

ACADEMIC CALENDER

Department of Food & Nutrition(H&G)
2023 1ST, 3rd, 5thsem ,NEP & CBCS

Semester/ Year	Syllabus Module/ Unit	Teachers	Tentative period of completion
3rd sem H	<p style="text-align: center;">FNTACOR05T: NUTRIENTS METABOLISM(THEORY)</p> <p>1.Carbohydrate Metabolism: Glycolysis & its regulation. Glycogen metabolism. Metabolism of pyruvate. Outline of pentose phosphate pathway. Anaplerotic reactions. Importance of gluconeogenesis.</p> <p>2. Lipid Metabolism : Fatty acid synthase and de novo biosynthesis of fatty acid; regulation and mechanism of chain elongation. Metabolism of cholesterol, its control and pathophysiological importance. β-oxidation of fatty acids.</p> <p>3.Amino acid Metabolism : Essential amino acids. Transamination. Deamination. Transmethylation.</p> <p>Decarboxylation.glucogenicandketogenicaminoacids.O outline of urea cycle. Inborn errors of Metabolism.</p> <p>4. Biologicaloxidation Mitochondrial electron transport chain. High energy phosphate bond.Formation of ATP.</p> <p>5. Nucleic acid metabolism Chemical structure of purine and pyrimidine, Catabolism and anabolism of pyrimidines. Gout - occurrence, prognosis, progression and therapy.</p> <p>6.Vitamins Classification, characteristics and chemical properties of fat and water soluble vitamins. Functions of fat and water soluble vitamins.Hypervitaminosis.Role of vitamins A,D,C, B1, B2B6, B12 and folic acid in metabolism.</p> <p>7.Mineral Metabolism Role of minerals in physiology. Trace elements. Sodium potassium balance. Role of calcium, iron and zinc in human body -metabolism, functions, deficiency and toxicity.</p>	<p>DP</p> <p>DP</p> <p>DP</p> <p>DP</p> <p>DP</p> <p>DP</p> <p>DP</p>	September - January 23

Internal exam Scripts will be checked by :- DP

FNTACOR05P: NUTRIENTS METABOLISM(PRACTICAL)

TOTAL HOURS: 60 2 CREDITS

1. Estimation of Vitamin C in citrus fruits.
2. Estimation calcium in blood (using kit) and drinking water (Complexometry).
3. Estimation of sodium and potassium in blood (using kit)
4. Estimation of iron in vegetables by spectrophotometry.
5. Estimation of DNA (PDA method) and RNA (Orcinol method) in tissues by spectrophotometry.

