

**SYLLABUS FOR
POST GRADUATE DIPLOMA IN
CLINICAL NUTRITION AND
DIETETICS**



**Continuing Education Centre
St. Teresa's College, Ernakulam
Government of Kerala**

CE(C) 2752/07

(From 2007 onwards)

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C01TPGD: HUMAN BIO-MECHANICS

Objectives:

To enable the students to:

1. Understand the various organ systems of the body.
 2. Gain knowledge about the significances of different organ systems
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- 1) Introduction to physiology – structure and constituents of cells and tissues
 - 2) Blood- introduction to haematology, functions of blood, functions of plasma proteins, erythrocytes, haemoglobin, important indices of RBC, leucocytes/WBC- functions and Platelets, blood groups, blood coagulation, blood transfusion and blood banks.
 - 3) Circulatory system- heart structure and functions, CV system, anatomy, cardiac cycle, heart sounds, heart rate and regulation, blood pressure- significance and measurements, hemorrhage- compensatory changes, cardiovascular modifications during exercise, oedema, causes and types.
 - 4) Respiratory system- Basic anatomy of the respiratory system, process of respiration, transport and exchange of oxygen and carbon dioxide in the body and different pulmonary volumes.
 - 5) Digestive system- Anatomy of digestive tract and process of digestion, absorption and assimilation of food, composition and functions and mechanism of secretion of digestive juices and accessory organs and glands- salivary, gastric, liver, gall bladder, intestine and pancreas, functions of bile salts, movements of stomach, small intestine, villi and defecation.
 - 6) Excretory system- Structure and function of kidney, structure of nephron, GFR, stages of urine formation, selective reabsorption of different constituents and factors affecting urine volume, composition of urine and micturition
 - 7) Body fluids, water and electrolytes balance, ICF, ECF, oedema- types and causes and other imbalances
 - 8) Endocrine system- structure and functions of pituitary, thyroid, parathyroid, adrenal body and pancreas, hormonal regulations of growth, reproduction and lactation, disorders associated with endocrine system.
 - 9) Locomotor system- Bone and its functions and formation, muscle-structure and physiology of muscular action.
 - 10) Defense mechanism of the body- Localisation of infections, inflammations and immunization. Defense mechanism- First line and second line defense, types of immunity.
 - 11) Nervous system- Anatomy and physiology, structure of neurons, nerve cell as a conducting tissue, transmission of nerve impulses, mechanism of impulse transmission, synaptic transmission and its affecting factors, various types of receptors and reflex action and arc.

REFERENCES:

- 1) Ratan Vidya, (2004), Handbook of Human Physiology, 7th Edition (Reprint), Jaypee Bros Medical Publishers (P) Ltd, New Delhi
- 2) Chandra Sekar C.N,(2007),Manipal Manuel of Physiology, 1st Edition, CBS Publisbers and Distributors, New Delhi.
- 3) Chatterjee C.C(2005), Human Physiology, 11th Edition(Reprint),Vol 1& II Medical Allied Agency, Kolkata.
- 4) Guyton A.C(1991), Textbook of Medical Physiology, 8th, Philadelphia: W B Saunders

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C02TPGD: FOOD SCIENCE

Objectives:

To enable the students to:

1. Gain knowledge on nutritive value and properties of different foods
 2. Identify the changes in property during food handling
 3. Create awareness on recent trends in food science
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- 1) Introduction to food science- definition and functions, various food groups, food groups guide pyramid
 - 2) Mechanism of cooking- mediums of cooking, conduction, convection, radiation, solar cooking, pressure cooking and microwave cooking.
 - 3) Study of Food Groups
 - a) Cereals and millets: Structure and types of cereals consumed, nutritive value of cereals, starch cookery, cereal processing
 - b) Pulses and Legumes: Nutritive value , pulse cookery, antinutritional factors in pulses
 - c) Nuts and Oilseeds: Nutritive value and processing and antinutritional factors present
 - d) Milk and milk products: Nutritive value and composition, effect of heat, acid, enzyme and enzyme on milk, coagulation, types of milk, processing and various milk products- fermented and non fermented products.
 - e) Fish, Poultry, and Meat: Classification, grading and selection, nutritive value, tenderization, rigor mortis, ageing and curing
 - f) Egg: Composition, nutritive value, characteristics of fresh eggs, coagulation of egg proteins and egg cookery.
 - g) Vegetables and Fruits: Nutritive value, classification, pigments present, ripening and sinesis, effect of cooking.
 - h) Oils and fats: Nutritive value, types of rancidity, changes in fat on frying, extraction of oils.
 - i) Sugar and jaggery: Stages of sugar cookery, preparation of fudge and fondant
 - j) Flavoring agents: Spices aand condiments
Leavening agents and food additives: Natural, chemical and biological
Browning reaction: Enzymatic and non enzymatic
 - k) Beverages: Alcoholic and non alcoholic
 - l) Food Additives
 - 4) Food Microbiology: Study of useful microorganisms and fermented products, food spoilage- causes, physical and chemical changes during spoilage, nutritional components, colour, texture, flavor and appearance, microbiology of some foods, food infection and food intoxication

- 5) Sensory evaluation of food and functional Foods: Prebiotics, Probiotics, Nutraceuticals and novel foods.

REFERENCES:

- 1) Frazier WC and Westhoff DC(1988) Food Microbiology, 3rd Edition Tata Mc Graw Hill Publishing Company.
- 2) Griswold Ruth, M, Experimentals Study of Foods, Haughthan, Miffin Company N.Y. 1979.
- 3) ICMR, Nutritive Value of Indian Foods. New Delhi 1989
- 4) Marion Benion, Introductory Foods, Macmillan Co N.Y 1980
- 5) Shakuntala Manay, N and Shadaksharaswamy, Food- Facts and Principles, New Age International Pvt Limited, 1987.
- 6) Srilakshmi. B, Food Science, New Age International Pvt Limited, 1997.

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C03TPGD: PRINCIPLES OF NUTRITION

Objectives:

To enable the students to

- 1) Understanding the relationship between nutrition and human well being
 - 2) Know and understand the nutritional need and deficiencies.
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- 1) Introduction to study of nutrition: Definition of nutrition, nutrients and health and its significance balanced diet, nutritional status and different forms of malnutrition.
 - 2) Energy: Unit of energy, determination of energy content of foods, basal metabolic rate, determination of BMR and total energy requirement.
 - 3) Proteins: Functions, sources, digestion, absorption, and metabolism, EAA Classification of food proteins, requirements, factors affecting protein needs
 - 4) Carbohydrates: Classification, sources, functions, digestion, absorption, metabolism, role of fiber in health and disease.
 - 5) Lipids: definition, classification, sources, functions, digestion, absorption, metabolism, EFA, need, sources, effects of deficiency.
 - 6) Vitamins: Definition, classification, nomenclature, units of measurements, fat soluble vitamins- A, D, E, K. Water soluble vitamins namely thiamin, riboflavin, niacin and other members of B-Complex. Ascorbic acid- functions, sources, requirement, deficiency and treatment.
 - 7) Minerals: Their role in nutrition, calcium, phosphorus, iron, sodium, potassium, magnesium, trace elements namely zinc, copper, iodine and fluorine- their role, deficiencies, requirement and sources.
 - 8) Water: Functions, sources, requirements, dehydration and water toxicity

REFERENCES

- 1) Bender, D. A, Introduction to Nutrition and Metabolism, 2nd Edition, Taylor and Francis Publishers 1997
- 2) Davidson. S. Passmore. R, Brock J.F and Truswell, A.s, human Nutrition and dietetics, English Language Book society 1985
- 3) Howe. F.S, Basic Nutrition in Health and Disease, W. b. Sanders Co, 1981
- 4) Swaminathan. N, Advanced Text book on Food and Nutrition Vol1 Pappco 1998

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C04TPGD: NORMAL NUTRITION

Objectives:

- 1) To understand the principles of menu planning
 - 2) To plan and acquire skill in preparing meals for various age groups and physiological conditions at different income levels
- 1) Principles involved in planning menu, techniques of writing menus, importance of meal planning- underlying factors which should be considered before planning meals, use of weight and measures, selection of major food groups, ICMR basic five, RDA, its computation.
 - 2) Planning of meals for the following stages:
 - a) Pregnancy: Anatomy of male and female reproductive organs, menstrual cycles- conception, contraception, parturition, brief anatomy of mammary glands, changes during pregnancy, the desirable weigh gain, and nutritional requirements, complications during various stages of pregnancy, diet for pregnancy.
 - b) Lactation: Nutritional requirements, Effects of mother's diet on composition and output of milk, effect of malnutrition on nutritional status of nursing mothers, methods to improve their nutritional status, diet for lactating women
 - c) Infancy- Nutrient requirements, growth and development during infancy, difference between human and animal milk, bottle feedings, methods of formula preparation, supplementary foods, importance of breast feeding.
 - d) Toddlers and preschoolers: Growth and development, nutritional requirements, balance diets during preschool years, good food habits.
 - e) School Children: nutritional requirements, importance of nutrition education, diet for school children.
 - f) Adolescence: growth and development, nutritional requirements of boys and girls.
 - g) Geriatric nutrition: Changes that occur during aging, nutritional needs, special care of old people.
 - h) Athletes: Nutritional requirements, meal planning, effects of tea, coffee or alcohol on athletic performance.
 - i) Nutrition for industrial workers: Nutritional requirements of worker, causes of nutrition among industrial workers, measures of improving their nutrition.
 - j) Space Nutrition: nutritional requirements, specials considerations for processing.

REFERENCES

- 1) Bhanvana Sabarval, Applied Nutrition And Health, Common, Wealth, 1999
- 2) Gopalan.C, Rama Sastri, B.V, and Balasubramian, S.C Nutritive Value of Indian Foods, NIN, ICMR, 1989
- 3) Home Science Associations of India, Food Preparation Hand Book, 1973
- 4) Indian Council of Medical Research, Recommended Dietary Intake for Indians 1991
- 5) Kinder, F, Meal Management, Macmillan Co 1973

- 6) Nieman. C., Butler worth. E., and Catherine. N, Nutrition, WMC Brown Publishers. 1990
- 7) Swaminathan M, Advanced Text book on Food Nutrition Publishing Co. Ltd 1953
- 8) Robinson Carinne. H and lawler Marilyn C.R, Normal and Therapeutic Nutrition, Oxford and IBN Publishing Co Pvt Ltd, 1982

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C05TPGD: FOOD SERVICE MANAGEMENT

Objectives

- 1) To develop knowledge of efficient management of hospital; being a part of medical team
 - 2) To gain insight into every aspect of catering management, where a dietician is directly involved
 - 3) To help learn administrative aspects of hospital management
- 1) Catering Management:
 - a) Food service system in a hospital
 - b) Menu planning in relation to hospital diets- menu consideration, steps in planning routine and modified diet, cyclic menu, diet card
 - c) Purchasing, delivery system and quality assurance, storeroom management. Purchase system, types, specifications, food requisition, laws relating to food purchasing, receiving and storage of food items- perishable, semi perishable and non perishable
 - 2) Hospital Administration
Managerial responsibility and skill, human resource management- hierarchy
 - 3) Financial Management
 - a) Cost, identifying element of cost, food cost control- cost analysis of dishes, portion and menu
 - b) Labour and energy cost control
 - c) Budget system and accounting/ book keeping
 - 4) Sanitation Management
 - a) Sanitation and hygiene in relation to food handling, preparation and serving, Personal hygiene, pest control, garbage disposal, general hygiene practice for benefit of hospital inmate and patients, food poisoning and infection
 - b) Disinfection and sterilization- Disinfectant, sanitizer, antiseptic, germicide used in working surface, equipments and hospitals, sterilization of equipments
 - 5) Risk Management

REFERENCE

- 1) Andrews.S(1980), Food and Beverage Services, 23rd Reprint, TATA McGraw Hill Publishing Co.
- 2) Avery A.C,(1980), Modern Guide toFood Sevice Equipment, CBI.
- 3) Malhan,S and Sethi M,(1987), Catering Management- An integrated Approach, Wiley Eastern Ltd, New Delhi.
- 4) Spears. C. Marian and Waden G. Allene(1985) Food Service Organization, MacMillan Publishing Co. New York an Collier MacMillan Publishers, London
- 5) Khan A Mahmood, Food Service Operation, A VI Publishing Co IMC West Port.

