

ALAGAPPA UNIVERSITY, KARAIKUDI
SYLLABUS UNDER CBCS PATTERN FOR AFFILIATED COLLEGES WITH
EFFECT FROM THE ACADEMIC YEAR 2022-23 ONWARDS

B.Sc., HOME SCIENCE
Programme Structure

Sem.	Part	Course Code	Courses	Title of the Paper	T/P	Credit	Hours/Week	Max. Marks		
								Int.	Ext.	Total
I	I	2211T	T/OL	Tamil /Other Languages -I	T	3	6	25	75	100
	II	712CE	E	Communicative English - I	T	3	6	25	75	100
	III	22BHF1C1	CC	Food Science	T	5	5	25	75	100
		22BHF1P1	CC	Food Science Lab	P	4	4	40	60	100
		-	AL-IA	Chemistry/Zoology/Computer Science/Fashion Technology & Costume Designing	T	3	3	25	75	100
	-	AL-IA	Practical-Respective Allied Theory Course	P	2	2	40	60	100	
	IV	22BVE1	SEC -I	Value Education	T	2	2	25	75	100
		-		Library / Yoga/ Counseling/Field trip	-	-	2	-	-	-
				Total		22	30	205	495	700
II	I	2221T	T/OL	Tamil/Other Languages-II	T	3	6	25	75	100
	II	722CE	E	Communicative English - II	T	3	6	25	75	100
	III	22BHF2C1	CC	Human Physiology	T	5	5	25	75	100
		22BHF2P1	CC	Human Physiology Lab	P	4	4	40	60	100
		-	AL-IB	Chemistry/Zoology/Computer Science/Fashion Technology & Costume Designing	T	3	3	25	75	100
	-	AL-IB	Practical-Respective Allied Theory Course	P	2	2	40	60	100	
	IV	22BES2	SEC -II	Environmental Studies	T	2	2	25	75	100
			Naan Mudhalvan Course	Language Proficiency for Employability(Effective English)	-	2	2	25	75	100
				Total		24	30	230	570	800
III	I	2231T	T/OL	Tamil/Other Languages-III	T	3	6	25	75	100
	II	2232E	E	English for Enrichment – I	T	3	6	25	75	100
	III	22BHF3C1	CC	Human Development	T	3	3	25	75	100
		22BHF3C2	CC	Principles of Nutrition	T	3	3	25	75	100
		22BHF3P1	CC	Principles of Nutrition Lab	P	3	3	40	60	100
	-	AL-II A	Chemistry/Zoology/Computer Science/Fashion Technology & Costume Designing	T	3	3	25	75	100	
	-	AL- II A	Practical-Respective Allied Theory Course	P	2	2	40	60	100	
	IV	22BE3	SEC -III	Entrepreneurship	T	2	2	25	75	100
-		NME-1	Adipadai Tamil(or) Advance Tamil(or) IT Skills for Employment/ MOOC'S	T	2	2	25	75	100	
				Total		24	30	255	645	900

IV	I	2241T	T/OL	Tamil /Other Languages –IV	T	3	6	25	75	100	
	II	2242E	E	English for Enrichment– II	T	3	3	25	75	100	
	III	22BHF4C1	CC	Introduction to Textiles	T	4	4	25	75	100	
		22BHF4C2	CC	Nutritional Biochemistry	T	4	4	25	75	100	
		22BHF4P1	CC	Nutritional Biochemistry Lab	P	3	3	40	60	100	
		-	AL-IIB	Chemistry/Zoology/Computer Science/Fashion Technology & Costume Designing	T	3	3	25	75	100	
	-	AL-IIB	Practical-Respective Allied Theory Course	P	2	2	40	60	100		
	IV	-	NME-II	Adipadai Tamil(or) Advance Tamil (or) Small Business Management / MOOC'S	T	2	2	25	75	100	
		Naan Mudhalvan Course		Digital Skills for Employability – (Microsoft-Office Fundamentals)	-	2	3	25	75	100	
Total						26	30	255	645	900	
V	III	22BHF5C1	CC	Diet Therapy	T	4	4	25	75	100	
		22BHF5C2	CC	Early Childhood Care and Education	T	4	4	25	75	100	
		22BHF5C3	CC	Clothing Construction	T	4	4	25	75	100	
		22BHF5C4	CC	Family Resource Management and Interior Design	T	4	4	25	75	100	
		22BHF5P1	CC	Diet Therapy Lab	P	4	6	40	60	100	
	22BHF5P2	CC	Clothing Construction Lab	P	4	6	40	60	100		
IV	-	-	Carrier development/employability Skills	-	-	2	-	-	-		
Total						24	30	180	420	600	
VI	III	22BHF6I	DSE	Internship		24	26	150	250	400	
	Naan Mudhalvan Course		Employability Readiness* (Naandi /Unnati/Quest/IBM Skills build)	-	2	4	25	75	100		
	Total						26	30	175	325	500
	Or										
	III	22BHF6E1	DSE	Community Nutrition	T	6	6	25	75	100	
				Home Science Extension and Communication	T	6	6	25	75	100	
				Food service Management	T	6	6	25	75	100	
				Bakery and Confectionary	T	6	6	25	75	100	
	IV	-	Others	Library / Yoga etc	-	-	2	-	-		
		Naan Mudhalvan Course		Employability Readiness* (Naandi /Unnati/Quest/IBM Skills build)	-	2	4	25	75	100	
	Total						26	30	125	375	500
(Or)											
III	22BHF6PR/ 22BHF6I/ 22BHF6E4	DSE	Project / Internship / Bakery and Confectionary		6	8	25	75	100		
			Community Nutrition	T	6	6	25	75	100		
			Home Science Extension and Communication	T	6	6	25	75	100		
			Food Service Management	T	6	6	25	75	100		

	IV	Naan Mudhalvan Course	Employability Readiness* (Naandi /Unnati/Quest/IBM Skills build)	-	2	4	25	75	100
			Total		26	30	125	375	500
			Grand Total		146	-	-	-	4400

*Employability Readiness -Women's Colleges Naandi course and all other Colleges IBM Skills build Course.

Sem.	Part	Course Code	Title of the Paper	Credits	Hours/Week	Marks		
						Int.	Ext.	Total
I	III	71BEPL	Professional English for Life Sciences -I	4	5	25	75	100
II		72BEPL	Professional English for Life Sciences -II	4	5	25	75	100
III		*	Professional English for Life Sciences -III	4	5	25	75	100
IV			Professional English for Life Sciences -IV	4	5	25	75	100

*The Syllabus of Professional English for III & IV Semester will be provided after receiving the syllabus from TANSCHÉ.

As per the TANSCHÉ, The Professional English book will be taught to all streams apart from the existing hours of teaching / additional hours of teaching (1hour / Day) as a 4 credit paper as an add on course on per with Major paper and completion of the paper is a must to continue his / her studies further.

