preparations, MacDonald and Evans Ltd. Plymouth.
- d. West B.B, Wood L, Harger V.P., (2006), Food Service in Institutions. John Willey and Sons, Inc., New York
- e. Casady M.S. (1973) 'Food preparation Handbook' published by the Home Science Association of India.
- f. Karla Longree (1967) 'Quantity Food Sanitation' John Wiley and Sons, Inc., New York.
- g. Waldon (1969) Recipes for great restaurants, Colier Macmillan Boom company, New York.
- h. Kotschewar L. and Terrel M.E. (1961) Food Service Planning layout and Equipment, John Wiley and Sons, Ltd., New York.
- i. Thangam E. Philip (2010) Modern Cookery for Teaching and trade Vol. I & II, Orient Longmans Ltd., New Delhi.
- j. Terell M.E., (1966) Professional Food Preparation, John Wiley and Sons, New York
- k. Marzia M., Canty M., and Richard B., (1933), Introduction to Catering, Oxford Blackwell Scientific publications, London.
- l. Lewis J., Minor E., Ronald F., (1984) – Food Service System Management. AVI Publishing company, New Delhi.
- m. Paul M., Peter J., (1986) – The Management of catering operations,. Holt, Pinehart and Winston publishers, New Delhi.

PAPER-V COMMUNITY NUTRITION

OBJECTIVES:

1. Know the various National and International organisations working for Nutrition
2. Know the prevalence of malnutrition in India
3. Know the measures to overcome malnutrition

UNIT 1 Nutrition and national development.

Human life cycle – Recommended dietary allowances for Indians.

National Organizations concerned with food and nutrition – ICMR, Nutrition Councils and Bureaus – Central and State. Health Education Boards, Social Welfare Boards, Women's voluntary services.

UNIT II

International organizations concerned with foods and nutrition, FAO, WHO, UNICEF, World Bank.

Assessing the food and nutrition problems in the community – Dietary survey, anthropometry, clinical examinations and laboratory examinations.

UNIT III

Prevalence of malnutrition in India. Environmental and socio-economic factors related to malnutrition and family size and composition.

Etiology of malnutrition – dietary patterns, food and nutrient intake, food losses, food waste, customs, habits, prejudice and ignorance. Nutrition and Infection.

UNIT IV Measures to overcome malnutrition:

- a. Need for an integrated approach to solve the problems of nutrition.
- b. The package program of immunization, nutrition and education.
- c. Feeding programs.

UNIT V

Teaching and extension of better nutrition – nutrition education for the community – principles of planning, executing and evaluating nutrition education programmes.
Food production and distribution.
National nutrition policy.
Nutrition in high altitudes, Space Nutrition and Nutrition during emergency.

REFERENCE BOOKS:

- a. Jelliffe. D.B. (1996), The assessment of nutritional status in the community – WHO Monograph Series – No.53. Geneva.
- b. Reh, Emma. (1976), Manual on household food consumption Surveys. FAO. Nutritional studies, No.18. Rome.
- c. Shanti Ghosh (1977), The feeding and care of infants and young children. Voluntary Health association of India , New Delhi.
- d. Ebrahim G.J. (1983), Nutrition in Mother and child health, Macmillan publishing, London.
- e. Ritchey, S.J. and Taper J., (1983), Maternal and Child Nutrition. Harper and Row Publishers, New York.
- f. McLarea, D.S. (Ed.). (1983), Nutrition in the community. John Wiley and sons, New York.
- g. Shukla, P.K. (1982), Nutritional Problems of India – Prentice Hall of India Pvt. Ltd., New Delhi.
- h. Mahajan B.K and Gupta M.C (2005), Textbook of Preventive and Social Medicine, Jaypee brothers, Medical Publishers (p) ltd, New Delhi.

WEBSITE, E-LEARNING SOURCES:

- <http://www.hsc.wvu.edu/library/U-links/community-nutrition.html>
- www.asns.org/njjun04a.pdf

- www.fns.usda.gov/fsec/FILES/SafetyNet.pdf
- www.ext.vt.edu/actionforhealthykids/assistance_guide/lesson5background.pdf

SEMESTER II

PAPER- VI QUANTITY FOOD PRODUCTION AND SERVICE

OBJECTIVES:

1. Develop professional competence in quantity food production
2. Acquire training in the different types of service used in various catering establishments.

UNIT I

Menu planning. Study of menus for different types of quantity food outlets. Courses of menu, uses of menu cards. Points for menu writing, important cookery terms used in menus, common French and English menu terms. Review of mechanics of menu planning. Menu format, Standardization of recipes, recipe file and adapting recipes

UNIT II

Quantity food transportation, receipt and transportation, handling of foods. Storage and purchase of foods (dry & refrigerated). Review of food selection with reference to food buyer, methods of buying, specifications, use of processed and convenience foods.

UNIT III

Methods of cooking, application of cookery terms used. Prepare menus for quantity cookery and food preparation for various Indian, Western, Far Eastern and Continental meals. Methods of cooking – [Moist (atleast 2 each) dry heat (using air as medium) – Veg. & non- veg using fat as medium, microwave cooking and calculation of nutritive value of cooked food]. Value, yield, size and conservation of fuel, portion size and cost per serving. Review of food standards.

