



COURSE STRUCTURE UNDER CBCS

(For the candidates admitted from the academic year 2016-2017 onwards)

Updated on 09.03.2017

Sem	Course	Course Title	Ins. Hrs / Week	Credit	Exam Hrs	Marks		Total
						Int.	Ext.	
I	Core Course – I (CC)	Advanced Food Science	6	4	3	25	75	100
	Core Course – II (CC)	Nutrition through Life Span	5	4	3	25	75	100
	Core Course – III (CC)	Clinical Biochemistry	5	4	3	25	75	100
	Core Course – IV (CC)	Food Service Management	5	4	3	25	75	100
	Core Practical – I (CP)	Advanced Food Science Nutrition through Life Span Clinical Biochemistry* (P)	3+3+3	4	3	40	60	100
	TOTAL			30	20			
II	Core Course – V (CC)	Dietetics	6	5	3	25	75	100
	Core Course – VI (CC)	Food Microbiology and Sanitation	6	5	3	25	75	100
	Core Practical – II (CP)	Dietetics Practicals* and Dietetics Internship* # (P)	8	4	3	40	60	100
	Elective Course – I (EC)	Functional foods and Nutraceuticals	5	5	3	25	75	100
	Elective Course – II (EC)	Front Office Management and Housekeeping	5	5	3	25	75	100
	TOTAL			30	24			
III	Core Course – VII (CC)	Quantity Food Production and Service	6	5	3	25	75	100
	Core Course – VIII (CC)	Research Methods and Statistical Techniques	6	5	3	25	75	100
	Core Practical – III (CP)	Quantity Food Production and Service Practical* (P)	8	4	3	40	60	100
	Elective Course – III (EC)	Hospital Food Service Administration	5	5	3	25	75	100
	Elective Course – IV (EC)	Food Product Development	5	5	3	25	75	100
	TOTAL			30	24			
IV	Core Course – IX (CC)	Food Service Facilities	5	5	3	25	75	100
	Core Course – X (CC)	Management and Accounting in Hospitality Industry	5	5	3	25	75	100
	Core Practical - IV (CP)	Catering Internship* @ (P)	8	4	3	40	60	100
	Elective Course – V (EC)	Counselling Skills	5	4	3	25	75	100
	Project		7	4	-	-	-	100
	TOTAL			30	22			
GRAND TOTAL			120	90				2000

Note:

* - Practical Exams to be conducted

- Should include both internal and external components in the dietetics practical and dietary internship.

Evaluation of the dietary internship should be done by the hospital in which the student undergoes training and marks should be obtained for the external component and the case study and viva should be considered for the internal component

@- Evaluation should be done by the hotel where the students undergo catering internship for their external component and the casestudy, work sheet and viva should be included in the internal component.

Project

Note:

Project : 100 Marks
Dissertation : 80 Marks
Viva Voice : 20 Marks

Core Papers - 10
Core Practical - 4
Elective Papers - 5
Project - 1

Note:

1. Theory	Internal	25 marks	External	75 marks
2. Practical	”	40 marks	”	60 marks

3. Separate passing minimum is prescribed for Internal and External

- a) The passing minimum for CIA shall be 40% out of 25 marks (i.e. 10 marks)
- b) The passing minimum for University Examinations shall be 40% out of 75 marks (i.e. 30 marks)
- c) The passing minimum not less than 50% in the aggregate. : 100 Marks

CORE COURSE I
ADVANCED FOOD SCIENCE

Objectives:

1. Gain knowledge on source and properties of food
2. Develop skills to judge the quality of cooked foods
3. Understand the Principles and chemistry of foods.
4. Apply the Principles while preparing and cooking.

UNIT I

- a. Physiological changes- Physical properties of water and ice sorption phenomena, solutions and colligative properties, freezing and ice structure, Colloidal salts, stabilization of colloidal systems, properties of colloids, Rheology of food dispersion, foam structure formation and stabilization. Denaturation of proteins, emulsions, stabilizers, browning reaction - enzymatic and non enzymatic
- b. Sugar cookery and sweeteners - Sugar cookery, sources, uses, properties, syrups, sugar alcohol, sweeteners, chemistry related to usage in food products. Structural relationship to sweetness perception, hydrolytic reaction, solubility and crystallization. Textural contribution, fermentation, non enzymatic browning. Amorphous and crystalline candies, fondant, caramel brittles and fudge

UNIT II

- a. Starch Cookery- Sources, uses and chemical characteristic, factors affecting viscosity of starch pastes. Batters and doughs- types, properties. Flour and flour quality, extruded foods, breakfast cereals, wheat germ, bulgar, puffed and flaked cereals. Fermented foods cereal based products
- b. Fats and oils - Sources, composition of fats and oils. Chemical changes in fat during storage and cookery. Fat substitutes and fat deterioration. Antioxidants, radiolysis, interesterification of fats. Emulsions in food preparation

UNIT III

- a. Fleshy foods- Meat structure and composition, cuts of meat. Post mortem changes, methods of cooking, tenderizers, factors affecting tenderness. Classification and kinds of fish, nutritive value, selection and methods of cooking. Poultry- nutritive value, selection and methods of cooking
- b. Egg cookery - Structure and composition, selection, testing for freshness of eggs. Coagulation of egg protein, foam formation, factors affecting foam formation. Egg processing, egg cooked in shell, poached egg, custard. Omelets, angel cake, sponge cake. Novel products- low cholesterol egg, double yolk eggs.

UNIT- IV

- a. Milk and milk products- composition and nutritive value, physical and chemical properties. Milk protein, coagulation, factors affecting coagulation, problems in milk cookery. Cream- types, uses of butter, cheese, types and making cheese. Cultured milk, yogurt, whey, concentrated dried products, substitute
- b. Legumes- .Pulses- Grams, dhal and nuts, processing, composition. Methods of cooking. Effects of processing such as cooking, decortication, germination and fermentation

UNIT V

- a. Plant pigments- Fruits and vegetables, structure, pigments and acid in vegetables and fruits. Cellulose and pectic substances, browning reaction in fruits and vegetables and preventive methods. Different methods of cooking and the effect on structure, pigment and volatile substances. Ripening of fruits.
- b. Acceptability testing – Quality features of food. Evaluation of foods by subjective and objectives methods, factors affecting the acceptability of foods, selection of taste panel. Difference, preference and descriptive tests, microscopic examination. Physical and chemical methods, physical characteristic colour, appearance, texture, density, volume, tenderness. Viscosity and surface tension, moisture, loss of weight

Text Books:

1. Gopalan.C., Ramasastry, S.V. And Balasubramanium. S.C. Nutritive Value of Indian Foods, National Institute Of Nutrition, Hyderabad, 2008.
2. Swaminathan .M. Advanced Textbook on Food and Nutrition, The Bangalore Printing and Publishing Co., Ltd., 2nd Ed, 2003
3. Shakuntala Manay, N. Shadaksharaswamy.M, Food Facts and Principles, 2nd Edition, New Age International, 2001.
4. Srilakshmi, B, 2002, Food Science, New Age International p) Ltd, New Delhi