Expansion

- TOL-Tamil/Other Languages,
- E – English
- CC-Core course –Core competency , critical thinking, analytical reasoning ,research skill &team work
- Allied / GEC -Exposure beyond the discipline
- AECC- Ability Enhancement Compulsory Course (Professional English & EnvironmentalStudies) - Additional academic knowledge, psychology and problem solving etc.,
- SEC-Skill Enhancement Course - Exposure beyond the discipline (Value Education ,Entrepreneurship Course, Computer application for Science, etc.,
- NME -Non Major Elective – Exposure beyond the discipline
- DSE – Discipline specific elective –Additional academic knowledge, critical thinking, and analytical reasoning-Student choice - either Internship or Theory papers or Project + 2 theory paper. If internship – Marks = Internal (150 (75+75) two midterm evaluation through Viva voce
+ Report 150+ External Viva voce 100 = 400, If Project – Marks = Internal -50 +Thesis - 100 + Viva voce 50 = 200 + 2 theory paper = 200 = 400
- MOOCs – Massive Open Online Courses
- *T-Theory, P- Practical

Allied Subjects offered

1. Basic Nutrition
2. Basic Nutrition Lab
3. Family Meal management
4. Family Meal management Lab
5. Early Childhood Care and Education
6. Early Childhood Care and Education Lab
7. Food preservation / Bakery confectionary
8. Food preservation / Bakery confectionary Lab

Semester - I				
Course code:	Core Course - I	T/P	C	H/W
22BHF1C1	FOOD SCIENCE	T	5	5
Objectives	To enable the students to <ul style="list-style-type: none"> ➤ Gain knowledge of food groups, food compositions and their significance ➤ Study different methods of cooking foods and gain experience in food preparations. 			
Unit -I	Introduction to Foods - Concept of food, nutrients, classification of foods, food groups and uses. Methods of cooking – objectives, merits and demerits; moist heat methods – boiling, steaming, blanching, poaching, steaming, simmering, pressure cooking; dry heat methods – baking, roasting, grilling, parching; frying – sautéing, deep fat, shallow fat; microwave cooking, solar cooking.			
Unit-II	Cereals and Millets – Classification, nutritional composition, structure, parboiling, Cereal products; cereal cookery – effect of moist and dry heat, gelatinization, factors affecting fermented foods, Pulses, Nuts and Oilseeds – Classification, nutritional composition, structure, toxicants; processing – soaking, germination, fermentation, pulse cookery – methods, factors affecting and changes occur during cooking. Fats and Sugars - Fats and Oils: Composition, smoking temperature, rancidity and its types. Sugars: Classification, sources, uses in cookery			
Unit -III	Vegetables and Fruits - Classification, nutritional composition; pigments – water soluble, and fat soluble. Properties and functions of enzymes, tannins, pectin, acids and flavones. Selection of cooking methods. Factors affecting – changes during cooking; Causes of enzymatic browning, prevention and conservation of nutrients			
Unit- IV	Milk and Milk Products - Nutritional composition, kinds of milk, processing – pasteurization, Homogenization and standardization of milk; milk products – butter, ghee, cheese, dehydrated milk; milk cookery– problems encountered in cooking milk.			
Unit -V	Flesh Foods and Beverages Meat: Classification, nutritional composition, selection, postmortem changes, storage, cooking methods, effects, factors affecting, uses. Egg: Types of eggs, Structure, composition, nutritional composition, quality of eggs, egg cookery and uses. Poultry and fish: Types of Poultry, nutritional composition, selection, storage, cooking methods and uses. Fish: Types of fish, selection, storage, cooking methods and uses. Beverages - Types of Beverages and its health benefits.			
Reference and Textbooks				
Kay Yockey Mehas, Sharon Lesley Rodgers (2002) <i>Food Science: The Biochemistry of Food and Nutrition</i> Glencoe/McGraw-Hill.				
Norman N.Potter Joseph H. Hotchkiss (1995) <i>Food Science</i> , Fifth edition, Springer.				
Shakuntala Manay and Shadaksharaswamy (1995) <i>Foods, Facts and Principles</i> , Wiley Eastern Co., New Delhi.				
Srilakshmi B (2003) <i>Food science</i> 3 rd Edition, New Age International Pub, New Delhi.				
Subbulakshmi Shoba A Udipi (2006), <i>Food Processing and Preservation</i> New Age				

International Publisher.

Semester - I

Course code: 22BHF1P1	Core Practical - I FOOD SCIENCE - LAB	T/P P	C 4	H/W 4
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Objectives	<ul style="list-style-type: none">➤ To gain knowledge in food handling techniques➤ To understand changes during cooking in different foods.
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- EXPERIMENTS :**
1. Principles of food safety and Lab management Techniques, measurement of ingredients, determination of edible Portion
 2. Cereal cookery: Microscopic examination of starches, gelatinization of starch
 3. Granules, gluten formation, methods of cooking coarse and fine cereals.
 4. Preparation of selected cereal and millet based recipes cooking quality of raw and parboiled rice by different methods - Pressure cooker, straining, absorption, steaming and microwave cooking.
 5. Pulse cookery: Factors affecting pulse cookery – soaking, addition of acid, alkali, enzyme, hardness of water – preparation of selected recipes
 6. Vegetables and fruits: Browning reaction, color and textural changes on cooking; preparation of selected recipes. Beverages – types and preparation
 7. Milk cookery: Problems in milk cookery and their prevention, milk preparations, cheese, curds, milk kafir
 8. Egg cookery: Boiling and parching, omelet and custard, egg milk preparations; quality determination of egg
 9. Meat, fish and poultry: Methods of cooking, factors affecting, common recipes
 10. Frying of foods in oil, smoking temperature, factors affecting absorption of oil, free fatty acid estimation
 11. Stages of sugar cookery – white sugar, jaggery, palm jiggery and cane jaggery crystallization of sugar, sugar products.

Reference and Textbooks

- Mathew S (2001) *Practical manual of introductory foods*, Agrobios India, Jodhpur
- Mohini Sethi and Eram S Rao (2001) *Food Science – Experiments and Applications*, CBS Publishers, New Delhi
- Srilakshmi B (2003) *Food Science – Laboratory manual*, Scitech Pub Pvt Ltd, Chennai
- Usha Chandrasekaran (2002) *Food Science and its application to Indian Cookery*, Phoenix Pub, New Delhi.

Semester - II				
Course code: 22BHF2C1	Core Course - II	T/P	C	H/W
	HUMAN PHYSIOLOGY	T	5	5
Objectives	<ul style="list-style-type: none"> ➤ To enable the students to understand the basic structure and functions of human body ➤ To create awareness about common diseases / disorders affecting each system. 			
Unit -I	<p>Digestive System - Brief description of organs of the GI tract, Accessory organs of digestion – liver, gall bladder and pancreas, Digestion and absorption of food</p> <p>Nervous system - Elementary anatomy of nervous system, Functions of different parts of the brain, Autonomic, sympathetic and parasympathetic nervous system.</p> <p>Sense Organs – Eye: structure and functions. Ear: structure and functions. Nostrils: Structure and functions.</p>			
Unit-II	<p>Respiratory System - Respiratory organs -structure and their functions – Mechanism of respiration.</p> <p>Lymphatic System - Lymph, Lymph glands and its functions.</p>			
Unit -III	<p>Cardiovascular System: Blood: Composition and functions. Blood clotting and its significance. Blood groups, Blood transfusion and its importance, Structure of human heart and functions – Cardiac cycle, blood pressure, pulse pressure.</p>			
Unit- IV	<p>Skin – Structure and functions, Regulation of body temperature.</p> <p>Excretory system - Structure and function of organs of urinary system. Mechanism of urine formation.</p>			
Unit -V	<p>productive system: Reproductive system of male and female – menstrual cycle, menarche and menopause. Fertilization</p> <p>Endocrine system - Listing of endocrine glands and location, functions of thyroid, parathyroid, adrenal and pituitary glands.</p>			
Reference and Textbooks				
<p>Guyton A C, Hall J E (1996): <i>Text book of Medical Physiology</i>, Prism Books (Pvt) Ltd, Bangalore</p> <p>Winwood (1988) <i>Sear's Anatomy and Physiology for nurses</i>, Edward Arnold, London</p> <p>Chatterjee C C (1988) <i>Text book of Medical physiology</i>, W B Saunder's Co, London</p> <p>Kumar R and Kumar M (2004) <i>Guide to prevention of lifestyle diseases</i>, Deep and Deep publications, New Delhi.</p>				