UNIT IV

Quantity food production. Food preparation – main dishes and their usual accompaniments. Soups, salads and salad dressings, common sauces and chutneys. Dishes for special functions and festivals.

UNIT V

Equipment for service of food. Use of silverware, crockery, glassware, stainless steel and plastics. Organizing, planning, preparation and service of breakfast, lunch, tea and dinner for 50 persons. Linen used in service – Table cloth, table mat and napkins. Practical training in the use of flowers for the table, service rules for laying a table and waiting at a buffet service.

Types of service – Formal and in formal. Indian service, special catering for occasions like birthdays, wedding receptions and outdoor catering/parties. Styles of service – Indian, French, Far eastern and continental menu. Equipment list and decorative items used.

REFERENCE BOOKS:

a. West B.B. Wood L. Harger V.P. (2006) Food Service in Institutions John Wiley and Sons, Inc., New York

b. Casady M.S. (1973) Food preparation Handbook' published by the Home Science Association of India.

c. Longree K., (1967) 'Quantity Food Sanitation ' John Wiley and Sons, Inc., New York.

d. Waldon K., (1969) Recipes for great restaurants, Colier Macmillan Boom company, New York.

e. Kotschewar L. and Terrel M.E. (1961) Food Service Planning layout and Equipment, John Wiley and Sons Ltd. New York.

f. Thangam E. Philip (2010) Modern Cookery for Teaching and the trade Vol. I & II, Orient Longmans Ltd., New Delhi.

- g. Terrell M.E., (1966) Professional Food Preparation, John Wiley and Sons, New York.
- h. Marzia M., Canty M. and Richard B., (1933), Introduction to catering Oxford Blackwell, Scientific Publications, London.
- i. Lewis J. M., Ronald F., (1984) – Food Service System Management AVI Publishing company.
- j. Paul M., Peter J., (1986) – The Management of catering operations,. Holt, Pinehart and Winston publishers.
- k. Mohini S (2007), Institutional Food service, New Age Publications (p) Ltd, New Delhi.
- l. Kinton and Cessarani (1999), Theory of Catering, John Wiley & Sons, London.

PAPER VII PHYSICAL FACILITIES FOR FOOD SERVICES

OBJECTIVES:

1. To enable the students to understand the design, care and operation of food service equipment.
2. To plan and design a food service operation.
3. To understand factors affecting selection of equipment and fuels in a food service.

UNIT I PLANNING OF FOOD SERVICES

- a. Location
- b. Layout

UNIT II

Functional equipment – classification, operation, installation and maintenance.

UNIT III

Different types and layout of kitchen spaces – L-shaped, U-shaped, rectangular, parallel, combination and Horse shoe shaped kitchen – their advantages and disadvantages

UNIT IV

Financial Investment on physical facilities – expenditure incurred in a) infrastructure facilities b) drainage and plumbing c) environmental sanitation d) planning the interior of food services.

UNIT V

Costing and Budgeting – different types of costing methods and budgeting – principles of double entry, books of accounts up to profit and loss statement.

REFERENCE BOOKS

- a. West B.B. Wood L. Harger V.P. (2006) Food Service in Institutions John Willey and Sons, Inc., New York
- b. Mohini S (2007), Institutional Food service, New Age Publications (p) ltd, New Delhi.
- c. Kinton and Cessarani (1999), Theory of Catering, John Wiley & Sons, London
- d. Terell M.E., (1966) Professional Food Preparation, John Wiley and Sons, New York
- e. Kotschewar L. and Terrel M.E. (1961) Food Service Planning layout and Equipment, John Wiley and Sons Ltd. New York.

PAPER- VIII NUTRITION THROUGH LIFE CYCLE

OBJECTIVES:

1. Understand the role of role of nutrition in maintaining good health.
2. Understand the dietary modifications at different stages of family life cycle.

UNIT I

Introduction to Life cycle, Role of nutrition – the nutrients. A brief reminder on diet influences during the life cycle – Nutritional needs. Nutrition and assessment basis – anthropometry, biochemical, clinical and dietary – importance of nutritional assessment.

UNIT II

Maternal malnutrition– the cause and outcome of pregnancy, physiology, stages of foetal growth, effects of malnutrition, effects of smoking, nausea, vomiting, constipation, heart burn, PIH, eclampsia and pre-eclampsia.

Lactation and human milk – Physiology and Nutritive value of human milk.

Colostrum – composition of human milk. Diet for nursing mother, advantages of breast feeding, basic values, importance of breast feeding over artificial feeding, public health measures for pregnant and lactating women

UNIT III

Infancy – Nutritional assessment, nutrient needs, milk, lactose intolerance, infant formula – types, supplementary food- liquid, semi-solid and solid food choices, special nutritional concerns in infant feeding. Feeding the premature infant, allergies and obesity. Nutritional disorders in infancy and childhood deficiency. PEM, Vitamin A Deficiency, Anaemia. Immunization schedule.

