

Contents of Courses for B.Sc. with Food Technology as Major Subject & B.Sc. (Hons) Food Technology

Model IIA

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
I	FTT1.1	Theory	4	Fundamentals Of Food Technology	60	40
	FTP1.1	Practical	2	Practical based on Fundamentals of Food Technology	25	25
	Minor*	Theory	4			
	Minor*	Practical	2			
	FTT1.2	Theory	3	Food Safety	60	40
			3	Language 1		
			3	Language 2		
			2	Digital fluency /Bioanalytical techniques (optional)		
II	FTT2.1	Theory	4	Food Chemistry	60	40
	FTP2.1	Practical	2	Theory based Practical's on Food Chemistry	25	25
	Minor*		4			
	Minor*		2			
	FTT2.2	Theory	3	Food And Nutrition	60	40
		Theory	2	Environmental Studies		
		Theory	3	Language 1		

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
		Theory	3	Language 2		
		Theory	2	Health and Wellness/Social emotion learning (2) (1+0+2)/ Principles Of Culinary Science And Art		
	Exit Option with Certificate in Food Technology (52 Credits)					
III	FTT3.1	Theory	4	Food Analysis	60	40
	FTP3.1	Practical	2	Theory based Practical's on Food Analysis	25	25
	Minor*	Theory	4			
	Minor*	Practical	2			
	FTT3.2	Theory	3	Nutraceutical and functional foods	60	40
	FTT3.3	Theory	2	Processing of Spices and Plantation Crops/ Artificial Intelligence		
		Theory	3	Language-1		
		Theory	3	Language-2		
IV	FTT4.1	Theory	4	Food Quality	60	40
	FTP4.1	Practical	2	Theory based Practical's on Food Quality	25	25
	Minor*	Theory	4			
	Minor*	Practical	2			
	FTT4.2	Theory	3	Brewing and Fermentation Technology	60	40
		Theory	3	Language 1		

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
		Theory	3	Language 2		
		Theory	2	Constitution of India		
			2	Sports /NCC/NSS		
Exit Option with Diploma in Food Technology (100 Credits)						
Choose any one discipline as major and other as minor						
V	FTT5.1	Theory	3	Food Microbiology, Contamination and Preservation of Foods (Major)	60	40
	FTP5.1	Practical	2	Theory based Practical's on Food Microbiology, Contamination and Preservation of Foods (Major)	25	25
	FTT5.2	Theory	3	Food Microbiology, Contamination and Preservation of Foods (Minor)	60	40
	FTP5.2	Practical	2	Theory based Practical's on Food Microbiology, Contamination and Preservation of Foods (Minor)	25	25
	FTT5.3	Theory	3	Food Biotechnology (Major)	60	40
	FTP5.3	Practical	2	Theory based Practical's on Food Biotechnology (Major)	25	25
	FTT5.4	Theory	3	Food Biotechnology (Minor)	60	40
	FTP5.3	Practical	2	Theory based Practical's on Food Biotechnology (Minor)	25	25
	Minor*	Theory	3	Bakery And Confectionaries Technology	60	40
	Minor*	Practical	2	Theory based Practical's Bakery and Confectionaries Technology	25	25
		Theory	2	Cyber security		
		Theory	3	Ethics and Self Awareness		
VI	FTT6.1	Theory	3	Food Processing Technology (major)	60	40