Semester - II				
Course code: 22BHF2P1	Core Practical - II	T/P	C	H/W
	HUMAN PHYSIOLOGY - LAB	P	4	4
Objectives	<ul style="list-style-type: none"> ➤ To Utilize the knowledge learnt to administer first aid for common emergency procedures. ➤ To acquaint the students with basic principles of home nursing. 			
EXPERIMENTS :				
<ol style="list-style-type: none"> 1. Estimation of one's own haemoglobin and blood group. 2. Demonstration of peripheral smear of blood and pointing out various blood cells, RBC and its significant. 3. Method of estimating pulse rate and blood pressure. 4. Urinary examination and significance. 5. Basic principles of first aid and home nursing with demonstration of various types of bandages and bandaging techniques. 6. Methods of artificial respiration, external cardiac massage. 7. Estimation of one's own haemoglobin and blood group. 8. Demonstration of peripheral smear of blood and pointing out various blood cells, RBC and its significant. 9. Method of estimating pulse rate and blood pressure. 10. Urinary examination and significance. 11. Basic principles of first aid and home nursing with demonstration of various types of bandages and bandaging techniques. 12. Methods of artificial respiration, external cardiac massage. 				
Reference and Textbooks				
<p>Chattarjee C.C.,(1988).<i>Text Book of Medical Physiology</i>.London:W.B.Saunders's Co.,</p> <p>Guyton A.C., Hall J.E. (1996). <i>Text Book of Medical Physiology</i>, Bangalore : Prism Books Ltd.</p> <p>Kumar, R. and Kumar, M. (2004). <i>Guide to Prevention of Lifestyle Diseases</i>. New Delhi: Deep and Deep Publications.</p> <p>Winwood, (1988). <i>Sear's Anatomy and Physiology for Nurses</i>. London : Edward Arnold.</p>				

Semester - III				
Course code: 22BHF3C1	Core Course - III	T/P	C	H/W
	HUMAN DEVELOPMENT	T	3	3
Objectives	<ul style="list-style-type: none"> ➤ To understand development aspects (both normal and exceptional) from conception to old age as they can be guided effectively. ➤ To have complete knowledge about the behavior pattern of the individual and various factors influencing them. ➤ To Provide adjustment in marital life. 			
Unit -I	<ol style="list-style-type: none"> 1. Growth and Development : The concept of growth and development, Factors that influencing development process. 2. Prenatal Development - Conception, signs and symptoms, stages and complications of pregnancy. Types of child birth. Prenatal influences, diet and nutritional care during pregnancy, kinds of birth injuries. 3. Post-natal - care, prevention of gynecological complications, methods of feeding and importance of breast feeding and weaning practices. 			
Unit-II	Infancy – definition, physical, motor, social, emotional, cognitive and language development, Minor ailments of infants. Care of infants - feeding and immunization. Importance of psychological needs.			
Unit -III	<p>Early Childhood – definition, physical, motor, emotional, social, cognitive and language development, creativity, importance of play, importance of family relationship, behavior problems – causes and treatment.</p> <p>Late Childhood – definition, physical, social, emotional, cognitive and language development, common behavior problems and its causes.</p>			
Unit- IV	<p>Adolescence – definition, physical, emotional, intellectual and motor development, personal adjustment and maladjustment. Delinquency – causes, prevention and rehabilitation. Drug addiction and alcoholism – rehabilitation.</p> <p>Children with special needs – definition, classification of each exceptional children, characteristics and rehabilitation of children with special needs.</p>			
Unit -V	<p>Adulthood – characteristics and developmental tasks.</p> <p>Old Age – physical and psychological changes, problems of the aged, family attitude towards aged, place of the aged in Indian Society.</p>			
Reference and Textbooks				
<p>Arya Subash,C. , 1970 <i>Infant & child care of the Indian Mother</i>,Vikas Publishing Co., Delhi.</p> <p>Babu,R.E. , 1953 <i>Marriage and the Family</i>,New York:MC Graw– Hill Book Company.</p> <p>Charles, S.P., 1983 <i>Adolescent Psychology</i>, Vikas House, New Delhi.</p> <p>Devadass, R.P; 1996 <i>Jaya, N. A Text Book on Child Development</i>, Macmillan Indian Ltd., Delhi.</p> <p>Duvall,M.E., 1972 <i>Marriage and Family Development</i>,New York: J.P. Lippincott Co.</p> <p>Hurlock, E.B. 1975 <i>Development psychology</i> Tata Mc Graw Hill Publishing Co, Ltd, New Delhi.</p> <p>Hurlock, E.B. 1973 <i>Adolescent Development</i>, Tata McGraw Hill Co. Ltd, New Delhi.</p> <p>Landias, P.H. 1954 <i>Your Marriage and Family Living</i>, New York: MC Graw – Hill Book Company.</p> <p>Mussen etal. 1990 <i>Child Development and personality</i>, Harper and Row publishers, New York.</p> <p>Papalia, D.E. 1997 <i>Human Development</i>, Tata McGraw Hill Publishing company Ltd, New Delhi.</p> <p>Parikh, S; 1993 Sudarshan, R. <i>Human Development and Structural Adjustment</i>, UNPP, Delhi.</p> <p>Suriakanthi, A. 1992 <i>A Handbook on Human Development</i>, Gandhigram Rural University, Gandhi gram.</p> <p>Suriakanthi. 1991A. <i>Child Development</i>, Swagath Fine Auto, Sivakasi.</p>				

Semester - III				
Course code: 22BHF3C2	Core Course - IV	T/P	C	H/W
	PRINCIPLES OF NUTRITION	T	3	3
Objectives	To enable the students to ➤ Gain knowledge on nutrients and their functions ➤ Understand nutritional needs of different age groups.			
Unit -I	Nutrition: Definition, nutritional status, nutritional requirements, malnutrition, balanced diet. Meal planning – factors affecting, nutritional classification of foods Energy : Definition, Units, calorific value of foods – bomb calorimeter; energy requirements– basal metabolism, specific dynamic action of foods, energy balance, direct and indirect calorimetry, physiological energy value of foods.			
Unit-II	Carbohydrates, Proteins and Lipids: Food sources, biological functions, requirements, deficiencies – causes, symptoms, prevention and treatment of PEM - Kwashiorkor and Marasmus. Fiber: Definition, classification, nutritional role.			
Unit III	Vitamins: Vitamin A, D, E, K, C and B complex – Thiamine, Niacin, Riboflavin and Folic Acid – History, classification, chemistry, food sources, biological role, requirement, deficiency, causes, symptoms, prevention and treatment Minerals and Water: Macro and micro minerals – Iron, Calcium, Phosphorus, Magnesium, Copper, Zinc, Sodium and Potassium – functions, food sources, biological role, requirement, deficiency – causes, symptoms, prevention and treatment.			
Unit IV	Nutrition in Pregnancy and Lactation: Symptoms and complication in pregnancy, physiological needs and nutritional support, additional allowances; pre and post delivery nutritional care, nutritional requirements. Nutrition in Infancy: Growth pattern of infants, nutritional requirements, breast milk Vs bottle milk, Weaning and supplementary foods.			
Unit V	Nutrition during Ages of Preschool, School going and Adolescence: growth and development during preschool period, good food habit formation, nutritional requirements for preschool, school going children and adolescents. Food fads, anorexia nervosa and bulimia Nutrition for Adult and Old Age: Nutritional requirement – physical activity, physiological changes in old age – modification of diet.			
Reference and Textbooks				
Gibney, M.J et al (2005) <i>Clinical Nutrition</i> I edition, Blackwell Science. Gopalan C Ramasastry and Balasubramaniam (2000) <i>Nutritive value of Indian Foods</i> , NIN, Hyderabad. Michelle McGuire Kathy A Beerman (2007), <i>Nutritional Science</i> Thomson New York. Robinson C H (1986) <i>Normal and Therapeutic Nutrition</i> 17 th Ed, Macmillan Pub Co, Srilakshmi (2003) <i>Dietetics</i> , New Age International, New Delhi . Srilakshmi B (2003) <i>Nutrition Science</i> , New Age International, New Delhi. Williams, M.H (2002) <i>Nutrition for health and fitness</i> Mc Graw Hill, Boston. Wordsworth.				