Childhood - Nutrient needs, factors influencing food choices, food acceptance, parental influences, preschool children, normal food behaviour.

UNIT IV

School age - Food patterns, meal patterns, prevention of nutrition and health problems.

Iron deficiency anaemia, over weight and obesity, Dental caries.

Adolescence – Nutrient requirements, eating behaviour, irregular meal pattern, factors influencing eating behaviour, eating disorder.

Adolescent pregnancy – hazards to the mother, to the infants, weight gain and assessment of nutrition needs.

UNIT V

Old Age- Physiological aspects, nutrition, digestion and absorption, nutrient requirements of older people, RDA, Food selection patterns of the older people, changes in life long food pattern, implications for nutrition education.

REFERENCE BOOKS:

- a. Caroline E.T. and Ruth A.R., (2000), “Nutrition and diet therapy, 7th edition, Delmar, New York.
- b. Kathleen M.L. and Sylvia E.S., (2002), Krause’s Food, Nutrition and Diet therapy, 11th edition, Saunders, Philadelphia.
- c. Gordon, M.W and Paul M.I., (1996), “Perspectives in nutrition, 3rd edition, Mosby, USA.
- d. Eleanor R.W., Sharon R.R., (2002), “Understanding Nutrition”, 9th edition, Wadsworth Thomson Learning, Australia.
- e. Geoffrey P. W., (2002), “Nutrition - Health Promotion Approach, 2nd edition, Arnold, London.
- f. Mira S., (2001), “Women and Development- The Indian experience”, Sage Publications, New Delhi.
- g. Francis G.S., Eleanor R. W., (2003), “Nutrition concepts and controversies”, 9th edition, Thomson Wadsworth, Australia.
- h. Michael, J.G and Barri M. M., (2004), Public Health Nutrition, Blackwell Science, UK.

WEBSITE, E-LEARNING RESOURCES:

- www.bam.gov/
- www.health.gov.healthypeople
- www.ncemch.org
- www.e-geriatric.net
- www.cfsan.fda.gov

PAPER – IX FOOD MICROBIOLOGY

OBJECTIVES:

1. Gain knowledge of the role of micro-organisms in health and disease
2. Understand the role of micro-organisms in health and disease
3. Gain knowledge of micro-organisms in relation to food and food preservation.

UNIT I

Introduction to microbiology and its relevance to everyday life.

General characteristics of micro organisms-bacteria, viruses, yeasts, moulds, algae.

Protozoa- Morphology, classification, motility, nutrition, respiration and reproduction.

UNIT II

Distribution and role of micro organisms in

- a. Soil
- b. Water
- c. Air
- d. Sewage

Destruction of Bacteria

- a. Sterilization
- b. Pasteurization
- c. Disinfection

UNIT III

Purification of water- industrial and domestic methods

- i) Industrial method of purification of water, sedimentation, filtration – slow sand filters and rapid sand filters.

Differences between slow and rapid sand filters – disinfection of water with the use of chemicals.

ii) Domestic method of water purification – involving simple techniques like straining water through muslin cloth, filtration of water by ‘three pitchers system and use of domestic filters like Pasteurs, Chamberland filters and Berkfield filters. Use of certain common chemicals like alum, quick lime and permanganate in filtration.

iii) Micro-organism in infection, resistance and immunity

iv) Different methods of spread of infection.

v) Reaction of the body to infection cellular and chemical defences – phagocytoses- antigen – antibody, 2 examples of antigen antibody reactions.

vi) Immunity – active and passive – artificial and natural

Allergy and hypersensitivity

i) Different types of allergies like idiosyncrasies, allergy of infection, contact dermatitis and drug allergy.

ii) Hypersensitivity – definition – anaphylaxis and serum sickness.

UNIT IV

Chemotherapy and antibiotics

i) Chemotherapy – use of sulphonamides, sulphones and PAS. Antibiotics – use of antibiotics, spectrum of activity, mode of administration, complication arising due to constant use of antibiotics, sensitivity tests done on antibiotics. Brief knowledge of any four common antibiotics.

UNIT V

Fermentation, Putrefaction and decay

i) Fermentation – aerobic respiration, anaerobic respiration, products of fermentation.

ii) Parts displayed by micro-organisms in putrefaction and decay.

Microbiology of food poisoning, food infections and food borne diseases, principles of food preservation

- i) Microbial food poisoning by Staphylococci, Salmonella of food poisoning group and clostridium botulinum (Botulism). Measures to prevent microbial food poisoning.
- ii) Food infections – food borne diseases – dysenteries, diarrhoea, typhoid, Cholera.

REFERENCE BOOKS:

- a. Adams, M.R. and Moss M.O., 2005, Food Microbiology, New Age International Publishers. Bangalore.
- b. Frazier, W.C and West H., 1995, Food Microbiology, Tata Mc Graw - Hill Publishing Company Ltd., New Delhi.
- c. Pelzer M.J and Reid R.D., 1972, Microbiology, Tata Mc Graw Hill. New York.
- d. Joshua A.K. (1971), Microbiology – India printing works, Madras.