**INTERNAL PRACTICAL MARKS WILL BE GIVEN BY
SMT DEBOSMITA PATHAK**

DP

September
23-January
24

	<p>FNTACOR06T: NUTRITION THROUGH LIFE SPAN(THEORY)</p> <p>1. Basics of Meal Planning Principles of meal planning, Food groups and Food exchange list, Factors affecting meal planning and food related behaviour</p> <p>2. Nutrition in Adults and Elderly Physiological changes in elderly.. RDA and nutritional guidelines, nutritional concerns and healthy food choices for: Adult man and woman, Elderly.</p> <p>3. Nutrition during Pregnancy Nutrition During Pregnancy: Factors (non-nutritional) affecting pregnancy outcome, importance of adequate weight gain during pregnancy, antenatal care and its schedule, Nutritional requirements during pregnancy and modification of existing diet and supplementation, Deficiency of nutrients, specially energy, iron folic acid, protein, calcium, iodine. Common problems of pregnancy and their managements, specially - nausea, vomiting, pica, food aversions, pregnancy induced hypertension, obesity, diabetes. Adolescent pregnancy.</p> <p>4. Nutrition during Lactation Nutrition during Lactation: Nutritional requirements during lactation, dietary management, food supplements, galactogogues, preparation for lactation. Care and preparation of nipples during breastfeeding.</p> <p>5. Nutrition during Infancy Nutrition during Infancy: Infant physiology relevant to feeding and care, Breastfeeding, colostrum, its composition and importance in feeding, Initiations of breast feeding. Advantages of exclusive breastfeeding. Basic principles of breastfeeding. Introduction of supplementary foods, initiation and management of weaning, Baby-led weaning. Bottle feeding- circumstances under which bottle feeding is to be given. Care & sterilization of bottles. Preparation of formula. Mixed feeding, breast feeding and artificial feeding. Management of preterm and low birth weight babies.</p> <p>6. Nutrition for Children and Adolescents Growth and development in children, RDA, nutritional guidelines, nutritional concerns and healthy food choices for: Preschool children, School children, Adolescents</p> <p>INTERNAL SCRIPTS WILL BE CHECKED BY: SS</p>	<p>SS</p> <p>Mitali Palodhi</p> <p>SS</p> <p>SS</p> <p>SS</p> <p>Smt Mitali Palodhi</p>	<p>September October</p> <p>September October</p> <p>October- November</p> <p>December- January</p> <p>November- January</p>
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	<p>FNTACOR06P: NUTRITION THROUGH LIFE SPAN(PRACTICAL) TOTAL HOURS: 60 2 CREDITS Meal planning and preparation of adequate meal for different age groups with special reference to different physiological conditions: infants, pre-schooler, school children,</p> <p>adolescents, adults, pregnancy, lactation and elderly. INTERNAL PRACTICAL MARKS WILL BE GIVEN BY: SP AND SS</p> <p>FNTACOR07T: ELEMENTARY DIETETICS AND MENU PLANNING (THEORY)</p> <p>1. DieteticsandDietician Definition and objective of dietetics, Dieticians-Definition, Classification andResponsibility</p> <p>2.Foodgroups Four food groups (Caribbean Food Guide; Canadian Food Guide; USA Food Pyramid; British Food Guide; Recommended Nutrient Intake (RNI); Dietary Value Intake; Dietary Reference Value, Five food group system of ICMR. Structure and composition of cereals. Wheat- structure and composition, types (hard, soft/ strong, weak) ,Diagrammatic representation of longitudinal structure of wheat grain. Malting, gelatinization of starch, types of browning- Maillard&caramelization. Rice- structure and composition, parboiling of rice- advantages and disadvantages. Structure and composition of pulses, toxic constituents in pulses, Milk andMilk Products-composition, classification and processing, Eggs- com[osition, Meat, fish & poultry- Types, composition, Sugar& Sugar products-Types and composition, Fats & Oils-Types & sources, Food adjuncts- spices, condiments, herbs, extracts;concentratesessences,foodcolours,origin,classificatio n, convenience foods, Bevarages-Tea, Coffee, Chocolate , cocoa poeder-composition</p> <p>3.Dietaryguidelines Nutritive values as a basis for classificationof food, Recommended Daily Allowances (RDA), Dietary guidelines for Indians and foodpyramids.</p>	<p>MS &GC</p> <p>Mitali palodhi</p> <p>Mitali Palodhi</p> <p>GC</p>	<p>September-December</p> <p>OCTOBER</p> <p>October-january 24</p> <p>September</p>
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	4.MenuPlanning Menu Planning: Rationale for menu planning, Factors affecting food choice, Nutritional factors,other factors; Exchange list and food composition tables for menu planning, Steps in the development of exchange list, Factors to be considered when planning the regular balanced diet: adequacy, balance caloric control, moderation, variety and aesthetics.	GC	October
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	<p>5. Basics of diet therapy Basic concepts of diet therapy: Therapeutic adaptations of normal diet, principles and classification of the therapeutic diets, Nutrient modifications.</p> <p>6. Diet for health care Team approach to health care. Assessment of Patient's needs.</p> <p>7. Routine Hospital Diet Routine Hospital Diets: Regular, light, soft, fluid, parenteral and enteral feeding.</p> <p>INTERNAL SCRIPTS WILL BE CHECKED BY: GC</p> <p>FNTACOR07P: ELEMENTARY DIETETICS AND MENU PLANNING (PRACTICAL) TOTAL HOURS: 60 4 CREDITS</p> <ol style="list-style-type: none"> 1. Planning and preparation of normal diets. GC 2. Planning and preparation of different liquid diets. SS 3. Planning and preparation of different soft/semi solid diets. SS 4. Planning and preparation of different nutrient modified diet. GC <p>INTERNAL PRACTICAL MARKS WILL BE GIVEN BY :- SS</p> <p>SEC SYLLABUS</p> <p>FNTSSEC01M: INSTRUMENTATION</p> <ol style="list-style-type: none"> 1. Microscopy Brightfield and darkfield microscopy, Optical Microscopy, Phase contrast Microscopy, Inverted Microscopy 2. Chromatography Principles and applications of paper chromatography (including Descending and 2-D), Thin layer chromatography, HPLC. Separation of mixtures by paper / thin layer chromatography 3. Spectrophotometry Principle and use of study of absorption spectra of biomolecules, Analysis of biomolecules using UV and visible range, Colorimetry. Protein concentration of spectrophotometer/ colorimeter. 4. Electrophoresis Principle and applications of native polyacrylamide gel electrophoresis 5. Centrifugation Preparative and analytical centrifugation, density gradient centrifugation and ultracentrifugation Separation 	<p>GC</p> <p>GC</p> <p>GC</p> <p>SS&GC</p> <p>MS</p> <p>DP</p> <p>DP</p> <p>DP</p> <p>GC</p>	<p>November</p> <p>December</p> <p>November</p> <p>September-December</p> <p>September</p> <p>October</p> <p>November</p> <p>December</p> <p>October</p>
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	<p>of components of a given mixture using a laboratory scale centrifuge</p> <p>6. ECG and EEG Principles of ECG and EEG, application of ECG and EEG</p> <p>7. ELISA Principle and applications of ELISA test</p> <p style="color: green;">INTERNAL SCRIPTS WILL BE CHEKED BY: SS</p> <p style="text-align: center;">3RD SEM G (DSC) FNTGCOR03T: COMMUNITY, NUTRITION AND HEALTH ASSESSMENT (THEORY)</p> <p>1. Concept on Community Concept and types of Community. Concept of community nutrition, Community health, Factors affecting community health.</p> <p>2. Nutritional Assessment Nutritional Assessment: Meaning, need, objectives and importance. Method of assessment of nutritional status – Anthropometry, Clinical, Biochemical, Dietary surveys, Vital health statistics.</p> <p>3. Concept of surveillance system Elementary idea of health agencies - FAO, WHO, ICMR, ICDS, ICAR, CSIR, ANP, VHAI, NIN and CFTRI. Role of voluntary health organisation in the improvement of Community health.</p> <p>4. Nutrition Intervention Programmes Current National Nutrition Intervention Programmes in India- SNP, ANP, Middy meal, NIDDCP, NPPNB, NNAPP. ICDS,</p> <p>5. Nutrition Education Nutrition Education: Definition, objectives of nutrition education. Methods of imparting nutrition education.</p> <p style="color: green;">INTERNAL SCRIPTS WILL BE CHEKED BY: MS</p> <p>FNTGCOR03P: COMMUNITY, NUTRITION AND HEALTH ASSESSMENT(PRACTICAL) TOTAL HOURS: 60 CREDITS: 2 1. Anthropometric Measurement of infant - Height,</p>	<p>MS</p> <p>SS</p> <p>MS</p> <p>SS</p> <p>MS</p> <p>SS</p> <p>SS</p> <p>SS</p>	<p>November</p> <p>October</p> <p>Sep- October</p> <p>September- october</p> <p>October</p> <p>November</p> <p>December</p> <p>October - November</p>
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	<p>weight, circumference of chest, mid - upper arm circumference. Calculation of BMI.</p> <ol style="list-style-type: none"> 2. Clinical assessment and signs of nutrient deficiencies. 3. Diet survey by 24 hours recall method. 4. Preparation of homemade ORS. 5. Preparation of low cost and medium cost school tiffin. <p style="text-align: center;">INTERNAL PRACTICAL MARKS WILL BE GIVEN BY : SS</p> <p style="text-align: center;">5TH SEM H</p> <p style="text-align: center;">FNTACOR111: CLINICAL NUTRITION AND DIET FOR SPECIAL SITUATIONS IN LIFE (THEORY)</p> <ol style="list-style-type: none"> 1. Nutritional management of physiological stress Nutrition in wound healing, Surgery: Pre and post surgical dietary management, Burns, Classification, Complication, Dietary management, Trauma: Dietary management, Sepsis: Dietary management. 2. Dietary Modification in febrile Condition Acute, chronic and recurrent fevers, typhoid, rheumatic fever, tuberculosis, malaria, H1N1, dengue fever and chikungunya. 3. Nutritional management of GI diseases Diseases of Esophagus and stomach: Esophagitis(GERD), Dyspepsia, Peptic ulcer, Gastritis, Gastrectomy, Dumping syndrome . Intestinal diseases: Flatulence, Diarrhea, Constipation, Hemorrhoids, Diverticular disease, Duodenal ulcer, Inflammatory Diseases of Bow: Crohn's disease and ulcerative colitis, Irritable bowel Syndrome, Colostomy, Ileostomy 4. Malabsorption syndrome Celiac disease (Tropical sprue), Steatorrhea, Intestinal Brush border diseases, Protein losing enteropathy 5. Diseases of Gall bladder and pancreas Pathophysiologic changes, etiology and dietary management -(Biliary dyskinesia , Cholelithiasis, Cholecystitis, Cholecystectomy ,Pancreatitis) 6. Liver diseases Pathophysiology, Progression of liver disease, Role of specific nutrients and alcohol in liver diseases. Nutritional care in liver disease in the context of results of specific liver function tests, Viral hepatitis , cirrhosis of Liver, Hepatic encephalopathy, Wilsons disease. 	<p>MP</p> <p>MS</p> <p>MP</p> <p>MS</p> <p>SS</p> <p>SS</p>	<p>October</p> <p>Sep-oct</p> <p>October- November</p> <p>Oct-nov</p> <p>Nov-dec</p> <p>Sep-nov</p>
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	<p>7. Nutrition Management of Renal Disease Etiology and pathogenesis, Clinical and metabolic manifestations Diagnostic tests, Acute and chronic nephritis, Nephrotic syndrome, Renal Failure: Acute and chronic, Nephrotheasis,ESRD</p> <p>8. Nutritional management in Allergy Definition, symptoms mechanism of food allergy, Biochemical and immune testing (short), Elimination diets, Food selection, Food allergy in infancy: Milk sensitive enteropathy, intolerance to breast milk, Prevention of food allergy.</p> <p>9. Neurological diseases Alzheimer's, Parkinson's disease and Epilepsy, Anorexia nervosa and bulimia.</p> <p>INTERNAL SCRIPTS WILL BE CHECKED BY: MS</p> <p>FNTACOR11P: CLINICAL NUTRITION AND DIET FOR SPECIAL SITUATIONS IN LIFE (PRACTICAL) TOTAL HOURS: 60 2 CREDITS Planning and preparation of Diets for the following diseases: i) Peptic ulcer ii) Viral hepatitis (GC)</p> <p>iii) Fever iv) Acute and chronic renal failure (MS)</p> <p>INTERNAL PRACTICAL MARKS WILL BE GIVEN BY : GC & MS</p> <p>FNTACOR12T: FOOD MICROBIOLOGY AND IMMUNOLOGY (THEORY)</p> <p>1. General Introduction to microbes (Bacteria, Fungus, and Algae) Classification, Nomenclature and Morphology (external and internal features). Principles of staining.</p> <p>2. Growth kinetics of bacteria Growth kinetics, Factors affecting growth, different nutritional media for growth, methods of media sterilization.</p> <p>3. Microbiology of food Microbes commonly present in food and the diseases caused by them, microflora present in milk, cereals, vegetables, flesh food. Seafood and Shell fish poisoning, Mycotoxins, Foodborne Diseases, Prions.</p> <p>4. Microbial Food Spoilage Sources of Microorganisms in foods, Some important food spoilage microorganisms, Spoilage of specific food groups - Milk and dairy products, Meat, poultry and</p>	<p>MP</p> <p>MS</p> <p>MP</p> <p>GC & MS</p> <p>DP</p> <p>DP</p> <p>DP</p> <p>SS</p>	<p>Nov- dec</p> <p>September</p> <p>Dec- jan</p> <p>September December</p> <p>October</p> <p>November</p> <p>December</p> <p>October</p>
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<p>seafoods, Cereal and cereal products, Fruits and vegetables and Canned products.</p> <p>5.FoodFermentations Fermentation –definition and types, Microorganisms used in food fermentations, Dairy Fermentations starter cultures and their types , concept of probiotics, Fermentated Foods-types, methods of manufacture for vinegar, sauerkraut, tempeh, miso , soya sauce, beer, wine and traditional Indian foods.</p> <p>6.Immunesystem Cells & Organs of the immune system, Innate and Acquired, Primary and secondary immune response, Active and Passive, Antigen, Antibody, Haptens, Adjuvants, Immunoglobulin- classification, polyclonal and monoclonal, basic structure and function, antigen and antibody reactions-RIA, ELISA, Immunoblot. Antibody production -processing and presentation of antigen, MHC, Humoral immune response. Cell mediated immunity, Formation, maturation and activation of B and T cells, Immune effectors system- cytokines complement system, K cells and NK cells, Cell mediated effectors response, Interferons, Immunopathology - basic principles of auto immune disease , Vaccine, toxins, toxoids, antiserum. Basic principles of immunological detection of pregnancy and immunohistochemistry.</p> <p style="text-align: center;">INTERNAL SCRIPTS WILL BE CHEKED BY: DP</p> <p>FNTACOR12P: FOOD MICROBIOLOGY AND IMMUNOLOGY (PRACTICAL) TOTAL HOURS: 60 4 CREDITS 1. Introduction to microbiology: Use of equipments Understanding and use of compound microscope Use of Autoclave Use of Incubator and Inoculation chamber 2. Preparation of different types of media (complex, differential and selective) 3. Preparation of slant, stab and plates using nutrient agar 4. Morphological study of bacteria and fungi using permanent slides 5. Gram staining 6. Bacteriological Analysis of Water by MPN method 7. Oucherlony double diffusion test in agar-gel.</p> <p style="text-align: center;">INTERNAL PRACTICAL MARKS WILL BE GIVEN BY : DP</p>	<p>SS</p> <p>EXTEN SION LECTU RE</p> <p>DP</p>	<p>November</p> <p>Oct- November</p> <p>September- December</p>	

