BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI – 620 024.
B.Sc. Nutrition and Dietetics - Course Structure under CBCS
(For the candidates admitted from the academic year 2010-2011 onwards)

Semester	Part	Course	Title	Instr Hours/ Week	Credit	Exam Hours	Marks		Total
							Int.	Extn.	
I	I	Language Course – I (LC) – Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course- I (ELC)		6	3	3	25	75	100
	III	Core Course – I (CC)	Food Science - Theory	6	5	3	25	75	100
		Core Course – II (CC)	Food Science - Practical	4	3	3	40	60	100
		First Allied Course –I (AC)	Food Microbiology - Theory	5	3	3	25	75	100
		First Allied Course – II (AC)	Food Microbiology & Basic Chemistry - Practical	3	-	***	-	-	-
				30	17				500
II	I	Language Course – II (LC) - Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course–II (ELC)		6	3	3	25	75	100
	III	Core Course – III (CC)	Physiology	6	5	3	25	75	100
		First Allied Course – II (AC)	Food Microbiology & Basic Chemistry - Practical	3	3	3	40	60	100
		First Allied Course – III (AC)	Basic Chemistry- Theory	5	4	3	25	75	100
	IV	Environmental Studies		2	2	3	25	75	100
		Value Education		2	2	3	25	75	100
				30	22				700
III	I	Language Course – III (LC) – Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course-III (ELC)		6	3	3	25	75	100
	III	Core Course – IV (CC)	General Biochemistry and Nutrition - Theory	6	5	3	25	75	100
		Second Allied Course – I (AC)	Principles of Resource Management and Interior Design - theory	**6**	3	3	25	75	100
		Second Allied Course– II (AC)	Principles of Resource Management and Interior Design - Practical	**4**	-	***	-	-	-
		Non Major Elective I - for those who studied Tamil under Part I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto +2 but opt for other languages in degree programme	Principles of Nutrition	2	2	3	25	75	100

				30	16				500
IV	I	Language Course –IV (LC) - Tamil*/Other Languages ** #		6	3	3	25	75	100
	II	English Language Course – IV (ELC)		6	3	3	25	75	100
	III	Core Course – V (CC)	Family and Community Nutrition - Theory	4	4	3	25	75	100
		Core Course – VI (CC)	General Biochemistry and Nutrition & Family and Community Nutrition - Practical	4	4	3	40	60	100
		Second Allied Course - II	Principles of Resource Management and Interior Design - Practical	2	3	3	40	60	100
		Second Allied Course – III	Food Standard and Quality Control - Theory	4	4	3	25	75	100
	IV	Non Major Elective II - for those who studied Tamil under Part I I a) Basic Tamil for other language students b) Special Tamil for those who studied Tamil upto +2 but opt for other languages in degree programme	Nutrition for the Family	2	2	3	25	75	100
		Skill Based Elective I		2	**4**	3	25	75	100
				30	**27**				800
V	III	Core Course – VII (CC)	Dietetics - I	6	5	3	25	75	100
		Core Course – VIII (CC)	Food Service Management - I	5	5	3	25	75	100
		Core Course – IX (CC)	Extension Education	5	5	3	25	75	100
		Core Course – X (CC)	Social Problems in India	5	4	3	25	75	100
		Major based Elective – I	Food Preservation and Bakery - Theory	5	5	3	25	75	100
	IV	Skill based Elective –II		2	**4**	3	25	75	100
		Skill based Elective – III		2	**4**	3	25	75	100
				30	**32**				700
VI	III	Core Course – XI (CC)	Dietetics - II	**6**	5	3	25	75	100
		Core Course – XII (CC)	Food Service Management - II	**6**	5	3	25	75	100
		Core Course – XIII (CC)	Dietetics–I & II-Practical	6	5	3	40	60	100
		Major based Elective II	Clinical Biochemistry – Theory	**6**	5	3	25	75	100
		Major based Elective III	Food Preservation and Bakery and Clinical Biochemistry - Practical	**5**	4	3	40	60	100
	V	Extension activities		-	1	-	-	-	-
		Gender Studies		1	1	3	25	75	100
				30	26				600
			Total	180	140				3800

Note:

	Internal Marks	External Marks
1. Theory	25	75
2. Practical	40	60

3. Separate passing minimum is prescribed for Internal and External marks

The passing minimum for CIA shall be 40% out of 25 marks [i.e. 10 marks]

The passing minimum for University Examinations shall be 40% out of 75 marks [i.e. 30 marks]

* for those who studied Tamil upto +2 (Regular Stream)

** Syllabus for other Languages should be on par with Tamil at Degree level

those who studied Tamil upto 10^{th} or +2, but opt for other languages in degree level under Part I should study special Tamil in Part IV

*** Examination at the end of the next semester.

Extension activities shall be out side the instruction hours.

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CORE COURSE I : FOOD SCIENCE

UNIT – I

a. Definitions : Food Science, Food, Nutrients, Nutrition Status, Mal-nutrition, under – Nutrition, over Nutrition, Balanced diet, Hunger, Hollow Hunger, Hidden Hunger, Appetite, Health, Meal, Menu.
b. Balanced Diet and Food Groups: Basic four and Basic five, Nutritional Classification of foods – Energy yielding, Body Building and protective foods.
c. Cooking Methods : Moist and Dry heat methods of cooking, merits and demerits.

UNIT – II

a. Cereals and Cereal Products : Structure Nutritive value of rice, wheat, maize and locally available millets, Enrichment and fortification. Batters and Doughs; Milling and parboiling; Malting of cereals.
b. Pulses and Nuts : Composition and Nutritive value, factors affecting cooking quality of pulses, germination of whole grams.

UNIT III

Vegetables and Fruits – classification, Nutritive value, changes during cooking of vegetables, changes during ripening of fruits. Storage.

UNIT – IV

a. Milk & Milk Products : Composition and Nutritive value, Different types of milk products; pasteurization of milk.
b. Egg : Structure, Composition and Nutritive value. Measure of quality, factors affecting foam formation, uses of egg in cookery. Home preservation and storage.
c. Fleshy Foods: Composition and Nutritive value of meat, fish and poultry selection and storage – Effect of cooking on colour, texture and flavour. Factors affect tenderness.

UNIT – V

a. Fats & Oils : Composition and Nutritive value of common fats and oils, and reuse of oils, smoking temperature, rensidity of fat, absorption.
b. Beverages : Classification, Nutritive value – Coffee, Tea, Cocoa, milk based fruit juices, aerated and alcoholic beverages.
c. Spices and Condiments : Types, uses in Indian cookery.

Reference

1. Swaminathan, M. : Hand Book of Food Science and Experimental Food Text.
2. Hughes. O. 1971 : Introductory Foods.
3. Peckham, C.G. 1969 : Foundation of Food Preparation
4. Love, P. 1967 : Experimental Cookery
5. Swaminathan, M. 1976 : Essentials of Food and Nutritive Vol.I
6. Potler, N. : Food Science.

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CORE COURSE II : PRACTICAL - FOOD SCIENCE

1. **Cereals and cereal cookery**
    a. Preparation of a few cereal products using Rice, Wheat, Ragi etc.
    b. Experimental cookery on cereals.