WEBSITE. E-LEARNING RESOURCES:

- www.cfsan.fda.gov – Center for food safety and applied nutrition
- www.foodsafetycouncil.org - International food safety council
- www.who.int/water_sanitation_health/hygiene/en/ - Sanitation and hygiene
- <http://www.microbiol.org> – Microbiology network
- <http://mic.sgmjournals.org> – microbiology journal

PAPER- X EXPERIMENTAL FOODS

OBJECTIVES:

1. Evaluate foods using sensory organs
2. Know the changes in food during different types of processing
3. Know the different types of packaging and preservation of food

UNIT I

Evaluation of foods:

- a) Factors affecting acceptability of foods; planning and conducting acceptability studies.
Use of sensory organs in the evaluation of foods- visual, tactile, olfactory and gustatory.
- b) Principles of objective evaluation; Selection of taste panel, types of tests needed.
- c) Principles of Subjective Evaluation; Methods for objective evaluation- recent studies; improvised methods for laboratory studies.

UNIT II

Changes in food during

- a) Preparation
- b) Cooking by different methods
- c) Browning reactions- enzymatic and non-enzymatic.

UNIT III

Fats and oils- manufacture and properties of locally available fats and their uses in food preparation, rancidity. Factors affecting the absorption of fats and oils during frying.

Enzymes in food industry. Classification, properties, enzyme applications and new developments.

UNIT IV Food processing

Types and techniques, packaging material, shelf life of processed foods (cereals, nuts and oil seeds, pulses, flesh foods, instant foods, fruits and vegetables). Changes in food during processing. Determination of quality of processed foods.

UNIT V

Bio deterioration of foods :

General aspects: microbial deterioration of carbohydrates, proteins and fats.

Post harvest technology

Visits: Regional Quality Control Laboratory, Central Food Technological Research Institute, Food processing units.

REFERENCE BOOKS

- a. Paul P.C and Palmer H.H., (1972). Food theory and application, New York, John Wiley and Sons, Inc.,

- b. Mahan L.K. and Stump, S.E (2002), “Krause’s Food Nutrition and Diet Therapy”, 10th edition, W.B.Saunders’s company, Philadelphia.
- c. Swaminathan M., (2002), “Food and Nutrition”, BAPPCO, 88, Mysore Road Bangalore – 560 018.
- d. Griswold R.M., (1963). The experimental study of foods. Bostn, New York, Houghton Mifflin and Co.
- e. Bowers J., (1992). Food theory and applications, Maxwell Macmillan International edn.,

WEBSITE, E-LEARNING RESOURCES:

- www.fao.org – Food and agricultural organization
- www.wfp.org - world food programme
- www.foodsafetycouncil.org - International food safety council
- www.cfsan.fda.gov

SEMESTER III

PAPER -XI FINANCIAL AND MARKETING MANAGEMENT

OBJECTIVES:

This course deals with financing in business accounting, taxation, pricing policies, marketing and sales strategy and banking. The students will be expected to carry out minor projects in related to field.

UNIT – I (12 hours)

Financing of business

UNIT – II (12 hours)

Financial accounting

UNIT – III (12 hours)

Taxation
Banking

UNIT – IV (12 hours)

Marketing and sales management.

UNIT – V (12 hours)

Pricing policies.

GROUP PROJECT: In any one of the above areas.

PAPER -XII THERAPEUTIC NUTRITION

OBJECTIVES:

1. To obtain knowledge regarding metabolic processes of normal and diseased organs.
2. To be familiar with dietary behaviour modifications based on physiological changes occurring in diseased conditions.
3. To acquire Knowledge regarding the effect of various diseases on nutritional status and nutrient requirement
4. To understand the role of dietitian
5. To develop skills and techniques in the planning and preparation of therapeutic diets for various diseases and nutritional deficiencies.
6. To gain knowledge in diet counseling and educating patients.

Unit I -Nutritional Management in the Diseases of Gastrointestinal system

Causes, symptoms and nutritional management of gastritis, peptic ulcer, flatulence, malabsorption syndrome, inflammatory bowel syndrome, hepatitis, cirrhosis of liver, cholecystitis, cholelithiasis and pancreatitis

Unit II -Nutritional Management in the Diseases of Kidney, Endocrine System and Obesity

a. Diseases of Kidney

Causes, symptoms and nutritional management of nephritis, nephrosis, renal failure, renal stones and dialysis

b. Diseases of endocrine system

Causes, symptoms and nutritional management of disorders of thyroid, pituitary and adrenal cortex

c. Nutritional management of obesity

Causes and nutritional management

Unit III -Nutritional Management in Cardiovascular Diseases

a. Diseases of Cardiovascular system

Causes and nutritional management of hyperlipoproteinemia, atherosclerosis, hypertension and congestive cardiac failure

Unit IV - Nutritional Management in Cancer and Burns

a. Cancer-Causes and nutritional management

b. Burns- Types and nutritional management.

Unit V- Nutritional Management in Metabolic Diseases

a. Diabetes Mellitus - Types, causes, symptoms and nutritional management.

b.Gout and Phenyl ketonuria – symptoms and treatment.

