

Manonmaniam Sundaranar University, Tirunelveli

UG COURSES –AFFILIATED COLLEGES

B.Sc. Food Science & Nutrition

(Choice Based Credit System)

(For those who joined the course from the academic year 2016-2017 onwards)

(45th SCAA meeting held on 09.02.2017)

Sem.	Pt I/II /III /IV	Sub. No.	Sub. status	Subtitle	Hrs/ Week	Cre- dits	Marks				
							Maximum			Passing Minimum	
							Int.	Ext.	Tot.	Ext.	Tot.
III	I	18	Language	TAMIL/OTHER LANGUAGE	6	3	25	75	100	30	40
	II	19	Language	ENGLISH	6	3	25	75	100	30	40
	III	20	Core-5	ESSENTIALS OF MACRONUTRIENTS	4	4	25	75	100	30	40
		21	Major Practical-I	ESSENTIALS OF MACRO & MICRONUTRIENTS	2	-	Practical exams in the even semester				
		22	Allied -III	FAMILY RESOURCE MANAGEMENT-I	4	4	25	75	100	30	40
		23	Allied Practical -I	FAMILY RESOURCE MANAGEMENT	2	-	Practical exams in the even semester				
	IV	24	Skill based	FOOD PROCESSING AND PRESERVATION	4	4	25	75	100	30	40
IV	25	Non Major (elective)	(A) FOOD PROCESSING AND PRESERVATION (OR) (B) DIETETICS - I	2	2	25	75	100	30	40	
Subtotal					30	20					

Se m.	Pt I/I II/ IV	S u b. N o.	Sub. status	Subtitle	Hrs /We ek	Cre dits	Marks				
							Maximum			Passing Minimum	
							Int.	Ext.	Tot.	Ext	Tot.
IV	I	26	Language	TAMIL/OTHER LANGUAGE	6	3	25	75	100	30	40
	II	27	Language	ENGLISH	6	3	25	75	100	30	40
	III	28	Core-6	ESSENTIALS OF MICRONUTRIENTS	4	4	25	75	100	30	40
		29	Major Practical - II	ESSENTIALS OF MACRO & MICRONUTRIENTS	2	2	50	50	100	20	40
		30	Allied IV	FAMILY RESOURCE MANAGEMENT-I	4	4	25	75	100	30	40
		31	Allied Practical II	FAMILY RESOURCE MANAGEMENT	2	2	50	50	100	20	40
IV	IV	32	Skill based	FUNDAMENTALS OF BAKING	4	4	25	75	100	30	40
	IV	33	Non- Major Elective	(A).DIETETICS II (OR) (B).FUNDAMENTAL S OF BAKING	2	2	25	75	100	30	40
	V	34	Common	EXTENSION ACTIVITY (NCC, NSS, YRC, YWF)		1	25	75	100	30	40
Subtotal					30	25					

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester III/Ppr.no.20/ Core – 5**

ESSENTIALS OF MACRONUTRIENTS

Objectives:

1. To understand the role of nutrition in the maintenance of good health.
2. To study nutritional deficiencies and their prevention.

Unit: 1

Basic concepts of Nutrition

Relation of good nutrition to normal physical development and sound health

Unit : II

Carbohydrates

Classification, digestion, absorption, metabolism, functions, sources and requirements

Unit : III

Protein:

Classification, digestion, absorption, EAA, metabolism, functions, sources, requirements, and deficiency - Kwashiorkor, Marasmus

Unit : IV

Fats: (Lipids)

Classification, digestion, absorption, metabolism, functions, PUFA, sources and effects of deficiency

Unit : V

Energy:

Definition, energy needs of the body, BMR, factors affecting BMR, determination of energy value - Bomb calorimetry method, determination of energy requirements - Direct calorimetry method, Specific Dynamic Action

References:

1. Dr. M. Swaminathan, Advanced Text - Book on Food and Nutrition, BAPPCO, 1985.
2. N. Shakuntala Manay, M. Shadaksharaswamy, Foods Facts and Principles, Newage International (P) Ltd. Publishers, Second Edition, 2001.
3. Seema Yadav, Basic Principles of Nutrition, Anmol Publication Pvt. Ltd., First Edition, 1997.
4. Robinson, C.H. and Lawler, R.M., Normal and Therapeutic Nutrition, Maxmillan Publication & Co., New York, 1994, 17th edition.
5. Sri Lakshmi, B., Dietetics, New Age International Private Ltd., New Delhi, 1995.
6. Mahtab, S. Bamji, Pralhab Rao, R and Vinodhini, Text Book of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester III/ Ppr.no.22/Allied Paper - III**

FAMILY RESOURCE MANAGEMENT – I

Objectives:

- To attain a thorough knowledge of understanding values and goals in house keeping
- To gain a basic knowledge of planning and constructing a house
- To understand a basic designs and art

Unit. I : Housing

- a. Functions of the house and its environment
- b. House planning – site selection, factors to be considered, features of a house contributing to livability, orientation, grouping, roominess, lighting and ventilation, storage facility, privacy, flexibility, sanitation and economy
- c. Kitchen planning – different types – work triangle
- d. House plans – low, middle and high income groups

Unit. I : Care and maintenance of house

- a. Care and maintenance of house and its surroundings.
- b. Daily, weekly and periodical cleaning to keep the house in good condition.
- c. Insect and pest control – preventive and remedial measures to be adopted.

Unit. III : Elements of Design I

- a. Elements of design, types of design, characteristics of a good design, principles of design
- b. Harmony – meaning, types – repetition, contrast, transition
- c. Proportion – meaning – means of obtaining good proportion
- d. Balance – meaning – types and means of obtaining balance
- e. Emphasis – meaning – means of creating emphasis
- f. Rhythm – meaning – means of getting rhythm

Unit. IV. : Colour

- a. Qualities of colour – hue, value, intensity of colours and emotions, advancing and receding colours.
- b. How to use colours – proportion, balance, harmony, and rhythm in colour.
- c. Use of colour in interior decoration

Unit.V. : Accessories, Furniture, Flower Arrangement

- a. Selection, use and care of accessories, Picture and wall hangings, basic knowledge of flower arrangements – principles, types of flower arrangement.
- b. Selection and use of furniture – living room, bedroom and dining room – table setting.

References

1. Desh Pande, R.S., Modern Ideal Homes for India – United Book Corporations, Poone – 1971.
2. Stella Soundararaj. A Textbook of House hold Arts, Orient Longmans, Bombay – 1968.
3. Margaret Kaye. A. A Students hand book of House wifery, J.M. Dent Sons Ltd., London.
4. Paulena Nickell, Jean Muir Dorsey – Management in Family Living, Wiley Eastern Private Ltd.,

MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)/Semester III/ Ppr.no.24/Skill based - I

FOOD PROCESSING AND PRESERVATION

Objectives :

1. To understand the principles of food preservation
2. To develop skills for setting up production units

Unit – I

Objectives and principles of food preservation

Unit – II

- a) Low temperature - refrigeration, freezing
- b) High temperature – canning, dehydration, drying

Unit –III

Preservation by use of chemicals – preparation of crush, squashes, synthetic syrup

Unit –IV

Preservation by use of sugar – Jam, Jelly, Marmalade, Tuty-fruity

Unit – V

Pickling – Principles and methods

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester III/Ppr.no.25(A) / Non-Major Elective –I (A)**

FOOD PROCESSING AND PRESERVATION

OBJECTIVES

1. To understand the principles of food preservation
2. To develop skills for setting up production units

Unit – I

Objectives and principles of food preservation

Unit – II

- c) Low temperature - refrigeration, freezing
- d) High temperature – canning, dehydration, drying

Unit –III

Preservation by use of chemicals – preparation of crush, squashes, synthetic
syrup

Unit –IV

Preservation by use of sugar – Jam, Jelly, Marmalade, Tuty-fruity

Unit – V

Pickling – Principles and methods

**MSU/2016-17/UG colleges/Part IV (B.Sc. Food Science & Nutrition)
Semester III/Ppr.no.25 (B) / Non-Major Elective – I (B)**

DIETETICS - I

Objectives :

1. To gain insight into the national nutritional problems and their implications
2. To obtain knowledge about the methods of assessment of nutritional status
3. Develop skills in organizing and evaluating nutrition projects in the community