<p>5th Semester DSE FOR FNTA HONS</p>	<p>FNTADSE02T: ENTREPRENEURSHIP IN FOOD INDUSTRY (THEORY)</p> <p>1. Entrepreneurial Development CASE STUDIES of SUCCESSFUL entrepreneurs, EXERCISES on ways of SENSING opportunities—sources of idea, creating efforts, SWOT49 Analysis, Entrepreneurial skill assessment test,</p>	<p>PS COMM ERCE</p>	<p>September -December</p>
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	<p>Techniques of development of entrepreneurial skills, positive self-image and locus of control.</p> <p>2. Food BUSINESS management AND STUDIES of Food PROCESSING Business and ITS ASPECTS, BUSINESS opportunity Identification and ASSESSMENT techniques, BUSINESS Idea Generation and devaluation exercise, Market ASSESSMENT study Analysis of competitive situation,</p> <p>SWOT Analysis for business and for competitors, Preparation of BUSINESS plan, Preparation of project report, Methods of Arrangement of inputs— finance and material, Tax planning.</p> <p>3. Personality development and communication skills No. of Hours 20 Communications SKILLS and Personality Development, Intrapersonal communication and Body Language, Interpersonal Communication and Relationships, Leadership Skills, Team Building and public speaking, Corporate Grooming, Dressing Etiquette, Preparing for Interview, Emotional Quotient.</p> <p>INTERNAL SCRIPTS WILL BE CHECKED BY: PS COMMERCE</p> <p>FNTADSE02P: ENTREPRENEURSHIP IN FOOD INDUSTRY (PRACTICAL) TOTAL HOURS: 60 CREDITS: 2 1. Preparation of business plan. 2. Preparation of project report. 3. Tax Planning under the head Salary. 4. Visit to a food industry</p> <p>INTERNAL PRACTICAL MARKS :- POULAMI SINHA COMMERCE</p>	<p>PS</p> <p>PS COMMERCE</p>	<p>September-December</p> <p>Do</p> <p>Do</p> <p>September-December</p>
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<p>FNTADSE03T: FOOD BORNE DISEASES AND FOOD TOXICOLOGY(THEORY)</p> <p>1. Food borne DISEASES Definition related to food borne DISEASES, types of DISEASES with example (Pandemic, Endemic and Epidemic). Infection, contamination, decontamination, disinfection, transmission (direct and indirect). Brief idea about different vector borne DISEASES, mode of TRANSMISSION prevention and control of following DISEASES: Salmonella, Shigella, Typhoid, Botulism, Cholera, E.coli food poisoning, Staphylococcus food poisoning, Clostridium infection, Bacillary infection.</p>	MS	September - Oct
<p>2. Lactose intolerance Lactose intolerance-its mechanism and enzyme deficiency.</p>	MS	October
<p>3. Mechanism of foodborne DISEASES Molecular mechanism of foodborne DISEASES.</p>	E Lec	November
<p>4. Food SAFETY Definition: Food SAFETY, TYPES of hazards (Biological, chemical and PHYSICAL HAZARDS), impact on health, control MEASURES, factors affecting food SAFETY.</p>	MS	November
<p>5. Hygiene and sanitation Hygiene and sanitation: Contamination, control methods using physical and chemical agents, USE of preservatives, pest control management, personal hygiene.</p>	GC	September - November
<p>6. Food safety management Food safety management: Concept of safety management, prerequisites-GHPs, GMP, HACCP etc.</p>	GC	September - November
<p>7. Toxic agents in food Toxic agents in food: Botulism, lathyrism, Ciguatera toxins, Tetrodotoxins, Saxotoxins, conotoxins, Antivitamin, Haemagglutinins, Cyanogenic glycosides, Strychnine, Solanine, atropine, MUSCARINE.</p>	GC	December