Reference Books

1. Potter N.M. 'Food Science' The AVI publishing Company inc., West Port, Connecticut, U.S.S. 1973.
2. Fox A. Cameron, A.G. 1970, 'Food Science and Chemical Approach', University of London, press Ltd., 1970.
3. Griswold, R.M. 'The Experimental study of Foods' Houghton Milflin, Company, Bpstp New York, 1962
4. Peckham, G.C., 'Foundation of Food Preparation', The Macmillan and Company, London, 1969
5. Paul P.C. and Palmer, H.H. 'Food Theory and applications'. John Willey and sons, Inc., New York 1972.
6. Low, B. 'Experimental Cookery' John Willey and Sons, Inc, New York. (1965)
7. Meyer, H. 'Food Chemistry' Van Nonstrand, Teinhold Company, New York and London, 1969.
8. Amerine, M.A. et-al ., 'Principles of Sensory Evaluation of food' Academic press, New York, and London 1965.
9. Paul, P.C. and palmer, H.H Food Theory and Applicaions. John Wiley (1972)
10. Matz., S.A. Food Texture The AVI Publishing Co. (1962)
11. .Kranar, A. and Twing B.A. Fundamental of Quality control for the Food Industry. The AVI publishing Co., (1966)
12. Vail, G.E., Philip J.A. Rust L.O. Griswold R.M. Justin, M.M. 'Food' , Houghton Mifflin, Co., 1973.
13. Pameranz., Y., Functional Properties of Food components. Academic Press Inc., Boston, 1991
- 14.

Journals

1. Journal of Food Science, The Institute of Food Technologists, Illinois, USA
2. Nutrition and Food Science, Farbes Publications Ltd., Hatree House, Greenway, London
3. Journal of Food Science and Technology, Association of Food.

CORE COURSE II

NUTRITION THROUGH LIFE SPAN

Objectives: To enable the students to

1. Understand the importance of meal planning
2. Comprehend the nutritional needs pertaining to different stages of life
3. Know the nutrition related problems in life cycle
4. Plan diet for various age groups

UNIT I

- a. Basic principles of meal planning, balanced diet, RDA, food allowance for different age groups, factors affecting meal planning.
- b. Nutrition during pregnancy – stages of foetal development, physiological changes, haematological changes, cardiovascular changes, respiratory changes, renal changes, gastrointestinal changes, metabolic changes, weight gain in pregnancy, factors influencing the outcome of pregnancy, complications, nutritional requirements and diet planning for a pregnant women.

UNIT II

- a. Nutrition for lactating women – Physiology and psychology of lactation, hormonal control, improving lactation performance- physical contact between mother and child, psychological support, good nutrition, galactogogues, colostrum – composition, composition of breast milk, factors affecting the volume and composition of breast milk, nutritional requirements of a nursing mother, diet planning, factors responsible for lactation failure.

UNIT III

- a. Nutrition in infancy – birth weight of infants, growth and development, milestones in development (only stages), immunization schedule, nutritional requirements of the infant, process of breast feeding, superiority of breast milk, advantages of breast feeding, comparison of human milk with cow's milk, artificial feeding, weaning and supplementary foods, problems in weaning, nutrition related health problems- diarrhoea, under nutrition, over nutrition/ obesity, preterm infants.
- b. Nutrition in preschool age – growth and development, body composition, physical and motor development, language, cognitive development, emotional and social development, nutritional requirements, factors affecting nutritional status, food requirement, eating habits, low cost supplementary foods, nutrition related problems in childhood- under nutrition, micronutrient deficiencies, overweight and obesity, diet planning for the preschool child.

UNIT IV

- a. Nutrition in school age – growth and development, changes in height and weight, changes in body composition, changes in social and psychological behaviour, nutritional and food requirement, packed lunch – factors to be considered, sample menu, feeding problems, nutritional concerns- iron deficiency anaemia, malnutrition, diet plan for the school children.

- b. Nutrition in adolescence - growth and development, – Physiological changes, sexual changes, psychosocial changes, dietary changes, body composition, nutritional requirements, nutritional problems- anaemia, iodine deficiency, calcium deficiency, zinc deficiency, obesity, eating disorders- bulimia nervosa, anorexia nervosa, binge eating, malnutrition due to early marriage, food habits and diet plan.

UNIT V

- a. Nutrition in adulthood – Physiological changes, reference man and reference women, activity classification, nutritional requirements of an adult man and women, body composition, nutrition and health issues- under nutrition, anaemia, iodine deficiency disorder, lifestyle related disorder, obesity, metabolic syndrome, hypertension, cardiovascular diseases, diabetes, cancer. Planning diet to suit different income levels.
- b. Nutrition in elderly – definition of geriatrics, changes in body composition, physiological changes, psychological and socio- economic factors in relation to food intake, nutritional requirement, nutritional and health problems- under nutrition, obesity, osteoporosis, anaemia, diabetes, cardiovascular diseases, arthritis, constipation, Alzheimer disease, modification of diet in old age.

Text books:

1. **Mahtab, S, Bamji, Kamala Krishnasamy, G.N.V. Brahmam, Text Book of Human Nutrition**, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi, 2012.
2. **Srilakshmi, B., Dietetics**, New Age International (P) Ltd., New Delhi, 2013.
3. **Swaminathan, M., Advanced Textbook on Food and Nutrition**, Vol. 1, Second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore, 2012.

Reference books:

1. **Dietary Guidelines for Indians, ICMR, National Institute of Nutrition**, Hyderabad, 2013.
2. **Gopalan, C. Rama Sastri B.V. and Balasubramanian**, Nutritive Value of Indian Foods, NIN, ICMR, Hyderabad, 2014.
3. **Krause, M.V. and Hunscher, M.A., Food, Nutrition and Diet Therapy**, 14th Edition, W.B. Saunders

Journals:

1. Reports of the State of World's Children, WHO and UNICEF, Oxford University.
2. Reports of National Family Health Survey, International Institute for Population Science, Mumbai.
3. World Development Reports, Investing in Health, World Development indication
4. Indian Journal of Medical Research, ICMR, New Delhi,
5. Indian Journal of Pediatrics, Valley Nicro, Mussoria, U.P.
6. Indian Journal of Nutrition and Dietetics, Avinashilingam Deemed University, Coimbatore.
7. Proceedings of the Nutrition Society of India, NSI, Hyderabad.

CORE COURSE III

CLINICAL BIOCHEMISTRY

Objectives: To enable the students to

1. Understand the metabolism of the nutrients and the associated diseases
2. Know the organ function tests
3. Comprehend the role of hormone in health

UNIT I Disorders of carbohydrate metabolism:

Diabetes mellitus, glycohemoglobins, hypo-glycemias, galactosemia and ketone bodies. Various type of glucose tolerance tests. Glycogen storage diseases. Inborn errors of carbohydrate metabolism

UNIT II

a) **Disorders of amino acid metabolism-** Phenylalanemia, homocystinuria, tyrosinemia, MSUD, phenylketonuria, alkaptonuria, albinism and aminoacidurias.

b) **Disorders of nucleic acid metabolism-** Disorders in purine/ pyrimidine metabolism.

c) **Disorders of fat metabolism**

UNIT III Evaluation of organ function tests:

Assessment and clinical manifestations of renal, hepatic, pancreatic, gastric and intestinal functions. Clinical importance of bilirubin.