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
	FTP6.1	Practical	2	Theory based Practical's on Food Processing Technology (major)	25	25
	FTT6.2	Theory	3	Processing Of Oils and Fats (major)	60	40
	FTP6.2	Practical	2	Theory based Practical's on Processing of Oils and Fats (major)	25	25
	Minor*	Theory	3	Fast Foods and Catering Services	60	40
	Minor*	Practical	2	Theory based Practical's on Fast Foods and Catering Services	25	25
		Theory	3			
	FTT6.4	Theory	2	Professional/societal communication	60	40
Exit Option with Bachelor of Science Degree in Food Technology (144 Credits)						
VII	FTT7.1	Theory	3	Processing Technology f Meat, Poultry and Fish	60	40
	FTP7.1	Practical	2	Theory based Practical's on Processing Technology Of Meat, Poultry And Fish	25	25
	FTT7.2	Theory	3	Post-Harvest and Storage Engineering	60	40
	FTP7.2	Practical	2	Theory based Practical's on Post Harvest and Storage Engineering	25	25
	FTT7.3	Theory	4	Food Refrigeration and Cold Storage	60	40
	FTT7.4	Theory	3	Beverage Technology	60	40
	FTT7.5	Theory	3	Research Methodology	60	40
VIII	FTT8.1	Theory	4	Food Adulteration and Food Toxicology And Sensory Evaluation	60	40
	FTT8.2	Theory	4	Food engineering and enzymes in food processing	60	40
	FTT8.3	Theory	3	Food Extrusion Technology	60	40

Semester	Course No.	Theory/ Practical	Credits	Paper Title	Marks	
					S.A.	I.A.
		FTT8.4	Theory	3	Food Laws and Regulations	60
FTT8.5			6			
Award of Bachelor of Bachelor of Science Honours in Food Technology (185 Credits)						
Note: *Minor Subject Code as per the electives taken						


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Shivagangotri, Davangere.

M.Sc. degree in Food Technology (Two Semesters)						
Semester	Course Number	Theory/ Practical	Credits	Title of the Course	S.A.	I.A.
I	PGFTT1.1	Theory	03	Dairy Technology	60	40
	PGFTP1.1	Practical	02	Theory based Practical's on Dairy Technology	25	25
	PGFTT1.2	Theory	03	Food product Development	60	40
	PGFTP1.2	Practical	02	Theory based Practical's on Food product Development	25	25
	PGFTT1.3	Theory	04	Food Packaging Technology	60	40
	PGFTT1.4	Theory	03	Value Addition In Food Product	60	40
	PGFTT1.5	Theory	03	Food Products Industrial Byproduct	60	40
II	PGFTT2.1	Theory	3	Fundamentals of Nutraceutical	60	40
	PGFTP2.2	Practical	2	Theory based Practical's on Fundamentals of Nutraceutical	25	25
	PGFTT2.3	Theory	3	Post-Harvest Management of Fruits and Vegetables	60	40
	PGFTT2.4	Theory		Food additives and Biostatistics	60	40
	PGFTT2.5	Theory	3	Entrepreneurship Development	60	40
	PGFTT2.6		6	Dissertation/ Project	140	60
	PGFTT2.7			Dissertation		

CURRICULUM STRUCTURE FOR UNDERGRADUATE DEGREE

B.Sc. FOOD TECHNOLOGY SEMESTER 1

Total Credits for the Program: 265 credits

Starting year of implementation: 2021-2022

Name of the Degree Program: B. Sc Degree / Honours and M.Sc

Discipline/Subject: Food Technology

Program Articulation Matrix:

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately

Semester	Course No.	Programme Outcomes that the Course Address	Pre-Requisite Course(s)	Pedagogy	Assessment
I	DSC- 1 Fundamentals Of Food Technology	PO 1, PO 2, PO 3	12 th / Equivalent	<ul style="list-style-type: none"> •MOOC •PROBLEM SOLVING •LECTURE 	Formative and Summative Assessment
	OE- 1 Food Safety	PO 1, PO 2, PO 3	12 th / Equivalent	<ul style="list-style-type: none"> •MOOC •PROBLEM SOLVING •LECTURE 	Formative and Summative Assessment
II	DSC -2 Food Chemistry	PO 1, PO 2, PO 3	12 th / Equivalent	<ul style="list-style-type: none"> • MOOC • PROBLEM SOLVING • LECTURE 	Formative and Summative Assessment
	OE- 2 Food and Nutrition	PO 1, PO 2, PO 3	12 th / Equivalent	<ul style="list-style-type: none"> •MOOC •PROBLEM SOLVING •LECTURE 	Formative and Summative Assessment