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	<p style="text-align: center;">INTERNAL SCRIPTS WILL BE CHEKED BY: GC</p> <p>FNTADSE03P:FOODBORNE DISEASES AND FOOD TOXICOLOGY (PRACTICAL) TOTAL HOURS: 60 CREDITS: 2 1. Assessment of surface sanitation by swab and rinse method. 2. Assessment of personal hygiene. 3. Designing of various food processing systems and food service areas. 4. Design and layout of cold storage and ware house. 5. Assessment of physico chemical properties of waste water. 6. Isolation and enumeration of bacteria from rotten food bread and vegetables. 7. Testing of sanitizers and disinfectants. 8. Study of phenol coefficient of sanitizers. 9. Visit to Food industry and preparation of report.</p> <p style="text-align: center;">INTERNAL PRACTICAL MARKS WILL BE GIVEN BY :- DP</p> <p style="text-align: center;">5TH SEM G (DSE 1 SYLLABUS FOR FNTG [ONLY FOR DSC])</p> <p>FNTGDSE02T- FOOD SAFETY AND FOOD PROCESSING</p> <p>1. Food additive and food safety: Concept of food safety, factors affecting food safety, Food additives-various type and their effects on health.</p> <p>2. Food spoilage: Cereals, PULSES, Vegetables & Fruits, Milk & milk products, FLESHY foods, Fats & OILS. Food borne infections & infestation.</p> <p>3. Food adulterants PFA definition of food adulteration, Common adulterants in food and their effects on health, Common household methods to detect adulterants in food.</p> <p>4. Food laws and regulatory authority No. of Hours 10 Prevention of Food Adulteration (PFA) Act, Regulating authority-Codex Alimentarius, ISI, Agmark, Fruit Products Order (FPO), Meat Products Order (MPO), Bureau of Indian Standards (BIS), MMPO, FSSAI.</p> <p>5. Food Preservation No. of Hours 10 Food Preservation-Definition, Objectives, Methods-main principle, procedure, common examples</p> <p>6. Food adjuncts and preserved products No. of Hours 8 Spices (Chilies, Turmeric, Garlic and Ginger), use and nutritional aspect. JAMS, Jellies, Squashes-USES and nutritional ASPECTS.</p> <p style="text-align: center;">INTERNAL SCRIPTS WILL BE CHEKED BY: SS</p> <p>FNTGDSE02P- FOOD SAFETY AND FOOD PROCESSING (PRACTICAL) TOTAL HOURS: 60 CREDITS: 2 1. Detection of common adulterant in food i) Khesari flour in besan ii) Vanaspati in Ghee/Butter iii) Dried papaya seeds in black pepper iv) Metanil yellow in turmeric or coloured sweet products.v)</p>	<p style="text-align: center;">DP</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p> <p style="text-align: center;">SS</p>	<p style="text-align: center;">September-December</p> <p style="text-align: center;">Oct - December</p> <p style="text-align: center;">Oct-dec</p>
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1ST SEMESTER (NEP) MAJOR	<p>Artificially foreign matter in tea (dust/leaves). 2. Prepa ration of Jam, Jelly, Pickle and Sauce</p> <p style="color: green; text-align: center;">INTERNAL PRACTICAL MARKS WILL BE GIVEN BY :- SS</p>		
	<p>CORE COURSE (DS) FNTADS01T BASICS OF FOOD & NUTRITION</p> <p>1.Introduction to Food and Nutrition Foods:Energygiving, bodybuildingandprotective.Nutrients:macroandmicronutrients,Dieta nd balanceddiet,Menu.Healthandnutritionalstatus.Malnutrition,functional food, prebiotics, probiotics, 8 phytochemicals, nutraceuticals. Fibre. Functions of foods: physiological, psychological, social. Food groups,food pyramid,Relationbetweenfoodandnutrition,healthanddiseases.</p> <p>2. Foods, Nutrients and cooking of food Foods and their nutrientcontents:Nutrientspresentincerealsandmillets,pulses,nutsand oil seeds, fruits and vegetables, milk and milk products, flesh food, eggs, Condiment and spices, salt. Nonnutrient components of foods: phytate, tannins,oxalate,trypsininhibitor,goitrogensandothertoxicagentsinfood. Cooking: Beneficial and adverse effects of cooking. Different methods of cooking-dry, moist, frying, and micro wave cooking-advantage, disadventureandtheeffectofvariousmethodsofcookingonfoods,Solar cooking.</p> <p>3.Food energy and energy requirementsTheenergyvalue of foods: Physical and physiological calories. Bomb calorimeter Energy requirement of an individual: Basal metabolic rate (BMR) and physical activity..BMR:Measurement(directandindirect),factorsaffectingBMR, SDAoffoods.physicalactivityratio(PAR).Classificationofactivitiesbased on occupations.Nutritional requirements and Recommended dietary allowances(RDA):factorsaffectingRDA,ApplicationofRDA,Referencem an andwoman..</p> <p style="color: green; text-align: center;">INTERNAL SCRIPTS WILL BE CHEKED BY: MS</p>	SS	August- November
		GC	August- November
		MS	August- November

