

Manonmaniam Sundaranar University, Tirunelveli

UG COURSES-AFFILIATED COLLEGES

B.Sc Nutrition & Dietetics

(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	Sub.Title	Hrs/ Week	Cre- dits	Marks					
							Maximum			Passing Minimum		
							Int.	Ext.	Tot.	Ext.	Tot.	
III	I	18	Language	TAMIL	6	3	25	75	100	30	40	
	II	19	Language	ENGLISH	6	3	25	75	100	30	40	
	III	20	Core-5	NUTRITION THROUGH LIFE CYCLE	4	4	25	75	100	30	40	
		21	Major Practical-I	NUTRITION THROUGH LIFE CYCLE	2	-	Practical exams in the even semester					
		22	Allied -III	FOOD MICROBIOLOGY	4	4	25	75	100	30	40	
		23	Allied Practical -I	FOOD MICROBIOLOGY	2	-	Practical exams in the even semester					
	IV	24	Skill based	FOOD SERVICE MANAGEMENT -I	4	4	25	75	100	30	40	
	IV	25	Non Major (elective)	(A)FOOD MICROBIOLOGY- I (OR) (B) PRINCIPLES OF INTERIOR DECORATION-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	FOOD CHEMISTRY	4	4	25	75	100	30	40
		29	Major Practical I	FOOD CHEMISTRY	2	2	50	50	100	20	40
		30	Allied IV	FOOD PROCESSING & PRESERVATION	4	4	25	75	100	30	40
		31	Allied Practical II	FOOD PROCESSING & PRESERVATION	2	2	50	50	100	20	40
	IV	32	Skill based	FOOD SERVICE MANAGEMENT-II	4	4	25	75	100	30	40
	IV	33	Non- Major Elective	FOOD MICROBIOLOGY- II OR PRINCIPLES OF INTERIOR DECORATION - II	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. Nutrition and Dietetics)/
Semester - III/Ppr.no.20/Core - 5**

NUTRITION THROUGH LIFE CYCLE

Objectives:

1. To help students to understand the basis of meal planning.
2. To obtain knowledge on various nutritional deficiency disorders.
3. To understand the nutritional needs of members at different age levels.

UNIT-I

Requirements for infants and preschool children:

- a. Infancy – Growth and development, nutritional requirements, breast feeding, weaning practices, diet supplements.
- b. Preschool age- nutritional requirements, factors affecting nutritional status, problem related to nutrition.

UNIT-II

Balanced diets for school going children and adolescents:

- a. Balanced diet- meaning, basic principles meal planning.
- b. Planning meals for different socio economic conditions low income, middle income and high income groups.
- c. School age – nutritional requirements, food requirements, packed lunches, school lunch programs.
- d. Adolescence – Nutritional requirements, food habits, fast food, nutritional problems.

UNIT – III

Balanced diet for adults, pregnant women and lactating mother:

- a. Adult – nutritional requirements, food requirements, principles involved in planning of meals.
- b. Pregnant women- physical changes, nutritional requirements, food requirements, problem related to nutrition, during pregnancy complication and dietary problems.
- c. Lactating mothers –Nutritional requirements, food management.
- d. Geriatric Nutrition – process of aging, physiological and biochemical changes in feeding elderly

UNIT –IV

Diet modification:

- a. Deficiency – importance – modification of normal diet- clear fluid- full fluid and soft diet.
- b. Tube feeding, parenteral feeding.
- c. Pre and post operative diet.

UNIT –V

Diet for deficiency conditions:

- a. Nutritional deficiency diseases- PEM, Vitamin A, Anaemia.
- b. Lactose intolerance, phenyl ketonuria, alkaptonuria, galactosemia and sickle cell anaemia

References:

1. Sri Lakshmi (2004) Dietetics, Wiley Eastern publishers.
2. Corrine Robinson (1990) Normal and Therapeutic Nutrition, Oxford and IBH publishers.
3. Swaminathan. M. (2003) Principles of Nutrition and Dietetics, Bappco publishers, Bangalore.
4. Gopalan Etal., (1996) Nutritive value of Indian food, NIN publication, Hyderabad.
5. Bhavana sabarwal (1999) principles and practices of Dietetics, Ajay verma common wealth publishers, New Delhi.
6. Davidson Passmore (1989) Human Nutrition and Dietetics, London Churchill

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Nutrition and Dietetics)/
Semester – III / Ppr.no.21/ Major Practical**