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1C06PPGD: NORMAL NUTRITION (P)

Planning, calculations, preparation of diets for pregnancy, lactation, Infancy, toddlers and preschoolers, school Children, Adolescence, Old age, Athletes, Industry workers

REFERENCES

- 1) Bhanvana Sabarval, Applied Nutrition And Health, Common, Wealth, 1999
- 2) Gopalan.C, Rama Sastri, B.V, and Balasubramian, S.C Nutritive Value of Indian Foods, NIN, ICMR, 1989
- 3) Home Science Associations of India, Food Preparation Hand Book, 1973
- 4) Indian Council of Medical Research, Recommended Dietary Intake for Indians 1991
- 5) Kinder, F, Meal Management, Macmillan Co 1973
- 6) Nieman. C.,Butler worth. E., and Catherine. N, Nutrition, WMC Brown Publishers. 1990
- 7) Swaminathan M, Advanced Text book on Food Nutrition Publishing Co. Ltd 1953
- 8) Robinson Carinne. H and lawler Marilyn C.R, Normal and Therapeutic Nutrition, Oxford and IBN Publishing Co Pvt Ltd, 1982

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER I

CN1PR1PGD: FOOD SERVICE MANAGEMENT

- Food Service Management: Students are expected to do one week hotel internship at a three or four star hotel. This is for them to be informed on the practicality of the subject Food service management.

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER II

CN2C07TPGD: NUTRITIONAL BIOCHEMISTRY

Objectives:

To enable the students to:

- 1) Understand the principles of Biochemistry
 - 2) Understand the relationship between Biochemistry, Nutrition and Food Science
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- 1) Enzymes: Nature, mode of action, activation, inhibition classification according to function
 - 2) Co-enzymes: Role of vitamins as co enzymes in the metabolism of macro nutrients.
 - 3) Enzymatic digestion and absorption of bulk nutrients, carbohydrates, proteins and fats
 - 4) Carbohydrate Metabolism: Interconversion of hexoses in the liver, aerobic and anaerobic metabolism of glucose- Glycolysis, TCA cycle, HMP shunt, Gluconeogenesis, Glycogenesis, Glycogenolysis and energetics of the pathways.
 - 5) Lipid Metabolism: Fatty acid oxidations, Synthesis of fatty acids, Triglycerides and phospholipids, fatty liver and lipotropic factors, cholesterol metabolism, bile acid synthesis
 - 6) Protein Metabolism: Essential and non essential amino acid metabolic reactions- transamination, deamination, transdeamination transmethylation etc. urea cycle, changes in blood picture in malnutrition, pregnancy and liver diseases.
 - 7) Free energy, exergonic and endergonic reaction, high- energy compounds, electron transport chain, oxidative and subtraction phosphorylation.
 - 8) Nuclear Proteins: Structure and functions of DNA and RNA, role of different RNAs in protein synthesis, genetic code.
 - 9) Macro- micro nutrient interaction
 - 10) Drug and nutrient interaction : Effect of drugs on nutrient intake, absorption and metabolism, requirement, summary of action of some common drugs, effect of nutrients and nutritional status on absorption and metabolism of drugs

REFERENCES

- 1) Conn, EE, Stump,P.K, Breuning.G and Doi, R.H(1987), Outlines of Biochemistry, John Wiley and Jons.
- 2) Dasgupta, S.K, Biochemistry Vol I,II,III(1987), The Mc Millian Co of India Ltd.
- 3) Deb A.C(2006),Fundamentals of Biochemistry,New Central Book Agency (p) Ltd, Kolkata
- 4) Murray R.K, Garmner, D.K, Mayers, P.A, and Rodwell, V.W(2000), Harpers Biochemistry 25th Edition , Appleton and Lange, Connecticut.
- 5) Pant, M.C,(1977), Essentials of Biochemistry, 2nd Edition Kedarnath Publishers.
- 6) Rama Rao, A.V.S.S, and SuryaLakhmi, A(1998), A Textbook of Biochemistry, 8th Edition V.B.S Publishers Distributors Ltd.
- 7) Vasudevan D.M,Sreekumari S,(2005), Text Book of Biochemistry, Jaypee Brothers Medical Publishers(P),Ltd, New Delhi

