

**E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.**

*(An Autonomous Institution – Affiliated to Madurai Kamaraj University)*

Re-accredited (**3<sup>rd</sup> Cycle**) with Grade **A+** & **CGPA 3.51** by NAAC

## **DEPARTMENT OF NUTRITION & DIETETICS**



**CBCS SYLLABUS**

**BACHELOR OF SCIENCE**

**PROGRAMME CODE - N**

**COURSE STRUCTURE**

(w.e.f. 2017 – 2018 onwards)

**E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.**

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(Re-accredited (3<sup>rd</sup> Cycle) with Grade A<sup>+</sup> & CGPA 3.51 by NAAC)**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS - UG**

(w.e.f. 2017 – 2018 Batch onwards)

**COURSE STRUCTURE – SEMESTER WISE**

Sem	Part	Sub Code	Title of the Paper	Teaching hrs. (Per week)	Duration of Exam (Hrs)	Marks allotted			Credits
						C.A	S.E	Total	
1	I	17IT1	Part - I Tamil	6	3	25	75	100	3
	II	172E1	Part - II English	6	3	25	75	100	3
	III	17N11	Core - Food Science - I	4	3	25	75	100	4
	III	17N1P	Food Science - I & II Practicals	2	-	-	-	-	-
	III	17AN1	Allied I - Human Physiology	6	3	25	75	100	4
	IV	17SEN11	Skill Based Elective –I Spices and Herbal Nutrition	2	2	25	75	100	2
	IV	17SEN12	Skill Based Elective –II Food Safety and Quality Control	2	2	25	75	100	2
	IV	17NMN1	NME - Basic Nutrition	2	2	25	75	100	2
2	I	171T2	Part - I Tamil	6	3	25	75	100	3
	II	172E2	Part - II English	6	3	25	75	100	3
	III	17N21	Core - Food Science - II	4	3	25	75	100	4
	III	17N2P	Core - Food Science - I & II Practicals	2	3	40	60	100	2
	III	17AN2	Allied I - Food Microbiology	6	3	25	75	100	5
	IV	17SEN21	Skill Based Elective –I Nutritional Assessment	2	2	25	75	100	2
	IV	17SEN22	Skill Based Elective –II Home Food Catering	2	2	25	75	100	2
	IV	17NMN2	NME - Food Preservation	2	2	25	75	100	2

3	I	171T3	Part - I Tamil	6	3	25	75	100	3
	II	172E3	Part - II English	6	3	25	75	100	3
	III	17N31	Core- Fundamentals of Nutrition	4	3	25	75	100	4
	III	17N4P	Nutritional Biochemistry Practicals	2	-	-	-	-	-
	III	17AN31	Allied I – Bakery	6	3	25	75	100	4
	III	17AKN3	Allied II – Bio Chemistry	4	3	25	75	100	4
	III	17AKN4P	Allied II - Practical I Qualitative Analysis	2	-	-	-	-	-
4	I	171T4	Part - I Tamil	6	3	25	75	100	3
	II	172E4	Part - II English	6	3	25	75	100	3
	III	17N41	Core - Nutritional Biochemistry	4	3	25	75	100	4
	III	17N4P	Core - Nutritional Biochemistry Practicals	2	3	40	60	100	2
	III	17AN41	Allied I - Food Preservation	4	3	25	75	100	4
	III	17AN4P	Allied I - Bakery and Food Preservation Practicals	2	3	40	60	100	1
	III	17AKN4	Allied II – Environmental and Organic Chemistry	4	3	25	75	100	4
	III	17AKN4P	Allied II - Practical I Qualitative Analysis	2	3	40	60	100	1
5	III	17N51	Core - Nutrition Through Life Cycle	4	3	25	75	100	4
	III	17N61P	Nutrition Through Life Cycle Practicals	3	-	-	-	-	-
	III	17N52	Core - Dietetics - I	4	3	25	75	100	4
	III	17N62P	Dietetics – I & II Practicals	3	-	-	-	-	-
	III		<b>Elective - I</b>	4	3	25	75	100	5
	III	17PGRT8	Dietetic Internship Project	2	-	-	-	-	-
	III	17AKN5	Allied II – Applied Chemistry	4	3	25	75	100	4
	III	17AKN6P	Allied II - Practical II Volumetric Analysis	2	-	-	-	-	-
	IV	174EV5	Environmental Studies	2	2	-	100	100	2
	IV	17SEN51	Skill Based Elective –I Hotel House Keeping	2	2	-	100	100	2

