

EGRA S.S.B. COLLEGE
DEPARTMENT OF NUTRITION
2022-2023

Semester	Paper	Teacher	Syllabus details
SEMESTER 1	C1T: Basic Nutrition	PROF. SOMNATH SAU	7.Nutrition- Fitness, Athletics and sports. 8. Food Guide- Basic food groups, How to use food guide (according to RDA). 9. Interrelationship between nutrition and health- Visible symptoms of goods health. 10. Function of nutrients- Carbohydrate, dietary fibre, protein, fat, vitamins, minerals, anti-oxidants, water
		PROF.ESA CHAKRABORTY	11. Effect of cooking and heat processing on the nutritive value of foods. 12. Processed supplementary foods 13. Food sanitation in hygiene.
		MR.PRADIP KUMAR MAITY	5.Energy and other nutritional requirement of adult male and female engaged in different types of work (Sedentary, moderate, heavy). 6. Food as source of nutrients, function of food, definition of nutrition, nutrients and energy, adequate, optimum and good nutrition, malnutrition
		MRS.SALINI DAS	1. Concept and definition of terms Nutrition, Malnutrition and Health: Brief history of nutritional science. Scope of nutrition. 2. Minimum Nutritional Requirements and
		MS.ANKITA PANDA	3.Body Composition and Changes through the life cycle. 4. Energy in Human Nutrition: Idea of energy and its unit, energy balance, Assessment of energy requirements, Deficiency and Excess, Determination of energy in food, B.M.R & influencing factors, S.D.A.

Basic Nutrition (Practical)	PROF. SOMNATH SAU	7. Soups: Basic, clear and cream soups. 8. Snacks: pakoras, cheese toast, upma, poha, peanut, chikki, ti and laddo
	PROF.ESA CHAKRABORTY	5. Milk and milk products: Porridges, curds, anner and their commonly made preparations, milk based simple desserts and puddings, custard, kheer, ice-cream. 6. Meat- Cut of meats Meat preparations, Fish, poultry, hard and soft cooked, poached, scrambled, fried omelette, eggnoys
	MR.PRADIP KUMAR MAITY	3. Food preparation and classifying recipes as good, moderate or poor, sources of specific nutrients, Amount of ingredients to be in standard recipea) Portion size b) Beverages: tea, coffee, cocoa, fruit juice, milk, milkshakes. c) Cereals and flour mixtures- basic preparation and there nutritive value- Boiled rice and rice pulao, chapatti, parantha, sandwiches, pastas, pancakes, cookies and cakes. 4. Vegetables and fruits: Simple salad,
	MS.ANKITA PANDA	2. Weights and measures standards; household measures of raw and cooked foods.
	MRS.SALINI DAS	1.Use and care of kitchen equipment.
C2 T2: Food Science and food commodity	PROF. SOMNATH SAU	Carbohydrates - Sources, daily requirements, functions. Effects of too high - too low carbohydrates on health. Digestion & Absorption. Blood glucose and effect of different carbohydrates on blood glucose. Glycemic Index. Functional role of Sugars in food, Fermentation of Sugar.

Semester	Paper	Teacher	Syllabus details
			<p>7. Proteins - Sources, daily requirements, functions. Effect of too high - too low proteins on health. Digestion & absorption. Assessment of Protein quality (BV, PER, NPU). Factors affecting protein bioavailability including anti-nutritional factors</p>
		PROF.ESA CHAKRABORTY	<p>10. Minerals & Trace Elements, Bio-Chemical and Physiological Role, bio-availability & requirements, sources, deficiency & excess (Calcium, Sodium, Potassium Phosphorus, Iron, Fluoride, Zinc, Selenium, Iodine, Chromium). 11. Vitamins - Bio-Chemical and Physiological Role Physiological role, bio-availability and requirements, sources, deficiency & excess. 12. Water - Functions, daily requirements, Water balance. 13. Sensory characteristics of food 14 Food behaviour, modification of food behaviour 15. Cereals and Millets: Cereal products, breakfast cereals, fast foods. Structure, processing, storage, use in various preparations, variety, selection and cost.</p>
		ANKITA PANDA	<p>16. Pulses and Legumes: Production (in brief), structures, selection and variety. Storage, processing and use in different preparations. Nutritional aspects and cost. 17. Milk and Milk-products: Composition, classification, selection quality and cost, processing, storage and uses in different preparations. Nutritional aspects, shelf - life and spoilage. 18. Eggs: Production, grade, quality, selection, storage and</p>