REFERENCES

1. Alpers,(1999), Manual of Nutritional Therapeutics, Little Brown, Washington.
2. Antia F.P., (2000), Clinical Dietetics and Nutrition, Oxford Press, New Delhi.
3. Chatterjee M.N. and Shinde R., (1994), Text book of Medical Biochemistry, Jaypee Brothers Pvt. Ltd., New Delhi.
4. Garrow, J.S. James, W.P.T. and Ralpa., (2000), Human Nutrition and Dietetics, Churchill Livingstone, Edinburgh.
- 5.. Gaw et al., (1995), Clinical biochemistry. Churchill Livingston Publications, London
6. Gowenlock, A.H., (1988), Varley's Practical Clinical Biochemistry, CBS publishers and distributors, India.
7. Krause, M.V., (1986), Food, Nutrition and Diet Therapy W.B.Saunders Co., USA.
8. Mahan, K.L. and Syliva, E.S., (2000), Krauses Food, Nutrition and Diet Therapy, W.B. Saunders Company, Philadelphia.
9. Ramakrishnan., (1994), Text book of Clinical Biochemistry, T.R. Publications, Madras.

10. Robinson et al., (1994), Normal and Therapeutic Nutrition, Macmillian Co., New York.
11. Srilakshmi, B., (2005), Dietetics, New Age International (P.) Limited, Publishers, New Delhi
12. Williams, S.R., (1986), Nutrition and Diet Therapy, C.V. Mosby, London.
13. MALhan,K.N.A.,(2002).Krauses Food Nutrition and Diet Therapy, W.B Saunders Company, Philadelphia.

WEBSITE E-LEARNING RESOURCES

- a. www.nal.usda.gov/fnic/etext/000058.html - food and Nutrition Information Centre
- b. www.fantaproject.org - Fanta technical assistance for nutrition
- c. www.americanhear.org - American heart association
- d. www.nhlbi.nih.gov/chd/ - National Cholesterol education program

PAPER- XIII PHYSIOLOGICAL AND METABOLIC CHANGES IN DISEASE

OBJECTIVES:

1. To learn about the food, drug and nutrient interaction in the body
2. To learn about the pathophysiology of different diseases
3. To learn about the therapeutic aspects of different clinical conditions

UNIT I

Normal cellular processes

Stress and physiologic effects.

Drug, Food and Nutrient interaction

UNIT II

Regulation of Food intake and pathogenesis of obesity and malnutrition and starvation

Pathophysiology of G.I tract disease: anatomic, physiologic and functional changes, impact on nutritional status and nutritional implications, post surgical complications and management, malabsorption syndrome.

UNIT III

Pathophysiology of liver diseases- progression of liver disease – metabolic and nutritional implications-role of specific nutrients and alcohol.Diseases of the Gall bladder and pancreas- pathophysiologic changes-metabolic and nutritional implications

UNIT IV

Cardio-vascular disease- pathogenesis, role of nutrients in prevention-metabolic and nutritional implications

Diseases of the renal system-etiology, pathogenesis- changes in function with progression of disease, metabolic and nutritional implications,water and electrolyte balance.

Cancer-carcinogenesis –pathogenesis and progression of cancer, role of nutrients, foodstuffs and food additives in cancer. Therapies and their clinical and metabolic implications.

UNIT V

Metabolic disorders, Diseases of Endocrine Glands and Inborn errors of Metabolism.

Diabetes, Hyper and Hypo thyroidism, Inborn errors of carbohydrate and protein metabolism.

Immunity and infection-diarrhoea, AIDS, respiratory problems.

Musculo- skeletal problems, arthritis, osteoporosis.

REFERENCE BOOKS:

- a. Anderson L., M.V.Dibble, P.R. Turkki, H.S. Mitchell and H.J. Rynbergen (1982) Nutrition in Health and Diseases, 17th ed ., j.b. Lippincott co., Philadelphia,.
- b. Anita F.P (1989): Clinical Dietetics and Nutrition, 3rd ed., Oxford University Press, Delhi, Reprinted in.
- c. Bennion M (1979): clinical Nutrition, Harper and Row Pub. New York
- d. Kraus M.V. and L.K. Madan (1984): Food, Nutrition and therapy, W.B. Saunders Company, London

- e. Passemore R. and M.A. Eastwood (1986): Human Nutrition and Dietetics, 8th ed.
ELBS Churchill Livingstone,
- f. Robinson, C.H.M.R. Lawrie, W.L. Chenoweth and A.E. Garwick; Normal and therapeutic nutrition, 17th ed. Macmillan Pub. Co.
- g. Whitney, E.N and C.B. Cataldo (1983): understanding normal and clinical nutrition, west pub. St. Paul
- h. Williams S.R (1981): Nutrition and diet therapy, 4th ed., the C.V Mosby Co., St. Louis,.
- i. Williams S.R. (1986): Essentials of Nutrition and Diet Therapy, 4th ed., Mosby College Pub. St. Louis
- j. Thomas, B (1996): Manual of Dietetic practices
- k. ASPEN. Nutrition Support, Dietetics
- l. ADA – American Dietetic Association guidelines
- m. ADA - American Diabetic Association guidelines
- n. Indian Dietetic Association Clinical Nutrition Manual

PAPER- XIV DIETETICS INTERNSHIP

OBJECTIVES:

1. To learn about diet planning techniques for various patients in a hospital set up
2. To learn about the practical difficulties faced by meeting the patients during ward rounds
3. To calculate the nutrients present in different diets by making use of food exchanges.
4. To prepare special diets – blenderised feeds, diabetic, allergic diets for kidney disorders, burns, cancer, AIDS and liver disorders.