Enzymes of clinical importance, Enzymes of pancreatic origin and biliary tract.

UNIT IV Hormonal disturbances:

Protein hormones (anterior pituitary hormones, posterior pituitary hormones), steroid hormones, adrenocorticosteroids, and reproductive endocrinology. Disturbances in thyroid function.

Disorders of mineral metabolism: Hypercalcaemia, hypocalcaemia, normocalcaemia, hypophosphataemia and hyperphosphataemia.

UNIT V Biochemical aspects of hematology:

Disorders of erythrocyte metabolism, hemoglobinopathies, thalassemias thrombosis and anemias. Detoxification in the body: enzymes of detoxification, polymorphism in drug metabolizing enzymes.

Text Books

1. M.N. Chatterjea and Rana Shinde, Textbook of Medical Biochemistry, Jaypee Brothers, 2015
2. David L. Nelson and Michael M. Cox, Lehninger Principles of Biochemistry 5th Ed
WH Freeman and Company, 2008.

Reference Books

1. LSP Davidson, J MacLeod and CRW Edwards, Davidson's Principles and Practice of Medicine: A Textbook for Students and Doctors, 15th Ed
Publisher: Churchill Livingstone.
2. John W. Baynes and Marek Dominiczak, Medical Biochemistry, Publisher: Mosby, 2010
3. Allan Gaw, Michael Murphy, Robert Cowan, Denis O'Reilly, Michael Stewart and James
4. Shepherd, Clinical Biochemistry: An Illustrated Colour Text, 3rd Ed,
Publisher: Churchill Livingstone, 2008.
5. William F. Ganong, Review of Medical Physiology, Publisher: McGraw-Hill, 2012.
6. Robert K. Murray, Daryl K. Granner, Peter A. Mayes and Victor W. Rodwell, Harper's Biochemistry, Publisher: Appelton and Lange, 2012.
7. Richard Luxton, Clinical Biochemistry, Scion Publishing Ltd. 2008
8. Gerhard Meisenberg and William H. Simmons, Principles of Medical Biochemistry: Publisher: Mosby.

CORE COURSE IV

FOOD SERVICE MANAGEMENT

Objectives: To enable students

1. Understand the organization and management of Food Service Institutions.
2. Gain knowledge about the Food Service and responsibilities of each.

UNIT I Definition and scope of food service Management :

Food Industries - Classification Review of objectives and classification of food service. Definition, Principles and scope of management

UNIT II Planning

Nature, importance, steps in: Planning, steps in: planning, steps and kinds of forecasting, assessment of needs of food service based on present and future trends.

Organizing- present and future trends. Process of organization. Principles of organization, types of organization, tools of management.

UNIT III

Staffing- Man power planning, labour sources, selection, recruitment and training, wages, salaries, incentives, promotion, demotion, transfer, dismissal. Managerial problems of Food Service Unit.

Directing and Controlling – Direction, leadership, delegation, decentralization, centralization, supervision, human relations in industry, authority and responsibility, motivation, communication, evaluation techniques

UNIT IV Food cost and Accountability

Review of maintenance of accounts daily, weekly, monthly accounts for food, labour equipment and furnishing, rent, water, fuel, light, licences, cleaning supplies, maintenance and miscellaneous. Double entry book keeping, ledger accounts, journal and balance sheet, budgetary control, non- budgetry control. Cost control, fixed, variable, average, marginal and unit cost, break even analysis- production planning control.

UNIT V Administrative Leadership

Qualifications of effective food service administrator and/ or dietitians. Responsibilities, communications, academic requirements and opportunities. Professional and trade associations. Evaluation of self and department.

Related experience

1. Visit to commercial and non commercial (welfare) food service institutions
2. Planning work sheet for different categories of personnel in Food Service Institution.
3. Preparation and use of check sheet for use by administrator and dietitians

Text Books

1. Kinton, R., Cessarani, V and Foskett, D, The Theory of Catering, Hodder and Stoughton, 2000.
2. Tripathi, P.C. Personnel Management and Industrial Relations, Sultan Chand and Sons, 2000.

Reference Books

1. Kaufman,R. Mega planning- Practical tools for Organisational Success, Sage Publications Inc, 2000.
2. Shring Y, P. Effective Food Service Management, Anmol publications Pvt Ltd,New Delhi, 2001.
3. Stephen, B, , Williams, S, R, "Bill Jardine, and Richard, J, N, Introduction to Catering,
4. Ingredients for Success, Delmar- Thomson learning, 2001.
5. Yadav, C, P. Management of Hotel and Catering Industry, Anmol publications Pvt
6. Ltd and Institute of sustainable development, Lucknow, New Delhi, 2001

JOURNALS

1. Journal of vacation marketing. Henry Steward Publications 28/30 Little Russel Street, London, W.C. IA. 2 HN
2. Indian Management - Journal of All India Management Association.All India Management Association pub. Management House, New Delhi - 3
3. Journal of the American Dietetic Association 'the American Dietetic Association, 430 North Michigan Avenue, Chicago, Illincise.

CORE PRACTICALS I

ADVANCED FOOD SCIENCE (P) (NON EXAMINATION)

- a. Sugar cookery, stages, preparation of fondant, fudge, caramel, pulled toffee and brittles. Preparation of syrup for gulab jamoon, coconut burfi, brittle
- b. Starch- microscopic examination, gelatinisation of starch, preparation of idli, dosai, appam, chappathi , paratha and poori. Starch as binding and coating agent.
- b. Fats-Smoking temperature, factors affecting absorption. Deep fat fried foods, preparation of pastries and Salad dressings.
- c. Meat, fish and poultry. Changes in cookery. Tenderness, different methods of cooking
- d. Coagulation of egg white and egg yolk. Boiled egg, poached egg, scrambled egg, custard, cake, emulsion, mayonnaise. Egg quality testing. Egg as binding and coating agent.
- e. Principles involved in the preparation of tomato soup, cooking vegetables in milk, cheese setting of curds
- f. Pulse – effect of soaking (time and types of water), germination, Factors affecting the cooking quality of pulses.
- g. Effect of acid and alkali. Effect of heat on pigments in vegetables and fruits
- h. Evaluating the quality-acceptability of foods, subjective and objective methods

NUTRITION THROUGH LIFE CYCLE (P) (NON EXAMINATION)

1. Planning, nutritive value calculation and preparation of meals for
 - a) Pregnancy
 - b) Lactation
 - c) Infancy- weaning foods, low cost supplementary foods
 - d) Pre-school age
 - e) School age
 - f) Adolescence
 - g) Adult
2. Case-study- Elderly – dietary recall and food habits
3. Dissemination of nutrition knowledge for chosen target groups in a rural community in a phased manner.

CLINICAL BIOCHEMISTRY

Objective:

To enable the students to get practical experience in the Laboratory and to develop skills to undertake research work on blood and urinary analysis.