Syllabus for B.Sc. with Food Technology as Major Subject & B.Sc. (Hons) Food Technology

B.Sc. FOOD TECHNOLOGY SEMESTER 1

Course Title: FUNDAMENTALS OF FOOD TECHNOLOGY (DSC- 1)	
Total Contact Hours: 45	Course Credits: 3
Formative Assessment Marks: 30	Duration of ESA/Exam: 3 hours
Model Syllabus Authors:	Summative Assessment Marks: 70

Course Pre-requisite(s): PUC/ 10+2 (with chemistry or biology as one optional)

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Utilize advanced instruments and technologies to process and analyze food products and to solve food safety problems.
2. Critically assess and analyze food science information available in the public domain in an innovative and ethical way.
3. Communicate technical and other relevant information effectively in both oral and written format to a diverse audience including supervisors, colleagues, and consumers

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Utilize advanced instruments and technologies to process and analyze food products			✓												
Critically assess and analyze food science information in an innovative and ethical way.		✓													
Communicate technical and other relevant information in both oral and written format to a diverse audience		✓													

B.Sc. FOOD TECHNOLOGY SEMESTER 1

COURSE TITLE: FUNDAMNTALS OF FOOD TECHNOLOGY

Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs
Unit 1: Composition And Nutritive Value Of Plant Food	20 Hrs
Introduction to Nutrients - Carbohydrates, Protein, Lipids, Vitamins, Minerals. Cereals: General outline, Composition & Nutritive value, Structure of wheat and Rice. Millets – ragi, sorghum, maize, finger millet. PULSES & LEGUMES: Composition, Nutritive value, Anti-nutritional factors. Changes during cooking, Factors affecting cooking time. Germination - Changes during germination. Nuts & Oilseeds: Composition, sources of proteins and oil, Processing of oil seeds - Soya bean, coconut, ground nut and sesame. Protein concentrates and isolates, Texturized vegetable protein.	
Unit II: FRUITS & VEGETABLES Composition, Classification, Nutritive value, Vegetable Cookery, Changes during cooking, Ripening, Changes during ripening - Spices: Definition, Classification, Chemical composition, use of spices - Nutritive value of Sugar cookery - Artificial sweeteners.	20 Hrs
Unit III: COMPOSITION AND NUTRITIVE VALUE OF ANIMAL FOODS	20 Hrs
Eggs: Structure, Composition, Nutritive value, Grading Changes during storage. Fish: Composition, Nutritive value. Meat: Structure,	

Composition, Nutritive value. Poultry- classification, composition and nutritive value. FUNCTIONAL FOOD: Introduction to Functional foods, Prebiotics, Probiotics, Nutraceutical. Organic Foods and GM foods	
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Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Total	60 marks + 40 marks = 100 marks

Practical: 2 Credits

**50 Marks (Practical + IA)
(25 + 25)**

1. Study different types of browning reactions: enzymatic and non-enzymatic.
2. To study gelatinization behaviour of various starches
3. To study the concept of gluten formation of various flours.
4. To study malting and germination.
5. To study dextrinization in foods.
6. Identification of pigments in fruits and vegetables and influence of pH on them.
7. Quality inspection of animal foods.

Formative Assessment (IA)	
Assessment Occasion/ type	Weightage in Marks
Seminar presentation	10
Quiz, Assignment	10
Low-cost innovative recipes	05
Total	25

REFERENCES

1. B. Srilakshmi, Food science, New Age International Publishers (India), 2003
2. N. Shakuntalamanay, M., Foods: Facts and Principles - New Age Publishers, 2004
3. M. Swaminathan., Food science, Chemistry & Experimental Foods, BAPPCO (2003).