2. **Pulses**
    a. Preparation of a few pulse dishes.
    b. Experimental cookery.

3. **Vegetables and Fruits**
    a. Effect of cooking on vegetables pigments.
    b. Darkening of vegetables and fruits.
    c. Preparation of a few vegetable curries, and fruits salad.

4. **Milk Cookery**

    Preparation of a few ice creams and milk

5. **Egg**

    Preparation of
    a. Scrambled egg.
    b. Poached egg
    c. Omelette and Experimental cookery.

6. **Fats and Oils**

    Preparation of a few deep fat food products.

7. **Beverage**

    Preparation of Coffees, Tea, Cocoa drinks and various milk based fruit juice beverages.

Reference

1. Swaminathan, M. : Hand Book of Food Science and Experimental Food Text.
2. Hughes. O. 1971 : Introductory Foods.
3. Peckham, C.G. 1969 : Foundation of Food Preparation
4. Love, P. 1967 : Experimental Cookery
5. Swaminathan, M. 1976 : Essentials of Food and Nutritive Vol.I
6. Potler, N. : Food Science.

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FIRST ALLIED COURSE I : FOOD MICROBIOLOGY

Objectives

To enable students

1. Gain knowledge of the role of micro-organism in health and disease.
2. Understand the role of microbes in relation to food spoilage, food borne disease.

UNIT – I

Micro Organisms – Important in Food Microbiology

a. Bacteria : General characteristics of bacteria, bacteriamorphology, cell structure, motility, nutrition reproduction and respiration.
b. Viruses : General characteristics of viruses, viral diseases – symptoms, characteristics and control of viral diseases.
c. Yeasts : General characteristics of yeasts. Economic importance of yeasts.
d. Molds : General characteristics of molds Economic importance of molds.
e. Protozoa : General characteristics of protozoa. Morphology and life history of entamoeba histolytica, plasmodium, protozoal diseases – Dysentery – Malaria.

Contamination of Foods

UNIT – II

Contamination from green plants and fruits, from animal, from sewage, from soil, from water, from air, during handling and processing.

UNIT – III

General principles underlying spoilage – chemical changes caused by micro-organisms. Fitness of unfitness of food for consumption causes or spoilage, classification of foods by case of spoilage factors, affecting the growth of micro-organisms in food factors affecting kinds and numbers of micro organization food, chemical changes caused by micro-organisms.

UNIT – IV

a. Micro organisms in Food – Microbial food spilage, for borned diseases, food poisioning and food infection and their control.
b. Contamination, Spoilage and preservation of
    i. Cereal and Cereal products.
    ii. Meat, fish and eggs.
    iii. Fruits and Vegetables.
    iv. Micro-organisms in milk Microbial role in Fermentation Microbial Spoilage of milk, prevention of control of spoilage pasteuization – methods, principles and advantages, Milk borne disease (Human and boving origin) and their control.

UNIT – V

a. Soil Micro-biology – Role of micro-organism in N_2 bycle.

b. Micro-organisms in water-Bacteriological examination of water, test for C. Coil, water borne diseases and their control.
c. Sewage – Method of sewage disposal role of files and other insects in the spread of disease.
d. Micro-organisms in air – drople infection and air-borne diseases and their control.
e. Sterilization and disinfectants – principles and air-borne diseases and their control.

REFERENCE:

1. Joshua, A.K.1972 – Micro biology Ist edition Published by the author
2. Frazier, W.C., 1972 – Food Microbiolgoy Tata-McGraw Hill Book Company, New Delhi.
3. Pelczar & Heid, 1965 – Micro biology, McGraw Hill Book Co., London.
4. Philip, Carpenter – Microbiology W.B.Saunders Co., Philadelphia, London.
5. Salle, A.J.1961 – Principles of Bacteriology McGraw Hill Book Company, London.
6. Kenneth, L.Burdon, 1958 – Microbiology The Macmillian Co., New Delhi.
7. Hobbs, B.C.-Food Poisoning and food hygiene Inter. Sctence publishing, New Delhi.

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FIRST ALLIED COURSE II : PRACTICALS

FOOD MICROBIOLOGY & BASIC CHEMISTRY

FOOD MICROBIOLOGY (50 MARKS)

1. **Examination of yeast, mold, protozoa and pathogenic bacterias.**
2. Examination of unstained organisms – Hanging drop preparation method.
3. Examination of stained organisms – simple staining and Gram's method of staining.
4. Study of sterilizing instruments.

Related Experiments: Visit of Water Works, Dairy Form, Public Health Labs.

Record

Record of the practicals will be maintained by the students and submitted at the end of the Semester for Internal assessment.

BASIC CHEMISTRY (50 MARKS)

1. Organic Reactions of the following compounds

    a. Glucose
    b. Urea
    c. Benzaldehyde
    d. Acetophenone
    e. Benzoic Acid
    f. Aniline

2. Acideimetry and alkalimetry.
   Estimation of Sulphuric acid.

3. Permanaganimetry
    a. Estimation of ferrous sulphate using potassium permanganate.

Estimation of oxalic acid using $KmnO_4$

Iodimetry

Estimation of copper using thi-sulphate.

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SEMESTER – II

CORE COURSE III – PHYSIOLOGY - THEORY

Objectives:

1. To understand the Structure and Physiology of various organs in the body.
2. To obtain a better understanding of the Principles of Nutrition and Dietetics through the study of Physiology.

UNIT – I

Blood, Heart and Circulation

a. Blood : Composition, functions, RBC – Structure, functions, erthropoiesis, Haemoglobin, WBC – Structure, functions, Classification.

   Blood Platelets: Structure, functions, Reticulo endothelia system, Blood groups – Rh factor. Blood coagulation, spleen –Structure and functions, Lymp – Lymphatic system.

b. Heart and Circulation: Heart – Anatomy and physiology, Blood vessels –Structure of artery, vein, capillaries, Cardiac output, Arterial Blood pressure, clinical measurement of blood pressure, properties of cardiate muscle, origin and conduction of heart beat, cardiaccycle, Regulation of the Heart's action.

UNIT – II

Respiratory and Excretory System

a. Respiratory System: Structure of respiratory organs, Mechanics of repiration, subdivisions of lung air, Chemistry of respiration. Artificial respiration, control of respiration.
b. Excretory System : Physiology of kidney – nephron, formation of urine, voiding of urine. Skin – Structure and functions, Regulations of body temperature.

UNIT – III

Digestive System : General anatomy of digestive system – Digestive in the mouth, stomach and intestines. Movements of small intestine. Role of pancreas, Liver – Structure and function.

UNIT – IV

Endocrine and Reproductive system:

a. Endrocrinology : Structure and functions of thyroid, pituitary, parathyroid, adrenals, islets of langerhans ofpancreas, sex glands.

b. Reproductive System : General anatomy – Female and male reproductive system. Testis – Spermatogenesis, male sex hormones, ovaries – ogenesis, Female sex hormones, Menstrual cycle. Phases and endocrine control. Mammary glands – Structure, lactation and process of reproduction, fertilization, development of embroyo, pregnancy and parturition..