1. Determination of Blood for
 - a. Glucose
 - b. Haemoglobin 1. Cyanmothaemoglobin method 2. Wong's method
 - c. Total Cholesterol
 - d. Triglycerides
 - e. High Density Lipoproteins(HDL)
 - f. Serum Calcium
 - g. Serum Total Protein and A/G ratio
 - h. Serum Phospholipid
 - i. Serum Creatinine
 - j. Serum Alkaline Phosphatase
 - k. Serum Glutamic Oxalate Transaminase
 - l. Serum Glutamic Pyruvate Transminase
 - m. Serum Bilirubin

2. Analysis of urine for
 - a. Creatinine
 - b. Urea
 - c. Total nitrogen
 - d. Calcium
 - e. Phosphorus
 - f. Iodine

3. Demonstration of Serum Glycosylated Heamoglobin using biochemical analyser

References:

1. Raguramulu N. Madhavan Nair K. KalyanaSundram S., A manual of laboratory techniques Silver Printers, NIN.2007
2. Charles George Lewis Wolf, A laboratory hand-book of urine analysis and physiological chemistry,W. B. Saunders & co., 1901,Harvard University, 2007
3. Nancy A. Brunzel, Fundamentals of Urine & Body Fluid Analysis, Saunders; 2 edition , 2004.
4. H. Varley, A. H. Gowenlock and M. Bell, Practical Clinical Biochemistry, Volume 1, Heinemann, London. 1980.

CORE COURSE V

DIETETICS

Objectives:

1. Understand the role of dietitian
2. Gain knowledge about the principles of diet therapy and different therapeutic diets
3. Develop aptitude for taking up dietetics as a profession

UNIT I Dietitian, Special feeding, Diet for Nutritional Deficiencies

Role of dietitian in the hospital and community- Types of dietitian, education and personal qualifications- Professional ethics and obligations Feeding the patients – Psychology of feeding the patients, assessment of patient's needs. Routine hospital diets- regular diet, soft diet, full fluid diet, clear fluid diet Special feeding methods- Parenteral and enteral nutrition Diet for nutritional deficiency disorders- etiology, types, symptoms and dietary modifications for PEM, anaemia, Vitamin A deficiency

UNIT II Diet in fevers and Diseases of the gastro intestinal system

- a. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for Febrile conditions- acute, chronic and recurrent fevers- typhoid, influenza, rheumatic fever, tuberculosis, malaria and poliomyelitis.
- b. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for Gastro intestinal disorders- peptic ulcer, gastritis, diarrhea, dysentery, constipation, malabsorption syndrome, ulcerative colitis, enteritis and carcinoma
- c. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for liver, gall bladder and pancreatic disorders- Fatty liver, Hepatitis, cirrhosis, cholecystitis, cholelithiasis, pancreatitis

UNIT III Diet in Metabolic disorders, CVD and Cancer

- a. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for metabolic disorders- Diabetes mellitus, obesity, underweight, hypothyroidism and hyperthyroidism, gout, arthritis and osteoporosis.
- b. Pathogenesis, aetiology, types, grading, symptoms, treatment and dietary modification for cancer
- c. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for cardio vascular disorders- hypertension, atherosclerosis, hyperlipidemia, hypercholesterolemia, acute and chronic cardiac diseases, congestive cardiac failure

UNIT IV Diet in Renal diseases and food allergy

- a. Pathogenesis, aetiology, types, symptoms, treatment and dietary modification for renal disorders acute and chronic glomerulonephritis, nephrosis, nephrosclerosis, uremia, nephrolithiasis.
- b. Allergies – food allergy and intolerance – mechanism, factors influencing, symptoms, tests for allergy, nutritional care and elimination diet.

UNIT V Nutritional Care in Inborn Errors of Metabolism, Special Children and Palliative Care

- a. Nutritional care for the patients with inborn errors of metabolism- prognosis, symptoms, dietary management - phenylketonuria, galactosemia
- b. Nutritional care for the children with special needs – overview of the disability, food and nutritional needs and their modification-Attention deficit hyperactivity disorder, Autism, Cerebral palsy, Down's syndrome.
- c. Basics of palliative care- definition, types, objectives and principles of palliative care

Text books

1. Mehan, L.K. and Arlin, M.T., Krause's Food, Nutrition and Diet Therapy, W.B. Saunders Company, Philadelphia, 1992
2. Robinson, C. H., Normal and Therapeutic Nutrition, Oxford and IBH publishing Calcutta, Bombay, 1987.
3. Sue Rodwell Williams, Nutrition and Diet therapy, CRC Press, 1994.

Reference Books:

1. Antia, F.E., Philip Abraham, Clinical Dietetics and Nutrition, Oxford University Press New Delhi, 1998.
2. Davidson passmore P., and Breck J.P., Human Nutrition and Dietetics, The English Language Book Society, Livingstone, 1986.
3. Krause M.V. Horsch M.A. Food Nutrition and Diet Therapy W.B. Saunders Company, Philadelphia, 1993.
4. Swaminathan M. Essentials of Food and Nutrition, Vol. I & II Ganesh and Company, Madras, 1995.
5. William's Basic Nutrition and Diet Therapy, Staci Nix, RS, C.V. Muusby Camp. Saint, Lowin, 2012.
6. Cooper Et. al, Nutrition in health and disease 4th edition, Pitman Medical Publishing Co. 1963.
7. Srilakshmi, B, Dietetics, New Age International, New Delhi, 2002
8. Shils, E.M. Olson, A.J. and Shike M.C., Modern Nutrition in Health and Diseases, Lea and Febriger Philadelphia, Vol. II 1994.
9. Gopalan , C. Ramasastry, B.V. and Balasubramaniam, S.C. Nutritive value of Indian Foods National Institute of Nutrition, Hyderabad, 2010.

JOURNALS

1. Journal of American Dietetics Association
2. Indian Journal of Medical Research
3. Indian Journal of Nutrition and Dietetics
4. Nutrition Reviews
5. American Journal of Clinical Nutrition
6. Nutrition Bulletin. The British Nutrition Foundation.15 Belgrave square, London Swix.
7. Applied Nutrition, Journal of Indian Dietetics Association Pratabchakraborty pub. Secretary of Indian Dietetic Association 27/1 Monoharpuku, Calcutta 700 029.
8. Diabetes care. Pub. by American Diabetic & American Dietetic Association, Professional section membership, 1960 Duke Street, Alexandria, V.A. 22314.
9. Food and Nutrition Bulletin, The Editor, The United Nations University, Cambridge, Programme Officer, Massachusetts Inst. of Technology E-38-756, Cambridge Mass, 02139, USA.
10. The New England Journal of Medicine, Massachusetts Medical Society England by passmore International Redlec, Herts.
11. Journal of Royal Society of Medicine, The Royal Society of Medicine, Wimpole Street, London.
12. Clinical Nutrition, Sales Promotion, Department, Churchill Livingstone Medical Journals Robers Stevenson House 1-3, Baxter's place, Edinburgh EH1, EAF.UK.
13. The British Journal of Nutrition, Cambridge University, Press Journals Dept. 46 West 20th Street, New York, 10011-4211.
14. The Journal of Nutrition, Subscription Dept. Rockville pick, Bethesda MD 20814-3990.
15. International Journal of Sport Nutrition, Human kinetics Publishers InE, Box 5076, Champaign IL 61825-5076.
16. International Journal of Vitamin and Nutrition Research. Hogrefe and Huber publishers, Toronto, Ontario M4P2S3. Canada.
17. Nigerian Journal of Nutritional Sciences, Dr.O.B. Oloyeda, Dept. of Biochemistry University of Illorin, P.M.B.1515. Illorin, Nigeria.