Semester - III				
Course code:	Core Practical - III	T/P	C	H/W
22BHF3P1	PRINCIPLES OF NUTRITION -LAB	P	3	3
Objectives	➤ Plan diets for different age groups based on nutritional requirements.			
EXPERIMENTS :				
<ol style="list-style-type: none"> 1. Formulation of preparation of weaning foods for infants. 2. Planning and preparing a balanced diet for preschool age, school age, adolescent and adulthood. 3. Planning and preparing menu for special physiological conditions such as pregnancy, lactation and old age. 4. Planning balanced diet for different income groups and different category of work – sedentary, moderate and heavy work. 				
Reference and Textbooks				
<p>Gopalan C Ramasastry and Balasubramaniam (2000) <i>Nutritive value of Indian foods</i>, NIN, Hyderabad</p> <p>Srilakshmi (2003) <i>Dietetics</i>, New Age International, New Delhi</p> <p>Srilakshmi B (2003) <i>Nutrition Science</i>, New Age International, New Delhi</p> <p>Williams, M.H (2002) <i>Nutrition for health and fitness</i> Mc Graw Hill, Boston</p>				

Semester - IV				
Course code: 22BHF4C1	Core Course - V	T/P	C	H/W
	INTRODUCTION TO TEXTILES	T	4	4
Objectives	<ul style="list-style-type: none"> ➤ To develop concept about the textile fibres, yarns, weaves, prints and finishes. ➤ To understand the basics of clothing 			
Unit -I	Introduction to textile Fibres; Classification of fibre; natural and synthetic; cellulose, protein, mineral; plant and animal fibre; major and minor fibres. Characteristics of fibres, manufacturing of major fibres – cotton, wool, linen, silk.			
Unit-II	Yarn – Definition, Types and properties of different yarns. Spinning – Mechanical and Chemical, Yarn count and twist – S twist and Z twist.			
Unit -III	Fabric construction – Basic loom – parts and operations. Weaving – types of weaves – basic and decorative.			
Unit- IV	Non woven fabric construction – knitting, Lacing, Netting, Blended fabrics.			
Unit -V	Finishes – Basic finishes and special finishes. Dyeing – classification of dyes and method of dyeing. Printing – hand printing and machine printing.			
Reference and Textbooks				
Bernard P. Corbman, <i>Textiles Fiber to Fabric</i> , McGraw Hill International Editions, New Delhi, Sixth edition, 2005.				
Bernard. P. corbman, <i>Textoles – Fibre to fabric</i> , Mc Graw Hill Book Company.				
Corbman B.P andPotter.M.D, <i>Textiles fiber to fabric</i> , International Edition, Mc Graw-hill book Co, New York,1984.				
Deepali Rastogi and SheetalChopra, <i>Textile Science</i> , Orient Black-Swan Private Limited, Hyderabad, 2017.				
Hollen N Saddler, L and Langford A, <i>Textiles</i> , Mac Million, New York.				
Joseph J Pretal, <i>Fabric Science</i> , Fairchild Publications ,Newyork, 5th edition , 1990.				
Kaplan, N.S., <i>Textile Fibres</i> , Abhishek Publications, Chandigarh, 2008.				
Mary Mathews, <i>Practical clothing construction</i> , Part–I Bhattarams Reprographics, 2002.				

Semester - IV				
Course code: 22BHF4C2	Core Course - VI	T/P	C	H/W
	NUTRITIONAL BIOCHEMISTRY	T	4	4
Objectives	This course will enable the students to <ul style="list-style-type: none"> ➤ Develop an understanding of the principles of bio chemistry (as applicable to human nutrition) ➤ Obtain an insight into the chemistry of major nutrients and physiologically important compounds. 			
Unit -I	Introduction to Bio Chemistry – Definition, Objectives, Scope and inter-relationship between bio chemistry and other biological sciences. Carbohydrates - Structure and properties of Monosaccharides – glucose, fructose, galactose, Disaccharides – maltose, lactose, sucrose, Polysaccharides – Dextrin, Starch, Glycogen. Carbohydrates glycolysis, gluconeogenesis, glycogenesis, glycogenolysis, blood sugar regulation.			
Unit-II	Lipids - Types and properties of Fatty acids, composition and properties of fats, significance of Acid Value, Iodine Value and Saponification Value, Classification and structure of phospholipids, structure of glycolipids, types and structure of sterols, Lipids – oxidation and bio synthesis of fatty acids. Lipoproteins – types, composition, role and significance in diseases.			
Unit -III	Proteins – Structure and properties of Amino Acids, Essential and Non essential Amino Acids. Definition, Classification, Structure, properties and functions of proteins. Proteins – general reactions of amino acid, amino acid metabolism - tyrosine, histidine, phenylalanine, glutamic acid and alanine, urea cycle.			
Unit- IV	Enzymes – Definition, Types and classification of enzymes, definition and types of co-enzymes, specificity of enzymes, enzyme inhibition Introduction to genetic control of metabolism – Nucleic acids, types, composition, structure, replication, transcription, genetic code, Elementary knowledge of bio synthesis of proteins. Fluid - electrolyte and Acid – Base Balance. Minerals – Biochemical role of inorganic elements			
Unit -V	Molecular aspects of transport – Passive diffusion, facilitated diffusion, active transport Biological Oxidation –Citric acid cycle,Electron transport chain Oxidative phosphorylation.			
Reference and Textbooks				
Lehninger, A.L, Nelson, D L and Cox, M M (1993): 2 nd Edition, <i>Principles of Bio – Chemistry</i> , CBS Publishers and Distributors Stryer, L (1995): <i>Bio Chemistry</i> , Freeman W H and Co. Michelle McGuire Kathy A Beerman (2007), <i>Nutritional Science</i> , Thomson Wordsworth. Murray, R K., Granner, D K., Mayes, p A and Rodwell, V W (1993): 23 rd edition, <i>Harper's Bio Chemistry</i> . Lange Medical book. Sundararaj, P and Siddhu, A., (1995): <i>Qualitative Tests and Quantitative Procedure in Bio Chemistry – a Practical Manual</i> , Wheeler Publishing.				