UNIT – V

Nervous System and Special Senses

a. Nervous System:

1 Spinal cord – Structure and functions. Ascending and descending tracts, reflex action.

2 .Brain – Structure and functions of cerebrum, optic thalamus, midbrain, pons medulla oblongata, Hypo thalamus, cerebellum.

3. Autonomic nervous system, sympathetic and parasympathetic.

b. Special Senses.

1 Physiology of vision, Structure of eye, dark and light adaptation, accommodation of the eye, visual fields, common ****** due to abnormalities – presbyopia, cataract, Astigmatism, Blindness.

2. Ear – Structure and Physiology of hearing.

Practicals

1 Histology of the epithelial, muscular, connective tissue.
2. Microsopic structure of bone and cartilage.
3. Microsopic structure of nerve.
4. Estimation of haemogolobin, RBC and WBC count Demonstration.
5. Identification of different types of whits blood cells – Demonstration.
6. Determination of blood groups.
7. Recording of normal heart beat of frog.
8. Effect of temperature on heart beat – demonstration.
9. Arterial blood pressure and pulse rate, effect of exercise.
10. Histology of artery, vein, traches and lung.

Related Experiences

1. Visit to blood bank.
2. Observation on giving transfusion.

Record

Record of the practicals will be maintained by the students and submitted at the end of the Semester for internal assessment.

Text

1. Best C.H. and Taylor N.B. : The Living Body.
2. Chatterjee : A Text Book of Physiology.

Reference

1. Wright. S. : Applied Physiology
2. Saradha Subramanianm & Madhavan Kutty : Human Physiology.

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FIRST ALLIED COURSE III : BASIC CHEMISTRY

UNIT – I

Co – ordination Chemistry : Nomenclature of mono nuclear complexes – Sarner, sidgewicl Pauling Theories – Chelation and its industrial importance with particular reference to EDTA – Biological role of HB and chlorophyll – Application in quantitative, quantitative and analytical chemistry.

UNIT – II

Industrial Chemistry:

a. Synthesis, properties and uses of silicones – Fuel gases – Naturalgas, Semi-water gas, water gas, Carburetted water gas, producer gas and oil-gas (Manufacturing details not needed) – Fertilizers – urea, ammonium sulphate, ammonium nitrate, super phosphate of lime, triple super phosphate, potassium nitrate.
b. General methods of preparation and properties of alloys of the following metals – copper zinc, Aluminium Mangesium, Stannium, Lead, Titanim, Thorium, Bismuth, Cobalt, Manganese Mickel and Iron – The role of carbon is steel and treatment of steel.

UNIT – III

Aromatic Aromatic Compounds

a. Types of organic reactions and reagents – Common electrophiles, nucleaphiles and free radicals – Electron displacement effects, inductive effect, Resonance effect, Hyper conjugation and steric effects – states of Hybridisation carbon geometry of organic molecules CH_4, C_2H_6, C_2H_4 and C_7H_6.
b. Typical substitution reactions – Nitration – Halogenation – Alkylation – Sulphonation – preparation and uses of Naphthalene and Amtjraceme/

UNIT – IV

a. Halogenated Compounds : Importance chlorohydro carbons used as solvents and pesticids (Dischloromethane, Chloroform, Cc14, DDT and BHC) – Freons – properties & uses.
b. Synthetic Dyes and Polymers: Teflon, alkyl reasins, polyester, epoxide resins – general treatment – Azo dyes, vat dyes, food colours – General treatment.

UNIT – V

a. Emulsions, Gels, preparation, properties and applications – Importance of PH and buffers in the living systems – PH determination by colorimetric and electrometric methods – Electrochemical corrosion and prevention.
b. Laws of Photo Chemistry and applications.

Reference:

1. Veeraiyan and A.N.S. Vasudevan – Text Book of Ancillary Chemistry Vol.I & II.
2. P.L.Soni – Inorganic Chemistry
3. B.S.Bhal and G.D.Tuli – Essentials of Physical Chemistry.

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CORE COURSE IV – GENERAL BIO-CHEMISTRY AND NUTRITION

UNIT – I

Carbohydrates – Classification, properties, function, sources and requirements, (Digestion – absorption and metabolism – Glycolysis, TCA Cycle, HMP pathway, Uronic act Cycle, Glcogenesis, Glycogenolysis, Gluconeogenesis) Mucopoly – sacharides – Fibrs – role of fibre in Nutrition.

UNIT – II

Proteins – Classification, properties, functions, sources and requirements. Digestion, absorption and metabolism – General pathways of metabolism of amino acids – deamination, Transamination , Decarboxylation, Urea Cycle, fate of deaminated amino acids – Methods for the determination of nutritive value of proteins – essentials amino acids – protein energy malnutrition – etiology, symptoms, prevention and treatment.

UNIT – III

Lipids – Classification, properties, functions, sources and requirements, Digestion, absorption and metabolism – oxidation of unsaturated fatty acids – Essential fatty acids, sources, effects of deficiency – Relationship between fat metabolism and Adipose tissue.

UNIT – IV

Energy – Unit of energy, determination of energy content of foods, Basal metabolic rate, determination of BMR, determination of total energy requirements, SDA of food factors affecting total energy requirements. Carbohydrate protein and fats as sources of energy.

UNIT – V

1. Vitamins – History, properties, functions, sources, affects of deficiency of vitamins, A,D,E and K – Water soluble vitamins – Thiamine, niboflavin, Niacin, Vit, B12m Pyridoxine Pantothenc acid, folic acid, Biotin and ascorbin acid.
2. Minerals – Absorption : Utilization, function requirements, sources, effects of deficiency of calcium, Phosphorus, Sodium, Potassium, Iron, Copper, Iodine, Fluorine, Zine, Cobalt and Selenium
3. Water – distribution – function, sources, requirements & dehydration.

Reference

1. Lehniger A.L., 1979 : Text Book of Bio-Chemistry
2. Swaminathan M. : Bio-Chemistry for Medical Students.
3. Happer, 1980 : Review of Physiological Chemistry.
4. Anita F.R. 1973 : Clinical Nutrition and Dietetics.
5. Ambika Shanmugam, 1987 : Bio-Chemistry for Medical students.

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SECOND ALLIED COURSE I
PRINCIPLES OF RESOURCE MANAGEMENT AND INTERIOR DESIGN.

Objectives:

To help students

Understand the meaning of Management

- Increase ability to solve personnel management problems.
- Recognise the importance of wise use of resources to achieve one's goals.
- Knowledge and understanding of the principles and methods of creating beautiful interiors.
- Learn skills in using the basic principles of art at home, in commercial situations and other occasions.
- Apply theoretical knowledge interior decoration to practical situations.

Theory

UNIT – I

Elements involved in management – process – planning, controlling and evaluating. Decision making – Hobitual Vs Conscious decisions making, individual and group decisions – Factors aiding in good decision. Goals and values – Their relation to decision making. Resources – Human and non-human resourcesm – Utilization of resources to achieve family goals.

UNIT – II

Family Income – Money income and real income, Source of income. Family expenditure, Family budget – Main items, Budget studies, Financial records of the house hold, their purpose and nature.

UNIT – III

Interior Decoration – Place of art in every day life. Good taste and the consumer.