CORE COURSE VI

FOOD MICROBIOLOGY AND SANITATION

Objectives: To enable the students to

1. Understand the microorganisms related to food
2. Know the beneficial effects of the microorganisms
3. Evaluate the principles of sanitation
4. Know the laws related to food safety

UNIT I Introduction to Microbiology

Structure, Growth and Multiplication of micro-organisms

Definition and History: Microscopy, General Morphology and Types of microorganisms Bacteria, Fungi, Algae, Yeast and Virus - Bacteriophage. Growth curve, batch and continuous culture, factors affecting growth: intrinsic factors, nutrient content, pH, redox potential, antimicrobial barrier and water activity; extrinsic factors: relative humidity, temperature and gaseous atmosphere.

UNIT II Microbiology of Foods, Benefits of Microbes

Contamination, spoilage and preservation of cereal and cereal products, sugar and sugar products vegetables and fruits, milk and milk products and canned foods, meat and meat products, egg and poultry, fish. Food fermentation-types; fermented food products

UNIT III Importance of Personal hygiene of food handlers

General principles of hygiene – personal and environmental hygiene. Hygienic Practices in Handling and Serving Foods. Planning and implementation of training programme for health personnel

UNIT IV Safety Measures:

Safety in food procurement, storage, handling and preparation, control of spoilage, safety of leftover foods, disposal of food waste

Control of Infestation and Cleaning Methods Importance of pest control, various pests and their control measures, cleaning and sanitizing, need for efficient cleaning programme. Cleaning Agents, Equipments, Methods to wash rinse and sanitize Food Contact Surfaces,

UNIT V Food Laws and Quality Management, Recent Concerns in Food Safety.

International and National food laws, Essential Commodities Act (ECA). ISI, BIS, AGMARK, PGFA, FPO, Food Safety and Standards Bill 2005, FAO, WHO, Codex Alimentarius, WTO, JEFA, APDA, ISO 22000 series. HACCP- definition and principles.

Text Books

1. Pechkam, G.C. Foundations of Food Preparation, III Edition, MacMillan Publishing Co., New Jersey, 1998
2. Roday, S., Hygiene and Sanitation in Food Industry, Tata McGraw Hill Publishing Co., New Delhi, 1999.

Reference Books

1. Charley, Hand Weaver Foods – A Scientific Approach, III Edition, Prentice Hall Inc., New Jersey, 1998.
2. Fennema, O.R., Food Chemistry, III Edition, Marcel Dekker Inc., New York, 1996.

CORE PRACTICAL II

DIETETICS PRACTICALS AND DIETETICS INTERNSHIP (P)

OBJECTIVES: To enable the students:

1. Develop skills in translating diets into practical menus.
2. Understand the concept of the quantity of food to be prescribed
3. Develop skills in diet counselling and feeding of patients.
4. Develop capacity for taking up dietetics as a profession

DIETETICS PRACTICALS

1. Practical experience in weighing and measuring food items
2. Preparation of clear and full liquid diets and soft diet
3. Planning and preparing diets for:
 - a. Febrile conditions.
 - b. Gastrointestinal disorders
 - c. Liver and gall bladder disorders
 - d. Metabolic disorders
 - e. Cardio Vascular disorders
 - f. Renal disorders
 - g. Obesity and underweight
 - h. Nutritional deficiency
 - i. Special children
4. Planning and preparing paediatric diets
 - (a) Lactose free diet
 - (b) Juvenile diabetes
 - (c) Diet for inborn errors of metabolism

5. Visit to three hospitals

DIETARY INTERNSHIP

The Practical work consists of internship in a teaching hospital for 4-6 weeks.

- i. Visits to the different wards to observe patients requiring Special diets.
- ii. Experience in calculating and planning any six modified diets.
- iii. Supervising and handling the Food preparation and service in the dietary department of the hospital
- iv. Case study- Selecting and observing patient ten patients requiring a therapeutic diet in relation to Patient's dietary history - income, occupation, food habits and social factors.
- v. Calculating the diet according to medical prescription
- vi. Accompanying the doctor while visiting the patient.
- vii. Use of the computer in diet
- viii. Counselling and patient education

- ix. Education of the patient.

Preparation of the report should include

- i. History of the hospital
- ii. Location
- iii. Facilities provided
- iv. Layout of the kitchen
- v. Work organization
- vi. Organization structure
- vii. Duties of the dietitian
- viii. Special dietary preparation
- ix. Menus
- x. Types of service
- xi. Equipments
- xii. Storage of food
- xiii. Handling of leftovers and shortages
- xiv. Sanitation and hygiene

ELECTIVE COURSE I

FUNCTIONAL FOODS AND NUTRACEUTICALS

Objectives To enable the students to gain:

1. Knowledge on sources of Functional Foods and Nutraceuticals
2. Knowledge on the role of functional foods, nutraceuticals and dietary supplements in health and disease

UNIT I Functional Foods and Nutraceuticals

Definition and History-Functional foods, traditional foods, nutraceuticals - teleology, designer foods and pharma foods, history of functional foods, components of functional foods, stages involved in development of functional foods.

UNIT II Categorization of Nutraceuticals

Classification - Based on food source, mechanism of action and chemical nature-isoprenoid, phenolic substances, fatty acids and structural lipids, terpenoids – saponins, tocotrienols and simple terpenes, carbohydrates and amino acid based derivatives, isoflavones.

UNIT III Functional Foods and Nutraceuticals of Microbial Origin

Functional foods of Microbial origin- Human gastrointestinal tract and its microbiota, functions, probiotic microflora and functions- Lactobacillus and Bifidobacterium, concept of probiotics and prebiotics with examples, role of probiotics in health and disease, spirulina as bioactive component.

UNIT IV Functional foods and Nutraceuticals in Health and Disease

Sources and role of Functional foods and Nutraceuticals - Role of functional foods and Nutraceuticals in diseases, concept of dietary supplements, phytochemicals, phytosterols, omega 3 and 6 fatty acids, dietary fiber, role of nutraceuticals in health and disease management – diabetes mellitus, hypertension, CVD, cancer; non essential nutrients as dietary supplements, FOSHU foods.

UNIT V Regulatory Aspects of Functional Foods and Nutraceuticals

Regulatory aspects- International and national regulatory aspects of functional foods in India, ICMR guidelines for Probiotics, development of biomarkers to indicate the efficacy of functional ingredients, Research frontiers in functional foods.

Text Books

1. Bamji (2003), Textbook of Human Nutrition, 3rd edition, Oxford & IBH Publishing Co Pvt Ltd, New Delhi
2. Srilakshmi.B (2012), Nutrition Science, 4th edition, New Age International Pvt Ltd.