Semester - IV				
Course code:	Core Practical - IV	T/P	C	H/W
22BHF4P1	NUTRITIONAL BIOCHEMISTRY - LAB	P	3	3
Objectives	<ul style="list-style-type: none"> ➤ To enable students to understand the role of nutrients in the body. ➤ To acquire skills to analyse various blood parameters using different methods. 			
EXPERIMENTS :				
Carbohydrates				
<ol style="list-style-type: none"> 1. Reaction of Mono, Di and Polysaccharides and their identification in unknown mixtures 2. Estimation of reducing and total sugars in foods 3. Estimation of lactose in milk 				
Fats				
<ol style="list-style-type: none"> 1. Reactions of fats and oils 2. Determination of Acid value, Saponification of oils 				
Proteins				
<ol style="list-style-type: none"> 1. Reactions of proteins in foods 2. Reactions of amino acids and their identification in unknown mixtures 				
Vitamins				
<ol style="list-style-type: none"> 1. Estimation of ascorbic acid content of foods by titrimetric method / colorimetric method 				
Minerals				
<ol style="list-style-type: none"> 1. Estimation of calcium in foods by titrimetric method 2. Estimation of chloride in table salt by titrimetric method 3. Estimation of phosphorus by Colorimetric method. 				

Semester - V				
Course code:	Core Course - VII	T/P	C	H/W
22BHF5C1	DIET THERAPY	T	4	4
Objectives	<ul style="list-style-type: none"> ➤ Know the principles of diet therapy ➤ Understand the modifications of normal diet for therapeutic purposes. 			
Unit -I	<p>Basic Concepts of Diet Therapy Therapeutic adaptations of normal diet, principles and classification of therapeutic diets. Routine Hospital Diets: Regular, light, soft fluid, parenteral and enteral feeding. Nutritional care for overweight and obese, Underweight.</p>			
Unit-II	<p>Febrile conditions – Typhoid, Tuberculosis and Malarial infections and surgical conditions, GI tract diseases, intestinal diseases and Anemia. Malabsorption syndrome, celiac sprue, tropical sprue. Intestinal brush border deficiencies, protein losing enteropathy.</p>			
Unit -III	<p>Diseases of the Liver – Jaundice, Cirrhosis of liver, Viral Hepatitis, Hepatic Encephalopathy, Wilson’s disease. Diseases of Gall Bladder and Pancreas – Cholelithiasis, Cholecystitis, cholecystectomy, Pancreatitis .Diet in disease of the endocrine pancreas – diabetes mellitus.</p>			
Unit- IV	<p>Diseases of the cardiovascular system – Atherosclerosis and hyper tension, Diseases of Musculoskeletal system, renal diseases – glomerular nephritis – acute and chronic, End stage renal disease and dialysis.</p>			
Unit -V	<p>Management of cancer, Surgery, trauma and burns.Inborn errors of metabolism – biochemical basis and nutritional Management of PKU and Maple Syrup Urine Disease, Allergies: Food allergy, types of allergens, reactions – diagnosis and treatment.</p>			
Reference and Textbooks				
Gibney, M.J et al (2005) <i>Clinical Nutrition</i> I edition Blackwell Science				
Joshi S A (1992) <i>Nutrition and Dietetics</i> , Tata McGraw Hill Publications, New Delhi				
Mahaj L K Arlin M T (1992) <i>Kruse’s Food, Nutrition and Diet Therapy</i> , 8 th Ed W B Saunders Company, London				
Mahaj L K Arlin M T (1992) <i>Kruse’s Food, Nutrition and Diet Therapy</i> , 8 th Ed W B Saunders Company, London				
Ruth .A.Roth IX (2007) <i>Nutrition and Diet Therapy</i> Thomson Delmar Learning, Australia				
Townsend,C.E(2000) <i>Nutrition and Diet therapy</i> , VII edition, Delmar Publisher Albany				
Williams, M.H (2002) <i>Nutrition for health and fitness</i> , Mc Graw Hill, Boston.				

Semester - V				
Course code: 22BHF5C2	Core Course - VIII	T/P	C	H/W
	EARLY CHILDHOOD CARE AND EDUCATION	T	4	4
Objectives	<p>The course will enable students to:</p> <ul style="list-style-type: none"> ➤ Understand the need and significance of early childhood care and education, ➤ Understand the policy perspectives on ECCE in India and world, ➤ Develop knowledge and skills in designing the curriculum for children below six years and ➤ Develop an insight into the educational thoughts of Indian and western educationists on ECCE 			
Unit -I	<p>Concept and Significance of ECCE - Understanding terminologies, “Child”, “Childhood”, and “Early Childhood Care and Education” · Importance and significance of ECCE .- Developmental perspective, NeuroScience perspective, Human right perspective. Contributions of Thinkers and Educationists in ECCE - educational thoughts of Frobel, John Dewey, Montessori, Gandhi, Tagore and Aurobindo on understanding of childhood and programmes and for young children.</p>			
Unit-II	<p>Policies and Programmes in ECCE in India - ECCE Policy Framework: National Policy on Education (1986), Article 45 in Indian Constitution and 86th Amendment, National Curriculum Framework (2005), National Policy on ECCE (2013) Sustainable Development Goals (SDG); New Education Policy 2020. Programmes and provisions in ECCE in India: Public Sector: ICDS; Rajiv Gandhi Crèche Scheme; ECCE in SSA; Private sector provisions in ECCE; Voluntary Sector initiatives in ECCE.</p>			
Unit -III	<p>Physical arrangements needed for an ideal ECCE centre – Building, site, safety, space;Furniture – types, shapes, safety. Other equipment – play equipment – selection, use and storage. Setting up the learning environment – indoor area, outdoor area, learning activity corners. Quality Standards as per ECCE policy.</p>			
Unit- IV	<p>Early Childhood Curriculum – Definition and concept of curriculum: Curriculum Approaches – Subject centered, learner centered, community centered. Developmentally appropriate practice (DAP) – definition and core considerations, myths and consequences of developmentally inappropriate ECE practices. Components and essential features of developmentally appropriate ECCE curriculum. Planning a developmentally appropriate curriculum – approaches, key principles and types of plans.</p>			
Unit -V	<p>Organizational Management and Community Involvement Evaluation of ECCE ECCE professionals- competence, skill and methodology.–programmes- infrastructure, safety, school–Maintenance of records. Working with parents and community for continuity of home interactions. Evaluation of pre school participation.</p>			
Reference and Textbooks				
<p>Aggarwal, J. C. (2007). <i>Early Childhood Care and Education: Principles and Practices</i>. Shipra: New Delhi.</p> <p>Arni, K. and Wolf G. (1999). <i>Child Art with Everyday Materials</i>. TARA Publishing.</p> <p>Fleer, M. (2010). <i>Early learning and development: Cultural –historical concepts in play</i>. Cambridge: Cambridge University Press</p> <p>Kaul, V. (2009). <i>Early Childhood Education Programme</i>. National Council of Educational</p>				

Research and Training. Newdelhi.

Mohanty, J. Mohanty, B. (1996). *Early childhood care and Education*. Deep And Deep Publication, New Delhi.

Morrison, G. S. (2003). *Fundamentals of early childhood education*. Merrill/Prentice Hall:

Muralidharan, R. and Banerji.V. (1989) *A Guide Booklet of Nursery Teachers*, New Delhi : NCERT.

Swaminathan, M. (1998). *The First five Years*. Sage Publications.

Virginia Singh, A. (1995). *Playing to Learn: A training manual for Early Childhood Education*. M. S. Swaminathan Research Foundation.