Unit : I

Nutrition throughout lifecycle - I

- a) Basic principles of menu planning.
- b) Nutrition during pregnancy
- c) Nutrition during lactation

Unit : II

Nutrition throughout lifecycle - II

- a) Nutrition during infancy
- b) Nutrition during preschoolers
- c) Nutrition during school going children

Unit : III

Concept of diet therapy -I

- a) Nutrition during adolescents
- b) Nutrition during adulthood
- c) Nutrition during old age

Unit : IV

Concept of diet therapy -II

- a) Principles of therapeutic diet
- b) Modification of normal diets

Unit : V

Deficiency disorders

Nutrition for deficiency disorders – PEM, Anemia and Vitamin A deficiency

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester IV/Ppr.no.28/Core Paper – 6**

ESSENTIALS OF MICRONUTRIENTS

Objectives :

1. To understand the role of Nutrition in the maintenance of good health.
2. To study nutritional deficiencies and their prevention.

Unit I

Vitamins

History, Chemistry, absorption, functions, requirements, effects of deficiency, Fat soluble Vitamins - A, D, E and K, water soluble Vitamins - C and B complex

Unit II.

Major Minerals

Functions, sources, requirements and effects of deficiency of minerals

Unit III.

Trace Elements

Functions, sources, requirements and effects of deficiency of trace elements

Unit IV.

Interrelationship between nutrients and water balance

- a. Interrelationship between carbohydrates, proteins, fat, vitamins and minerals
- b. Water balance

Unit V

Enzymes

Enzymes - Classification, factors affecting enzyme action

References:

1. Dr. M. Swaminathan, Advanced Text - Book on Food and Nutrition, BAPPCO, 1985.
2. N. Shakuntala Manay, M. Shadaksharaswamy, Foods Facts and Principles, Newage International (P) Ltd. Publishers, Second Edition, 2001.
3. Seema Yadav, Basic Principles of Nutrition, Anmol Publication Pvt. Ltd., First Edition, 1997.
4. Robinson, C.H. and Lawler, R.M., Normal and Therapeutic Nutrition, Maxmillan Publication & Co., New York, 1994, 17th edition.
5. Sri Lakshmi, B., Dietetics, New Age International Private Ltd., New Delhi, 1995.
6. Mahtab, S. Bamji, Pralhab Rao, R and Vinodhini, Text Book of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996.

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester III & IV/Ppr.no.29/Major practical - II**

ESSENTIALS OF MACRO AND MICRONUTRIENTS

- a) Qualitative test for Sugar
- b) Qualitative test for proteins
- c) Qualitative test for Minerals
- d) Quantitative estimation of Vitamin C in Greens
- e) Quantitative estimation of Vitamin C in Lime Juice
- f) Quantitative estimation of Vitamin C in Curds
- g) Quantitative estimation of reducing sugar in Fruit Juices
- h) Quantitative estimation of reducing sugar in honey
- i) Quantitative estimation of Calcium
- j) Quantitative estimation of Phosphorus

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester IV/Ppr.no.30/Allied Paper - IV**

FAMILY RESOURCE MANAGEMENT – II

Objectives:

1. To enable the students to understand the importance of home management in family and personal living
2. To improve their ability in family resource management
3. To understand and apply basic principles of art in interior designing

Unit I

Management

- a. Definition and meaning of management – characteristics of a good home maker
- management process – planning, organizing, controlling and evaluating
- b. Motivating factors in management – values, goals and standards. Decision making – steps in decision making

Unit II

Resources

- a. Resources – classification and characteristics
- b. Time and Energy Management – Importance of time management, guidelines in planning time schedule, fatigue - types and overcoming fatigue – work simplification – Mundel's Law

Unit III

Standard of living

Constituents – factors affecting, causes for low living standards in India.