			<p>spoilage, cost, nutritional aspects and use in different preparations. 19. Meat, Fish and Poultry: Types, selection, purchase, storage, uses, cost, spoilage of fish poultry and meat, uses and preparations. 20. Vegetables and Fruits: Types, selection, purchase, storage, availability. Cost of use and nutritional aspects of raw & processed products and use in different preparations. 21. Sugar and Sugar products: Types of natural sweeteners, manufacture, selection, storage and use as preserver, stages in sugar cookery.</p>
		<p>SALINI DAS</p>	<p>Fats and Oils: Types and sources (animal and vegetable), processing, uses in different preparations, storage, cost and nutritional aspects. 23. Raising and Leavening agents: Types, Constituents, Uses in cookery and bakery, Storage. 24. Food Adjuncts: Spices, Condiments, Herbs, Extracts, Concentrates, Essences, Food Colours. Origin, classification, Description, uses, Specifications, procurements and Storage. 25. Convenience Foods: Role, types, advantages, uses, cost and contribution to diet. 26. Salt: Types and uses. 27. Beverages: Tea; Coffee. Chocolate and Cocoa Powder- Processing, cost and nutritional aspects, other beverages-Aerated beverages, juices. 28. Preserved Products : Jams, Jellies, Pickles, Squashes, Syrups types, composition and manufacture, selection, cost, storage, uses and nutritional aspects. 29. Food Standards : ISI, Agmark, FPO, MPO, PFA. 30. New food: fast food, junk food, GM food, Free food 31. Food, preservation, food processing, food adulteration and food storage.</p>

		PRADIP KUMAR MAITY	Basic concept on Food, Nutrients, Nutrition. 2. Classification of Food, Classification of Nutrients. 3. Carbohydrates - Definition, Classification, Structure and properties. Monosaccharide's - glucose, fructose, galactose. Disaccharides - Maltose, lactose, sucrose. Polysaccharides - Dextrin, starch, glycogen, resistance starch. 4. Lipids - Definition, Classification & Properties. Fatty acids - composition, properties, types. 5. Proteins - Definition, Classification, Structure & properties University Amino acids - Classification, types, functions. 6. Carbohydrates - Sources, daily requirements, functions. Effects of too high - too low carbohydrates on health. Digestion & Absorption. Blood glucose and effect of different carbohydrates on blood glucose. Glycemic Index. Functional role of Sugars in food, Fermentation of Sugar.
		PROF. SOMNATH SAU + ANKITA PANDA	1. Carbohydrate a. Reactions of Mono, Di and Polysaccharides and their identification in unknown mixtures. b. Estimation of reducing and total sugars in foods. c. Estimation of lactose in milk.
		PRADIP KUMAR MAITY	. Fats a. Reactions of fats and oils b. Determination of Acid value, Saponification of natural fats and oils
		SALINI DAS	Proteins a. Reactions of proteins in foods b. Reaction of amino acids and their identification in unknown mixtures c. Estimation of total nitrogen of foods by Kjeldhal method.

Semester II	Nutritional Biophysics and biochemistry	PROF. SOMNATH SAU	6. Molecular aspects of transport; Passive diffusion, facilitated diffusion, active transport. 7. Enzymes: Definition, types and classification of enzymes, definition and types of coenzymes. specificity of enzymes, Isozymes, enzyme Kinetics including factors affecting enzyme action, velocity of enzyme catalyzed reactions, enzyme inhibition.
		PROF.ESA CHAKRABORTY	8. Intermediary metabolism: a) Carbohydrate Metabolism, Glycolysis, TCA cycle & energy generation, gluconeogenesis, glycogenesis, glycogenolysis, blood sugar regulation. b) Lipids : Oxidation and biosynthesis of fatty acids (saturated & mono-unsaturated) : Synthesis and utilization of ketone bodies, Ketosis, fatty livers. c) Proteins : General reaction of amino acid metabolism, urea cycle.
		SALINI DAS	1. Biochemistry: Definition, objectives, scope and interrelationship between biochemistry and other biological science. 2. Biophysics-general idea of biophysics in nutrition 3. Basic process and nutritional importances of Diffusion, Osmosis, Absorption, Viscosity, Surface tension, Colloids. 4. Principles of Thermodynamics and its importance in nutrition. 5. Acid, Base, Buffer, pH and Acid-Base balance.
		ANKITA PANDA	9. Lipoproteins : Types, composition, role and significance in disease (in brief) 10. Introduction to Nucleic acids: Structure, replication, transcription, genetic code (in brief) elementary knowledge of biosynthesis of proteins. 11. Fluid, Electrolytes and Acid-Base balance brief.

		PROF. SOMNATH SAU	To study the general properties of urease and salivary amylase. 2. Preparation of buffer of particular PH (Phosphate buffer, tris buffer)
		PROF.ESA CHAKRABORTY +PRADIP KUMAR MAITY	3. Determination of strength of KMNO ₄ using primary standard (oxalic acid). 4. Electrophoresis 5. Dialysis

Semester II	CC-4: HUMAN PHYSIOLOGY	PROF. SOMNATH SAU	9. Excretory System: Structure of Nephron, formation of urine. 10. Central Nervous System: Parts, Sliding filament theory, neuromuscular junction, wallerian regeneration, Motor Nervous System- Upper motor Nervous System and lower motor Nervous System. Sensory Nervous System, Sympathetic and Parasympathetic nervous system.
		PROF.ESA CHAKRABORTY	5. Lymphatic System: Lymph glands and its function, Splen- Structure and functions 7. Gastrointestinal System: a. Structure of various parts of the GI tract b. Digestion and absorption of Carbohydrate, protein and fat. (Digestion and absorption of Carbohydrate, protein and fat repeated in CC2T 6, 7, 8)