Semester - V				
Course code: 22BHF5C3	Core Course - IX CLOTHING CONSTRUCTION	T/P T	C 4	H/W 4
Objectives	<ul style="list-style-type: none"> ➤ To learn about the parts and functions of sewing machines and tools used for garment construction. ➤ To learn, understand and develop various types of seams, hems, fullness and plackets ➤ To learn about the applications of sleeves, yokes, collars and pockets. 			
Unit -I	Parts and functions of a single needle machine, essential tools – cutting tools, measuring tools, marking tools, general tools, pressing tools, seams and seam finishes – types, working of seams and seam finishes Hems – types, stitches used.			
Unit-II	Fullness - definition, types. Darts, tucks, pleats, flares and godets, gathers and shirts, frills or ruffles, flounces, facings – bias facing, shaped facing and decorative facing. Binding–single bias binding, double bias binding.			
Unit -III	Plackets – Definition, characteristics of a good placket, types – inconspicuous placket and conspicuous plackets. Fasteners - conspicuous (Button and button-holes, button loops, button with holes, shank buttons, eye lets and cords). Inconspicuous (press buttons, hooks and eyes, zips).			
Unit- IV	Sleeves - definition, types, set-in-sleeves–plain sleeve, puff sleeve, bishop sleeve, bell, circular. Modified arm hole - squared arm hole. Cap sleeve and Magyar sleeve. Sleeve and bodice combined - raglan, kimono and dolman. Yokes - types, simple yoke, yoke with fullness with in the yoke, yoke supporting / releasing fullness.			
Unit -V	Collars - definitions, types, peter pan, scalloped, puritan, sailor, square, rippled, full shirt collar, open collar, Chinese, turtle neck, shawl collar pockets – types – patch pocket, bound pocket, pocket in a seam, front hip pocket.			
Reference and Textbooks				
Mary Mathews, <i>Practical Clothing Construction – Part I and II</i> , Cosmic Press, Chennai (1986)				
The Complete Book of Sewing – Dorling Kindersley Limited, London (1986)				
Sewing and Knitting – A Readers Digest, step- by – step guide, Readers Digest Pvt Ltd, Australia.				

Semester - V					
Course code: 22BHF5C4	Core Course - X		T/P	C	H/W
	FAMILY RESOURCE MANAGEMENT AND INTERIOR DESIGN		T	4	4
Objectives	<ul style="list-style-type: none"> ➤ To recognise the importance of wise use of resources to achieve one's goals. ➤ To acquire the knowledge of various elements and principles of art in Interior. ➤ To learn skills in using the basic principles of art at home, in commercial situations and other occasions. ➤ To apply theoretical knowledge of interior decoration to practical Situations. 				
Unit -I	<ol style="list-style-type: none"> 1. Management – Definition, principles and elements involved in management, 2. Process – planning, controlling and evaluation. 3. Decision Making – steps, importance, types of decisions, Habitual versus Conscious decision making. Individual and group decisions, resolving conflicts in group decisions. 4. Management Concepts - Goals and Values – their relationship to decision making. 5. Resources – Human and non-human resources. How they are utilized to achieve family goals. 6. Time and Energy Management – Time and energy as resources. Management process applied to the use of time and energy. 				
Unit-II	<ol style="list-style-type: none"> 1. Human Wants – Their nature and classification. The concepts of Marginal utility, law of Diminishing Marginal Utility and the Law of Substitution and their application. Law of Demand. 2. Standard of Living – Definition, constituents – Means for raising the standard of living of families. 3. Family Income – Money income and Real income, sources of income. Family expenditure (family income management), family budget, its main items. Engles's Law of Consumption. 4. Financial Records – Types, purposes, maintenance. 5. Savings – Needs for savings in the family, types of savings institutions and schemes. 				
Unit -III	<ol style="list-style-type: none"> 1. Interior decoration: Place of art in everyday life. Good taste and its importance. 2. Design : Elements of design, types of design, characteristics of good design. Principles of design – Harmony, Emphasis, Proportion, Balance and Rhythm. 3. Colour: Qualities of color. hue, value, Intensity, colors and emotions, advancing and receding colors, prang colour system.and colors in interior decoration. 4. Furniture: - Selection, arrangement and care of furniture in the living area, dining area, study area, and bed room. 				
Unit- IV	<ol style="list-style-type: none"> 1. Furnishings : Factors in the selection, types, use and care of furnishing materials (Draperies and curtains). 2. Floor coverings : Factors for selecting floor coverings, salient features of carpet, types, use and care of floor coverings. 				
Unit -V	<ol style="list-style-type: none"> 1. Accessories : Selection, use and care of accessories .Flower arrangement-Types, principles and steps in preparing flower arrangement and Other art objects. 2. Home illumination : Functions, factors to be considered, types of illumination, planning for illumination for various areas. 				
Reference and Textbooks					
Alexander, M.J., “ <i>Designing Interior Environment</i> ”, Har court Brace Jauaroui Inc., New York. 1972.					

Goldstein. H and Goldstein. V. "*Art in Everyday Life*", Macmillan and Company, New York, 1966.

Graig. H.T., And Rush, C.H. "*Homes with Character*", D.C. Health and Company, Boston, 1965.

Nickell.P. and Dorsey. J.M. – "*Management in Family Living*", John Wiley and Sons, Inc, New York, 1960.

Premavathy Seetharaman and Parveen banu "*Interior Design and Decoration*" CBS Publishers, New Delhi, 2007.

Roy Day, "*All about Decorating Your Home*" Hamlyn, London", 1976

Rutt, A.H., "*Home Furnishings*", John Wiley and Sons, New York, 1961

Sherwood, R.F. "*Homes Today and Tomorrow*": Chart Bannet, Co., Inc., PEORIC, Illinois, 1972

Semester - V				
Course code:	Core Practical - V	T/P	C	H/W
22BHF5P1	DIET THERAPY – LAB	P	4	6
Objectives	➤ To Apply the principles of diet therapy in modifications of normal diet for therapeutic purposes			
EXPERIMENTS :				
<ol style="list-style-type: none"> 1. Planning and preparation of fluid food preparation, clear fluid preparations 2. Planning and preparation of recipes for soft, semi solid diet, mechanical and pureed 3. Planning and preparation of recipes using protein concentrates, sugar substitutes 4. Planning and preparation of low fat and low calorie recipes, high fibre and low fibre recipes, bland recipes 5. Planning and preparation of a menu for following conditions: overweight, obese, Underweight and nutritional Anemia 6. Planning and preparing a menu for a Febrile conditions – Typhoid, Tuberculosis and Malarial infections 7. Planning and preparing a menu for a upper GI tract diseases, intestinal diseases 8. Planning and preparing a menu for a Malabsorption syndrome 9. Planning and preparing a menu for a Vital hepatitis, jaundice, cirrhosis, cholecystitis. 				

Semester - V				
Course code: 22BHF5P2	Core Practical - VI	T/P	C	H/W
	CLOTHING CONSTRUCTION – LAB	P	4	6
Objectives	➤ To equip the students with basic knowledge and skills required for construction of various garment components.			
EXPERIMENTS :				
<ol style="list-style-type: none"> 1. Preparation of samples for seam (any 5)-plain, Top Stitched, Flat fell, piped seam. 2. Preparation of samples for seam finishes (any 3) - overcast, Hem, Edge stitched, bound. 3. Preparation of samples for fullness-darts, tucks - pin, cross, group tucking with scalloped effect, Pleats -knife, box, kick, gathering by machine, elastic. Ruffles-single, double. 4. Preparation of samples for facing and binding-bias facing, shaped facing, binding. 5. Preparation of samples for fasteners- button and buttonhole, press button, hook and eye. 6. Preparation of samples for sleeves-plain sleeve, puff sleeve (any one type), 7. Preparation of samples for collar –(Any two type) 8. Preparation of samples for pocket-Patch Pocket. 				