**POST GRADUATE DIPLOMA PROGRAMME
CLINICAL NUTRITION AND DIETETICS
SEMESTER II
CN2C08TPGD: DIAGNOSTIC TEST SIGNIFICANCE**

Objective:

- 1) To help the students to interpret the clinical significance of various physiological and biochemical test
 - 2) To understand the disease conditions better
 - 3) To interpret the functional status of various organs of the body through organ- function test.
- 1) Haematology: Total count of RBC, total platelet count, differential diagnosis of Anaemia- haemoglobin estimation, RBC index, hemorrhagic disorders- bleeding time, coagulation time, prothrombin time, detection of blood group and RH factor
 - 2) Routine Biochemical Test:
 - a) Estimation of blood sugar and glucose tolerance test
 - b) Estimation of blood urea, uric acid
 - c) Estimation of total protein and albumin and creatinine in serum
 - d) Estimation of total unconjugated and conjugated, bilirubin, Icteric index
 - e) Blood lipid profile- Total serum cholesterol, serum triglyceride, HDL cholesterol, LDL Cholesterol
 - f) Electrolyte Estimation- Determination of sodium and potassium, calcium serum chloride and serum inorganic phosphate.
 - g) Enzymes- Amylase, Phosphatase- acids and alkaline, transaminase creatinine kinase,
 - 3) Organic function Tests
 - a) Liver function test: serum bilirubin, serum total protein and albumin, serum enzymes- transaminase (SGOT and SGPT), Alkaline Phosphatase, serum cholesterol, urinobilinogen,
 - b) Renal Function Test: Serum creatinine, blood urea nitrogen, glomerular filtration rate (GFR)
 - c) Gastric function test: Physical and chemical screening, gastric acidity test
 - d) Thyroid function test: Estimation of BMR, PBL, T3, T4 and TSH
 - e) Cardiac function Test: ECG, TMT, Blood pressure, Cardiac output
 - 4) Microbiological and Para cytological test significance: Bacterial- Staphylococcus aureus, Clostridium botulinum, Mycobacterium Tuberculosis, E.Coli, Salmonella Typhi, viral- influenza, measles, chicken pox. Parasites- Entamoeba histolytica, Ascaris Lumbricoides, Taenia Solium (tape worm)

REFERENCES

- 1) Mukhjee, L.K. Medical laboratory Technology, Vol 3, Tata Mc Graw Hill Publishing Co Ltd 1999
- 2) Maiti, C.R medical Laboratory Technology, New Central Book Agency, 1997

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER II

CN2C09TPGD: CLINICAL NUTRITION AND DIETETICS- 1

Objectives:

- 1) To understand the role of nutrition for good health
 - 2) To gain knowledge and develop skills and techniques in the planning and preparation of therapeutic diets
 - 3) To develop the skill in the selection of foods for modification of diets
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- 1) Diet Therapy and nutritional care in Diseases: Growth and source of dietetics, nutritional care process, nutritional care plan and implantation, purpose and principles of therapeutic diets, modifications of diets according to medical prescription and food habits of patients, classification of therapeutic diet
 - 2) Routine hospital diets, pre operative and post operative diets, special feeding methods- basic concepts, Parenteral nutrition, diet in burns, modifications of diet in burns
 - 3) Nutritional care for weight Management- Regulation of energy intake and balance of body weight.
 - a) Overweight/ Obesity- Types, health risks, causes, physiology of the obese state, complications, diets in obesity, foods to avoid and include.
 - b) Underweight/ leanness- etiology and assessment, diet plan predisposition
 - 4) Modification of diet in relation to gout
 - 5) Diet in allergy: definition, classification manifestation, mechanism of food allergy (symptoms, diagnosis, history, food record) common food allergies, test for allergy, elimination diets for allergy in infancy, dietetic treatment
 - 6) Febrile conditions: Acute- typhoid, influenza, recurrent malaria; chronic- tuberculosis
 - 7) Nutrition and cancer: development of cancer, types and effects on metabolism, metastasis and nutritional status, nutrients and their relationship with cancer, recent developments in nutrition and cancer, carcinogenesis and Mutagenesis
 - 8) Nutrition and immune response
 - 9) Elementary knowledge on diet in arthritis, rheumatism and skin diseases
 - 10) Disease of the nervous system- neuritis and polyneuritis, migrane, headache, epilepsy, multiple sclerosis.
 - 11) Medical nutrition therapy for HIV infection and AIDS
 - 12) Dietary care in diseases of the adrenal cortex, thyroid and parathyroid gland: Functions hormones and their insufficiency, metabolic implications, clinical symptoms dietary treatment of hypo and hyperthyroidism, hypocalcemia
 - 13) Nutritional Care in anaemia