References

1. Webb G.P (2006), Dietary Supplements and Functional Foods, Blackwell Publishing Ltd, New York.
2. Tamine. A (2005), Probiotic Dairy Products, Blackwell Publishing Ltd, United Kingdom.
3. USFDA regulations on functional foods

Journals

1. Journal of functional foods
2. Journal of free radical research

ELECTIVE COURSE II

FRONT OFFICE MANAGEMENT AND HOUSEKEEPING

Objectives: To enable students

1. Gain knowledge on the role of front office operations in hotels
2. Acquire skills in reservation and handling of guests

UNIT I Front office and Housekeeping department:

Objectives of front office and housekeeping department Functions of front office and housekeeping department Duties and qualities of front office staffs and their etiquettes. Importance of efficient front desk and housekeeping, Evaluation of lodging establishment, Objectives and scope of hospitality industry and classification of hotels-self study

UNIT II Rooms and rates and equipment used in front office:

Room types and rates, Rate categories, rate factor, room rate code, room rate. Classification, special rates, miscellaneous rate policies, Front office equipments

UNIT III Basic reservation system:

Basic reservation procedures, Individual and group reservation, Forecasting, computerized reservation system. Check – in procedures (registration of guest) Settlement of bills. Check – out procedures

UNIT IV Cleaning guest rooms, public room and linen and bed making:

Rules, procedure and principles, daily periodic and spring cleaning, List of standard room supplies, Cleaning equipment – type, selection, purchasing, cleaning, Cleaning agents, Linen types storage and control of linen and bed making procedures. Care and maintenance of equipment. and Cleaning agents

UNIT V Front office accounting and records for control:

Different types of reports maintained. Maintaining account balance, Compiling sales and revenue, computerized billing and electronic point of sales, Importance of reports

Text Books

1. Andrew, S. Hotel Front Office – Training manual, Tata Mac Graw Hill Publishing co ltd, New Delhi, 1995

References

1. Lean, M. Guide to Hotel and catering services, 1981.
2. Bardi, J. A., Hotel Front Office Management, Van Nostrand Reinhold Publishing Co Ltd, New Delhi, 1982.
3. Schneider, M. and Tucker, G. The professional housekeeper, Van Nostrand Reinhold, New York, 1985.
4. Branson, J, C. and Lenrox, M. Hotel, Hostel and House Keeping, Edward Arnold Ltd, 1989.
5. Martin, R, J. and Jones, T, J, A. Professional Management of House keeping operations. John Wiley and Sons Inc. New York, 1992.
6. Allen, D, N. Accommodation and cleaning services, Vol II, 1992.
7. Renner, P, F. Basic Hotel Front office Procedures, 3rd edition, Van Nostrand Reinhold, New York, 1993.
8. Andrews, S. Hotel Housekeeping, Training manual. Tata Mac Graw Hill Publishing Co ltd, New Delhi, 1995

CORE COURSE VII

QUANTITY FOOD PRODUCTION AND SERVICE

Objectives: To enable students:

1. Gain knowledge in menu planning and product standards to maintain quality
2. Learn aspects on quantity production and quality control.

UNIT I Menu planning

Definition of menu, menu classifications, techniques of writing a menu, menu presentation, menu evaluation, Study of menus for different types of quantity food outlets. Courses of menu, uses of menu cards, important cookery terms used in menus, common terms in French and English Menu. Review of mechanics of menu Planning. Menu format, purchase and storage procedures. Procurement, product selection, specification, method of purchasing, purchasing procedures, receiving, storage and inventory control.

UNIT II Production, Planning and Standardization of recipes

Production forecasting, production scheduling, standardization of recipes, portion control, cost control, menu pricing. Standardization of recipes, recipe files and adapting recipes.

Quantity Food Transportation and buying

Transportation, receipt and handling of foods. Storage 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 Quantity food production and Quality control

Methods of production, product standards, effective utilization of leftovers, waste disposal, service management and service equipments. Food preparations - main dishes and their usual accompaniments. Soups, salads and salad dressings. Common sauces and chutneys. Dishes for special catering - Functions, festivals.

UNIT IV Food Service

Food Service techniques- Planning the menu silver, crockery, glassware, stainless steel, plastics and melamine ware.

Preparation of service- Linen - table cloths, table mats, napkins, flowers for the table, rules for laying a table, rules for waiting at a table, types of service –

formal, informal and Indian service, carving at table, food and beverage service, for special catering functions, like wedding receptions, outdoor catering.

UNIT V Service systems

Style of service- North Indian, South Indian, Chinese, Italian, Mexican cuisines – role and influence of culture, ingredients used and special equipments
Traditional, Commissary, Ready prepared – cook chill, cook freeze, assembly serve.

Text Books:

- 1 **Negi, J (2000). Professional Hotel Management.** S.Chand and Company Limited, New Delhi.
2. **Palacio, J.P., Harger, V., Shugari, G. Thesis, M (2001). West and Woods Introduction to Food Service.** Mac Millan Pub Co., New York.

Reference Books:

1. **Cessarani,V. Kinton,R (2002). Practical Cookery.** seventh edition. Hodder and Stoughton publishers.
2. **Khan, M.A (2003). Food Service Operations.** AVI Publications Co., Connecticut.
3. **Thangam Philip (2005). Modern Cookery.** Orient Longman Limited. Third edition.
4. **Sethi, M. and Malhan, S.M (2007). Catering Management – An Integrated Approach.** Wiley Eastern Limited, Mumbai.

Journals:

1. International Journal of Hospitality and Tourism.
2. International Journal of Hospitality Management.
3. Journal of Hospitality Marketing and Management.

CORE COURSE VIII

RESEARCH METHODS AND STATISTICAL TECHNIQUES

Objectives: To enable the students to

1. Understand the fundamental principles and techniques of methodology concerning research and
2. Apply statistical procedure to analyze numerical data and draw inferences.

UNIT I

1. **Introduction to Research and types of research-** Definition, Objectives and characteristics of research. Types of Research- Basic , applied , Action , Evaluation, experimental , Surveys- Descriptive , diagnostic and exploratory
2. **Basic components of any research design** - Data and methods of data collection Types of data – Primary and secondary data. Data sources. Primary data collection methods- direct personal investigation, indirect oral investigations, schedules and questionnaires. Interviews and Type of Interviews. Pre-testing and Pilot study, Editing and coding of data

UNIT II

1. **Organization of data-** Classification- Geographical chronological, qualitative, quantitative, frequency distribution, discrete and continuous. Tabulation of data parts of a table, rules of tabulation, types of tables- simple and complex, preparation of blank tables
2. **Representation of data-** Diagrammatic – One dimensional diagrams- Bar diagrams – simple, multiple, subdivided, deviation. Two dimensional diagrams- pie, circles, rectangles and squares- pictogram and cartographs. Graphical, frequency graphs- Line , polygon, curve Histogram- cumulative frequency graphs-ogives

UNIT III

1. **Sampling Techniques-** Sample design- Different sampling Methods- Probability and non probability, sampling methods, simple, stratified, systematic. Cluster, multistage, purposive judgment, convenience, quota, snowball, accidental. Sampling and non sampling errors
2. **Thesis and Report writing-** Components or layout of a thesis. Introduction, review of literature, methodology, results and discussion, summary and conclusion, bibliography, footnotes and Appendix

UNIT IV

1. **Measures of central tendency and variation**- Mean, median, mode, their relative advantages and disadvantages. Measures of dispersion, mean deviation, standard deviation, coefficient of variation, percentiles and percentile ranks
2. **Correlation and regression**- Correlation, coefficient of correlation and its interpretation, rank correlation. Regression equations and predictions. Association of attributes , contingency table