6	III	17N61	Core - Food Processing	4	3	25	75	100	4
	III	17N62	Core - Dietetics - II	4	3	25	75	100	4
	III		<b>Elective II</b>	4	3	25	75	100	5
	III	17N61P	Core - Nutrition Through Life Cycle Practicals	3	3	40	60	100	4
	III	17N62P	Core - Dietetics –I & II Practicals	3	3	40	60	100	4
	III		<b>Elective III</b>	2	3	20	80	100	5
	III	17AKN6	Allied II –Applied and Medicinal Chemistry	4	3	25	75	100	4
	III	17AKN6P	Allied II - Practical II Volumetric Analysis	2	3	40	60	100	1
	IV	17SEN61	Skill Based Elective –I Front Office Management	2	2	-	100	100	2
	IV	174VE6	Value Education	2	2	-	100	100	2
	V	175NS4/ 175PE4	Extension Activities - NSS/Physical Education	-	2	-	-	100	1
		<b>Total</b>	<b>180</b>					<b>140</b>	

### **Electives**

#### **Semester – V (Elective – I Choose any one)**

1. Catering Management – 17NE5A
2. Functional Foods and Nutraceuticals – 17NE5B

#### **Semester – VI (Elective – II Choose any one)**

1. Post Harvest Technology - 17NE6A
2. Food Safety and Quality control – 17NE6B

#### **Semester – VI (Elective – III)**

Dietetic Internship Project – 17NEPR6

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**CBCS**

### DEPARTMENT OF NUTRITION AND DIETETICS -UG

(w.e.f. 2017 – 2018 onwards)

**Title of the Paper : Core-Food Science – I**

**Contact Hours: 4**

**Semester : I**

**Credits: 4**

**Sub Code :17N11**

#### **Objectives:**

To enable students to

1. Learn about the structure, composition, processing and their changes during cooking.
2. Understand importances of various food and their nutrients composition
3. Be familiarize with the different methods of cooking and their merits and demerit

**Unit – I Introduction to Foods :** Food-meaning, classification and functions. food groups-basic four and basic five. cooking-objectives, methods - moist heat, dry heat, microwave cooking, solar cooking and their merits and demerits.

**Unit – II Cereals and Millets :** Classification of cereals and millets, structure of wheat, nutritional composition: - wheat, rice, maize or corn, jowar, ragi and bajra. processing-parching, extrusion and puffing parboiling-merits and demerits. cereal cookery – factors affecting gluten formation, effect of cooking - gelatinization, retrogradation and dextrinisation. culinary uses of cereals in cookery

**Unit – III Pulses:** Classification, nutritional composition, changes during cooking of pulses, processing - soaking, germination, fermentation, parching, and extrusion. toxic Constituents- trypsin inhibitors, haemagglutinins and cyanogenic glycoside, culinary use of Pulses.

**Unit - IV Nuts and Oil Seeds:** Nutritional composition - almonds, coconut, groundnut, cashewnut, and gingelly seeds. Processing of oilseed – gingelly seed. toxic constituents- aflatoxins and gossypol. culinary use of nuts and oilseeds.

**Unit –V Vegetables & Fruits:** Vegetable and fruits -classification, selection, nutritional composition, pigments - water soluble and fat soluble , effect of cooking , conservation nutrients during cooking and processing , browning reaction – types, and prevention.

**Text Books:**

1. Shakuntala Manay and Shada Sharaswamy, *Food; Facts and Principles*, New Age International Pub., New Delhi, 2010.
2. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.