Internship will be carried out during the summer vacation of the first year and marks should be sent to the University by the College and the same will be included in the Third Semester Marks Statement.

**ELECTIVE – INTER DISCIPLINARY
PAPER XV ENTREPRENEURIAL DEVELOPMENT**

OBJECTIVES:

1. Creating awareness about entrepreneurship as an effective to a ‘White Collor Job’.
2. Students can be taken to trade fairs to collect information on Industrial products of their interest.
3. Students visits to financial institutions industrial association, research institutions and banks would help them in collecting information on availability of finance, technology, raw material and export potential.

UNIT I

Importance of entrepreneurship and relevance in career growth.

Entrepreneur, Entrepreneurship and enterprises.

Concept and development

Characteristics of entrepreneurs

Developing Entrepreneurial Competencies.

UNIT II

Types of enterprises and Ownership

Manufacturing, service and Franchise

Large, medium, SSI tiny and cottage industries.

Limited, public Limited, Private Limited.

Partnership, Sole Proprietorship.

Advantages and disadvantages of types of ownership;

Employment, Self employment and Entrepreneurship.

UNIT III

Financial Management- Important and techniques

Management of working Capital, reinforcement of the concept of working capital.

Factors to be controlled in managing working capital – Tools and Techniques.

Financial support from financial institutions

Books of account

Importance of accounting assessment.

Different books and its relevance. Support

Stationery and its use. Operating mechanism.

UNIT IV

Marketing management

marketing for small business

strategies for sales promotion – tools & techniques for sales promotion, pricing

Policy and its implication on sales

Export marketing

Understanding the International Business environment

Procedures and formalities

Do's and Don'ts for exports

UNIT V

Inventory Control and Quality Management

Defining quality and its concept

Aspects of quality management

ISO 9000 Certification.

Total Quality Management

Legal complications

Income Tax

Sales Tax

Excise

Labour laws, factory act, pollution control act etc.

Related experience - Alumni association – Ex-students of the institutions who have set up their own enterprises can be invited to talk to the students which would help motivate the students to take up an entrepreneurial career.

REFERENCE BOOKS:

- a. P.C. Jain (1998) Handbook of New Entrepreneurs Oxford University Press
- b. Jan Vyas, Granthistran, (1947), Small Scale Industry Handbook
- c. Shiv Khera (1998), You can win, Macmillan India.
- d. Charles Hozgrew, (1997) Cost Accountancy, A Managerial Emphasis
- e. Mitch McGremmon, FT – Pitman, (1995), Unlesh the Ebtreprenuer Within
- f. Holt, PHI (1997), Entrepreneurship, New Venture Creation.
- g. Philip Kotter (1997) Marketing Management by, Prentice Hall, India, (PHI).
- h. I.M. Pandey, Vikas, (1998), Management Accounting
- i. Everette Adam, PHI, (1997), Production and Operational Management
- j. Azhav Kazmi (1997), Business policy, Tata McGraw Hill (TMH)

PRACTICAL

1. Visit to small Scale Visit to the Trade Fair.
2. Ex. Students enterprise – visit.
3. Industry, financial institution association, research institution and banks.

ELECTIVE – EXTRA DISCIPLINARY

PAPER XVI FUNDAMENTALS OF CHILD GUIDANCE AND COUNSELING

OBJECTIVES:

1. To enable the students to understand the basics of guidance and counseling.
2. To impart knowledge on educational and vocational guidance.
3. To enable students to understand the concept of mental health and hygiene, causes and adjustment.

UNIT I The concept of guidance

- a. Meaning, nature and scope of guidance
- b. Philosophical, Psychological and sociological bases of guidance
- c. Need and importance of educational guidance services in schools.

UNIT II Vocational Guidance

- a. Purpose and functions of vocational guidance
- b. Relationship between educational and vocational guidance
- c. Relation between vocational guidance and work education

UNIT III Educational Guidance

Basic data necessary for educational guidance - Pupil's abilities, aptitude, interest.

Construction, administration and interpretation of Cumulative record cards and individual Inventories

UNIT IV The concept of counseling

- a. Meaning, nature and scope of counseling
- b. Different types of counseling
- c. Various steps and techniques of counseling

REFERENCE BOOKS

- a. Spock, Benjamin (1970), Baby and Child Care, Mumbai: Pocket Books Distributing Company
- b. Suriakanthi. A, Child Development An Introduction, Kavitha Publications, Gandhigram, Tamil Nadu
- c. Read, Katherine. H (1989), The Nursery School A Human Relationship, Laboratory, Kolkata

SEMESTER IV

PAPER –XVII THERAPEUTIC NUTRITION PRACTICAL

OBJECTIVES:

1. To enable students to plan, prepare and serve diets for different diseases.
2. To calculate the nutrients present in different diets by making use of food exchanges.
3. To prepare special diets – blenderised feeds, diabetic, allergic diets for kidney disorders, burns, cancer, AIDS and liver disorders.