Semester - VI						
Course code: 22BHF6E1	DSE - I			T/P	C	H/W
	COMMUNITY NUTRITION			T	6	6
Objectives	<ul style="list-style-type: none"> ❖ To enable students to learn the concepts of community nutrition ❖ To enable the students to assess the health status of the community Contents. 					
Unit -I	Community Nutrition –meaning and concept of community nutrition, relationship between health and nutrition. Malnutrition and infection- vicious cycle. Application of modern science and technology for effectively increasing the production and conservation of foods.					
Unit-II	Communicable diseases and its control Socioeconomic and demographic status – relation to nutritional status importance of sanitation and hygiene in health. Strategies to combat nutritional deficiencies: Food fortification, food enrichment, nutrition and health education, vitamin A prophylaxis program, prophylaxis against nutritional anemia, control of IDD.					
Unit III	Nutritional status - definition, Methods of Assessments - anthropometry, biochemical, clinical, and biophysical assessment. Diet surveys - food weighment survey, 24 hour recall method, food dairy and food frequency.Vital statistics- mortality and morbidity statistics.					
Unit IV	Nutrition Education- objectives and methods used, integration of nutrition education with extension work, when to teach, whom to teach and who is to teach. Principles of planning, executing and evaluating, nutrition education programmes, problems in conducting nutrition education programmes.					
Unit V	Nutrition programmes national and international organizations concern with food and nutrition- vitamin-A prophylaxis, anaemia, iodine, ICDS, ICMR, NIN, CFTRI, DFRL and FAO, WHO and UNICEF ,IVACG,INACG & IZACG.					
Reference and Textbooks						
Annual Reviews of Nutrition, Annual Review Inc, California, USA.						
Baeurle, P.A.(ed.)(1992). <i>Inducible Gene Expression</i> . Part I: Environmental Stresses and Nutrients. Boston. Birkhauser.						
Berdanier, C. D. and Hargrove, J.L.(ed)(1996). <i>Nutrients and Gene Expression: Clinical Aspects</i> .Boca Raton, FL CRC Press.						
Bodwell,C.E. and Erdman,J.W.(1998). <i>Nutrient Interactions</i> . Marcel Dekker Inc. New York.						
Chandra,R.K. (ed.)(1992). <i>Nutrition Immunology</i> . ARTS Biomedical. St John’s New Foundland.						
Indian Council of Medical Research. <i>Nutritive Value of Indian Foods</i> -Latest Publication.						
Indian Council of Medical Research. <i>Recommended Dietary intakes for Indians</i> - Latest Recommendations.						
Shills, M.E.; Olson,J.;Shike,M. and Roos,C.(1998): <i>Modern Nutrition in Health and Disease</i> . 9th Edition. Williams and Williams.A. Beverly Co. London.						
WHO Technical Report Series.						
World Reviews of Nutrition and Dietetics.						
Journals						
Nutrition Reviews						
Journal of Nutrition						
American Journal of Clinical Nutrition.						
British Journal of Clinical Nutrition						
European Journal of Clinical Nutrition.						
International Journal of Vitamin and Nutrition Research						

Semester - VI				
Course code: 22BHF6E2	DSE - II	T/P	C	H/W
	HOME SCIENCE EXTENSION AND COMMUNICATION	T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To enable the students to understand the malnutrition problems and prevalence in India. ➤ To provide knowledge on the national effort in combating malnutrition and ➤ To impart knowledge on national and International contributor towards national improvement in alleviating nutrition problems. 			
Unit -I	Introduction to extension education and Community development, Philosophy and Principles of extension education. Origin, History, Organization and functions of community development and Extension service in India.			
Unit-II	Home Science Extension - concept, philosophy, objectives. Home science extension Workers - qualities and activities. Components of extension and dimensions of extension education – meaning, process and principles of learning in extension.			
Unit -III	<p>A. Principles and methods of extension work</p> <ol style="list-style-type: none"> a. The learning and teaching process – effective teaching through different methods – individual, group and mass approach. b. Audio visual aids in extension work – motion pictures, radios, slides, flannel graphs, flash cards, graphs and puppet shows. <p>B. Program planning - Meaning and importance, steps involved in programme planning. Welfare programmes for women and children : IRDP, ANP, ICDS, TRYSEM, DWCRA, NAEP.</p> <p>C. Group organization and leadership in rural areas – social groups – classification, leadership – classification, role and training of a good leader.</p>			
Unit- IV	<p>Communication: Concepts, Historical background, concept and nature, Functions of Communication, Types of Communication - communication transactions; Formal and informal communication; Verbal and Non-verbal Communication. Scope of Communication - Education, training and learning industry.</p> <p>Corporate Communication, Management of Organizations, Advertising and Public relations Communication and mainstream media - newspaper, radio, television and Cinema, ICTs and web based communication, Communication for social change.</p>			
Unit -V	Understanding Human Communication, Culture and communication - Signs, symbols and codes in communication. Postulates/ Principles of Communication, Elements of Communication and their characteristics, Models of Communication, Barriers to Communication.			
Reference and Textbooks				
Addivi Reddy, "Extension Education" 1 st edition, Sree lakshmi press, Andrapradesh, 1971.				
Aravinda Chandra, Anupama Shah and Uma Joshi, "Fundamentals of Teaching Home Science", Sterling Publishers Pvt Ltd., NewDelhi, 1989.				
Dahama O.P. and Bhat Nagar.O.P., "Extension and communication for development, Oxford and IBH Publishing company New Delhi, 1985.				
Devadas .R.P, "Introduction to home science", Saradhalaya press, Coimbatore - 43.				
Food and Nutrition Board, <i>CommUnity Food and Nutrition Extension Unit</i> , Rajjaji Bhavan, Chennai - 90.				
Food and Nutrition Board, <i>Department of Women and Child Development Ministry of Human Resources Development</i> , Government of India, Shastri Bhavan, New Delhi. 1.				
Foundations of Community Health Education, Mc Graw Hill, London.				
Jelliffe, D.B. <i>The Assessment of Nutritional Status on the CommUnity</i> – WHO Monograph Series No. 53, Geneva : WHO, 1996.				

Mclaren D.S. *Nutrition in the CommUnity*, New York : John WEley and Sons. 1983.

Park and Park , *Social and Preventive Medicine*, Banarsidas Bhanot Publishers, 2009.

Shukla,P.K. *Nutritional Problem in India*. New Delhi:Prentice Hall of India Pvt. Ltd.1982

Swaminathan N. *Essential of Food and Nutrition*. Vol.I & II. BAPPCO.