		ANKITA PANDA	<p>6. Respiratory System:- Ventilation, functions, Lungs volume and capacities.</p> <p>8. Endocrinology: List of endocrine glands, Hormones their secretion and function (in brief)</p>
		SALINI DAS	<p>1. Cell structure and function 2. Blood cells: Haemoglobin, Blood groups, Coagulation factors, Anaemia. 3. Skeletal System: bones, joints and bone deformities in brief. 4. Cardiovascular System: Cardiac cycle, Cardiac output, Blood pressure, Hypertension, Radial Pulse 5. Lymphatic System: Lymph gl</p>
		PRADIP KUMAR MAITY	<p>11. Skin: Structure and function of skin 12. Reproductive System: a. Structure and functions of male and female reproductive organs, Menstrual cycle, Puberty, Menopause, fertilization and development of fertilized ovum, placenta and its function. 13. Special senses: Structure and function of eye and ear, common diseases in eye and ear (in brief).</p>
	HUMAN PHYSIOLOGY (Practicals)	ANKITA PANDA+	<p>1. Identification of prepared Slides: (a) Lungs, (b) Supra Renal Gland, (c) Thyroid, (d) Pituitary (e) Testis, (f) Ovary, (g) Kidney, (h) Liver, (i) Pancreas, (j) Small Intestine, (k) Large Intestine, (l) Spinal cord, (m) Cerebellum</p>

		PROF. SOMNATH SAU+SALINI DAS+PRADIP KUMAR MAITY	2. Preparation of blood film and identification of white blood cells, Differential count. 3. Estimation of Haemoglobin. 4. Determination of Bleeding time and clotting time of blood, Blood grouping. 5. Measurement of Blood pressure and Pulse Rate. 6. Elicitation of Reflexes and jerks. 7. Estimation of haemoglobin, RBC, WBC, TLC, DLC and ESR.
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Syllabus distribution of 3rd SEMESTER

CC-05(CC-5: Family meal management and meal planning)

FACULTY	NAME OF UNITS
S.S	5. Management of preterm and low birth weight children – their special needs. 7. Geriatric nutrition – Dietary requirement, Geriatric health problems, Nutritional care. 6. Growth and development from infancy to adulthood: Importance of nutrition for ensuring adequate development, Preventions of growth faltering. Growth assessment by Height, Weight, BMI, Skin fold thickness, Waist Hip Ratio.
E.C	1. Nutrition during Pregnancy: Physiology of pregnancy, factors (nonnutritional) 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, nutritional factors affecting breast feeding. Deficiency of nutrients and impact- energy, iron, folic acid, protein, calcium, iodine. Common problems of pregnancy and their managements- nausea, vomiting, pica, food aversions, pregnancy induced hypertension, obesity, diabetes and Adolescent Pregnancy. 2. Nutrition during Lactation: Physiology of Lactation: Nutritional requirements during lactation, dietary management, food supplements, galactogogues, preparation for lactation. Care and preparation of nipples during breast feeding.
S.D	3. Nutrition during infancy: Infant physiology relevant to feeding and care. Breast feeding - colostrums, its composition and importance in feeding. Initiation of breast-feeding and duration of breast-feeding, Advantages of exclusive breast-feeding, Nutritional and other advantages of breast-feeding. Introduction of complementary foods, initiation of management of weaning, breast feeding etc. Bottlefeeding circumstances under which bottle-feeding is to be given. Care and sterilization of bottles. Preparation of formula. Mixed feeding, breast feeding and artificial feeding. Teething and management of problems. 4. Nutrition to toddlers / preschool/school going children or adolescent.
P.M	8. Sports Nutrition- nutritional demand on different sports and dietary recommendations. 9. Space Nutrition- Body composition changes in space, special diet in space persons. 10. Meal planning for the family.
A.P	11. Indian meal pattern- vegetarian and non- vegetarian 12. Food faddism and the faulty food habits 13. Nutritive value of common Indian recepies.

C5P: Family meal management and meal planning (practical)

A.P

1. Planning and preparation of balanced diet for a pregnant women
2. Diet during complication of pregnancy

S.D

3. Planning and preparation of balanced diet for a lactating women
4. Preparation of weaning food

E.C

5. Planning and preparation of balanced diet for a pre-school children
6. Planning and preparation of balanced diet for school going child. Preparation of packed lunch.

P.M

7. Planning and preparation of balanced diet for adolescents
8. Planning and preparation of balanced diet for adult men and women of different Physical activity and economic status.
9. Planning and preparation of balanced diet for senior citizen.

CC-6: COMMUNITY NUTRITION AND NUTRITIONAL EPIDEMIOLOGY

S.S

9. Principles of Epidemiology: Concept of disease, rate of a disease in a population (attack rate, morbidity rate, mortality rate, incidence and prevalence rate).
12. Epidemiological methods: descriptive studies, analytical studies and experimental studies.
13. Study of the epidemiologic approach – time, place, person distribution. Determinants of disease. Vital statistics and their significance.
14. Demography- Demography cycle and its applications. Socio-demographic and psychosocial variables.