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	<p>DS FNTADS01P BASICS OF FOOD AND NUTRITION PRACTICAL CREDITS 1. Process involved in cooking, microwave, steaming, grilling, deep fat frying.</p> <p>2.Generalconceptsofweightsandmeasures,Eyeestimationofrawcooked foods</p> <p>3. Preparation of food from different food groups and their significance in relation to health</p> <p>4. Preparation of supplementary food from different age group and their nutritional significance</p> <p>INTERNAL PRACTICAL MARKS :- SS</p> <p>FNTASE01: Fundamental Skills of Computer and Instrumentation</p> <ul style="list-style-type: none"> • Proficiency in use of commonly available widely used packages related word processing, presentation, email and working knowledge in spreadsheet packages • Preparation of reports, creation of tables, graphs as especially appropriate for food and nutrition <ul style="list-style-type: none"> • Preparation of suitable aids for the purpose of communication and demonstration of food and nutrition related issues especially focussing the common people • Preparation of self-profile • Use of microscopy <p>Project submission , Examiner GC</p>	<p style="text-align: center;">SS& GC</p> <p style="text-align: center;">SS DP GC MS</p>	<p>August- November</p> <p>August - december</p>
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Food and Nutrition Minor

**CORE COURSE (DS) FNTGMA01T:
 Elementary Food and Nutrition**

<p>1. Introduction to Food and Nutrition Definition of Food, Nutrition, Nutrient, Dietetics, Balance diet, Malnutrition, Energy, BMR</p>	SS & GC	August-sep
<p>2. Food and Nutrients Carbohydrate, Protein, Fat, Vitamins and Minerals (calcium, phosphorus, sodium, potassium, iron, iodine,) - sources, classification, chemistry, functions, deficiencies of these nutrients. Functions of water and dietary fibre.</p>	MS	August- oct
<p>3. Food groups Basic food groups: Types, composition, nutritional significance, role of cookery of cereals, pulses, milk and milk products, meat, fish, egg, vegetables and fruits, nuts, oil and sugar.</p>	SS	August -Nov
<p>4. Deficiency Diseases: Elementary idea about deficiency diseases related to food and nutrition</p>	GC	August- nov
PRACTICAL		
<p>1. Elementary idea of weights and measures. SS</p>		
<p>2. Preparation of dishes from different food groups. MS</p>		Sep- Nov
<p>3. Planning and preparation of diet for an adult female and male. SS</p>		

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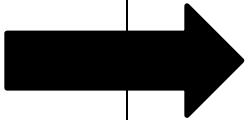
Academic Calendar

Department of Food & Nutrition (Honours) 2023 2nd 4th sem 6th sem CBCS

4 th Semester	<p>FNTACOR08T: community nutrition(THEORY)</p> <p>1. Concept on Community Concept of Community, types of Community, Factors affecting health of the Community.</p> <p>2. Nutritional Assessment and Surveillance Nutritional Assessment Surveillance: Meaning, need, objectives and importance.</p> <p>3. Assessment methods for human Nutritional assessment of human: Clinical findings, nutritional anthropometry, biochemical tests, biophysical methods.</p> <p>4. Diet survey Diet survey: Need and importance, methods of dietary survey, Interpretation - concept of consumption unit, individual and total distribution of food in family, adequacy of diet in respect to RDA, concept of family food security.</p> <p>5. Clinical Signs Clinical Signs: Need and importance, identifying signs of PEM, vitamin A deficiency and iodine deficiency, Interpretation of descriptive list of clinical signs. Nutritional anaemia. Rickets, B-Complex deficiencies.</p> <p>6. Nutritional anthropometry Nutritional anthropometry:Need and importance,</p>	<p>2</p> <p>4 2 2</p> <p>5 1 2 1 1</p> <p>10 3 4 3</p> <p>10 1 2 2 2 1</p>	<p>DP</p> <p>SS</p> <p>SS</p> <p>SS</p> <p>SS</p> <p>DP</p>	<p>APRIL</p> <p>June 1st week</p> <p>JUNE 1ST WEEK</p> <p>WITHIN JUNE</p> <p>JUNE 1ST WEEK</p>