Date

Course Co-ordinator

Subject Committee Chairperson

B.Sc. FOOD TECHNOLOGY SEMESTER 1

Course Title: FOOD SAFETY (OE- 1)	
Total Contact Hours: 45	Course Credits: 3
Formative Assessment Marks: 30	Duration of ESA/Exam: 3 hours
Model Syllabus Authors:	Summative Assessment Marks: 70

Course Pre-requisite(s): PUC/ 10+2 (with chemistry or biology as one optional)

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Explain the application of food quality and food safety system
2. Identify the hazard of the food chain to ensure food safety
3. Examine the chemical and microbiological quality of food samples
4. Detect the adulteration in food samples
5. Review of legislative approaches for the management of food safety

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Explain the application of food quality and food safety system			✓												
Identify the hazard of the food chain to ensure food safety		✓													
Examine the chemical and microbiological quality of food samples		✓													
Detect the adulteration in food samples and review of legislative approaches for the management of food safety		✓													

B.Sc. FOOD TECHNOLOGY SEMESTER 1

Title of the Course: FOOD SAFETY

Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENTS	45 Hrs
Unit I: INTRODUCTION TO FOOD SAFETY:	15 Hrs
Introduction to concepts of food quality, food safety, food quality assurance and food quality management; objectives, importance and functions of quality control, Current challenges to food safety. SAFETY ACT: Role of national and international regulatory agencies, Bureau of Indian Standards (BIS), AGMARK, Food Safety and Standards Authority of India (FSSAI), Introduction to WTO agreements: SPS and TBT agreements, Codex Alimentarius Commission, USFDA, International organization for standards (ISO) and its standards for food quality and safety (ISO 9000 series, ISO 22000, ISO 15161, ISO 14000).	
UNIT II: SAFETY DURING PROCESSING:	15 Hrs
HACCP; Desirable safety features of some food processing equipment; Personal protective equipment; Safety from adulteration of food. Role of maintenance staff and plant operators; Preventive maintenance; Guidelines for good maintenance & safety precautions; Lubrication & lubricants; Work place improvement through '5S'.	
UNIT III: PLANT MAINTENANCE:	15 Hrs
Hygiene and sanitation requirement in food processing and fermentation industries; Cleaning, sanitizing and pest control in food processing; storage and service areas PERSONAL HYGENE: Hygiene and sanitation requirement in food processing and fermentation industries; Cleaning, sanitizing & pest control in food processing; storage and service areas.	

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Total	60 marks + 40 marks = 100 marks

REFERENCES

1. Food Safety Management, A Practical Guide for the Food Industry
Editors: Yasmine Motarjemi Huub Lelieveld, eBook ISBN: 9780123815057,
Hardcover ISBN: 9780123815040, Academic Press.
2. Food Hygiene, Microbiology & HACCP. S J Forsythe, P R Hayes. Springer,
2012.
3. Food Safety Handbook, Author(s): Ronald H. Schmidt, Gary E. Rodrick,
Published 2003 John Wiley & Sons, Inc., Print ISBN: 9780471210641.

Date Course Co-ordinator Subject Committee Chairperson

B.Sc. FOOD TECHNOLOGY SEMESTER 2

Course Title: FOOD CHEMISTRY (DSC- 2)	
Total Contact Hours: 45	Course Credits: 3
Formative Assessment Marks: 30	Duration of ESA/Exam: 3 hours
Model Syllabus Authors:	Summative Assessment Marks: 70

Course Pre-requisite(s): PUC/ 10+2 (with chemistry or biology as one optional)

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Recognize the mathematical objects called Groups.
2. Link the fundamental concepts of groups and symmetries of geometrical objects.
3. Explain the significance of the notions of Cosets, normal subgroups and factor groups.
4. Understand the concept of differentiation and fundamental theorems in differentiation and various rules.
5. Find the extreme values of functions of two variables.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Recognize and link the mathematical objects called Groups.			✓												
Explain the significance of the notions of Cosets, normal subgroups and factor groups.		✓													
Understand the concept of differentiation and fundamental theorems in differentiation and various rule and find the extreme values of functions of two variables		✓													