REFERENCES

- 1) Antia. F.P, Clinical Nutrition and Dietetics, Oxford university press, 1973
- 2) Bhavana Sabarval, Principles and Practics, Common wealth Publishers, 1999
- 3) Davidson.S. Passmore. R, Brock. L.P and Truswell A.S Human Nutrition and Dietetics, The English Language Book Society and Churchill Lingustone, 1977
- 4) Gopalan, C. Balasubramanian, S.C. Ramasastry, B.V, The Nutritive value of Indian Foods ICMR, New Delhi, 1981
- 5) Krause, M.V and Huncher.A. Food Nutrition and Diet Therapy, W.B Saunders Co 1977
- 6) Robinson. C. H, Normal and Therapeutic Nutrition, The Oxford and IBH Publishing Co, 1982
- 7) Srilakshmi. B. Dietetics, Newage International (P) Ltd Publishers, 1997
- 8) Williams.S.R Nutrition and Diet therapy, Mobsy Co 1977
- 9) Williams. S.R, Mowry's Basic Nutrition and diet Therapy, Mobsy Co, 1978

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER II

CN2C10TPGD: CLINICAL NUTRITION AND DIETETICS-II

Objectives:

- 1) To understand the role of nutrition for good health
 - 2) To gain knowledge and develop skills and techniques in the planning and preparation of therapeutic diets
 - 3) To develop the skill in the selection of foods for modification of diets
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- 1) Pathogenesis of Gastrointestinal diseases
 - a) Diseases of oesophagus and stomach- predisposing factors, treatment and dietary care - ulcers, gastritis. Foods stimulating GI secretion
 - b) Intestinal diseases- Diaphorrea, dysentery, constipation, flatulence, irritable bowel syndrome, haemorrhoids, steatorrhoea, diverticular disease, inflammatory bowel disease, ulcerative colitis, Chron's disease
 - c) Malabsorption syndrome- Celiac disease, lactose intolerance, tropical sprue
 - 2) Dietary care and diseases of liver, and biliary system: Viral hepatitis, jaundice, cirrhosis, hepatic coma, Wilson's disease
Dietary care and diseases of exocrine pancreas: Acute and chronic Pancreatitis
Dietary care and diseases of gall bladder
 - 3) Dietary management of endocrine pancreas: Diabetes mellitus- classification, symptoms, diagnosis and complications, glycosylated haemoglobin, special dietetic foods, medications, artificial sweeteners, glycemic index
 - 4) Nutrition in Cardio vascular diseases- Prevalence, pathophysiology aetiology, risk factors, prevention and treatment- Atherosclerosis, angina pectoris, myocardial infarction, hypertension, congestive heart failure

- 5) Principles of dietary management of Renal diseases: Glomerulonephritis, nephritis, nephritic syndrome, acute renal failure, chronic renal failure, different urinary stones and dialysis. Use of sodium potassium exchange list in renal diseases.
- 6) Dietary management in Inborn errors of metabolism: Pbenyl ketonuria, maple syrup disease, galactosemia, tyrosenemia.
- 7) Dental caries: Causes symptoms and dietary management, Fluorosis