UNIT V

1. **Probability and distributions**- Rules of probability and its applications. Normal, binomial, their properties, importance of these distributions in research studies
2. **Tests of Significance**- Large and small samples, 't' and F tests , tests for independence using chi square, analysis of variance and applications

Text Books

1. Kothari.G.R., Research Methodology, Methods and Techniques, Wiley Eastern Limited, New Delhi, 2004
2. Devadas.R.P.,A Handbook on methodology of Research, Sri Ramakrishna Vidyalaya, Coimbatore, 2000

Reference Books

1. Gosh.B.N., Scientific Methods and Social Research Sterling Publishers Pvt.ltd., New Delhi.
2. Kulbir Singh Sidhu, Methodology of Research in Education Sterling Publishers Pvt. Ltd., New Delhi, 2006
3. Gupta.S.P., Statistical Methods, Sultan Chand & Sons, New Delhi, 2002
4. Srivastava.A.B.L and Sharma. K.K., Elementary Statistics in Psychology and Education, Sterling Publishers Pvt.ltd.2003

CORE PRACTICALS-III

QUANTITY FOOD PRODUCTION AND SERVICE (P)

UNIT I

Menu planning- Different types of Menu offered in Commercial and Non Commercial food service institution

UNIT II

Standardization of recipes, Portion control and Pricing. Stepping up of selected recipes

UNIT III

Preparation of different types of cuisines. Preparation of South Indian, North Indian, Western, Chinese, Thai and Continental cuisines

UNIT IV

Soups/ Salads /Sauces- Preparation of soups, salads and sauces

UNIT V

Table Setting and Beverage service- Formal, Casual, Buffet, waiter service-order taking procedure, service and clearance.

References

1. Sethi.M and Malhan.S, Catering Management- an integrated approach, New Age International Pvt Ltd,New Delhi,1993
2. Palacio, J.P., Harger, V, Shugart, Gand Thesis, M. West's and Wood's Introduction to Food Service, Mac Millan Pub. Co., New York, 1994
3. Spears. M. C. Food Service Organisation, A Managerial Systems Approach. Prentice Hall Inc., Ohio, 1995
4. Malhotra,R.K. Fundamentals of Hotel management and Operation, Anmol publishing House ,1998
5. Coltman Michael, M. Hospitality Management Accounting, John Wiley and sons, New York 1998
6. Kinton, R, Cessarani, V, Foskett, D, The Theory of Catering, Hodder and Stoughton, 2000
7. Yadav,C.P. Managemnt of hotel and catering industries, Anmol Publications Pvt Ltd, New Delhi, 2001.

ELECTIVE COURSE-III
HOSPITAL FOOD SERVICE ADMINISTRATION

Objectives: To enable students:

1. Gain knowledge in hospital functions and administration
2. Acquire skills in maintaining medical records
3. Understand the management of resources in hospitals

UNIT I Hospital based health care and its changing scenario

Effects of globalization on health care, concepts of corporate hospitals in developing countries, infrastructure and lay out of an ideal corporate hospital, functioning of modern, hospital and changing needs of patients, hospitality in hospital care

UNIT II Patient Care Services

Patient Admission / discharge, cafeteria and dietary services, front office services, housekeeping services, blood bank, diagnostic services, lab, physiotherapy, pharmacy operation theatre, outpatient and inpatient ward –admission

UNIT III Principles of Hospital management

Managerial activities for effective hospital functioning duties and responsibilities of hospital managers, qualities of office managers, effective inter and intra departmental co-ordination, understanding functioning of corporate multi specialty hospital

UNIT IV Marketing and Material management

Human resource management, managerial accounting and financial management, importance of material management, principles of material management, inventory management.

UNIT V Hospitality in hospital care

Management of dietary department, diet planning for hospital diets, purchasing, storage and quantity food production, patient compliance, food production, serving to patient- tray and trolley service, plate waste management, washing and garbage disposal

References

1. Sudhir Andrews, Front Office Management and Operations, 2008, Tata Mc Graw – Hill Publishing Company Ltd.
2. Sakharka B M, Principles of Hospital Administration and Planning, 2009, 2nd Edition, Jaypee Brothers Medical Publishers (p) Ltd.
3. Sherry Glied and Peter Smith, The Oxford Handbook of Health Economics, 2011
4. Jan Abel Olsen, Principles in Health Economics and Policy, 2009, Oxford University Press.
5. Mohinder Chand, Managing Hospitality Operations, 2009, 1st Edition, Anmol Publications Pvt. Ltd. New Delhi.
6. Goel S.L, Health Care System and Hospital Administration, 2009, Vol.7, Deep and Deep Publications Pvt. Ltd.
7. Kalkar S.A, Hospital Information Systems, 2010, Published by Asoke K.Ghosh, PHI Learning Pvt. Ltd.
8. <http://eurpub.oxfordjournals.org/content>.

ELECTIVE COURSE IV
FOOD PRODUCT DEVELOPMENT

Unit I Food consumption pattern

Trends in food consumption pattern. Economical, psychological and sociological dimensions of food consumption patterns. Trends in social change as a base for new product development

Unit II Introduction to Food Processing and Product Development

Food components, types of food processing, status of food processing industry in India and scope of growth in future principles and purpose of new product development, product design and specifications.

Unit III Recipe Development

Traditional foods, weaning foods, convenience foods, RTE, RTS, extruded foods, IMF foods, speciality products, health foods, nutritional supplements, functional foods, nutraceuticals and designer foods, sports foods, foods for defense services, space foods.

Unit IV Testing, Evaluation and Packaging of Products

Standardization, portion size, portion control, quantity cooking, shelf life Evaluation-sensory and microbial testing of processed foods, nutrient analysis. Suitable packaging materials for different foods, SWOT analysis

Unit V Financial Management and Marketing of Food Products

Institutional support (Training and Finance) for entrepreneurship development. Financial Institutions (Central and State Government) banks/ funding agencies, financial accounting procedures, book keeping, market research, marketing strategies, cost calculation , advertising methods, product sales, product license, legal specifications, consumer behaviour and food acceptance

Textbooks

1. **Sudhir Gupta (2007) Handbook of Packaging Technology**, Engineers India Research Institute, New Delhi
2. **Khanaka, S.S., Entrepreneurial Development**, S. Chand and Company Ltd, New Delhi, 2006.

Reference Books :

1. **Suja, R. Nair(2004) Consumer Behaviour and Marketing Research**, 1st Edition, Himalaya Publishers.
2. **Hmacfie,(2007) Consumer led Food Product Development**, Weedhead Publishing Ltd., UK
3. **Fuller, Gordon, W(2005) New Food Product Development**, 2nd Edition, CRC Press, Boca Raton, Florida,
4. **Schaffner .D,J, Schroder , W.R.(2000)Food Marketing and International Perspectives**, Web/McGraw Hill Publication

CORE COURSE – IX

FOOD SERVICE FACILITIES

Objectives

To enable students

1. Gain knowledge in space allocation and arrangement of equipment in food service institution.
2. Develop skills in selecting and handling equipments for food preparation and service.
3. Acquire knowledge in the use of computers for catering services.