B.Sc. FOOD TECHNOLOGY SEMESTER 2

Title of the Course: FOOD CHEMISTRY FTT2.1

Number of Theory Credits	Number of lecture hours/semester
4	60

	60Hrs
UNIT I: Introduction	20 Hrs
Physicochemical properties of water, water weak interactions in Aqueous Systems, ionization of water, weak acids, and weak bases, buffering against pH changes in biological systems, water as a reactant, The fitness of the aqueous environment for living organisms water activity and its influences on food quality and stability. Role of water in food. Carbohydrate: Introduction, classification, structure, sources, properties and functions of carbohydrates, functional properties of sugars, starch, cellulose, glucans, hemicelluloses, gums, pectin substances, polysaccharides, Modified starch and dietary fibre. Dietary requirements of carbohydrates, inborn errors of carbohydrates.	
UNIT II: Amino acids and Proteins:	20Hrs
Amino acids, occurrence, structure, classification, physical & chemical properties. Peptides, polypeptide, proteins & their properties, major source of proteins, classification, structure, properties, purification and denaturation of proteins, physicochemical and functional properties of protein derived from milk, egg protein, meat protein, fish muscle protein, oil seed protein and cereal protein. Protein- protein interaction, Protein-lipid interaction, protein-lipid complexes and protein-carbohydrate complexes. Modified proteins and application in food industry. Dietary requirements of proteins, metabolic defects such as Kwashiorkor associated with proteins.	

UNIT III: Enzymes and Lipids	20 Hrs
<p>General introduction to Enzymes, classification and functions of Enzymes and its activity in different food systems, factors affecting rate of enzymatic action, commercial availability, immobilization of enzymes, importance of enzymes in food processing. Lipids: General introduction, classification, physical and chemical properties, functions and Dietary requirements of food lipids, refining of crude oil and fats, hydrogenation, winterization shortenings and low fat spreads. Vegetable and animal fat, margarine, lard, butter. Flavour changes in fats and oils, lipid oxidation, auto oxidation, factors affecting lipid oxidation and its biological significance, metabolic defects such as cardiovascular disease associated with lipids. Vitamins: Physiological and biochemical role of fat and water soluble vitamins, functions and sources. Vitamin C, Vitamin B complex, Iron and Folic acid. Requirements and recommended allowances. Deficiency diseases.</p>	

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Total	60 marks + 40 marks = 100 marks

Practical: 2 Credits

50 Marks

1. Safety measures in the Laboratory
2. Qualitative Tests of Carbohydrate (Molisch's Test, Fehling's Test, Benedict Test, Iodine Test, etc.)
3. Quantitative Determination of Carbohydrate by Phenol Sulphuric acid method
4. Isolation of starch from given sample.
5. Determination of total sugar/reducing sugar in food.

6. Determination of iodine value/acid value/saponification value of oil
7. Test for detection of different oils (Baudouin test, Halphens test, hexabromide test)
8. Estimation of lysine content
9. Determination of ascorbic acid by dye method
10. Determination of phosphorus/estimation of calcium
11. Estimation of tannins from food
12. Determination of total carotenoids

Formative Assessment	
Assessment Occasion/ type	Weightage in Marks
Seminar presentation	10
Quiz, Assignment	10
Low-cost innovative recipes	05
Total	25

REFERENCES

1. Lillian Hoagland Meyer(1974) Food Chemistry, The AVI Publishing Co Inc., Connecticut, MA, USA
2. Eskin NAM, Henderson HM and Townsed RJ(1971)Biochemistry of Foods, Academic Press, New York
3. John W. Brady(2013) Introductory Food Chemistry, Cornell University Press, Ithaca, USA
4. H.-D. Belitz, W. Grosch and P. Schieberle(2009) Food Chemistry, 4th Ed. Springer-Verlag. Berlin Heidelberg
5. Meyer, L.H.(1987) Food Chemistry. CBS publishers and Distributors, New Delhi.