PLANNING, PREPARATION AND SERVICES OF DIETS FOR DIFFERENT CONDITIONS

UNIT 1:

Fevers – short, long term and intermitent
Celiac disease - lactose intolerance and other allergic conditions
Obesity

UNIT II:

Liver disorders – ulcers, gastritis, inflammatory bowel syndrome, intestinal disorders – diarrhoea and constipation
Pancreatitis
Insulin Dependent Diabetes Mellitus
Non Insulin dependent Diabetes Mellitus

UNIT III:

Cardio Vascular Diseases.

- (a) atherosclerosis
- (b) hypertension.

UNIT IV:

Renal Diseases

- (a) Nephritis
- (b) Nephrosis.
- (c) Renal Failure.

UNIT V:

Total Parenteral nutrition (TPN) – severe burns, AIDS and cancer

REFERENCE BOOKS

- a. Sue Rodwell Williams (1985), Nutrition and Diet therapy,. The CV. Mosby saint Louis.
- b. Bogeri, J.G.V. Brigg D.H. Colloway, (1973), Nutrition and physical fitness, W.B. Saunders Philadelphia, London.
- c. Mahan. (1992), Food Nutrition and Diet therapy. W.B. Saunders company, Philadelphia, London, Toronto.
- d. Robinson, C.H. Lawles, M.R. Chernoweth. W.L. garwick, A.E.(1990), Normal and Therapeutic Nutrition the Macmillan company, New York.
- e. Garrow (2001), Nutrition and Dietetics”, 10th Edition,Churchill Livingstone
- f. Wilson, E.P. Fisher K.H. and Fuqua M.E. (1975), Principles of Nutrition. John Willey and Sons New York, London.
- g. G.A. Helen (1974). Industry Nutrition; C.V. Mosby Company Saint Louis.

- h. C. Gopalan, S.C. Balasubramanian, S.V. Ramasastri and Vivesara Rao, Diet Atlas, ICMR, New Delhi, India.
- i. Wadlock, G.M. and Kessel, M. (2002), “ Perspectivesa in nutrition”, Mc Graw Hill, New York.
- j. Davidson and Passmore R and Brock J.B (1976), Human nutrition and dietetics. The English languages book society and Churchill Living Stone.
- k. David M. Paize et.al. (1988), Clinical nutrition, C.V.Mosby Co.St.Louis.
- l. Antia, F.P. and Abraham P (1994), “ Clinical dietetics and nutrition”, 4th edition, Oxford university press.
- m. M. S. Swaminathan, (1974), essential of Nutrition Vol. I and II. The Ganesy and company, Madras- 17.
- n. Srilakshmi B (2005), “ Dietetics”, revised fifth edition, New Age International (P) limited.
- o. Sizere, F.S and Whitney E. R. (2003). “Nutrition, Concepts and Controversies”, 9th edition, Thomas Wadsworth, Australia.
- p. Brown, j.E. (2006), “Clinical Nutrition, Case studies”, Thomas Wadsworth, Australia.
- q. Brown, A (2004), “Understanding Food , Principles and Preparation”, Thomas Wadsworth, Australia.

WEBSITE, E-LEARNING RESOURCES:

- www.nal.usdfa.gov/fnic/etext/000058.html - Food and nutrition information center
- www.fantaproject.org- Fanta technical assistance for nutrition
- www.americanheart.org –American heart association
- www.nhlbi.nih.gov/chd/ - National cholesterol education program

PAPER- XVIII DISSERTATION

OBJECTIVES:

1. To learn the principles of research methodology in framing of hypothesis, collection of data, sampling, research design, graphic representation and histogram
2. To apply basic statistical procedures to the results obtained
3. To make use of the knowledge of interpretation, and report writing in formulation of dissertation

Three months study on any area of research related to the M.Sc. Course such as to cover the above objectives

ELECTIVE – EXTRA DISCIPLINARY

PAPER - XIX HOSPITAL ADMINISTRATION

OBJECTIVES:

- 1) To know about the types of hospitals and their administration.
- 2) To gain knowledge about the legal aspects of hospital administration.
- 3) To know about National and International organization financing medical care.

UNIT I

Hospital Organization and Management- Introduction, general principles, management structure and duties, History and functions of Hospitals, Relationship of Hospital to the community

UNIT II

Legal aspects of nurses, doctors and employees in the hospital, Medical malpractices, and laws affecting disease afflicted.

UNIT III

Organization Financial Medical Care- National- ICMR, NIN, CFTRI
International- WHO, UNICEF, FAO

UNIT IV

Accounting and Financial Management in Hospitals- Principles, analysis and interpretation of financial reports, Preparation and use of budgets, Methods of cost computation.