UNIT I Type of food Service :

Review of Location, architectural considerations, space allocation, design, work flow in all types of commercial and welfare food service institutions, house keeping requirements in relation to size, work and storage heights.

UNIT II Floor planning and layouts :

Planning and organizing space relationships and arrangement of equipment with assembly line concept. Detailed layout and location of functional areas in relation to capacity, receipt, purchase & storage of food, food production, food service, removal of soiled dishes, hand washing and dishwashing. Workers and their work space needs. Food safety - Sanitation of plant, garbage disposal and pest control

UNIT III Equipment :

Review of classification, traditional and modern equipments, Materials used for bases and finishes, accessory parts and functional design of equipment. Equipment needs for commercial and welfare food service institutions of varying capacities Care and maintenance of equipments.

UNIT IV Catering Systems:

Recent trends versus traditional, cooking- chill & cook - freeze systems. Working knowledge of mechanics of menu planning, customer preferences, portion cost and control.

UNIT V Automation in the Hospitality Industry :

Advantage of using computers in menu planning and accounting functions of food service institutions. Types of computer systems used for reservation systems, point of sale systems (POS) and property management systems.(PMS)

Related experience

Market survey of electrical and non electrical equipments available.

TEXT BOOKS

1. Glow, G., 'Catering Equipment and systems Design' Applied Science Publishers Ltd., London 1977.
2. [Lendal H. Kotschevar](#) and Margret E. Terrell, 'Food Service Planning, Layout and Equipment, 2nd Edition, John Willey and Sons, 1997.

REFERENCE

1. Unklebay, N.S., Unklebay, K., "Energy Management in food Service, Ellis Horwood Ltd., England, 1982.
2. Palan E.R. Sc. Steadler, J.A. 'Preparing for the food service Industry- 'An introductory approach" AVI Publishing Co., West Port, 1986.
3. Foster, D.L. - V.I.P. An introduction to Hospitality, Glencoe, Macmillan/ McGraw - Hill, International Editions, 1993.
4. Foster, D.L. - Food and Beverage Operations, Methods and cost controls Glencoe, Macmillan/ McGraw - Hill, International Editions, 1993.
5. West, B.B., Wood, L., Harger, V.F. and Schugart - Food Service in Institutions, John Wiley & Sons., N.Y., 1972.

CORE COURSE – X

MANAGEMENT AND ACCOUNTING IN HOSPITALITY INDUSTRY

Objectives: To enable students to

1. Gain knowledge on various sources of finance
2. Know the accounting tools used by the business office.
3. Understand the main functions of the marketing and sales department.
4. Find out the factors that influence food and beverage cost and discuss contract methods.

UNIT I Introduction to Origin of the Hospitality Industry

Industry segments- the hospitality hotel organisations - business office (Back Office) - owner industryship- and management methods- the function of ownership - the function of management.

UNIT II

Financing need for finance - kinds of finance long-term and short-term

The Business finance- Role of commercial Banks Institutional financing.

UNIT III

Finance- The importance of financial reports - the Balance sheet – preparing Reports a Balance sheet - purpose and use of an operating statement - cash flow analysis.

Financial Planning - For costing sales - Projecting expenses Departmental Budgets.

UNIT IV

Hospitality - Understanding hospitality, marketing, identify marketing activities Marketing relationship between sales and marketing - Retail and wholesale - Element of marketing tangible and intangible components of the hospitality product. Role of sales department.

Marketing communications - Media analysis - Budgeting media, Expenditures - public Relations - presses releases - Market Research and planning - Supply and Demand - Market Planning - Targeting the market - The Marketing Budget.

UNIT V

Food cost and beverage costs - cost control methods – controlling Beverage Food Production costs - controlling food service costs- Beverage Control Cost control Techniques order entry devices a delivery net work - Dispensing units - **Tracking devices** - support equipment.

Text Books

1. Sudhir Andrews, Front Office Management and Operations, 2008, Tata Mc Graw –Hill Publishing Company Ltd.
2. Sakharka B M, Principles of Hospital Administration and Planning, 2009, 2nd Edition, Jaypee Brothers Medical Publishers (p) Ltd.

Reference Books

1. Sherry Glied and Peter Smith, The Oxford Handbook of Health Economics, 2011
2. Jan Abel Olsen, Principles in Health Economics and Policy, 2009, Oxford University Press.
3. Mohinder Chand, Managing Hospitality Operations, 2009, 1st Edition, Anmol Publications Pvt. Ltd. New Delhi.
4. Goel S.L, Health Care System and Hospital Administration, 2009, Vol.7, Deep and Deep Publications Pvt. Ltd.
5. Kalkar S.A, Hospital Information Systems, 2010, Published by Asoke K.Ghosh, PHI Learning Pvt. Ltd. <http://eurpub.oxfordjournals.org/content>

CORE PRACTICAL IV

CATERING INTERNSHIP (P)

Objectives To enable students to

1. Gain knowledge of origin, equipment and food service techniques in institutions.
2. Obtain practical training in quantity catering and service

COURSE OUTLINE

1. Internship for a period of FOUR Weeks in well established catering centre, to develop professional competence.
 - Hands on training in front office, housekeeping, kitchen and restaurant.
 - Detailed observation on meal planning, food standards and service.
2. Case study of 5 quantity food outlets to be recorded with reference to staff organization, kitchen layout, purchase, preparation and service of food, processing, holding and storage, specific equipment used and convenience products, Supervising control and accounting procedures.
3. Development of check sheets for:
 - Menu
 - Employee performance
 - Kitchen safety
 - Sanitation

ELECTIVE COURSE V
COUNSELLING SKILLS

Objectives: Prepare the students to:

1. Understand the principles and procedures of nutrition counseling and the role of the counsellor.
2. Develop an understanding in lifestyles influence on health and well-being
3. Effect of acute and chronic diseases on the emotional and psychological state and the behaviour of the individuals.

UNIT I Counselling

Definition, Expectations, goals, scope and limits. Counsellor – Characteristics of an effective counselor The Client – Characteristics, expectations

UNIT II The Counselling Process

Techniques for obtaining relevant information, Clinical Information, Medical History and General Profile, Dietary Diagnosis -Assessing food and nutrient intakes, Lifestyles, physical activity, stress, Nutritional Status, Correlating relevant information and identifying areas of need: Problem exploration and clarification, Developing new perspectives and setting goals, implementation, follow up and evaluation.

UNIT III Counselling techniques

Strategies and communication skills, Rapport building and opening techniques, Questioning, listening, reflecting, acceptance, silence, leading reassurance, non-verbal behaviour, terminating skills

UNIT IV Group Counselling,

Developing resources and aids for education and counseling, audio visual aids, computer in education, e- resource.

UNIT V Working with different groups

Hospitalised patients (adults, pediatric, elderly, handicapped), adjusting and adapting to individual needs. Outpatients (adults, pediatric, elderly and handicapped), patient's education, techniques and modes, follow up, Monitoring and Evaluation of outcome: Home visit

Text Book

1. Alam, S. (2008). Basics of Guidance and Counselling. Global Vision Publishing House, New Delhi

Reference

1. Nayak, A. K. (2007). Guidance and Counselling. A P H Publishing Corporation, New Delhi.