E.C

1. Concept of community, types of community, factors affecting health of Community.
2. Nutritional Anthropometry, Biochemical tests and Biophysical methodology - Merits, Limitations
3. Diet Survey: Need and importance, methods of dietary survey- Merits and Limitations. Family food security.
4. Clinical Signs: Merits, Limitations, Need and importance, identifying signs of PEM, vitamin A deficiency, Vit.-D deficiency and iodine deficiency, Classify clinical sign according to WHO.

S.D

16. Comparison with norms, standards, Z-scores.
17. Interpretation of the nutritional assessment data and its significance
18. Determining Validity and Reliability
19. Sources of errors for different methods of measurement relating to nutritional exposures.

	CC-7: Basic Dietetics
SS	<ul style="list-style-type: none"> 6. Diet for gastro-intestinal disorders- Constipation, diarrhoea, peptic ulcer 7. Diet for Renal Diseases- Nephritis, Nephrotic syndrome, Renal failure. 8. Diet for obesity and different cardiovascular disorders.
A.P	<ul style="list-style-type: none"> 1. Role of dietician: The hospital and community 2. Basic Concepts of diet therapy 3. Principle of diet therapy and therapeutic nutrition for changing needs 4. Routine Hospital Diets: Regular, light, soft, fluid, parenteral and enteral Feeding.
S.D	<ul style="list-style-type: none"> 9. Diet for diabetes mellitus 10. Nutrition in cancer 5. Diets for febrile conditions, infections and surgical conditions.
P.M	<ul style="list-style-type: none"> 11. Nutrition in Immune system dysfunction (AIDS & Allergy) 12. Nutrition support in metabolic disorder 13. Nutrition in burn and surgery
E.C	<ul style="list-style-type: none"> 14. Nutrition- Addictive behaviour in anorexia nervosa, bulimia and alcoholism 15. Nutrient Drug interaction 16. Feeding infants and children's- problems in feeding children in hospital 17. Nutrition and diet clinics- Nutrition education in general, Patients check-up and dietary counselling, educating the patient and follow up.
	C7P: Basic Dietetics (Practical)
S.D	<ul style="list-style-type: none"> 1. Planning and preparation of normal diets. 2. Planning and preparation of fluid diets. 3. Planning and preparation of soft/semi solid diets.
A.P	<ul style="list-style-type: none"> 5. Planning and preparation of diets for diabetes mellitus 6. Planning and preparation of diet for hypertension and atherosclerosis
E.C	<ul style="list-style-type: none"> 7. Planning the preparation of diets for nephritis and nephrotic syndrome 8. Planning and preparation of diets for Peptic Ulcers.
P.M	<ul style="list-style-type: none"> 9. Low and medium cost diets for PEM, anaemia and vitamin A deficiency 4. Planning and preparation of high and low calorie diets.

Skill Enhancement Course (SEC) SECIT: Biostatistics and Bioinformatics	
S.S	2. Measures of Central Tendency: Mean, Median, Mode. 3. Dispersion: Range, Standard Deviation.
P.M	4. Hypothesis Testing:, Student't' test, 5. Bioinformatics and Health Informatics: Concept and applications.
S.D	4. Analysis of Variance (ANOVA). 6. Nucleic acid and Protein Data Bases, Nutrient data bases.
A.P & E.C	4. Chi-square Test 7. Sequence similarity searching by BLAST, Principle, features and types of BLAST, Significance of Multiple Sequence Alignments, Phylogenetic Tree. 1. Data and Data Types: Primary data and Secondary Data.

SL NO	NAME OF THE TEACHER	CC8
1.	S.S	<p>Disease of the liver, Exocrine Pancreas and Biliary System. Liver function tests, application of diet therapy and nutritional care in liver disease. Dietary care and management in Viral Hepatitis, Cirrhosis of liver, Wilson's diseases. Dietary care and management in diseases of Gall Bladder and Pancreas Cholelithiasis, Cholecystitis, Cholecystectomy, Pancreatitis.</p> <p>10. Planning and preparation of diet for Viral Hepatitis patient. 11. Planning and preparation of diet for Cirrhosis of liver patient. 12. Planning and preparation of diet for Cholelithiasis patient.</p>
2.	E.C	<p>Etiology, symptoms, diagnostic tests and dietary management of intestinal diseases: Diarrhea, Steatorrhoea, Diverticular disease, Inflammatory bowel disease, Ulcerative Colitis, Flatulence, Constipation, Irritable Bowel Syndrome, Haemorrhoids.</p> <p>1. Planning and preparation of diet for diarrhoea patient. 2. Planning and preparation of diet for Steatorrhoea patient 3. Planning and preparation of diet for Diverticular disease patient.</p>
3.	P.M	<p>Anaemias: Pathogenesis and dietary management - Nutritional Anaemias, Sickle Cell Anaemias, Thalassemia, Anaemia resulting from Acute Haemorrhage.</p> <p>Arthritis and gout: Etiology, symptoms, diagnostic tests and dietary management</p> <p>13. Planning and preparation of diet for Pancreatitis patient. 14. Planning and preparation of diet for Anaemia patient. 15. Planning and preparation of diet for Thalassemia patient.</p>