Design: Elements of Design. Types of designing, characteristics of good design.

Principles of design:

Harmony

ii. Proportion

iii. Balance

iv. Emphasis

v. Rhythm.

Colour – Qualities of colour. Hue, value, Intensity colours and emotions, Advancing and receeding colours, Effect of colours upon each other, Effect of coloured lights upon coloured materials. Using design and colours in interior decoration.

UNIT IV

a. Selection, arrangement and care of furniture in the living area, Dining area, study area, and bed room.

b. Furnishings - selection use and care of furnishing materials Draperies and curtains, floor coverings.

UNIT – V

a. Accessories – Selection, use and care of accessories

- Picture and Wall hanging
- Flower arrangement
- Other art objects.

b. Home illumination – Functions, Factors to be considered types of illumination, planning for illumination for various areas.

Reference

1. Nickell.P. and Dorsey. J.M. – Management in Family Living, John Wiley and Sons, Inc, New York, 1960.
2. Goldstein.H and Goldstein. V.Art. in everyday Life, Macmillan and Company, New York, 1966.
3. Graig. H.T.,and Rush, C.H. Homes with character, D.C. Health and Company, Boston, 1965.
4. Rutt, A.H., Home Furnishings, John Wiley and Sons, New York, 1961.
5. Devadas R.P., Text Book of Home Science
6. Roy Day, All About Decorating your home Hamlyn, London, 1976.
7. Alexander, M.J., Designing interior environment, Har court Brace Jauaroui Inc., New York. 1972.
8. Sherwood, R.F. Homes Today and Tomorrow: Chart Bannet, Co.,Inc., Peoric, Illinois, 1972.
9. Cross H. and Crandall E.W. and Knoll M.M.Management for modern families.
10. Deacon R.E. and Fire bought F.M.Home Management conteat and concepts.
11. Stepot, D.D. Introduction to Home Furnishing. The Macmillan Co., New York. 1979.
12. Laver, D.A.Design Basies., Holt Rinchart Winston, New York, 1979.
13. Evans, H.M., Man the Designer, The Macmillian Co., New York, 1976.
14. Sulahria, J. and Diamond.R.Inside Design creating your environment, Carfield Press, Sanfrancisco, 1977.
15. Faulkner, R. and Faulkner.S., Inside Today's Home, Hold, Rinchart and Winston.

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SEMESTER – III & IV

SECOND ALLIED COURSE II : PRACTICAL - PRINCIPLES OF RESOURCE MANAGEMENT AND INTERIOR DESIGN

Related Experience

1. Eliciting values of students
2. Maintaining family accounts.
3. Developing budget for the family
4. Analysis of design for their qualities.
5. Arrangement of furniture using cut-outs.
6. Arranging flowers suitable for various areas.
7. Application of colour in the interior
8. Application of designing in the interior.

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NON - MAJOR ELECTIVE I – PRINCIPLES OF NUTRITION

Objectives:

1. Understanding the meaning of Nutrition
2. Understanding the role of Nutrition in human life
3. Increasing the ability to overcome Deficiency

Unit I

Introduction to Nutrition and Food Science – Definition, history, RDA, factors affecting RDA – Methods used for deriving RDA, Basic five food groups and the functions of food, Food pyramid

Unit II

a) Carbohydrates – classification, functions, digestion and absorption, Sources, deficiency diseases. Role fo fibre in human Nutrition
b) Energy – units, Carbohydrate, protein, fat as a source of energy

Unit III

Protein – classification – functions, sources digestion and absorption, sources and deficiency disorders.

Unit IV

Lipids – Classification, functions, digestion and absorption, sources, excess and deficiency disorder

Unit V

a. Vitamins – Fat soluble vitamins A, D, E & K, functions, sources, requirements deficiency diseases
b. Water soluble vitamins – B like thiamine, Riboflavin, Niacin, Phridoscin, Folic acid, B2 and Vitamin C and their functions sources requirements and deficiency diseases
c. Minerals – Calcium, phosphorus, Sodium, Potassium, Iron, Iodine, Flourine and their functions, sources requirements and deficiency diseases.

References:

1. Srilakshmi. B. (2008) Nutrition Science, III Edition, New Age International Publishers, New Delhi
2. Chintapalli Vidya (2004) A Text book of Nutrition, New Delhi: Discovery Publishing House
3. Gopalan. C. Ramasastry, B.V. and Balasubramanian, S.C. (1976), Nutrition value of Indian Foods, Hyderabad: National Institute of Nutrition
4. Swaminathan M. (1972), Essentials of Food and Nutrition, Philadelphia: Ganesh and Company
5. Robinson, Normal and Therpautic Nutrition
6. Laren M.C. (1976), Nutrition in the Community
7. Begam.R. (1999), Text Book of Food Science, Nutrition and Dietetics

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CORE COURSE V : FAMILY AND COMMUNITY NUTRITION

Objectives

To enable the students to

1. Understand the role of nutrition in different stages of life cycle.
2. Gain experience in Planning menu for different stages.
3. Develop skills in organizing and evaluating nutrition projects in the community.
4. Gain knowledge about the method of assessment of nutritional status of a community.

UNIT – I

a. Nutrition In Pregnancy : Physiology changes in pregnancy, nutritional allowances and complications of pregnancy. Menu planning and diet in pregnancy for low middle and high income groups.

b. Nutrition In Lactation : Lactation in relation to the growth and health of infants. Nutritional requirements of nursing mothers. Menu planning and diet for nursing mother of low, middle and high income groups.

c. Nutrition in Infancy : Growth and development of the infant, Nutritional requirements of the infants, Composition of breast milk and Cow's milk, superiority of human milk over Cow's milk an weaning and supplementary food suitable for infants.

d. Nutrition in Pre-school age : Growth and development of pre-school children, Food habits and diet for the pre-school children and importance of supplementary foods.

e. Nutrition during school age : Growth and development, foods habits and diet for the school child.

Nutrition in adolescenes : Physical an Physiological changes and Nutritional allowances for the adolescent, Nutrition for the adult.

Nutrition for the aged : Socio economic and Physiological factors influencing the diet for an old person.

UNIT – II

- Prevalence of malnutrition and strategies to overcome malnutrition
- Definition of community and family.
- Definition and explanation malnutrition, under Nutrition, optimum Nutrition and over Nutrition.
- Ecology of malnutrition – Dictary pattern food and nutrient intake, food lose, customs, food fads and faculty food habits, prejudicies and ignorance of malnutrition.
- Interaction between Nutrition and infection.
- Prevalence of malnutrition in India Anaemic, PEM, Vitamin A deficiency, B-Complex, iodine, dental cariesetiology, signs and symptoms and control.
- Measures to overcome malnutrition.

UNIT – III

- Role of National and International Organization of Combat Malnutrition.
- Contribution of International Organization – CARE, WHO, FAO, UNICEF.

- Nutrition Intervention Programme in India – ANP, SNP, KDS, Noon meal scheme, MSNP and Balwadi feeding programme.

UNIT – IV

- Assessment of the Nutritional Status of the Different Age Group in the Community.

- Methods available for the assessment of Nutritional status of an individual and a community.