NUTRITION THROUGH LIFE CYCLE

1. Menu planning, preparation and evaluation for a preschool child
2. Menu planning, preparation and evaluation for school age
3. Menu planning, preparation and evaluation for adolescence boys & girls
4. Menu planning, preparation and evaluation for a pregnant woman
5. Menu planning, preparation and evaluation for a lactating mother
6. Menu planning, preparation and evaluation for aged
7. Menu planning for PEM child
8. Menu planning, preparation and evaluation for a person suffering from Vitamin A deficiency
9. Menu planning, preparation and evaluation for Anaemic person

**MSU/ 2016-17/ UG colleges/part-III [B.Sc. Nutrition and
Dietetics/Semester III / Ppr.no.22/Allied – III**

FOOD MICROBIOLOGY

Objectives :

- To instruct students who are having their first experience with microbiology on the nature of micro organism
- To outline the source of contamination and their aspects of foods
- To understand the principles of food preservation
- To gain knowledge of the methods to prevent contamination

UNIT –I

General characteristics:

General characteristics of main group of microorganisms – Bacteria, fungi, yeast.

UNIT – II

Microorganisms of soil, water, sewage and atmosphere:

- a. Soil- Nitrogen cycle, carbon cycle, Sulphur cycle and phosphorus cycle.
- b. Water – methods of water purification, types of microorganisms..
- c. Sewage – Sewage treatments methods, types of microorganisms.
- d. Air – microbial pollution control measures.

UNIT- III

Contamination of cereals and cereals products:

- a. Contamination and prevention of spoilage of cereals and cereals product.
- b. Contamination and prevention of spoilage of vegetables and fruits.

UNIT –IV

Contamination of milk, fish, meats:

- a. Contamination and prevention of spoilage of milk and milk products.
- b. Contamination and prevention of spoilage of meats, fish and other sea foods.

UNIT –V

Contamination of egg and poultry:

- a. Contamination and prevention of spoilage of eggs.
- b. Contamination and prevention of spoilage of poultry.

References:

1. Joshua. A.K. Microbiology, India printing works
2. Martein Probisher, Fundamentals of micro-biology
3. Goss, R.C., Experimental Microbiology. Guide laboratory, Kalyani publishers
4. Frazier, W.C. Food Microbiology, Tata Mc. Graw Hill Book Company, Bombay, 1988
5. Adams, M.R and Moss M.O. Food Microbiology Royal Society of Chemistry, Cambridge, 1995
6. Banwart, G.T, Baric Food Microbiology CSS Publishers, New Delhi. 1987

FOOD MICROBIOLOGY

1. Identify different types of microorganisms.
2. Visit to sewage treatment plant.
3. Observe and note the spoilage in cereal products
4. Observe & note the spoilage in fruits
5. Observe & note the spoilage in vegetable.
6. Observe and note the spoilage in milk
7. Observe and note the spoilage in fish.
8. Observe and note the spoilage in egg
9. Observe and note the spoilage in meat and poultry.

MSU / 2016-17/ UG Colleges/ Part – III [B.Sc Nutrition and Dietetics]/semester III / Ppr.no.24/Skill Based Subject - I

FOOD SERVICE MANAGEMENT-I

Objectives :

1. Gain knowledge about various types of food service.
2. Understand the principles and functions of management.
3. Realise the importance of sanitation.

UNIT- I

Origin of Restaurant :

Origin of restaurant and commercial food services, Types of institutional food service operation.

UNIT –II

Management Process :

Management and organization - Definition, principles and tools of management

UNIT- III

Personnel Management :

Recruitment, selection, orientation, training, motivation and supervision.

UNIT-IV

Financial Management:

Book keeping, account maintains, balance sheets

UNIT- V

Hygiene and Sanitation :

Definition and importance of hygiene and sanitation in food handling, personal hygiene, pest and rodent
Cause and prevention of accidents and safety education.

References :

1. Mohini Sethi and – Surjeet Malhan.
2. Catering Management an integrated approach Wiley Eastern Ltd., New Delhi.
3. Malhotra – Food Service Management – Anmol Publisher, New Delhi.
4. The theory of catering, Kinton and Ceasarani.

FOOD MICROBIOLOGY -I

Objectives :

- To instruct students who are having their first experience with microbiology on the nature of micro organism
- To outline the source of contamination and their aspects of foods
- To understand the principles of food preservation
- To gain knowledge of the methods to prevent contamination

UNIT- I

General characteristics:

General characteristics of main group of microorganisms – Bacteria, fungi, yeast.

UNIT - II

Micro organisms of soil, water, Sewage & atmosphere:

- a. Soil – Nitrogen cycle, carbon cycle, sulphur cycle & Phosphorus cycle.
- b. Water – methods of water purification, types of microorganisms .
- c. Sewage – Sewage treatment methods, types of microorganisms.
- d. Air – microbial pollution Control measures.