**Reference Books:**

1. Alex Ramani .V *Food Chemistry*, Mjp publishers Chennai ,2014 .
2. Raheena Begum .M *A Text Book of Foods, Nutrition and Dietetics* ,Sterling Pub.Pvt.Ltd ., New Delhi 2010.
3. Shakuntala Manay and Shada Sharaswamy, *Food; Facts and Principles*, New Age International Pub,, New Delhi, 2010
4. Shrinandan Bansal *Food and Nutrition* AITBS Publishers., New Delhi 2012.
5. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.

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**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS - UG**  
(w.e.f. 2017 – 2018 onwards)**Title of the Paper : Allied I -Human Physiology****Semester : I****Contact Hours: 6****Sub Code : 17AN1****Credits: 4****Objectives:**

To enable students to

1. Understand some of the relevant issues and topics of human physiology.
2. Understand the integrated structure and functions of all systems.
3. Gain the knowledge of human physiology

**Unit – I Cells and Tissue:** Cells - meaning, types- bone, cartilage, nerve, epithelial, muscle, secretory, adipose, blood and function. tissues- meaning, types- connective, muscle, nervous, epithelial and function. hormones - meaning, function, endocrine glands and their hormones-pituitary, thyroid, parathyroid, adrenal, islets of langerhans.

**Unit – II Digestive System:** Structure and functions, process of digestion and absorption, functions of saliva, stomach, small intestine and large intestine. Role of liver, pancreas and gall bladder.

**Unit – III Blood:** Blood- function, composition, blood coagulation, blood grouping, blood transfusion.

**Circulatory System :**Structure and functions of heart, cardiac cycle.

**Respiratory System :**Structure and functions of respiration, mechanism of respiration, transport of gases in lungs.

**Unit – IV Reproductive System:** Structure of male and female reproductive organs, menstrual cycle, ovaluation and hormones.

**Excretory System :**Structure and functions, formation of urine, composition of urine.

**Unit – V Special Senses:** Structure of eye, ear, nose, skin ,tongue- mechanism of vision and hearing.

**Nervous System:** Nervous system –sympathetic and parasympathetic. central nervous system - Structure of brain and function.

**Related Experience:**

1. Determination of haemoglobin by Sahli's method.
2. Demonstration of coagulation of blood and blood grouping.
3. Recording Pulse rate & measurement of blood pressure.

**Text Books:**

1. Arumugam et al., *Animal Physiology*, Saras Publications, 2004.
2. Guyton, A.C *Function of the human body*, 4<sup>th</sup> edition, W.B Sanders Company, Philadelphia, 1985.

**Reference Books:**

1. Chatterjee, C.C *Human Physiology*, Medical Allied Agency, Calcutta, 1998.
2. Guyton, A.C *Function of the human body*, 4<sup>th</sup> edition, W.B Sanders Company, Philadelphia, 1985.
3. Guyton, A.C and Hall, J.B. *Text book of Medical physiology*, 9<sup>th</sup> Edition, W.B. Sanders Company, Prim books Pvt, Ltd, Bangalore, 1996.
4. Joshi, D.V *Preparatory Manual for UG Physiology*, B.I Churchill living stone, New Delhi, 1995.
5. Wilson, K.J.W and Waugh, A *Anatomy and Physiology in health and illness*, 8<sup>th</sup> Edition, Churchill living stone, 1996.



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### DEPARTMENT OF NUTRITION AND DIETETICS - UG

(w.e.f. 2017 – 2018 onwards)

SKILL BASED ELECTIVE

**Title of the Paper : Spices and Herbal Nutrition**

**Semester : I**

**Sub Code : 17SEN11**

**Contact Hours: 2**

**Credits: 2**

#### Objectives:

To help the students

1. Gain a basic knowledge of spices and herbal.
2. Gain an understanding about culinary uses.
3. Gain knowledge on therapeutic value of spices and herbal.

**Unit – I** Spices and Herbs –meaning , functions, and classification.

**Unit – II** Major spices of india- pepper , cardamom, chillies ,turmeric and ginger - nutritional composition ,culinary uses and therapeutic value.