4.	A.P	Inborn error of metabolism – Lactose Intolerance, Galactosamia, Phenylketonuria and its dietary management. 4. Planning and preparation of diet for Ulcerative Colitis patient. 5. Planning and preparation of diet for Flatulence patient. 6. Planning and preparation of diet for Constipation patient.
5.	S.D	Etiology, symptoms, diagnostic tests and dietary management of Malabsorption syndrome, Celiac sprue, tropical sprue, Intestinal brushborder deficiencies (Acquired disaccharide intolerance), Protein losing enteropathy. RUTF. 7. Planning and preparation of diet for Irritable Bowel Syndrome patient. 8. Planning and preparation of diet for Haemorrhoids patient. 9. Planning and preparation of diet for Celiac sprue patient.

SL NO	NAME OF THE TEACHER	CC9
1.	S.S	1. Introduction to microbiology and its relevance to everyday life. General characteristics of bacteria, fungi, virus, protozoa and algae. 2. Cultivation of microorganisms: Nutritional requirements of microorganisms, types of media used, methods of isolation 3. Growth of microorganisms: Growth curve, effect of environmental factors in growth of microorganism – pH, water activity, oxygen availability, temperature and others. 2. PREPARATION OF DIFFERENT CULTURE MEDIA.

2.	E.C	<p>4. Primary sources of microorganisms in foods, physical and chemical methods used in destruction of micro organisms in foods - sterilisation and disinfection</p> <p>5. Food Spoilage: Contamination of micro organisms in the spoilage of different kinds of foods, such as cereal and cereal products, vegetable and fruits, fish and other sea foods, meat and meat products, eggs and poultry, milk and milk products, canned foods</p> <p>3. STAINING OF BACTERIA WITH GRAM STAINING</p>
3.	P.M	<p>6. Assessing the microbiological quality of food: indicator organisms, microbiological standards, principles of GMP & HACCP in food processing. Safety management at household and industrial level.</p> <p>7. Foodborne infections: Bacterial food infections-Salmonellosis, Shigellosis and Listeriosis. Food poisoning (Staphylococcal and Botulism) - Symptoms, mode of transmission and methods of prevention, Concept of aflatoxin intoxication.</p> <p>4. MICROBIOLOGICAL EXAMINATION OF MILK (METHYLENE BLUE REDUCTION TEST).</p>
4.	A.P	<p>8. Beneficial effect of microorganisms-concept of probiotics and related factors</p> <p>9. Environmental microbiology: Water and water borne diseases, air and air borne diseases, soil and soil borne diseases, sewage and diseases.</p> <p>1. STUDY OF EQUIPMENTS IN A MICROBIOLOGY LAB.</p>
5.	S.D	<p>10. Waste product handling: Planning for waste disposal- solid wastes and liquid wastes.</p> <p>11. Fermented Foods- Dietary different fermented products, importance of fermented foods.</p> <p>5. PREPARATION OF TRADITIONAL INDIAN FERMENTED FOOD AND ITS QUALITY CHECKING E.G. TESTING OF PHYSICAL, CHEMICAL AND NUTRITIONAL PROPERTIES.</p>

SL NO	NAME OF THE TEACHER	CC10
1.	S.S	<p>3. Principle of freezing, changes occurring during freezing. Types of freezing - slow freezing, quick freezing. Food preservation by drying and dehydration, differences between sun drying and dehydration (i.e. mechanical drying), types of driers used in the food industry.</p> <p>ESTIMATION OF SODIUM, POTASSIUM, CALCIUM AND IRON IN DIFFERENT FOOD STAFFS.</p>
2.	E.C	<p>1. Significance, principles of different methods of food processing: thermal processing Cooking (moist heat, dry heat, combination method of cooking), blanching, pasteurization, sterilization, canning.</p> <p>VEGETABLES COOKERY: A. DIFFERENT METHODS OF COOKING VEGETABLES EFFECT OF SHREDDING, DICING, ACID AND ALKALI, PRESSURE COOKING, STEAMING WITH AND WITHOUT LID. E.G. POTATO, BEETROOT, CARROT AND GREENS. RECIPES WITH VEGETABLES</p>
3.	P.M	<p>2. Principles of microwave cooking and solar cooking.</p> <p>ESTIMATION OF VITAMIN C CONTENT OF FOOD BY BIOCHEMICAL METHOD.</p>
4.	A.P	<p>4. Preservation by Irradiation: Units of radiation, kinds of ionizing radiations used in food irradiation. Mechanism of action, concept of cold sterilization.</p> <p>EGG COOKERY: EXPERIMENTAL COOKERY ON EGGS-BOILED EGGS, POACHED EGGS, OMELETTES AND CUSTARDS. PREPARATION OF SELECTED COMMON RECIPES.</p>
5.	S.D	<p>5. Principle and methods of making pickles, jam and jellies from different vegetables / fruits.</p> <p>6. Principle and methods of preparation of food from cereals.</p> <p>7. Principle and methods of preparation of meat, fish, poultry and egg products.</p>