UNIT – V

- Nutrition Education for the Community.
- Meaning, nature and importance of Nutrition Education to the community.
- Principles of Planning, executing and evaluating Nutrition Education programmes.
- Problems of Nutrition Education programmes.

Reference Books

1. Margaret Mc.Williams, "Food Fundamentals" John Wiley and Sons, London, 1974.
2. Gopalan, C. and Balasubramanian, B.C.Diet Atlas of India, NIN, Hyderabad, 1971.
3. Gopalan, C.Ramasastry, B.V. and Balasubramanian, S.C. Nutritive value of Indian foods, NIN, Hyderabad, 1976.
4. Swaminathan, M.Essentials of Food and Nutrition Vol.I & II BAPPCO., The Bangalore Printing and Publishing co., ltd., No.88, Mysore Road, Bangalore.
5. Robinson, Normal and therapeutic Nutrition.
6. Davidson, Sri Stanley Passmore, R and Brock, J.H.Heeman, Nutrition and Dietetics, F.f.s. Livingstons Ltd., Edinduragt London, 1973.
7. Mc.Laren, Nutrition in the community 1976.
8. Nutrition Atlas, NIN, Hyderabad.
9. Major, J.Human, Nutrition Springfield, 1972.

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CORE COURSE VI – PRACTICALS
GENERAL BIO-CHEMISTRY AND NUTRITION &
FAMILY AND COMMUNITY NUTRITION

GENERAL BIO-CHEMISTRY AND NUTRITION

Practicals:

1. Quantitative tests for sugars, proteins and minerals.
2. Quantitative Estimation of glucose in sugar solution.
3. Quantitative Estimation of reducing sugar in grape juice.
4. Quantitative Estimation of reducing sugar in honey solution.
5. Quantitative Estimation of ascorbic acid in drumstic leaves.
6. Quantitative Estimation of ascorbic acid in lime juice.
7. Quantitative Estimation of ascorbic acid in raw and cooked cabbage.
8. Quantitative Estimation of calcium.
9. Quantitative Estimation of phosphorous.

Demonstrative Experiments

1. Estimation of Iron.
2. Estimation of Total Nitrogen in Foods.

Reference

1. Lehniger A.L., 1979 : Text Book of Bio-Chemistry
2. Swaminathan M. : Bio-Chemistry for Medical Students.
3. Happer, 1980 : Review of Physiological Chemistry.
4. Anita F.R. 1973 : Clinical Nutrition and Dietetics.
5. Ambika Shanmugam, 1987 : Bio-Chemistry for Medical students.

FAMILY AND COMMUNITY NUTRITION

Related Experience Practical

- Planning menus for special conditions like pregnancy, lactation, infancy, pre-school age, adoloscence and adult.
- Preparing and evaluating menus for different ages.
- Study of the socio-economic, socio-cultural background of a selected community.

Planning conducting and evaluating Nutrition Education programmes.**NON –**

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SECOND ALLIED COURSE – III - FOOD STANDARDS AND QUALITY CONTROL

Objectives:

To enable students to

- Gain knowledge about physio – chemical changes in foods.
- Gain knowledge on sources, uses, properties and changes in starches, sugars, proteins and browning reactions.
- Gain knowledge about proteins in foods, flavour and aroma, Common food adulterants and toxins and enzymes.

UNIT – I

Physio – Chemical changes in Foods in relation to Cookery – gel formation – denaturation of proteins – properties of colloids, emulsions, stabilizers – browning reactions – Enzymatic and non-enzymatic.

i) Starch cookery – sources and uses of starch, gelatinisation, Retrogradation, dextrinisation, starch suspensions, factors affecting the viscosity of starch particles.

ii) Sugar cookery: sources, uses, properties, crystallization, stages of sugar cookery, preparation of crystalline and non-crystalline candies with special reference to Indian preparation.

UNIT – II

a) Meat – Structure, Post – mortum changes, ripening and factors affecting tenderness, colour of meat.
b) Egg proteins – chemical composition, structure of egg proteins.
c) Milk proteins – casein and whey proteins.
d) Pigments and Polyphenol pigments in plants; Tannins and pectic substances, changes in pectic substances, changes in cellulose, production of volatile acids.

UNIT – III

a) Flavour and aromas of foods.

(i) Sensation of flavour and tast
(ii) Measurement of Odor.
(iii) Flavour intensifiers
(iv) Synthetic flavouring substances.

b) Evaluation of Food Quality

1. Sensory evaluation, characteristics, Requirements for conducting tests, Types of tests.

2. Objectives evaluation – Basic guidelines, Tests for objective evaluation – Chemical, Physio-chemical and microscopic evaluation, Instruments used for texture evaluation.

UNIT – IV

a) Food adulteration and Food standards; Adulteration – Definition, Common food adulterants; contamination with texicmetals, pesticides and insecticides; effects of food adulteration and contamination, measures to control food adulteration.

Food Adulteration and Prevention Act

a) Food standards – Food laws – AGMARK and BIS – specification for different foods.
b) Food Toxins – Mycotoxins – aflatoxins, aspergillus and pencillium species, mushroom poisoning, sea food toxins.
c) Other toxins naturally occurring in foods – Lathyrogens, haemagglutinins, goitrogens.
d) Toxic minerals and other inorganic compounds in food and water; selenium, fluorine, nitrates and nitrites, oxalates and phytates.

UNIT – V

Enzymes in backing industry, dairy industry, enzymes in fruit products, wine industry and meat industry, miscellaneous applications; enzymatic and non enzymatic browning.
Role of water in foods and cookery: Structure and properties, water activity, types of water and role of water.

References:

Basic Text

1. M.Swaminathan – Hand Book of Food Science and Experimental Foods, BAPCO, 88 Mysore Road, Bangalore.
2. M.Swaminathan – Essentials of Food and Nutrition : Vol.II
3. Eillian H.Mayer, Food Chemistry, Affiliated East West Press Pvt.Ltd., New Delhi, 1973.

Additional References

Food Science by B.Srilashmi

Related Experiences: Experiments On

a) Gelatinisation of starch
b) Sugar cookery
c) Effects of acids and alkalison plant pigments
d) Preparation of custard
e) Sensory evaluation

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NON – MAJOR ELECTIVE II –: NUTRITION FOR THE FAMILY

Objectives:

To enable the students to

1. Understand the role of nutrition in different stages of life cycle.
2. Gain experience in Planning menu for different stages.
3. Develop skills in organizing and evaluating nutrition projects in the community.

UNIT I

Principles of Nutrition - Nutrients and their functions. Food groups, meal planning, RDA, Over nutrition, under nutrition, malnutrition.

UNIT II

Nutrition during Pregnancy and Lactation. Importance of Nutrition during pregnancy**.** Complications in pregnancy, food and nutritional requirements for lactating women.

UNIT III

Nutrition for Infants and Preschoolers

Importance of breast milk, food and nutritional requirements for infants, weaning and supplementary foods for infants, food habits of preschoolers, nutritional requirements for preschool children.

UNIT IV

Nutrition for School Age and Adolescents.

Nutritional requirements for school going children and adolescents, factors influencing food intake, nutritional disorders.

UNIT V

Nutrition during Adulthood and Old age.