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	<p>standard for reference, techniques of measuring height, weight, head, chest and arm circumference, interpretation of these measurements.</p> <p>Growth & Development;</p> <p>Body Composition: Changes through lifecycle</p> <p>Use of growth charts.</p> <p>7. Agencies and programmes</p> <p>International, national, regional agencies and organisations.</p> <p>National nutritional intervention programmes to combat malnutrition:ICDS, Midday meal,</p> <p>Special nutrition program,</p> <p>National programs for prevention of anaemia,</p> <p>Vitamin A deficiency control programme Iodine deficiency disorders.</p> <p>INTERNAL EXAMINER :- SS</p> <p>FNTACOR08P: COMMUNITY NUTRITION (PRACTICAL)</p> <p>1. Anthropometric Measurement of infant - Height, weight, circumference of chest, mid - upper arm circumference, precautions to be taken.</p> <p>2. Comparison with norms and interpretation of the nutritional assessment data and its significance. Weight for age, height for age, weight for height, Z scores, body Mass Index (BMI) Waist - Hip Ratio (WHR).</p> <p>3. Growth charts - plotting of growth charts, growth monitoring and promotion.</p> <p>4. Clinical assessment and signs of nutrient deficiencies specially PEM (Kwashiorkor, marasmus) I vitamin A deficiencies, Anaemia, Rickets, B-Complex deficiencies.</p> <p>5. Estimation of food and nutrient intake: Household food consumption data, adult consumption unit, 24 hours dietary recall 24 hours record, Weighment method, food diaries, food frequency data, use of each of the above, information available through each individual, collection of data, estimation of intakes</p> <p>INTERNAL EXAMINER : SS</p>	<p style="text-align: center;">4</p>  <p style="text-align: center;">10</p> <p style="text-align: center;">4</p> <p style="text-align: center;">3</p> <p style="text-align: center;">3</p> <p style="text-align: center;">32 CLASS</p>	<p style="text-align: center;">SS</p> <p style="text-align: center;">DP</p> <p style="text-align: center;">SS</p>	<p style="text-align: center;">MID JUNE</p> <p style="text-align: center;">JUNE END</p> <p style="text-align: center;">JUNE END</p> <p style="text-align: center;">WITHIN JUNE</p>
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	<p>FNTACOR09T: EPIDEMIOLOGY AND PUBLIC HEALTH(THEORY)</p> <p>1. Introduction on Health Health and its importance: Definition of health (WHO), Dimension of health,</p> <p>Positive health.</p> <p>Determinants of health.</p> <p>Concept of disease and its causations.</p> <p>2. Data of Community health Secondary sources of community health data: Indicators of health. Secondary sources of data from NFHS, Vital Statistics, Census of India, ICMR.</p> <p>3. Epidemiology</p> <p>Definition of epidemiology, components and aims of epidemiology, basic measurements in epidemiology.</p> <p>Demography and family planning.</p> <p>Brief idea about epidemics,</p> <p><u>epidemiological methods: analytical epidemiology (case control and cohort study);</u></p> <p><u>Experimental epidemiology.</u></p> <p>Infectious diseases in epidemiology.</p> <p>Dynamics of disease transmission, modes of transmission of disease.</p>	<p>4</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>10</p> <p>12</p>	<p>Entirely by Dr. Sinjita Dutta</p>	<p>2ND WEEK OF APRIL</p> <p>4TH WEEK OF APRIL</p> <p>JUNE END</p>
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	<p>4.Diseases: Prevention and control</p> <p>Epidemiology of diseases, prevention and control [(Nutritionally related disease:- Hyperlipidaemia, clotting disorder, scurvy, beriberi, goiter); (vector borne disease: - HIV/AIDS, malaria, poliomyelitis, dengue, tuberculosis, mumps measles rubella, chicken pox, pertussis, chikungunya); (food borne disease:- salmonellosis, shigellosis, Typhoid , botulism, amoebiasis, rotavirus, E.coli food poisoning, staphylococcal food poisoning); (water borne disease: arsenic toxicity, cholera); (non communicable disease:- obesity, diabetes, coronary heart disease)</p> <p>5.Public health Definition of public health, relation between health and nutrition.</p>	<p>3</p>		<p>WITHIN APRIL</p> <p>4TH week MAY</p>
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	<p>6. Immunization</p> <p>Immunization : definition. Host defenses and immunity, immunizing agents: its types, national immunization schedule- its importance, immunization in adults and travellers, hazards of immunization health advice to foreign travellers.</p> <p>7. Community health care</p> <p>Health care of the community, health care delivery, health care system, Primary health care in India, Indian public health standards for subcenters, PHCs, community health centers. Hospital waste management.</p> <p>8. Community water management</p> <p>Community water management: importance of water to the community, sources of water. Concept of water pollution. Purification of water in small and large scale. Drinking water handling and safe drinking water</p> <p>9. Community waste management</p> <p>Community waste management: types and methods of disposal of wastes, sewage disposal and treatment.</p> <p>10. Air pollution</p> <p>Air pollution: source of air pollution, factors of air pollution. Indoor air pollution. Monitoring of air pollution. Effects, prevention and control of air pollution.</p> <p>INTERNAL EXAMINER :- DM FNTACOR09P: EPIDEMIOLOGY AND PUBLIC HEALTH(PRACTICAL)</p>	<p>2</p> <p>2</p> <p>6</p> <p>2</p> <p>2</p> <p>2</p> <p>4</p> <p>4</p>		<p>MAY</p> <p>JUNE 1ST WEEK</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p>
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	<p>.1. Preparation of 3 audio visual aids like charts, posters, models related to health and nutrition education.</p> <p>2. Formulation and preparation of low cost and medium cost nutritious/ supplementary recipe.</p> <p>3. Field visit (health centre, immunization centre, ICDS, MCH centre, NGOs etc.)</p> <p>2 PROJECT SUBMISSION BY STUDENTS.</p> <p>FNTACOR10T: DIET THERAPY FOR LIFE STYLE DISORDERS(THEORY)</p> <p>1. Lifestyle disorder Introduction, types, aetiology, management.</p> <p>2. Diabetes Mellitus Definition, Etiology, Classification, long and short term complications, Diagnosis, Management (Insulin Therapy, Dietary Management with food exchange list, Exercise, Pharmacological), Role of artificial sweeteners. Overview of special conditions: Diabetes in Childhood, Pregnancy, Role of Nutrition Education, Role of Nutrition in Prevention.</p> <p>3. Cardiovascular diseases</p> <p>Prevalence, incidence, mortality with special reference to Indian situation.</p> <p>Patho - physiology and Management of Atherosclerosis,</p> <p>Endothelial dysfunction,</p> <p>Thrombosis,</p> <p>Angina Pectoris,</p> <p>Congestive cardiac failure,</p> <p>stroke,</p> <p>MI.</p>	<p></p> <p>4</p> <p>8</p> <p>8</p>	<p>GC+MS</p> <p>MS</p> <p>MP</p> <p>MP</p>	<p>WITHIN JUNE</p> <p>APRIL 2ND WEEK</p> <p>MID APRIL</p> <p>WITHIN APRIL</p>
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	Hyper-lipidemia– classification, diagnosis and			
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	<p>nutritional management, Hypertension: Oetiology, Risk factors, Patho- physiology, Management</p> <p>4. Weight management Obesity and Overweight: Body weight components, Classification of obesity,(gynoid/android and Regulation hypertrophy/hypersplasia,</p> <p>Etiology and assessment of obesity and prevalence in Indian situation,</p> <p>Complications of obesity.</p> <p>Management: Medical (Pharmacological), Nutrition and lifestyle, Surgical,</p> <p>Behavioural Juvenile Obesity. Underweight: Etiology ,</p> <p>Diet management, Eating disorders: (Anorexia Nervosa and Bulimia), Management (Medical,Nutritional care),</p> <p>Psychological support and Prevention.</p> <p>5. Nutritional management of metabolic disease:</p> <p>Gout : Role of proteins and purine, Etiology, Symptoms and complications,</p> <p>Dietary management,Inborn errors of metabolism: PKU, MSUD, Glycogen storage disorders, Galactosemia</p> <p>6. Nutrition and respiratory health</p> <p>Physiology and functions of the respiratory system, Nutritional management of Asthma</p> <p>7. Nutritional management in cancer (Oral and colon) Cancer: Pathogenesis and progression of cancer, Role of Nutrients and food additives in cancer therapies and their nutritional implications, Symptoms, Diagnosis, Cancer therapies: Nutritional implications, Dietary management</p> <p>8. Arthritis and Osteoporosis Etiology dietary treatment in arthritis and osteoporosis.</p>	<p>8</p> <p>6</p> <p>4</p> <p>4</p> <p>2</p>	<p>MP</p> <p>MS</p> <p>MP</p> <p>MP</p> <p>MS</p>	<p>WITHIN MAY</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p>
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	<p>INTERNAL EXAMINER :- GC</p> <p>FNTACOR10P: DIET THERAPY FOR LIFE STYLE DISORDERS(PRACTICAL)</p> <p>Planning and preparation of Diets for the following diseases:</p> <ul style="list-style-type: none">i) Obesity and Underweight SPii) Diabetes mellitus SPiii) Hypertension and Atherosclerosis GCiv) Overweight and Underweight SPv) Gout GCvi) Osteoporosis GC <p>INTERNAL EXAMINER :- SP</p>		GC+MS	WITHIN JUNE
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4 TH SEM GENERA L	<p style="color: red;">FNTGCOR04T:DIETETICS (THEORY)</p> <p style="color: red;">TOTAL HOURS: 60</p> <p style="color: red;">CREDITS: 4</p> <p>1. Concept on Diet therapy Definition and objective of dietetics, Definition-diet therapy, Dieticians;principles and classification of the therapeutic diet. Responsibility of dieticians.</p> <p>2. RDA, Meal planning and Dietary guidelines RDA- Definition, Nutritional requirements (RDA), Principles and objectives of meal planning,</p>	4	MS	WITHIN APRIL 2 ND WEEK
		6	GC	WITHIN MAY