		<p>FRUITS: PREVENTION OF BROWNING ON FRUITS. PREPARATION OF SELECTED COMMON RECIPES.</p> <p>MILK COOKERY: EXPERIMENTAL MILK COOKERY. PREPARATION OF SELECTED COMMON RECIPES</p>
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SL NO	NAME OF THE TEACHER	SEC-2
1.	S.S	
2.	E.C	2. Nutritional requirements during lactation, dietary management, food supplements, galactogogues, preparation for lactation. Care and preparation of nipples during breast feeding.
3.	P.M	
4.	A.P	1. 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.

Syllabus distribution of 5th SEMESTER

CC-11

FACULTY	UNIT NO.	NAME OF UNITS
S.S	7,8	<p>7. Health care delivery system: Patterns of health care delivery, History of development of health care delivery system in India, Reports of different committees, Three-tier health care delivery system, Primary health center, Subcentre, CHV, Urban health infrastructure.</p> <p>8. Demography & Population Control: Introduction, Definition, Demographic cycle, Population Pyramid, Fertility, Factors affecting fertility, Indicators of fertility, Population</p>
E.C	6	<p>Mental health- Health & diseases, Concept of a) Normality b) Mental health, Magnitude of the problem, Prevention of mental diseases, Alcohol related & drug related problems, mental health services in India.</p>
S.D	1,2	<p>Food adulteration: common, adulterants, and health hazards. Food standards and food laws. National and International; PFA, FSSAI, HACCP, ISO Certification; Consumer guidance society, Consumer rights, Consumer court, Central facilities for assessing food adulteration, Role of food inspectors.</p>
P.M	3,4	<p>2. Community Water and Waste Management: Importance of water to the community, etiology and effects of toxic agents, water borne infectious agents, sources of water, safe drinking water/portability and tests for portability, community, waste and waste disposal, sewage disposal and treatment, solid waste and disposal, liquid waste disposal.</p> <p>3. Food Borne Disorders: Food borne infections- Typhoid, Para typhoid, cholera, infective hepatitis, amoebiasis - Food borne intoxications- Disorders caused by; Natural toxins, chemical toxins and Microbiological toxins in food- Lathyrism, staphylococcal intoxication, Botulism, clostridium perfringens, Mycotoxins.</p> <p>4. Food handling and Public Health: Preventing food borne</p>

A.P	5	illness and the speed of communicable disease; Sanitation of food serving institution; environmental sanitation, hygienic in food handling and personal hygiene of food handler.
S.S	3	Air & health- Indices of thermal comfort , Pollution a) Sources b) Pollutants c) Monitoring d) Effects e) Prevention & control.
E.C	1	3. Dietary management of non-communicable disease.
S.D	2	1. Protein under nutrition and its recovery
P.M	4	2. Vitamin or Mineral under nutrition and its recovery.
A.P	5.	4. Dietary management of growing child.
		5. Impact of nutrition education on awareness development in the field of personal health
CC-12		
S.S	5	5. Sampling – Criteria, Design, Characteristics of good sampling, types of sampling method.
E.C	2,6	2. Defining the Research Problem : Scientific Problem, Formation of scientific Problem, criteria of good research problem.
S.D	1,4	6. Methods of Data Collection: Primary and secondary data, Criteria of good data, Observation Method, Interview method, questionnaire and Schedules, Case Study Method.
P.M	3,8	1. Introduction to Research Methodology: Meaning of Research, Objectives of Research, Motivations in Research, Criteria of Good Research, Types of Research– Fundamental research, Applied Research, Action research, Qualitative Research, Quantitative Research, Historical research.
		4. The Research Hypotheses: Definitions of Hypothesis, Functions of Hypothesis, types of Hypothesis, Characteristics of a Good Hypothesis.
		3. The Review of Literature: Meaning of Review of Literature, Need and importances of Review of Literature,

A.P	7	<p>Objectives of Review of Literature.</p> <p>8. Ethical Issues in research: Code of Ethics in Research – Ethics and Research Process – Importance of Ethics in Research.</p> <p>7. Experimental design – single and multi group experimental design, Quasi experimental Design.</p>
DSE-1: Food Sanitation and Hygiene		
S.S	1	1. The relationship of micro organisms to sanitation. Role of microbiology – Environmental effects of microbial growth. Effects of micro- organisms on food degradation and food borne illnesses- bacteria, virus, molds, yeasts, and parasites.
E.C	2,3	2. Other food hazards – chemicals, antibiotics, hormones, metal contamination poisonous foods.
S.D	5,8	3. Food contamination- sources and transmissions. Water, air, sewage and soil as reservoirs of infection and ways of spread. Other agents of contamination - Humans, domestic animals, vermins, birds.
P.M	4,8	5. Safety in food procurement, storage, handling and preparation – control of spoilage – safety of left over foods.
A.P	6,7	8. Food sanitation, control and inspection-planning and implementation of training programme for health personnel.
		4. Importance of personal hygiene of food handler - habits - clothes, illness. Education of food handler in handling and serving food.
		6. Cleaning methods – sterilization, and disinfection – products and methods –use of detergents, heat, chemicals, and tests for sanitizer strength.
		7. Control of infestation: rodent control- rats, mice; vector control- use of pesticides.