Semester - VI				
Course code: 22BHF6E3	DSE - III	T/P	C	H/W
	FOOD SERVICE MANAGEMENT	T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To understand the basic principles of management in food services Units. ➤ Develop skills in setting up food service Units. ➤ To gain knowledge and develop skills in handling equipment and maintenance. ➤ To develop a knowledge base in key areas of institutional food administration. 			
Unit -I	<p style="text-align: center;">Food Service Institutions: Types of food service Institution, Commercial and Non Commercial Institutions. Commercial - Hotel, Motel, Restaurant, Bar, Pub, Fast Food Restaurant, Popular Catering. Non Commercial - Transport Catering, welfare catering, Industrial Catering, Leisure time Catering.</p>			
Unit-II	<p style="text-align: center;">Management Process: planning, controlling and evaluating goals, values and standards. Management Tools - The Organization Chart, Job Description and specification, Time schedule, Work schedule, Job Analysis and staff analysis, Budget leadership style and training, decision making and communication.</p> <p style="text-align: center;">Energy Management : Fatigue - types and causes of fatigue - principles and techniques Mundel's class of changes - work simplification.</p> <p style="text-align: center;">Personal management: recruitment and selection, Employees - Legal controls - Labor policies and welfare measures.</p> <p style="text-align: center;">Material Management: Food Materials, Cleaning, Table Ware, Equipment, staff, Time, Energy, Procedures.</p>			
Unit -III	<p style="text-align: center;">Equipment used in Food service industries: Classification of equipments - Electrical and non Electrical, equipments for food storage, preparation, serving, dishwashing and laundering. Base materials used for finishes.</p> <p style="text-align: center;">Food plant : Types of kitchen, layout of different food service establishments, drainage, water lines, lighting and ventilation adopted in different units such as kitchen, storage and dining area.</p>			
Unit- IV	<p style="text-align: center;">Quantity Food Preparation: Menu planning – Types of menu, standardization and standardized recipes portion control. Effective uses of left over.</p> <p style="text-align: center;">Quantity Food Service: Types of service, styles of service - Waiter, waitress service, counter service - snack bar, buffet service, Banquet.</p>			
Unit -V	<p style="text-align: center;">Buying and Accounting procedures in Food Service Institution: total budget, food budget, Portion control, methods of cost control, Cost accounting, Cost concepts - types of cost, Food cost control - methods of controlling food cost, break even analysis. Records to be maintained - system of book keeping - cash book, purchase book, sales book and purchase returns book, sales returns book and journals.</p> <p style="text-align: center;">Related Experience:</p> <ol style="list-style-type: none"> 1. Market survey to learn the trends in equipment available in the market. 2. Standardization of new selected quantity receipt in relation to nutritive value Cost, time and equipment. 3. Organizing preparing and serving food for three different meals for 50 members or more. 			
Reference and Textbooks				
Dr. Aggarwal D.K, <i>Housekeeping Management</i> , AMAN Publications, NewDelhi, 2006.				
Dr. Singh.R.K,, <i>Modern Trends in Hospitality industry</i> , AMANPublications, NewDelhi,2006.				
John Wiley, Book Of Yeild: <i>Accuracy in Food Costing and Purchasing</i> , 6th Edition, 2005.				
TEXT BOOKS:				
Lilli Crap, D R and Cousins J <i>A Food and Beverage Service</i> , 4th Edition, Hodder and Stoughton, 1994				
Sethi, M.,Malhan,S, <i>Catering Management: An integrated approach</i> , New Age				

International,2007.

Sudhir Andrews, *Food and Beverage Service* Training Manual, Tata McGraw Hill
Publishing Company Ltd New Delhi ,1999.

Semester - VI					
Course code:	DSE - IV		T/P	C	H/W
22BHF6E4	BAKERY AND CONFECTIONARY		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ Understand basic concepts of baking ➤ Familiarize with baking process and operations 				
Unit -I	Introduction to bakery– aims and objectives				
Unit-II	Wheat flour and its role in bakery products. Wheat – type, grading, varieties, structure, composition, principles of flour milling, and their classification. Millet based Flour – types of flour incorporated items - biscuits, cake, pastry, snacks composition, role of constituents, quality assessment.				
Unit -III	Other ingredients and their function in baking. Yeast – types, function, uses, effects of over and under fermentation. Eggs – composition, function in bakery and confectionery. Sugar – types, different forms and its uses. Fats – Composition, classification, function, effect of cooking. Milk products, emulsifiers, dried fruits, enzymes, cream, other leavening agents.				
Unit- IV	Methods of preparing - Variety of baked products – bread and bread rolls , biscuit, cake, cookies, pastries. Baking process – basic concepts, batch / continuous, dough mixing, dividing, moulding, panning, proofing, baking, Qualitative changes during different Unit operations.				
Unit -V	Variety of icings, Soufflé and meringue.				
Reference and Textbooks					
Borvers, J. (1992). <i>Food Theory and Application</i> (2ndEd), New York: Maxwell MacMillan International Edition.					
Kent K. L. (1975). <i>Technology of Cereals – with special reference to Wheat</i> , New York: Pergamon Press.					
Manay, N. S. and Sharaswamy, S. M. (1997). <i>Foods: Facts and Principles</i> New Delhi: New Age International Publishers.					
Matz S. A. (1989). <i>Technology for Materials of Baking</i> , England: Elsevier Science Publishers.					
McWilliams, M (2007). <i>Foods: Experimental Perspectives</i> 5th Ed, New Jersey: Macmillan Publishing Co.					
Potter, N. N. and Hutchkiss, J. H. (1997). <i>Food Science</i> , 5th Ed, New Delhi: CBS Publishers and Distributors.					
Rick Parker (2003) <i>Introduction to Food Science</i> , New York: Delmar Thomson Learning.					
Scottsmith and Hui Y.H (Editors) (2004) <i>Food Processing – Principles and Applications</i> London Blackwell Publishing.					
Subbulakshmi, G and Udipi, S. A. (2001). <i>Foods Processing and Preservation</i> , New Delhi: New Age International (P) Ltd. Publishing.					
Sultan W. J. (1976). <i>Practical Baking Manual – for students and instructors</i> , West Port: AVI Publishing.					
Swaminathan, M. (1995). <i>Food Science Chemistry and Experimental Food</i> . The Bangalore Printing and Publishing Co. Ltd.					
Vacklavick, V. and Christian, E. (2003). <i>Essentials of Food Science</i> . New York: Kluwer Academic/ Plenum Publisher.					

Semester - VI					
Course code:	INTERNSHIP		T/P	C	H/W
22BHF6I	DIET THERAPY INTERNSHIP			6	6
Objectives	<ul style="list-style-type: none"> ➤ Know the normal routine diets served in hospitals and for whom these should be served ➤ To enable students to apply the principles of planning therapeutic diets for various disease conditions ➤ To enable students gain practical experience in the management of a dietary department and patient counseling for a period of one month. 				
Contents					
<ol style="list-style-type: none"> 1. Observation and study of organization and Management of the dietary department. 2. Understanding the medical history of the patients, study of case sheets and diagnostic tests used 3. Planning therapeutic diets and computation of nutritive value 4. Observation and study of <ol style="list-style-type: none"> a. purchase storage and issue b. production c. service d. evaluation and follow up 5. Participation in diet counseling Units, experience in imparting diet counseling and understanding the records maintained in diet counseling Units 					
Reference and Textbooks					
<p>Joshi S.A. (1992). <i>Nutrition and Dietetics</i>, Tata McGraw Hill Publications, New Delhi.</p> <p>Malhan L. Kathleen M.T. (1992). <i>Kruse's Food, Nutrition and Diet Therapy</i>, 8th Ed W B Saunders Company, London.</p> <p>Ruth A. Roth IX (2007). <i>Nutrition and Diet Therapy</i> Thomson Delmar Learning, Australia.</p> <p>Townsend, C.E (2000). <i>Nutrition and Diet therapy</i>, VII edition, Delmar Publisher Albany.</p>					