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	<p>Dietary guidelines of pregnant & lactating women, infants(Weaning, supplementary food), pre-school children & school children (School lunch programme), adult males and females, old age people.</p> <p>3. Hospital diet Hospital diet: regular, soft, fluid, special feeding methods- advantages, disadvantages</p> <p>4. Dietary management of different diseases Dietary management in Gastro intestinal diseases (diarrhoea, constipation, gastritis, peptic ulcer & flatulence), Fever (short term), Diabetes mellitus (Type II - NIDDM), Heart diseases (hypertension, atherosclerosis, hyperlipidaemia), Liver diseases (infective hepatitis, cirrhosis of liver), Gout, Obesity (including assessment indices), Underweight.</p> <p>5. Food Allergy Food allergy- Definition, sources, symptoms, diagnosis, treatment, food intolerance.</p> <p>INTERNAL EXAMINER:- MS</p>	<p>4</p> <p>8</p> <p>4</p>	<p>MS</p> <p>MS</p> <p>GC</p> <p>MS</p>	<p>WITHIN JUNE 1ST WEEK</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p>
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	<p>status /health concern(at least 10 case studies to be done)</p> <p>5. Internship in any hospital/nursing home -case study of diseases</p> <p>6. Preparation of visual aids indicating clinical problems related to nutrition – Charts, posters, models etc. and demonstration</p> <p><u>3 PROJECTS HAS TO BE SUBMITTED BY STUDENTS</u></p> <p>INTERNAL EXAMINER GC</p> <p>SEMESTER 6 (HONOURS)</p> <p>FNTACOR13T: FOOD PROCESSING AND FOOD TECHNOLOGY(THEORY)</p> <p>1 Food Storage and Spoilage Contamination and microorganisms in the spoilage of different kinds of foods and such as cereal and cereal products, vegetable and fruits, fish and other sea foods, meat and meat products, eggs and poultry, milk and products, canned foods. Classification of food based on pH, Food infection, food intoxication, definition of shelf life, perishable foods, semi perishable foods, shelf stable foods, Storage of different kinds of foods and such as cereal and cereal products, vegetable and fruits, fish and other sea foods, meat and meat products, eggs and poultry, milk and products, spices and canned foods.</p> <p>2 Food preservation Definition, objectives and principles of food preservation. Different methods of food preservation. : Freezing and Refrigeration:Introduction to refrigeration, cool storage and freezing, definition, principle of freezing, freezing curve, changes occurring during freezing, types of freezing i.e. slow freezing, quick freezing, introduction to thawing, changes during thawing and its effect on food. Thermal Processing- Commercial heat preservation methods: Sterilization, commercial sterilization, Pasteurization, and blanching.Drying and Dehydration -</p>	4	SS	MAY
	<p>2 Food preservation Definition, objectives and principles of food preservation. Different methods of food preservation. : Freezing and Refrigeration:Introduction to refrigeration, cool storage and freezing, definition, principle of freezing, freezing curve, changes occurring during freezing, types of freezing i.e. slow freezing, quick freezing, introduction to thawing, changes during thawing and its effect on food. Thermal Processing- Commercial heat preservation methods: Sterilization, commercial sterilization, Pasteurization, and blanching.Drying and Dehydration -</p>	4	DP	MAY-JUNE

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	Definition, drying as a means of preservation, differences between sun			
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	<p>drying and dehydration (i.e. mechanical drying), heat and mass transfer, factors affecting rate of drying, normal drying curve, names of types of driers used in the food industry.</p> <p>Evaporation – Definition, factors affecting evaporation, names of evaporators used in food industry. Units of radiation, kinds of ionizing radiations used in food irradiation, mechanism of action, uses of radiation processing in food industry, concept of cold sterilization.</p> <p>3. Preserved Products Jam, Jelly, Marmalade, Sauces, Pickles, Squashes, Syrups types, composition and manufacture, selection, cost, storage, uses and nutritional aspects</p> <p>4. Food Standards and Food Laws Introduction on Food standards and Food Laws, FSSAI, ISI, Agmark, FPO, MPO, PFA, HACCP, Codex Alimentarius.</p> <p>5. Food Adulteration Definition, Classification, Different types of adulterants</p> <p>6. Food Packaging Packaging Functions and Requirements,, Printing of packages .Barcodes & other marking, Labeling Laws</p> <p>INTERNAL EXAMINER :-DP</p> <p>FNTACOR13P: FOOD PROCESSING AND FOOD TECHNOLOGY(PRACTICAL) TOTAL HOURS: 60 2 CREDITS</p> <ol style="list-style-type: none"> 1. Study on Blanching and Browning Process. 2. Preparation of Fruit preserves(Jam, Jelly). 3. Preparation of vegetable preserves.(Pickles) 4. Dehydrated Products – tray drying, sun drying etc. 5. Tomato Processing. 6. Fruit Pulping/Juice/Beverages production. 7. Preparation and Standardisation of Traditional Indian Fermented Food. 8. Visit to Food Processing and Preservation unit. 		<p>SS</p> <p>SS</p> <p>DP</p> <p>DP</p> <p>ENTIRELY BY SS</p>	<p>JUNE</p> <p>JUNE</p> <p>JUNE</p> <p>JUNE</p> <p>WITHIN JUNE</p> <p>WITHIN JUNE</p>
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<p>Detection of Adulterants in common Food Stuffs like Milk, Oil, Laddu, Turmeric etc.</p> <p>INTERNAL EXAMINER :- SS 1 PROJECT WILL BE DONE BY STUDENTS</p> <p>FNTACOR14T: RESEARCH METHODOLOGY AND BIostatISTICS(THEORY)</p> <p>1. Research Methodology Meaning, objectives and Significance of research. Types of research, research approaches and scientific methods, Research process, Criteria of good research.</p> <p>2. Research problem Definition and identification of a research problem, Selection of research problem. Technique Involved in Defining a Problem.</p> <p>3. Study design Meaning and needs of design, important concepts relating to research design, variables, experimental and control groups. (Use examples from epidemiology and clinical trials). Different research designs- exploratory, descriptive, analytical and diagnostic (epidemiology and clinical trials). Pilot studies. Qualitative vs quantitative research.</p> <p>4. Sampling of data and analysis Variable, parameter, statistics. Frequency distribution. Cumulative frequency. Graphical presentation techniques including Histogram, Bar chart, Pie chart along with the concepts of frequency polygon. Mean, median, mode, Standard Deviation and Standard Error of mean .Probability. Normal distribution. Student's t-distribution. Testing of hypothesis - Null hypothesis, errors of inference, levels of significance, Degrees of freedom.</p> <p>5. Preparation of report a. Graphical and diagrammatic presentation. b. Interpretation of – Meaning of</p>	6	Principal Madam	WITHIN JUNE
	6	Principal Madam	WITHIN JUNE
	12	Dr. Rittwik Chatterjee	WITHIN JUNE
	12	Dr. Sonali Mukherjee	WITHIN JUNE
		Dr. Rittwik Chatterjee	