UNIT –III : Methods of Food preservation :- Bacteriostatic, dehydration, pickling salting, sun drying, smoking, freezing mechanical drying, salt & sugar, oil & spices, Acids, Low temperature, High Temperature, Bactericidal – canning, cooking and irradiation.

UNIT – IV : Use of preservatives :

Chemical preservative, Food additives, ideal Anti – microbial preservation, added preservative, developed preservatives.

UNIT – V : Sterlization

Physical agents – lights desiccation, Electricity and heat.

Chemical agents- removal of microorganisms and filtration.

References:

- Joshua. A.K. Microbiology, India printing works
- Martein Probisher, Fundamentals of micro-biology
- Goss, R.C., Experimental Microbiology. Guide laboratory, Kalyani publishers
- Frazier, W.C. Food Microbiology, Tata Mc. Graw Hill Book Company, Bombay, 1988
- Adams, M.R and Moss M.O. Food Microbiology Royal Society of Chemistry, Cambridge, 1995
- Banwart, G.T, Baric Food Microbiology CSS Publishers, New Delhi. 1987

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

PRINCIPLES OF INTERIOR DECORATION - I

Objectives :

1. To learn the basic principles of art.
2. To develop the skill of applying the principles of art in decorating the house.

UNIT - I

Family Housing :

Need and importance of Housing.

Factors influencing selection of site.

Factors to be considered for good housing, Ventilation.

UNIT- II

Elements Of Design :

Design – Definition – Kinds of design. Elements of design line – Direction – Shape, Size, Texture and colour

UNIT- III

Principles Of Design :

Harmony, Balance, Rhythm, Proportion, Emphasis.

UNIT- IV

Use Of Colour In Interior :

Classifications of colours – primary, binary, intermediate, tertiary and quaternary. Qualities of colour, Hue value, intensity, Prang colour system, colour and emotion, use of colour in interior decoration.

UNIT - V

Furniture selection :

Care and selection of furniture in dining room, office, bedroom, living room.

References:

1. Nickel, P. and Dorsey, J.M. – Management in Family living, John Wiley and sons, Inc, New York (1986).
2. Varghese and Oglae, Home management, Wiley Eastern Ltd., New Delhi (1994).
3. Butt, H.H., Home Furnishings, John Wiley and sons, New York, 1971.

**MSU /2016-17 / UG Colleges / Part -III / [B.Sc Nutrition And
Dietetics]/semester IV /Ppr.no.28/ Core - 6**

FOOD CHEMISTRY

Objectives :

1. Understand the meaning and chemical preparation of carbohydrates in foods
2. Explain the role of lipids and protein in foods
3. Acquire knowledge on the chemical changes occurring in foods

UNIT - I

Carbohydrates in food:

- a) Introduction to food chemistry,
- b) Monosaccharides- structure, properties & derivatives
- c) Oligosaccharides- structure, properties & derivatives

UNIT - II

Carbohydrates in food:

- a) Functions of sugars in foods
- b) Polysaccharides and their role in foods

UNIT- III

Lipids in food

- a classification and composition
- b characteristics of fat
- c functional properties

UNIT -IV

Functional role of proteins

- a Denaturation of proteins,
- b Foam formation of proteins,
- c)functional role in foods

UNIT - V

Functional role of vitamins and minerals

Vitamins and minerals – Functional role in foods and its bioavailability

References:

1. Seema Yadav, 1997, Food Chemistry, Anmol Publications Pvt. Ltd, New Delhi
2. Meyer. L.H, Food Chemistry
3. Srilakshmi. B, 2002, Food Science, New Age International (P) Ltd, New Delhi
4. Shankuntala Manay, 2001, Food Principles, New Age International (P) Ltd, New Delhi

FOOD CHEMISTRY

1. Evaluation of food grains for their character.
2. Qualitative test for carbohydrate.
3. Estimation of reducing sugar.
4. Determination of gluten content
5. Preparation of colloid, gel, foam, emulsion
6. Determination of acidity in flour
7. Determination of acid value and free fatty acids
8. Determination of peroxide value in fat and oil
9. Purity in fat and oil
- 10.** Evaluation of milk samples

**MSU /2016-17 / UG Colleges / Part -III / [B.Sc Nutrition And
Dietetics]/semester IV/Ppr.no.30/Allied - IV**

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, Tuity-fruity

Unit – V

Pickling – Principles and methods

**MSU /2016-17 / UG Colleges / Part -III / [B.Sc Nutrition and
Dietetics]/semester IV/Ppr.no.31/Allied Practical - IV**

FOOD PROCESSING AND PRESERVATION

1. Preparation of jam - Pine apple, Multi fruits, Papaya.
2. Preparation of squashes- Mango, Grapes, Pineapple, Lime and ketchup.
3. Preparation of sauces
4. Preparation of pickles – Mixed vegetables, Mango, Garlic, Lemon, Chilies,
Fish and Mutton .
5. Visiting a food preservation factory.
6. One week training in a Food Preservation Unit.