Date

Course Co-ordinator

Subject Committee Chairperson

B.Sc. FOOD TECHNOLOGY SEMESTER 2

Course Title: FOOD AND NUTRITION (OE- 2)	
Total Contact Hours: 45	Course Credits: 3
Formative Assessment Marks: 30	Duration of ESA/Exam: 3 hours
Model Syllabus Authors:	Summative Assessment Marks: 70

Course Pre-requisite(s): PUC/ 10+2 (with chemistry or biology as one optional)

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Understanding the basic processes involved in the preparation, transformation and conservation of foods of both animal and vegetable origin.
2. Understanding the microbiology, parasitology and toxicology of food.
3. Examining and evaluating the relationship between food and nutrition in health and/or illness.
4. Applying scientific knowledge of physiology, pathophysiology, nutrition and food to individual or group diet planning and counselling, both in healthy (dietetics) and ill (diet therapy) clients, at every stage of life.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Understanding the basic processes involved in the preparation, transformation and conservation of foods of both animal and vegetable origin.			✓												
Understanding the microbiology, parasitology and toxicology of food.		✓													
Examining and evaluating the relationship between food and nutrition in health and/or illness.		✓													
Applying scientific knowledge to individual or group diet planning and counselling, both in healthy (dietetics) and ill (diet therapy) clients, at		✓													

every stage of life.

B.Sc. FOOD TECHNOLOGY SEMESTER 2

Title of the Course: FOOD AND NUTRITION FTT 2.2

Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENTS	45 Hrs
Unit I: FATS & LIPIDS:	15 Hrs
Understanding relationship between food, nutrition and health. Functions of food-physiological, psychological and social. Concept of balanced diet. Lipids - Classification, Composition function - essential fatty acids, deficiency, food sources of EFA, Function of TGL, Characteristics of animal and vegetable fats, sterols - cholesterol - function, food sources, phospholipids - function, ketone bodies - fat requirements - food sources, dietary lipids and their relation to the causation of Atherosclerosis and Ischaemic heart disease. NUTRIENTS, VITAMINS AND MINERALS Nutrients – Classification, Functions, Dietary sources, RDA. Fat soluble vitamins - A, D, E and K. Water soluble vitamins - thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C. Minerals- Role of Ca, P, Fe, Na, K, I, F, Se.	
Unit II: CARBOHYDRATES AND PROTEINS:	
Proteins - Composition - structure and classification, function of protein, Amino acids Indispensable and dispensable amino acids - special function of amino acids - protein deficiency - Protein Energy Malnutrition - KWASHIORKOR and MARASMUMS - etiology, clinical features, treatment and prevention - Evaluation of protein quality -	

PER, BV, NPU and NPR, chemical score mutual and amino acid supplementation of proteins.	
Unit III: BASICS OF ENERGY	15 Hrs
<p>Energy units - Kilocalories, Megajoules, determination of energy value of foods, using Bomb calorimeter, diagram of Bomb Calorimeter - gross calorific values, Physiological energy, value of foods, relation between oxygen used and calorific value. METABOLISM: Determination of energy requirements, direct calorimetry. Relation between Respiratory quotient and energy output - Specific dynamic action of food (Thermogenic food in REE) indirect calorimetry - Basal metabolism - definition, determination - benedict Roth basal Metabolism Apparatus - factors affecting BMR - determination of energy metabolism, during work - energy requirements for various types of activities, factorial methods for calculation of the daily energy requirements of an adult for varying degrees of physical activity - recommended allowances for calories, energy requirements of adults expressed in terms of reference man and reference woman - FAO committee and ICMR committee percent calories supplied by carbohydrates, fats and proteins in average Indian diets - Energy requirements for different age groups.</p>	

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Total	60 marks + 40 marks = 100 marks

REFERENCES

1. B. Srilakshmi, Food Science, New Age International Publishers (India), 2003.
2. NIN, ICMR (1990). Nutritive Value of Indian Foods.
3. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basics Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.
4. Seth V, Singh K (2005). Diet planning through the Life Cycle: Part 1. Normal Nutrition. A Practical Manual, Fourth edition, Elite Publishing House Pvt. Ltd.
5. Guthrie H.A. - Introductory Nutrition C.V. Mosby Co. St. Louis, 2006.

Date

Course Co-ordinator

Subject Committee Chairperson


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