**Unit – III** Minor spices of india – garlic, onion ,asafoetida, fenugreek, cinnamon , cumin, omum, mustard ,and clove- nutritional composition, culinary uses and therapeutic value.

**Unit – IV** Herbs- stevia, coriander leaves ,mint, curry leaves ,celery, aloevera, basil and rosemary -nutritional composition , culinary uses and therapeutic value.

**Unit – V** Preparation of herbal products -herb Tea , juices, dessert, soups and adulteration of spices.

**Text Books:**

1. Shakuntala Manay and Shada Sharaswamy, *Food; Facts and Principles*, New Age International Pub., New Delhi, 2010.
2. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.

**Reference Books:**

1. Gajalakshmi R *Nutrition Science* CBS Publishers & Distributors Pvt, Ltd, New Delhi, 2015.
2. Potter N. and Joseph H. *Food Science* (5 ed.), CBS Publishers & Distributors Pvt, Ltd, New Delhi, 1996.
3. Shakuntala Manay and Shada Sharaswamy, *Food; Facts and Principles*, New Age International Pub., New Delhi, 2010.
4. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.

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To help the students

- 1 .Know the importance of quality assurance in food industry
- 2.Know the various tests and standards for quality assessment and food safety

**Unit-I** Quality control-Meaning, principles of quality control in food-raw material control, process control and finished product inspection. Total quality management.

**Unit-II** Food law and standard-PFA, FPO,ECA, and EIC, food regulation agencies at state level.

**Unit-III** Voluntary standard and certification system-BIS, AGMARK, consumer protection act, International standard-HACCP, and codex alimentarius.

**Unit-IV** Food additives-meaning, food preservatives, food colour- advantages and disadvantages

**Unit-V** Food safety-definition,-food related hazards-naturally occurring toxicants, physical, biological and chemical toxicants.

**Text Books:**

1. Roday S *Food Hygiene and Sanitation* (10 ed.), Tata Mc Graw-Hill Publishing Company limited New Delhi, 2006
2. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.
3. Srilakshmi. B *Human Nutrition* (1 ed.), New Age International Pub., New Delhi, 2011.

**Reference Books:**

1. Potter N. and Joseph H. *Food Science* (5 ed.), CBS Publishers & Distributors Pvt, Ltd, New Delhi, 1996
2. Shrinandan Bansal *Food and Nutrition* AITBS Publishers., New Delhi 2012.
3. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.
4. Swaminathan M *Food and Nutrition Volume II* (2 ed.), The Bangalore Printing & Publishing Co. Ltd. 2004.
5. Raheena Begum *Food, Nutrition and Dietetics* (3 ed.), Sterling Publishers Private limited New Delhi, 2013

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### DEPARTMENT OF NUTRITION AND DIETETICS -UG

(w.e.f. 2017 – 2018 onwards)

NON - MAJOR ELECTIVE

**Title of the Paper : Basic Nutrition**

**Semester : I**

**Contact Hours: 2**

**Sub Code : 17NMN1**

**Credits: 2**

**Objectives:**

To help the students

1. Understand the functions & sources of nutrients.
2. Apply the knowledge in maintenance of good health for the individual and the community

**UNIT – I** Definitions - nutrition, nutrients, health, nutritional status, malnutrition, under nutrition, over nutrition, balanced diet and RDA.

**UNIT – II** Carbohydrates – definition, classification, function, sources and RDA.

**UNIT – III** Protein-definition, functions, sources, deficiency and RDA. lipids-definition, functions, types, sources, deficiency and RDA.

**UNIT – IV** Vitamins-classification – water soluble (thiamine,riboflavin,niacin,B12), fat soluble (A,D,E, and K) ,functions, sources, deficiency and RDA.