UNIT V

Doctor and Dietitian relationship- Qualities of Doctor, Qualities of Dietitian, relationship between Doctor and Dietitian with regard to patients.

REFERENCE BOOKS

- a) Davidson S.R. and Passmore J.F., 1975, Human Nutrition and Dietetics. Vol. I, II Edition.
- b) Francis, C. M and D' Souza, M.C., 2000, Hospital Administration. Jay Brothers.
- c) Gillespie S. McNei G., 1992, Hospital Management Macmillan and Co., New York.
- d) Mitchell et al., 1987, Nutrition in Health & disease, Pitman M. Edu. Publishing Co.
- e) Robinson et. al., 1986, Normal and Therapeutic Nutrition. Macmillan Co., New York.

WEBSITE, E-LEARNING RESOURCES:

- www.ingenta.connect.com- Food and Food ways.
- www.fda.gov/search.html
- www.wodswrth.com/nutrition
- www.elsevier.com- Indian Journal of Nutrition and food microbiology.

ELECTIVE – EXTRA DISCIPLINARY

PAPER- XX NUTRITION IN SPECIAL CONDITION

OBJECTIVES:

1. To learn about the special conditions in which the nutritional status of human beings are affected
2. To manage good nutritional status during emergencies

UNIT I

Sports – Effect of exercise/ games on muscular, cardiovascular and respiratory activities

Energy system – aerobic and aneorobic, fuel modulation on exercise

UNIT II

Sports nutrition – Preparation for competition – pre games meal, Carbohydrate loading, pre exercise hydration, post game meal

Nutrition during exercise/games – fluid and carbohydrate intake, nutritional factors causing fatigue. Fluid replacement, dietary supplements & ergogenic aids in sports

UNIT III

High altitude nutrition – a. Acclimatization, hydration, nutritional problems and altitude sickness, dietary management of mountaineers

Space travel and nutrition. Space physiology, space food system, dietary intake for space flight

UNIT IV

Sea voyage and Nutrition – Sea sickness. Deep sea diving. Hyperbaric conditions. Effect of high partial pressures of gases in the body.

Hyperbaric oxygen therapy, health problems and dietary management

UNIT V

Emergency feeding – emergency situations arising from famine, earthquake, flood and Tsunami.

Institutional problems in emergencies

Nutritional relief and rehabilitation – Organization involved, Food Distribution Strategies.

REFERENCE BOOKS:

- a. Bourland, Charles T., (1998) 'Advances in Food systems for space flight'. Life support and Biosphere Science 5:71-77
- b. Guyton, A.C. and Hall J.E,(2001). Pocket companion to text book of Medical Physiology, 10thedition W.B. Saunders company, Philadelphia
- c. Lane, Helen W., and Smith, Scott M., (1998). 'Nutrition in space'. In modern nutrition in Health and Disease, 9th edition eds, M.E. Shills, J.H. Olson, M. Shike and AC Ross, Baltimore, William and Wilkins.

WEBSITES

1. www.faqs.org/nutrition/smi-2/space-travel
2. [www.space.com/science astronomy/radiation-fruit-OH01518.html](http://www.space.com/science_astronomy/radiation-fruit-OH01518.html)
3. <http://www.bodyresults.com/SImounteering.asp>

ELECTIVE – INTER DISCIPLINARY

PAPER XXI CATERING INTERNSHIP

OBJECTIVES:

1. To be trained to be good managers in -
 - a. Hotels
 - b. Industrial canteens
 - c. Corporate hospitals

2. To be trained to plan the menu effectively for
 - b. Closed clientele (workers in industrial canteens and subsidized eating places)
 - c. Open clientele (hotels and corporate hospitals)
3. To learn effective cost control measures to meet the profit and loss of the institutions
4. To be a good and effective public relations officer

One month catering internship after the summer holidays when the student passes her second semester of the M.Sc course and goes to the third semester.

JOURNALS

- American Journal of Clinical Nutrition, Published by the American Society for Clinical Nutrition.
- Indian Journal of Nutrition and Dietetics pub. Sri Avinashilingam Home Science College, Coimbatore.
- Indian Management – Journal of all India Management Association.
- Journal of American Dietetics Association.
- Journal of Food Science and Technology.
- Nutrition-published National Institute of Nutrition.
- World Review of Nutrition and dietetics.

JOURNALS

- a. American Journal of Clinical Nutrition, Official journal of the American Society for clinical nutrition, Inc
- b. World review of nutrition and dietetics. Ed. Bourne, G.D.S Karger, Nutrition.
- c. The Journal of Nutrition, Official journal of the American Institute of Nutrition
- d. Nutrition reviews. The nutrition foundation Inc, New York, USA.

- e. Nutrition Today, Published by Nutrition Today Inc. Annapolis, USA.
- f. European Journal of Clinical Nutrition.
- g. Indian Journal of nutritionand dietetics, Avinashilinagm Deemed University, Coimbatore
- h. Indian Journal of Human Service, JBAS College for Women, Chennai.

From

Dr. Chandra Venkatasubramanian

Associate Professor

Post Graduate Department of Home Science

Queen Mary's College

Chennai - 4

A.C.S.'13