REFERENCES

- 1) Antia. F.P, Clinical Nutrition and Dietetics, Oxford university press, 1973
- 2) Bhavana Sabarval, Principles and Practics, Common wealth Publishers, 1999
- 3) Davidson.S. Passmore. R, Brock. L.P and Truswell A.S Human Nutrition and Dietetics, The English Language Book Society and Churchill Lingustone, 1977
- 4) Gopalan, C. Balasubramanian, S.C. Ramasastri, B.V, The Nutritive value of Indian Foods ICMR, New Delhi, 1981
- 5) Krause, M.V and Huncher.A. Food Nutrition and Diet Therapy, W.B Saunders Co 1977
- 6) Robinson. C. H, Normal and Therapeutic Nutrition, The Oxford and IBH Publishing Co, 1982
- 7) Srilakshmi. B. Dietetics, Newage International (P) Ltd Publishers, 1997
- 8) Williams.S.R Nutrition and Diet therapy, Mobsy Co 1977
- 9) Williams. S.R, Mowry's Basic Nutrition and diet Therapy, Mobsy Co, 1978

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER II

CN2C11TPGD: DIET COUNSELLING

Objectives:

To enable the students to:

- 1) Understand the psychology of the patient
- 2) Develop diet counseling skills
- 3) Prepare the patients for food acceptability
- 4) Create awareness among the communities about the importance of diet and good health
- 5) Develop humanistic approach towards patients

- 1) Role of a dietician in a hospital and community, team approach to nutritional care, ethical code and responsibility.
- 2) Defining features of counselling psychology
- 3) Diet counseling skill: Tactics and techniques of counseling- evaluating and understanding the clients attitude, how to identify and express your feelings towards the client, utilizing proper counselling techniques- non verbal behavior, verbal behavior, covert behavior.
- 4) Concepts and principles in communication and their application in developing skills in counseling use of communication aids, communication and interviewing skills.
- 5) Health Psychology and behavior medicine- approach to prevention and treatment, Mind- body medicine.
- 6) Therapeutic relationships: psychology of feeding the patients- Assessment of needs, education of the patient and follow up and establishing rapport with the patient and the family member, facilitative condition and counseling relationships- Empathic understanding, unconditional positive regard
- 7) Diagnosis and assessment :Eliciting clinical information- medical history, assessment of diet-profile, techniques of obtaining relevant information; dietary diagnosis- 24 hour recall method, food diary, list of food likes and dislikes, lifestyle; interpreting clinical information, case study- assessment and evaluation

REFERENCE

- 1) Gelso Charles, J. and Fretz Bruce, R. Counselling Psychology, a PRISM Indian edition Harcourt Brace College Publishers, 1995
- 2) Srilakshmi, B. Dietetics New Age International (P) Ltd, 1997

POST GRADUATE DIPLOMA PROGRAMME

CLINICAL NUTRITION AND DIETETICS

SEMESTER II

CN2C12TPGD: PUBLIC HEALTH NUTRITION

Objectives

- 1) To gain insight into the national nutrition problems and the efforts taken to overcome them
- 2) To understand the importance of nutrition education and integration of nutrition education with some aspect of diet counseling
- 3) To understand the impact of technological advancement on general health due to altered food habits/pattern

- 1) Assessment of nutritional status:
- 2) Cost of Malnutrition: Ecology of malnutrition- dietary pattern, food and nutrient intake, socio-economical, socio-cultural factors, environmental change and pollutants, impact of technology on general health- positive and negative aspect .
Prevalence of morbidity and mortality rate, prominent nutritional problems faced by community- Anaemia, IDD, vitamin A deficiency, underweight, diarrhea/ dysentery and flurosis
- 3) Nutrition and national development: Nutritional problem causing national drain-retarding economic development, industrial development and agricultural development, nutrition and infection
- 4) Strategies to overcome malnutrition: Need for an integrated approach to solve the problems of malnutrition – agricultural planning, food fortification and enrichment
- 5) Intervention programmes: Short term and long term , national and international organization.
- 6) Nutrition education: Definition and importance of nutrition education to the community, principles of planning, executing and evaluating nutrition education programmes.
- 7) Food adulteration: Definition, common foods adulterated and adulterants, health hazards, tests to detect adulteration, laws governing adulteration, consumer safety programmes and consumer education.
- 8) Public health and hygiene: Environmental sanitation and its implementation on health and nutritional status, safe drinking water, immunization programmes, sewage disposal, personal hygiene and mental hygiene
- 9) Preventive nutrition: Importance of fibre, phytochemicals and antioxidants in preventing degenerative health problems and increasing longevity, herbal nutrition- medicinal herbs and its scope in improving health