**MSU /2016-17 / UG Colleges / Part -IV / [B.Sc Nutrition And
Dietetics]/semester IV/Ppr.no.32/Skill Based Subject – II**

FOOD SERVICE MANAGEMENT - II

Objectives :

1. Gain knowledge about various types of food service.
2. Understand the principles and functions of management.
3. Realise the importance of sanitation.

UNIT -I

Classification :

Types of food service-system conventional, ready prepared and assembly service system, Styles of services, self-services, tray services, waiter services, vending, mobile and portal services.

UNIT -II

Menu Planning And Purchasing :

Menu – Types of menu, principles involved in menu techniques in writing, presenting a menu.

Purchasing and receiving procedure – Purchase specifications and procedure involved in receiving, standard practices.

UNIT -III

Quantity And Quality Control:

Quantity food production, standardization of recipes, quality standard and portion control, utilization of left overs.

UNIT - IV

Equipment And Storage:

Equipment and base materials, classification, selection, care and maintenance of equipments

UNIT - V

Food Storage –objectives, types, records maintained, storage procedures, other activities and inventory control.

Practicals:

1. Visit to star hotels.
2. Planning menus according to income levels.
3. Gaining practices and experience of the equipment of their care.

References :

- 1.Mohini Sethi and – Surjeet Malhan. Catering Management an integrated approach Wiley Eastern Ltd., New Delhi.
- 2.Malhotra – Food Service Management – Anmol Publisher, New Delhi.
- 3.The theory of catering, Kinton and Ceasarani.

**MSU /2016-17 / UG Colleges / Part -IV / [B.Sc Nutrition And
Dietetics]/semester IV/Ppr.no.33(A)/ Non-Major Elective – II (A)
FOOD MICROBIOLOGY – II**

UNIT - I

Cereals and cereals products :

Contamination and prevention of spoilage of cereals and cereals products

UNIT -II

Fruits & Vegetables :

Contamination and prevention of spoilage of vegetables and fruits

UNIT- III

Contamination of milk:

Contamination and prevention of spoilage of milk and milk products

UNIT- IV

Contamination of fish, meats :

Contamination and prevention of spoilage of meats, fish and other sea foods

UNIT- V

Contamination of eggs and poultry:

Contamination and prevention of spoilage of eggs

Contamination and prevention of spoilage of poultry

References:

1. Joshua. A.K. Microbiology, India printing works
2. Martein Probisher, Fundamentals of micro-biology
3. Goss, R.C., Experimental Microbiology. Guide laboratory, Kalyani publishers
4. Frazier, W.C. Food Microbiology, Tata Mc. Graw Hill Book Company, Bombay, 1988
5. Adams, M.R and Moss M.O. Food Microbiology Royal Society of Chemistry, Cambridge, 1995
6. Banwart, G.T, Basic Food Microbiology CSS Publishers, New Delhi. 1987

PRINCIPLES OF INTERIOR DECORATION- II

Objectives :

1. To learn the basic principles of art.
2. To develop the skill of applying the principles of art in decorating the house.

UNIT--I

Furnishings – selection, use and care. Draperies and curtains, floor coverings. Hanging Pictures. Table settings.

UNIT- II

Flower Arrangement :

Requirement of flower arrangement. Treatment of flower styles in flower arrangement (traditional oriental and modern), Types of flower arrangement. Steps in making flower arrangement

UNIT- III

Household Equipments and Cleaning:

Study about various house hold equipments. Need for house hold cleaning.
Reagents, Equipments, Methods of cleaning.
Principles followed in cleaning.
Furniture cleaning and polishing, care doing cleaning.

UNIT- IV

Household Pests :

Common house hold pests mode of infection, methods of eradication, pest control common natural and artificial
Pesticides.

UNIT - V

Illumination :

References :

1. Nickel, P. and Dorsey, J.M. - Management in Family living, Tohn Wiley and Sons, Inc., New York (1986).
2. Varghese and Oglae, Home management, Wiley Easter Ltd., New Delhi (1994).
3. Butt, H.H., Home Furnishings, John Wiley and Sons, New York, 1971.

References :

1. Kent.N.L. Technology of cereals – with special reference to wheat, pergamon Press, New York, USA, 1975.
2. Sultan.W.J. (1976): Practical baking manual – for students and instructors, AVI Publishing Co.INC, West Port, Connecticut.
3. Matz S.A. Technology for the materials of Baking- Elsevier Science Publishers, Barking, England.