**UNIT –V** Minerals –classification, functions, sources, deficiency ,RDA of calcium , iron, iodine, zinc and sodium.

**Text Books:**

1. Srilakshmi. B, Food Science (3<sup>rd</sup> edn.), New Age International Publications, New Delhi, 2003.
2. Srilakshmi.B , Nutrition Science (5<sup>th</sup> edn), New Age International Publications, New Delhi, 2008

**Reference Books:**

1. Guthrie A.H. Introductory Nutrition (6<sup>th</sup> edn), The C.V Mosby Company, 1986.
2. Gopalan, C. *et.al.*, Nutritive Value of Indian foods, ICMR, 1991.
3. Swaminathan, M. Essential of food and nutrition, Vol. I & Vol. II (5<sup>th</sup> edn.) , Ganesh & Co., Madras, 2007.
4. Robinson, ,C.H. et al., Normal& Therapeutic Nutrition, 17<sup>th</sup> edition., Macmillan publishing co 1986.
5. Williams S.A Nutrition Now (3<sup>rd</sup> edn), Wordsworth Thomson Learning Inc, Canada. 2001.

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**DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 onwards)

**Title of the Paper : Core - Food Science - II**

**Semester : II**

**Sub Code : 17N21**

**Contact Hours: 4**

**Credits: 4**

### Objectives:

To enable students to

1. Learn the structure, composition, selection of different food and their changes during to cooking.
2. Gain knowledge on sensory evaluation of foods.

**Unit - I Milk:** Milk - nutritional composition, types, processing - pasteurization, homogenization, standardization. Milk products - butter, ghee, cheese. Milk cookery, problems encountered in cooking milk.

**Unit - II Flesh Foods:** Egg ,Poultry, Meat and Fish- structure (meat), classification, nutritional composition, changes during cooking and tenderization.

**Unit - III Fats and oils:** Nutritional composition, rancidity – types and role of fat in cookery. **Sugars:** Classification, stages of sugar cookery and culinary use in cookery **Beverages:** Definition, classification and function.

**Unit – IV Sensory Evaluation:** Sensory characteristics of food,sensory tests– Difference: paired comparison, duo trio, and triangle. Rating: ranking, hedonic rating, and numerical scoring.

**Unit - V Food Adulteration:** Food Adulteration- meaning , types- intentional and incidental

**Text Books:**

1. Shakuntala Manay and Shada Sharaswamy, *Food: Facts and Principles*, Wiley Esatern Co, New Delhi, 1995.
2. Srilakshmi. B *Food Science* (5 ed.), New Age International Pub., New Delhi, 2010.

**Reference Books:**

1. Potter. N, *Food Science*, AVI Pub. Co., West Port, 1978.
2. Shakuntala Manay and Shada Sharaswamy, *Food: Facts and Principles*, Wiley Esatern Co, New Delhi, 1995.
3. Srilakshmi. B *Food Science* (5 ed.), New Age International Pub., New Delhi, 2010.
4. Srilakshmi. B, *Food Science-Laboratory Manual*, Scitech Pub. Pvt. Ltd., Chennai, 2010.
5. Usha Chandrasekaran, *Food Science and its Application to Indian Cookery*, Phoenix Pub., New Delhi, 2002.



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**DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 onwards)

**Title of the Paper : Core - Food Science I and II Practicals**

**Semester : II**

**Contact Hours: 2**

**Sub Code : 17N2P**

**Credits: 2**

### Contents:

1. Laboratory techniques, care of equipments and utensils, measurement of ingredients, determination of edible portion.
2. **Cereal cookery:** Microscopic examination of starches, measurement of raw and cooked rice, gelatinization of starch, gluten formation, methods of cooking coarse and fine cereals, quality of raw and parboiled rice cooked by different methods, preparation of selected recipes.
3. **Pulse cookery:** Germination, factors affecting cooking quality – hard water, soft water, soaked, un soaked, sodium chloride, sodium bicarbonate. Preparation of selected recipes.
4. **Vegetable and fruit cookery:** Measurement of weight of fruits and vegetables, browning reaction, colour and textural changes on cooking, preparation of selected recipes.
5. **Milk cookery** – problems in milk cooker and their prevention, preparation of selected recipes.
6. **Egg cookery:** Boiling, poaching, omelet, custard and egg nog preparation.
7. **Meat, Fish and Poultry:** Methods of cooking, common recipes.
8. **Beverages:** Preparation of hot and cold beverages.
9. Smoking temperature of different oils.
10. Stages of sugar cookery.