REFERENCE

- 1) Bedi Yashpal, Hygiene and public health
- 2) Bandila K.R,(1992), Food problems in India, Ashish Publishing House, New Delhi
- 3) Gopalan, C, Narasinga Rao B.S, and Subadra Seshadri(1992), Combating Vitamin A Deficiency through Dietary improvement , Special publication series 6 NFI.
- 4) Proceedings of the Nutrition Society of India, NIN, Hyderabad
- 5) Sabarwal, B,(1999), Public Health and Nutritional Care, Commonwealth Publishers, New Delhi
- 6) Sukla P.K,(1982), Nutritional problems of India, Vol II, Plintice Hall India(P) Ltd, New Delhi.

**POST GRADUATE DIPLOMA PROGRAMME
CLINICAL NUTRITION AND DIETETICS
SEMESTER II
CN2C13TPGD: COMMUNICATION SKILLS**

OBJECTIVES:

Acquire body language and communication skill and thereby develop confidence to approach interview board and society at large.

Module I

1. Introduction to communication
2. Concept, definition
3. Functions and need of communication
4. Types of communication- Verbal, non verbal, Intra personal, Interpersonal, Group communication
5. Barriers to communication

Module II

1. Art of small talk- initiating a conversation, sustaining a conversation, closing a conversation, interrupting a conversation.
2. Describing people, places, events and things
3. Participating in a conversation- interactional, transactional
4. Group Discussion- need for good communication skills, interpersonal skills, leadership skills, problem solving skills, types of group discussion (topic based, case based), Discussion etiquette (Do's and don'ts)

Module III

1. Letter Writing
2. Resume and covering letter
3. Email application
4. Email etiquettes
5. Presentation skills
6. Interview skills- research- on topics, on company details, preparing for the interview- a day before, on the day of the interview, during the interview, after the interview, what no to do at an interview
Speech mannerism and body language

REFERENCE

1. Rajendra Pal ,Essentials of Business Communications, Sultan Chand & Sons
2. Sanjay Kumar ,Lata Push, Communication skills ,Oxford
3. Dressing and Etiquette – Hand Book ,Guide India Publications
4. Meenakshi Raman ,Prakash Singh, Business Communications, Oxford Publishers

**POST GRADUATE DIPLOMA PROGRAMME
CLINICAL NUTRITION AND DIETETICS
SEMESTER II
CN2C14PPGD: DIETETICS (P)**

- 1) Standardisation of portion sizes for different food preparations, use of weights and measures (raw weight v/s cooked weight), use of food composition table, menu planning and calculation

- 2) Normal routine diet, preparations generally served in the hospitals. Modifications in consistency and fibre
 - a. Different types of liquid diet
 - b. Different types of semi solid/ soft diet
- 3) Diet preparation of cardiac diseases- modified diet with fat, sodium
- 4) Diet preparation of renal diseases- modified diet with protein, minerals and fluid.
- 5) High calorie diet preparation for underweight, anaemia and fevers.
- 6) Diet preparation for peptic ulcer, Ulcerative colitis, Diverticulosis, Diarrhoea, Constipation
- 7) Diet preparation for Diabetes mellitus with/without insulin therapy.
- 8) Elimination diets for allergy
- 9) Diet for Gout, Cancer and Obesity

PROJECTS

CN2PR1PGD: Hospital Internship

- Hospital Internship: 6 months internship in a multi specialty hospital under a registered dietician.

CN2PR2PGD Community Nutrition

- Community Nutrition: Students will give nutrition and dietetics classes to the public using proper visual aids.