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	<p>interpretation, Technique of interpretation, c. Precaution in interpretation- Interpretation of tables and figures. d. Report writing – Significance of report writing, Steps in writing report, Types of reports.</p> <p>INTERNAL EXAMINER :- DM AND SS</p> <p>FNTACOR14P: RESEARCH METHODOLOGY AND BIOSTATISTICS(PRACTICAL) 1. Assignment for calculation of mean, median, mode, standard deviation, standard error of mean and students’ ‘t’ test with provided data.</p> <p>FNTADSE045T: Dairy Technology (THEORY)</p> <p>FNTADSE045P: Dairy Technology (Practical)</p>		<p>DEBASHIS MAZUMDAR</p> <p>Entirely By Dr. Sonali Mukherjee</p> <p>Entirely by Dr. Amrita Banerjee</p> <p>Entirely by DP_</p>	<p>WITHIN JUNE</p> <p>WITHIN JUNE</p>
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	<p>FNTADSE06T: NUTRITIONAL MANAGEMENT AND COUNSELLING (THEORY)</p> <p>1. Basics of diet counselling Diet Counselling-meaning, significance, process, types Goals of counselling, individuals, group and family counselling, Basic sequence in counselling, Materials needed for counselling –models, charts, posters, AV aids, Hand outs etc, Communication process in counselling and linguistics in clinical dietary practices,</p>	4	MS	WITHIN JUNE
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	<p>problems in communication Role of Counsellor & Counselee, Techniques of obtaining relevant information- 24 Hour Dietary recall, List of food likes and dislikes, Lifestyle Dietician as a part of medical team and research team, Impact of counselling on health and disease of individuals – discussion of hospital case studies</p> <p>2. Introduction on Psychology and counselling Introduction to psychology – Definition , Nature and Scope Attention and perception – Types of attention and factors influencing attention , principles of perceptual organization and abnormalities in perception learning and memory- Types of learning, Types of memory, Forgetting and its causes motivation and emotion- Types of motives, types of emotions, emotional expression, Personality- nature and definition , factors influencing personality, Psychoanalytic theory of personality Nature and goals of counselling Principles of counselling, Characteristics of a good counsellor, Ethical principles of counselling, Special areas of counselling: Educational, family, health, community and counselling of alcoholic, and drug addicts.</p> <p>3. Counselling Skills Approaches to counselling – Psycho analytic approach, Behaviouristic, Humanistic approach, Pre – Helping phase: Rapport building skills, Attending and listening skills, Stage I skills: Empathy, respect, Genuineness and concreteness, Stage II skills: Advanced empathy, self disclosure, Immediacy and Confrontation. Stage III skills: Goal setting, Action plan Programme and Brainstorming</p> <p>4. Diet Counselling at Hospital and Community Level Role of counselling in hospital, Role of counselling in community, Organizing health camps and patient feedback – at hospital level, Organizing health camps and patient feedback – at community level, Diet counselling for obese people, Diet counselling for Diabetics, Diet counselling for CVD, Diet counselling for</p>	10	MP	WITHIN JUNE 2 ND WEEK
	<p>3. Counselling Skills Approaches to counselling – Psycho analytic approach, Behaviouristic, Humanistic approach, Pre – Helping phase: Rapport building skills, Attending and listening skills, Stage I skills: Empathy, respect, Genuineness and concreteness, Stage II skills: Advanced empathy, self disclosure, Immediacy and Confrontation. Stage III skills: Goal setting, Action plan Programme and Brainstorming</p>	10	MP	WITHIN JUNE
	<p>4. Diet Counselling at Hospital and Community Level Role of counselling in hospital, Role of counselling in community, Organizing health camps and patient feedback – at hospital level, Organizing health camps and patient feedback – at community level, Diet counselling for obese people, Diet counselling for Diabetics, Diet counselling for CVD, Diet counselling for</p>	10	MP	WITHIN JUNE

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	<p>mother and child care, Diet counselling for adolescent, Patient follow up / home visits,geriatric counselling with specific diseases like HIV/AIDS.</p> <p>INTERNAL EXAMINER:- MP</p>			
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Semester	Syllabus	Teacher	Distribution
2 nd Major	<p>FNTDSC202T: CHEMISTRY OF NUTRIENTS (THEORY)</p> <p>Course Objectives: To provide in depth knowledge of structure, properties, and basic functions of different types of nutrients and also select food groups.</p> <p>1. Chemistry of Carbohydrates: Carbohydrates: classification- mono- , di and polysaccharides; Stereoisomerism in carbohydrates. Physical and chemical properties of mono- , di-and polysaccharides.</p> <p>2. Chemistry of Lipids: Lipids: Classification – Fatty acids, triglycerides, phospholipids, Glycolipids, sterols and steroids. Eiconoids. Edible fats and oils- physical and chemical properties, Hydrogenation and importance of fats in the diet. Physical and chemical properties of saturated, monounsaturated, polyunsaturated fatty acids, trans fatty acids, phospholipids, cholesterol and liposomes. Essential fatty acids, nuts</p> <p>3. Chemistry of Amino Acids and Proteins: Proteins: Classification. Protein structure and organization: primary, secondary, tertiary and quaternary structure. Amino acids- classification. Physical and chemical properties of amino acid and protein. Biological value of proteins (BV), Net protein utilization (NPU) and Protein efficiency ratio (PER).</p> <p>4. Dietary Fibers: definition; types, composition, health benefits</p> <p>5. Water: Water in foods, water activity, phase transition of food containing water. Water</p>	<p>SS</p> <p>SS</p> <p>GC</p> <p>SS</p> <p>Extension Lecture</p>	Within April

	<p>Digestive system: elementary anatomy, and microanatomy of different parts of digestive system and its associated glands, and their functions.</p> <p>Composition of different digestive juices and their functions.</p> <p>Digestion and absorption of carbohydrate, protein and fat.</p> <p>5. Metabolism: Elementary Idea, BMR- definition, factors affecting; SDA; Enzymes- concept, properties</p> <p>6. Blood and body Fluids: Blood, composition, blood corpuscles, functions, blood groups and its importance in transfusion, hazards of mismatch blood transfusion. Rh factor, blood coagulation. Lymph: Composition and function.</p> <p>Elementary idea on immune functions; allergy with special reference to food allergens. Immunization: Importance and Immunization schedule.</p> <p>PRACTICAL</p> <p>1. 2. Determination of Bleeding Time (BT) and Clotting Time (CT). Detection of Blood group (Slide method).</p> <p>3. Identification of permanent sections (blood cells, stomach, small intestine, large intestine, liver, pancreas).</p>	<p>GC</p> <p>MS</p> <p>MS+GC</p> <p>SS</p>	