Unit IV

Money Management

- a. Family Income – types, sources methods of augmenting family income.
- b. Family expenditure – budget – meaning – types of budget-planning a family budget – steps in planning, advantages of budgeting – Engel’s law of consumption
- c. Savings – meaning – need, saving institutions – Bank – Post office – Insurance
– Chit fund – Unit trust of India

Unit V

Consumer Rights and protection

- a. Consumer Rights : The home maker as a wise consumer – rights of a consumer – consumer education –consumer aids – advertisement – standards-labels – price tag
- b. Consumer protection – need – measures adopted to provide consumer protection –consumer laws – consumer courts – consumer movement
- c. Residence course – need, objectives planning, organization and evaluation of the course – role of supervisor and staff adviser

References:

1. Desh pande, R.S. Modern Ideal Homes for India – United Book corporations, Pune – 1971.
2. Paulena Nickell, Jean Muir Dorsey – Management in Family Living, Wiley Eastern Private Ltd.,
3. Mc.Call’s Editiors – Mc Call’s Decorating book – Random House, Mc calls.
4. Van Dommolen, D.B. Designing and Decorating Book – John Wiley & Son.
5. Mann, M (1980) home Management for Indian families, New Delhi Kalyan Publishers.

FAMILY RESOURCE MANAGEMENT – II

- a. Draw the house plan and kitchen plan
- b. Visit to hotels to obtain knowledge on interior decoration and house keeping
- c. Demonstration of different designs
- d. Demonstration on mixing colour
- e. Visit to flower show
- f. Demonstration on different types of flower arrangement, wall hangings, picture

**MSU/2016-17/UG colleges/Part III (B.Sc. Food Science & Nutrition)
Semester IV/ Ppr.no.32/Skill based subject -II**

FUNDAMENTALS OF BAKING

Objectives:

This course will enable the students to

1. Understand basic concepts of baking
2. Acquaint with the role of various major and minor ingredients in bakery products
3. Familiarize with baking process and operations.
4. Learn the quality parameters of bakery products

Unit – I:

Introduction

- a) Introduction of baking
- b) Principles of baking
- c) Equipments needed – ovens, dough mixer, egg beater.

Unit -II

Role of ingredients in baking – I

- a) Wheat
- b) Fats and oils
- c) Egg

Unit -III

Role of ingredients in baking-II

- a) Milk, Sugar, Salt and Water
- b) Flavour agents
- c) Leavening agents – physical, biological

Unit – IV

Preparation of bakery products-I

Preparation of cakes – rich cakes, plum cakes, pineapple upside cake.

Unit – V

Preparation of bakery products-II

Preparation of cookies, bread rolls.

**MSU/2016-17/UG colleges/Part IV (B.Sc. Food Science & Nutrition)
Semester IV/Ppr.no.33(A)/ Non-Major Elective – II (A)**

DIETETICS - II

Objectives :

1. To gain insight into the national nutritional problems and their implications
2. To obtain knowledge about the methods of assessment of nutritional status
3. Develop skills in organizing and evaluating nutrition projects in the community

Unit : I

Therapeutic diets for

- a) Obesity and underweight
- b) Diabetes Mellitus

Unit : II

Therapeutic diets for

- a) Peptic ulcer
- b) Cirrhosis and Hepatitis

Unit : III

Therapeutic diets for

- a) Atherosclerosis
- b) Hypertension

Unit : IV

Therapeutic diets for

Febrile condition - Typhoid, TB and Malaria

Unit : V

Therapeutic diets for

Renal failure, Cancer, Burns

**MSU/2016-17/UG colleges/Part IV (B.Sc. Food Science & Nutrition)
Semester IV/ Ppr.no.33(B)/Non-Major Elective – II (B)**

FUNDAMENTALS OF BAKING

Objectives:

This course will enable the students to

1. understand basic concepts of baking
2. Acquaint with the role of various major and minor ingredients in bakery products
3. Familiarize with baking process and operations.
4. Learn the quality parameters of bakery products

Unit – I:

Introduction

- a. Introduction of baking
- b. Principles of baking
- c. Equipments needed – ovens, dough mixer, egg beater.

Unit -II

Role of ingredients in baking – I

- a. Wheat
- b. Fats and oils
- c. Egg

Unit -III

Role of ingredients in baking-II

- a. Milk, Sugar, Salt and Water
- b. Flavour agents
- c. Leavening agents – physical, biological

Unit – IV

Preparation of cakes – rich cakes, plum cakes, pineapple upside cake.

Unit – V

Preparation of cookies, bread rolls.