S.S	1	1. Study of personal and environmental hygiene habits of street food handlers. Intervention and result analysis. Project submission and presentation.
S.D,A.P,PM & EC	2	2. Preservation of fruits and vegetables for later use-peas, carrots, cauliflower, chutney, soup, pickle, jam, jelly, marmalade, squash.
DSE-4: Quality Control and Food Standards		
S.S		Codex Alimentarius Commission (CODEX): Introduction, standards, codex of practice, guidelines and recommendations, applying codex standards, Codex India, core functions of National Codex Contact Point, National Codex Committee of India.
E.C		Principal aspects of sampling of food: Importance of sample collection, sampling tools and containers, sample collection techniques, sampling for microbiological analysis of food, routine versus investigational sampling, quantity of sample to be collected, packaging and sealing of sample, dispatch of sample, documentation and commodity specific sampling procedure.
S.D		International Organization of Standardization (ISO): Overview, structure, interpretation and case studies of food safety and Quality management including ISO-22000, ISO-9001:2000, ISO22000:2005, ISO 17025/CODES/GLP, Retailers standards: BRC food and BRC IOP standards, IFS, SQF: 1000, SQF: 2000.
P.M		Hazard Analysis Critical Control Point (HACCP): History, structure, pre- requites and principles, HACCP applications, HACCP based SOPs.
A.P		Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), Good Agricultural Practice(GAP), Good Veterinary Practice (GVP),Storage and distribution of food, sanitation and safety in food services.

SL NO	NAME OF THE TEACHER	
1	SOMNATH SAU	<p>cc-13 Unit-I: Introduction to 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, Psycho analytic 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>Cc14 Unit- II: Enterprise Planning and Launching Types of enterprises classification based on capital, product, location, ownership pattern and process. Sensing business opportunities and assessing market potential; market research. Appraising of project and feasibility. Unit-VII: Development of a business plan</p> <p>DSC-3 Unit – IV: Social Geriatric Types of family – Joint family System, Role of Elders and Younger generation. Isolation, Loneliness and Dependency – Dependency Ratio – Generational equality. Financial aspects – Sources of income, Old age pension. Role of Govt. and NGOs in Socio – economic status of the elderly. Geriatric service for the elderly in western countries and India. Structure of geriatric service, family as basic unit-models of geriatric service. Day hospital, day care centre, long stay care institution. Home for the aged, function of the day hospital staff and patients of day hospital. Ethical issues in geriatric medicine- age limits on health care. Life sustaining measures.</p> <p>DSC-4 Unit- V: Modified Bakery Products - Modification of bakery products for people with special nutritional requirements e.g. high fibre, low sugar, low fat, and gluten free bakery products.</p>
2	ESA CHAKARABORTY	<p>CC13 Unit-III: Basics of Diet Counseling 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, problems in communication. Role of Counsellor & Counseee. 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>Traditional food beliefs, role of Ayurveda, Naturopathy, Yoga and other traditional medicines in disease management.</p> <p>CC-14</p> <p>Unit-V: Food service units, Menu planning, Food production process, Space and equipment 1. Food service units: Origin of Food Service units. Kinds of food service units. 2. Menu Planning: Importance of menu. Factors affecting menu planning, Types of menu. 3. Food Production Process: Food purchase and receiving, Storage. Quantity food production: Standardization of recipes, Recipe adjustments and portion control, Quantity food production techniques. Food service. Food hygiene and sanitation</p> <p>DSC-2</p> <p>Unit-II: Issues and challenges of ageing Issues and challenges of ageing – economic dependence/ poverty, elderly in rural/ urban area. Abuse, neglect, abandonment, physical, health and sensory problems. Crime against elderly, retirement and related issues. Ageing sensory system and issues with falling. Common complaints during ageing. Geriatric guidance and counselling. Depression in old age. Exerciseyoga, meditation . Behavior therapy: rational- emotive behavior therapy (REBT), horticultural therapy. Music therapy, Art therapy, Bibliotherapy</p> <p>DSC-3</p> <p>Course Contents: Unit- I: Bakery industry: Current status, growth rate, and economic importance of Bakery Industry in India. Product types, nutritional quality and safety of products, pertinent standards & regulations.</p>
3	SALINI DAS	<p>CC-13</p> <p>Unit-VII: 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. Dietary counseling through the life span - Diet counselling plans for obese people, Diabetics, CVD, dyslipidemia, cancer risk prevention, renal diseases, liver disorders mother and child care, Prenatal and pregnant women, Lactating women Childhood nutrition problems like, SAM, weight management, vitamin and mineral deficiencies, School children, adolescents, young adults, fitness, weight management, eating disorders. Geriatric counselling. Patient follow up / home visits,</p> <p>Unit-IX: Computer application in dietetic management a) Use of computers by dietician, b) Dietary computations, c) Dietetic management ,d) Education/ training , e) Information storage, f) Administrations ,g) Research</p>