Food and nutritional requirements for adults. Importance of nutrition during old age, factors influencing food intake, nutritional requirements, nutritional problems and management of old age.

Reference Books

1. Margaret Mc.Williams, "Food Fundamentals" John Wiley and Sons, London, 1974.
2. Gopalan, C. and Balasubramanian, B.C.Diet Atlas of India, NIN, Hyderabad, 1971.
3. Gopalan, C.Ramasastry, B.V. and Balasubramanian, S.C. Nutritive value of Indian foods, NIN, Hyderabad, 1976.
4. Swaminathan, M.Essentials of Food and Nutrition Vol.I & II BAPPCO., The Bangalore Printing and Publishing co., ltd., No.88, Mysore Road, Bangalore.
5. Robinson, Normal and therapeutic Nutrition.
6. Davidson, Sri Stanley Passmore, R and Brock, J.H.Heeman, Nutrition and Dietetics, F.f.s. Livingstons Ltd., Edinduragt London, 1973.
7. Mc.Laren, Nutrition in the community 1976.
8. Nutrition Atlas, NIN, Hyderabad.
9. Major, J.Human, Nutrition Springfield, 1972.

CORE COURSE VII : DIETETICS – I

UNIT – I

Definition of Dietitian, Goals of Diet Theraph

a. Role of Dietitian in the hospital and community education and personal qualification, Professional ethics and obligation.
b. Therapeutic adaptations of the normal diet, Routine hospital diets – Regular, Light, soft, full fluid, clear fluid diet.
c. Specially modified therapeutic diets, High calorie low calorie, high and low protein, bland, high and low residue diets, Planning and Calculation.

UNIT – II

a. Modification of diet according to medical prescription and dietary habits of the patient.
b. Feeding the patient, psychology of feeding the patient. Assessment of the patients needs.
c. Nutritional assessment of patient, objectives of Nutritional care process.

UNIT – III

a. Special Feeding: Intravenous, tube feeding, gastrostomy and jejunostomy.
b. Diet in relation to deficiency diseases proteincalorie deficiency, Iron and Vit.A deficiency.
c. Diet in overweight and underweight conditions.

UNIT – IV

2. Modification of diet in fevers of short and long duration.
3. Diseases of the gastro intestinal tract. Diapphes, Dysenty, constipation, peptic ulcer, gastritis, Malabsorption syndrome.

UNIT – V

2. Diseases of liver – fatty lever, hepatitis, cirrhosis, Hepatic coma.
3. Diseases of gall, blader – Cholecystitis and Cholethiasis.
4. Diet in allergy and skin disturbances, skin tests, elimination diets.

Text Book

1. Swaninathan M.., Advanced Text Book on Food and Nutrition, Vol.II. BAPPOO, No.88, Mysore Road, Bangalore, 1985.
2. Corinne H.Robinson, M.R.Lawber, W.L.Chenoweth and A.E.Garwick, Normal and Thepapsutic Nutrition 7th edn., Mc.Millan Publishing company, New York , 1986.

References

1. E.N.Whiteny and C.B.Cataldo, Understanding normal and clinical Nutrition, West Publishing Company, New York, 1983.
2. M.V.Krause and L.K.Mohan, Food, Nutrition and Diet Therapy W.B. Saunders company, Philadelphia, 1984.
3. R.Passmore and M.A.East Wood, Human Nutrition and Dietetics, English Language Book Society/Chruchill, Livingstone, 1987.

CORE COURSE VIII : FOOD SERVICE MANAGEMENT – I

Objectives

To enable the students to

1. Gain knowledge about various types of food services.
2. Gain knowledge about the Principles and functions of Management.
3. To understand about personnel Management, financial management and legal aspects of catering.
4. To pealise the importance of sanitation and hygiene in food service institutions.

COURSE OUTLINE:

UNIT – I

Food Service : Review of different types of institutional food service in operation- classification based on functional – i.e., profit oriented, service oriented and public health facility oriented, with their objective feedings programmes in the country.

UNIT – II

a. Management and Organization : Definition, Principles and techniques of management, tools of management; leadership- qualities of a good leader styles of leadership; art of delegation; organization – Definition, theories and types.
b. Personnel Management : Definition, Sources of personnel, Criteria for selection of personnel opientation, training, motivation, supervision, importance of good human relations, employee facilities fringe benefits : Labour policies and legislation – labour laws governing food service establishments; Performance appraisal of employees.
c. Financial management : Definition, application of Management Accounts of catering operators, cost concepts, book keeping and accounting – systems of book keeping, book of account maintenance of account books, balance sheets, inventor budgetary control.

UNIT – III

Fuels : Types of fuel, advantages of fuel in relation to economy in Quantity cookery fuel saving economy in food service institutions.

UNIT – IV

Hygiene, Sanitation and Safety in Food Service Institutions: Definition, importance, environmental hygiene and sanitation; hygiene in food handling; personnel hygiene of personnel; importance of pest and rodent control in food services.

UNIT – V

Safety : Accidents in food service establishments, safety procedure, training, Educating, legal responsibilities of food service manager.

Practicals

1. Visit to different types of institutions.
2. Comparison of cost different types of fuel.
3. Application of Principles of sanitation in colleges Hostel.
4. Visit to catering institutions to know about organization patter and personnel Management

Reference:

1. Bhushan, V.K.Business Organization and Management, Sultan Chand & Co., 1973.
2. Longree, K. and Balaker, B.C.Sanitary Techniques in Food Service, Johy Wiley and sons, New York , 1979.
3. Mohini Sethi and Surjeet Malham, Catering Management – an Integrated approach, Wiley Eastern limited, New Delhi, 1987.
4. West, B.B.Wood., L.Hager, V.F. and Shugart, G.Food Services in institutions, John Wiley and Sons, New York, 1987.

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CORE COURSE IX : EXTENSION EDUCATION

Objectives

To enable students:

- To understand principles of extension and community development work in our country.
- Prepare for higher studies in Extension Education.
- Become effective Home Science extension workers.
- Offer effective leadership in the community.

Theory

UNIT – I

a) Structure of India's rural society – characteristics of rural life in India, family life – religion and caste.
b) Rural problems and solutions – Cultural and social aspects – Provisions to improve rural homes, health, child care, education, recreation and cultural activities and supplementary occupation – Panchayat Raj administrative.

UNIT – II

Introduction of Extension Education and Community development Philosophy and principle of extension education. Origin, history, Organization and functions of the Community Development and Extension Service in India.

UNIT – III

Role of Home Science in developing a community. The Home Science Extension Workers – Training and responsibility of extension workers with special reference to Home Science Extension.

UNIT – IV

Principles and methods of extension work.

a) The learning and teaching process – effective teaching through different methods – individual, group and mass media.
b) Audio visual aids in extension work - motion pictures, radios, slides, flannel graphs, flash cards, charts, graphs, and pupper shows.

UNIT V

a. Communication - its meaning, needs types and problems in communications.
b. Programme planning, Meaning and importance of programme planning in extension. Developing rural leadership - Organisations for women and yough in the village as Mahalir Madrans and youth clubs.

Practicals:

1. Survey in a village to observe village, conditions characteristics and differences between rural and urban life.
2. Visit to an extension training center.
3. Studying the activities of a village panchayat, panchayat union, zilla parished.
4. Preparation of Literature. Leaflets and Pamphels suitable for villages.
5. Conducting Pupper show.
6. Learning to operate a projector
7. Practice in giving demonstration.
8. Planning, executing and evaluating simple programmes suitable for village women and youth and organizing them through Mahalir Manrams and Youth Club in villages.

CORE COURSE X : SOCIAL PROBLEMS IN INDIA – THEORY

Objectives

To enable the student to

1. Get background knowledge of Social Problems.
2. Understand the role of youth in solving the problems.

UNIT – I

Social Problems

1. Study of Indian Social Problems
2. Nature of Social Problems in India.
3. Social problems and Social Disorganization
4. Causes giving rise to social problems

UNIT – II

Alchoholism and Drug Addition

1. Causes of Drinning and drug addiction
2. Prohibition enquiry committee recommendation
3. Future line of action.

UNIT – III

a. Dowry Menace.

1. Meaning and features.
2. Why Dowry?
3. Evils of Dowry
4. Efforts at regulating the dowry.
5. Measures for eradication of the evil

b. Marital conflicts

1. Marital conflicts
2. Modern trends in Marital relation
3. Causes of Marital conflicts.
4. Marital and pre-marital counseling.

UNIT – IV

Family Disorganization

1. Nature of Family Organization
2. Concept of Family Disorganization
3. Changes in the role and status of partners.
4. Causes of family disorganizations
5. Personel and Impersonel factors in Tension
6. Effects of family tension
7. Avoidance of family tension
8. Future of family organization
9. Family Welfare Services

UNIT V

Unemployment

1. Meaning of unemployment and under employment
2. Classification of unemployment
3. Causes of unemployment
4. Suggestions to solve the problems
5. Measures taken by the Government to solve the problem

References:

1. Dr. C.B. Mamoria, Social Problems and Social Disorganisation in India.
2. Gurumukh Ram Madan, Indian Social Problems
3. Datt, R. and Sundaram, K.P.M. Indian Economy
4. Desai, A.R., Rural Sociology in India.

Journals:

1. Panchayat Raj
2. Social Welfare
3. Yusana
4. Kurukstra

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MAJOR BASED ELECTIVE I - FOOD PRESERVATION & BAKERY

UNIT – I

a. Review of the basic Principles behind food preservation: Ascpsis, removal, anacrobic conditions: Types of spoilages and methods of preventing them.
b. Preservation of fruits as Sugar concentrates, Jam, Jelly, Marmalade, preserves, candies, crystallized or glaced fruits, Factors affecting and jelly formation.

UNIT – II

a. Preservation by use of low temperature:

1. Refrigeration – Principles working system: cold storage defects.
2. Freezing
    a. Principles of freezing
    b. Methods of freezing
    c. Advantages and disadvantages.

b. Preservation by drying and dehydration:
Principles involved.

1. Methods of drying and dehydration
2. Pre-treatment of foods
3. Factors affecting

UNIT – III

a. Preservation by use of High temperature - Canning

1 .Canning Process.
2. Principles involved.
3. Spoilages encountered
4. Aseptic Canning.

b. Preservation by using Chemicals.

1 Mechanism of microbial inhibition
2. Inorganic and Organic preservatives
3. Antibiotics
4. Developed preservatives.

c. Radiation method of preservation of foods

1. Principles involved.
2. Sources of radiation, Units of radiation dosimetry
3. Applications of irradiation
4. Effect on food constitutions
5. Micro wave heating

UNIT – IV

a. Food Packages:

1. Definition of packaging
2. Package functions
3. Packaging materials – specific uses
4. Requistics of good packages.
    i. Attractivesness (Colour, Label, printed literature)
    ii. Protective strength/durability
    iii. Consumer convenience
    iv. Economy

b. Pickling : Principles, types & spoilages encountered in pickles.

UNIT – V

a. Introduction of bakery – Definition, Principle and Classification of baked products, Major/Minor equipments required to start a small bakery unit.

b. Role of major and minor ingredients in baking:

1. Role of flour (gluten), fat and eff in baking
2. Heavening agents – Definition, types (Physical biological and chemical) and role in baking.
3. Sugar – Sources, types and role in baking.
4. Role of minor ingredients – milk, water and salt.

c. Preparation of bakery items:

1. Bread : Types, methods, faults, bread diseases and improvers
2. Cake : Ingredients, types, methods and faults frusing/cake decorations
3. Biscuits and cookies : Ingredients, types, methods.

Reference:

1. Lal.B.Siddappa, G.G.& Tandon, G.N.19 67: Preservation of fruits and vegetables ICAR, New Delhi.
2. Dearosier, N.W., 1975: The Technolgy of Food preservation, AVU Publishing co., West Port, Conneticut.
3. Potter, N.N. 1973: Food Science, The AVI Publishing Co., West Port, Connecticut.
4. Peckham, C.G. 1969: Foundation of food preparation.
5. Hughes, O., 1971: Introductory foods.

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CORE COURSE XI : DIETETICS - II

UNIT – I

a. Pancreatic disorders: Pancreatitis
b. Diet in Diabetes Mellitus: Insulin and Non-Insulin Dependent Diabetes. Modifications and diotaryrole in NIDDM.
c. Food exchange lists.
d. Nutritional care in diseases of adrenal cortes, throid, parathyroid, Gout, and osteoporiosis.

UNIT – II

a. Dietary management in Cardiovascular diseases – Hypertension, hyperlipidemia, atheroselerosis, acute and Phronic cardiac disease, congestive cardia failure.
b. Dietary management in kidney diseases – Nephritis, Nephrosis, uremia and urinary caliculi.

UNIT – III

a. Nutritional care for patients having surgery, Trauma and burns.
b. Nutritional in neoplastic diseases or cancer.

UNIT – IV

Diseases of infancy and childhood.
a. Nutritional care of the low birth weight infant.
b. Nutritional care in diseases of infancy and childhood.

UNIT – V

Nutrition councelling.

Reference

1. Anita F.P.Clinical Dietetics and Nutrition.
2. Krause and Mahan, Food, Nutrition and Diet theraphy
3. Normal and therapeutic Nutrition by corrainne. H.Robinson.
4. Davidson and passmore (1975), Human Nutrition and Dietetics, English Language Book Society.
5. Principles of Nutrition and Dietetics by M.Swaminathan
6. Essentials of Food and Nutrition by M.Swaminathan.

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CORE COURSE XII : FOOD SERVICE MANAGEMENT – II

Objectives

1. To enable the students to gain knowledge on systems, types and styles of food service in catering establishments.
2. Develop skills for quantity cookery.
3. Gain knowledge and develop skills in handling equipments and their maintenance.
4. Gain knowledge on ideal food service layout.

COURSE OUTLINE

UNIT – I

Food Service – Classification of food service according to

a. Method of Processing : Types of food service systems: Conventional systems, Commissary system, read prepared system and assembly – service system.
b. Styles of Service : Service of food-self service, tray service, Waiter – Waitress Service and portable service.