		<p>CC14 Unit VI: Planning of a small food service unit a. Preliminary Planning: Survey of types of units, identifying clientele, menu, operations and delivery. b. Planning the set up: a) Identifying resources, b) Developing Project plan, c) Determining investments DSC-2 Unit-III: Clinical Geriatric Physiological and biochemical changes during old age. Nutritional requirements and general dietary guidelines for elderly. Major nutritional and health problems during old age - osteoporosis ,obesity, neurological dysfunction. Anaemia. Malnutrition and constipation. Infection and Immunity. Degenerative disorders in elderly- Dementia, Alzheimer, Parkinson's disease. Disorders of upper GIT. Disorders of lower GIT. Disorders of Liver. Disorders of Biliary system and pancreas. Infection of Respiratory system. Coronary heart disease. Assessment of nutritional status of older adults. DSC-3 Unit- V: Modified Bakery Products - Modification of bakery products for people with special nutritional requirements e.g. high fibre, low sugar, low fat, and gluten free bakery products.</p>
4	PRADI KUMAR MAITY	<p>CC-13 Unit-VI: Teaching aids used by dietitians Charts, leaflets, posters etc., preparation of teaching material for patients suffering from Digestive disorders, Hypertension, Diabetes, Atherosclerosis & Hepatitis and cirrhosis. Unit-VIII: Computer application a) Execution of software packages. b) Straight line, frequency table, bar diagram, pie chart, Preparation of dietary charts for patients. c) Statistical computation- mean, median, standard deviation, conclusion and regression test. Unit-IV: Practical consideration in giving dietary advice and counselling a) Factors affecting and individual food choice. b) Communication of dietary advice c) Consideration of behaviour modification d) Motivation. CC-14 Unit-I: Entrepreneurship development Entrepreneurship - concept, definition, need and significance of entrepreneurship development in India, entrepreneurship growth process, barriers, entrepreneurship education model. Entrepreneur- their characteristics, types, gender issues, role demands and challenges. Entrepreneurial motivation. Challenges faced by Women Entrepreneurs. Unit - IV: Personnel management Functions of a personnel manager, Factors to consider while planning the kind and number of personnel: Menu, type of operations, Type of service, Job description and job specification DSC-2 Definition of ageing, senescence, old age or aged people, gerontology, geriatrics, and Geriatric nutrition. Classification of old population. Introduction to geriatric care- concept of gerontology. Ageing - Biology of ageing. Theories of ageing – disengagement theory, activity theory,</p>

		<p>selective theory and continuity. Microscopic theories, changes in ageing scenario. Interaction between biological and psychological in ageing. Interaction between physiological and social processes in ageing. Drug, food, and nutrient reaction. Dietetics of Geriatric care-Nutritional requirement. Food requirement, dietary modification. Implication of ageing population for rehabilitation: Demography, mortality and morbidity.</p> <p>DSC-3</p> <p>Unit- III: Cakes - Ingredients & processes for cakes, Equipments used, product quality characteristics, faults and corrective measures. Different types of icings.</p>
5	ANKITA PANDA	<p>cc-13</p> <p>Counselling Skills Approaches to counselling – i. Psycho analytic approach, ii. Behaviouristic, iii. Humanistic approach. Pre – Helping phase: i. Rapport building skills, ii. 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>Unit-IV: Practical consideration in giving dietary advice and counselling</p> <p>a) Factors affecting and individual food choice. b) Communication of dietary advice c) Consideration of behaviour modification d) Motivation.</p> <p>cc-14</p> <p>Unit-III: Enterprise Management and Networking a. Organization and Management - Principles of management. Functions of management/ manager. b. Managing Production: Organizing Production; input- output cycle. Ensuring Quality c. Managing marketing: Understanding markets and marketing. Functions of marketing. 4Ps of marketing (same as marketing mix). d. Financial Management: Meaning of Finance. Types and sources of Finance. Estimation of project cost. Profit Assessment. Networking of Enterprises. Importance of Financial Management. Budgets and Budgeting process. Cost concepts</p> <p>Dsc -3</p> <p>Mushroom Culture: 1. Definition and characteristics of mushroom. 2. Morphology and life cycle of Mushroom. 3. Identification and classification of mushroom 4 Nutritional and medicinal value of edible mushrooms; poisonous mushrooms. 5. Types of edible mushrooms available in India- Volvariella volvacea, Pleurotus citrinopileatus, Agaricus bisporus. 6. Process of mushroom cultivation. 7. Storage and nutrition: short term storage (Refrigeration- upto 24 hours), long term storage (canning, pickles, papads), drying, storage in salt solutions.</p>