Meal Planning

c. Menu : Types of menu, Principles involved in menu Planning: Indian and Western, menu planner, why menu Planning; techniques in writing menu card.

UNIT – II

i. Quantity Food Purchasing and Storage.

a. Purchasing : Purchasing officer, duties, purchasing procedure, selection of supplier, methods of purchasing, purchase specifications.
b. Receiving : Procedure and forms.
c. Storing and issuing : Objectives, types of store records, and stores issues.

ii. Quantity Food Production and Service.

a. Quality standards and control
b. Standardisation of recipes
c. Portion control: Utilization of left over foods.
d. Ways and means of creating good atmosphere (Interior decoration)
e. Informal and formal service styles (Table Service)

UNIT – III

Food Cost Control : Principles of food cost control, elements of cost-food cost, labour cost and over head expenses; why good cost control; factors responsible for losses in a food service industry; methods of controlling goods costs leading to profit; costing of dishes, meals and events; methods of pricing items.

UNIT – IV

Equipments and Furnishings

a. Classification of equipment, factors involved in selection of equipments; purchase of equipment, operational know-how, care and maintenance of equipments; dining room furnishings.
b. Materials Used: Base materials used in the manufacture of equipments, materials used for finishes, materials used in the manufacture of dining room furnishings.

UNIT – V

Food Plant Layout: Flow of work, characteristics of a typical food service layout, layout of food plants-space allocation for the various areas and flow of traffic through receiving, storage, preparation, service and dish washing areas; arrangements of equipments in work centers; optimum working heights.

Practicals:

1. Visiting star hotels to gain practical knowledge on the styles of food service.
2. Observing the ideal food plant layout in a hotel.
3. Gaining practical experience on the use of equipments and their care.
4. Standardisation of 5 selected quantity recipes in relation to cost, time and equipment.
5. Organising, preparing and serving 2 special meal for 25 more members.

Reference Book

1. Kotschevar, L. and Terrel, M.E. 1971 – Food service Planning, Layout and Equipment, John Wiley and Sons.
2. Kotas, R and Davis, B., - 1973 – Food Cost Control, Mc.Millan & Sons.
3. Mohini Selti and Surjeet Malhan, 1987 – Catering Management – an integrated approach, Wiley Eastern Limited, New Delhi.
4. West, B.B.Wood.L.Harger, V.F. and Shugart, G., 1988 – Food Service in Institutions, John Wiley and Sons, New York.

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CORE COURSE XIII : PRACTICALS - DIETETICS – I & II

DIETETICS - I

Practicals

1. Planning, Preparation and service of diet in
    a. Soft, clear and full fluid diet.
    b. Low and medium cost diet for protein – calorie, vitamin A, Iron deficiency.
    c. Overweight and underweight conditions.
    d. Fevers of shot and long duration.
    e. Diarrhea, dysentery, constipation.
    f. Peptic Ulcer.
    g. Lever disorder – Hepatitis, Cirhosis.

DIETETICS - II

Practicals

1. Planning, Preparation and serving of diets for
2. Diabetes mellitus
3. Hypertension
4. Atherosclerosi
5. Coronary Heart disease
6. Nephritis
7. Nephrosis

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MAJOR BASED ELECTIVE II : CLINICAL BIO-CHEMISTRY - THEORY

UNIT – I

Level of Blood glucose innormal and abnormal conditions – Maintenance of blood glucose level – Hyps and Hyperglyeaemia – (Benedict's method) - Diabetes Mellitus – Ketosis – Diabetic coma – Urniary reducing substances – Pentosuria, Galactosaemia, glycosuria and Glycogen storage diseases – Glucose Tolerance test-oral and intravenous.

UNIT – II

a. Level of lipids in blood – separation of serum lipoproteins – (Electrophoresis) – Disorder of lipoproteins – Determination of serum cholesterol (Zak's method) – Hyper and Hypo – Cholesterolaemia Atheroselerosis – inborn errors of fat metabolism () Glucher's disease; Niemann-picks disease, Fabry's disease, Tay-sach's disease, metachromatic leukodystrophy, Krabe's disease and Refsum's disease.

b. Determination of Total plasma proteins (Biuretty method) – Separation of plasma proteins (electrophoresis) – functions. Clinical significance of plasma proteins – Test for proteins inurine – Albuminuria – Inborn errors of amino acids metabolism – Phenyl Ketonuria – Albuminuria – Inborn errors of amino acids metabolism – Phenyl Ketonuria - Albinism – Alkaptonuria – Hartnup disease – Cystinuria and maple syrup disease-Bence Jons proteins.

UNIT – III

Formation of Bible acids and bile salts – functions, formation of bile pigments from Haemoglobin – Tests for bile pigments and bile salts in Urine-Tests for Liver function – Determination of serum bilirubing – Jaundice – Types of Jaundice-Icteric index-Galactose tolerance test-Hippuric acid Test-Bromo-Sulphthalein test. Enzymes inliver disease – Congenital Hyperbilirubin – semias – Gilbert's, Criglar-Najjar, Dubir Johnson and leucy-Driscoll syndrome.

UNIT – IV

Test for Gastric function – Collection of Examination on stomach contents – Determination of free acidity – Fractional test meal-moral and abnormal curves – Examination of duodenal contents- Determination of serum amylase and lipase significance – Tests for Malabsorption – Examination of faeces- Determination of fat content to faeces – Fat balance studyxylulose excretion test – Vitamin A absorption Test.

UNIT – V

Urine examination-their significance in health and disease – Tests for kidney function – glearance test – Urea clearance, inulin clearence and creatine clearance – Dye test – Dilution test – Dialysis.

Reference:

1. Clinical Bio-Chemistry by Latner, Al.W.B.Saunder's C., 1975.
2. Clinical Bio-Chemistry by Cantrow. A and Trumper, M.W.B., Saunders Co., - 1975.
3. Hawk, Physiological Chemistry Ed., by Bernar, L.Oser, Tata Mc.Graw Hill, Publishing Co. Ltd., New Delhi.
4. Bio-Chemistry for medical students by M.Swaminathan.
5. Clinical Bio-Chemistry by Harold Varley.

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MAJOR BASED ELECTIVE – III - PRACTICALS - FOOD PRESERVATION AND BAKERY & CLINICAL BIOCHEMISTRY

FOOD PRESERVATION AND BAKERY

Practicals:

2. Visit to a well established bakery unit and bottling unit.
3. Preparation of biscuits and cookies.
4. Preparation of cakes.
5. Preparation of selected jams, jellies, marmalades preserves and squashes.
6. Preparation of dehydrated products Vathals, vadams, chutney powder

CLINICAL BIOCHEMISTRY

Practicals

1. Quantitative analysis of Urine for sugar, protein, Bile pioments, Bile salts,
2. Acetone and Blood.
3. Estimation of Urine Glucose (Benediet's Method)
4. Estimation of Urine Urea (DAM-TSC Method)
5. Estimation of Blood Glucose (Folin-WU Method)
6. Estimation of Blood Urea (DAM-TSC Mehtod)
7. Estimation of serum cholesterol (Zak's Method)
8. Estimation of serum bilirubin.
9. Electrophoretic pattern of blood proteins (Demonstration).