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**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 onwards)

**Title of the Paper : Allied I - Food Microbiology**

**Semester : II**

**Contact Hours: 6**

**Sub Code : 17AN2**

**Credits: 5**

**Objectives**

This course will enable students to

1. Understand the nature of microorganisms involved in food spoilage.
2. Understand the importance of microorganisms in food biotechnology.
3. To know the importance of food poisoning and infection.

**Unit – I Introduction to Micro Organism:** Brief history of food microbiology, primary sources of microorganisms in foods, physical and chemical methods of destruction of micro organisms in food, extrinsic and intrinsic parameters affecting growth and survival of microbes.

**Unit – II Contamination of Food Spoilage-I:** Sources, contamination and microorganisms involved in spoilage of different kinds of foods and their prevention - cereal and cereal products, vegetables and fruits.

**Unit – III Contamination of Food Spoilage-II:** Sources, contamination and microorganisms involved in spoilage of different kinds of foods and their prevention- fish and other sea foods, meat and meat products, egg and poultry, milk and milk products.

**Unit – IV Food Poisoning and Infection:** Food poisoning and infection –meaning and difference fungal food borne diseases. Bacterial food borne diseases and prevention – salmonella, staphylococcus, clostridium, perfringens and pseudomonas.

**Unit – V New Trends in Food Microbiology: Microbes used in food biotechnology, fermented foods and their benefits, prebiotic and probiotic.**

**Text Books:**

1. Anna K. Joshua, *Microbiology* (4<sup>th</sup> Edn), Popular Book Depot, Madras, 1988.
2. Frazier, W C and Westhoff D C., *Food Microbiology* (4<sup>th</sup> Edn), MC Graw Hill Inc. 1988.

**Reference Books:**

1. Benson Harold, J. *Microbiological Applications*, WNC Brown publishers, 1990.
2. Colling, C.H. and Lyne, P.M. *Microbiological Methods*, Butters Worth, London, 1976.
3. Frazier, W C. and Westhoff D C., *Food Microbiology* (4<sup>th</sup> Edn), MC Graw Hill Inc. 1988.
4. Jay James, M. *Modern Food Microbiology*, (3<sup>rd</sup> Edn.), Van No Strand Reinhold company Inc., 1986.
5. Pelezar, M.I. and Reid R.D., *Microbiology*, Tata Mc Graw Hill Book Company, New York, 1978.

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To enable the students to

1. Understand the concept of nutritional status and its relationship to health.
2. Know the aims and objectives for assessing the nutritional status of an individual and community.

**Unit – I Nutritional anthropometry - Meaning, need and importance, techniques for measuring height, weight, head, chest and arm circumference.**

**Unit – II Biochemical and Biophysical methods: Biochemical- laboratory test and test for protein energy malnutrition biophysical- functional assessment**

**Unit – III Diet surveys - Need and importance, methods of dietary survey, food security- meaning ,definition, concept of family food security.**

**Unit – IV Clinical signs - Identifying signs of PEM, vitamin A deficiency and Iodine deficiency.**

**Unit – V Vital Health Statistics-Measures of mortality and morbidity.**

**Text Books:**

1. Srilakshmi. B *Nutrition science* (5 ed.), New Age International Pub., New Delhi, 2010.
2. Srilakshmi. B *Human Nutrition* (1 ed.), New Age International Pub., New Delhi, 2011.

**Reference Books:**

1. Mahindru S.N *Food and Nutrition Education* (1 ed.) ,A P H Publishing Corporation New Delhi, 2008
2. Srilakshmi. B *Nutrition science* (5 ed.), New Age International Pub., New Delhi, 2010.
3. Srilakshmi. B *Human Nutrition* (1 ed.), New Age International Pub., New Delhi, 2011.
4. Swaminathan M *Food and Nutrition Volume II* (2 ed.), The Bangalore Printing & Publishing Co.Ltd. 2004.

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This course will enable the students

1. Develop skills in preparing various food items.

2. Learn proper handling, preparation and service of foods

**Unit-I Cereals and Pulses:** Cereals- method of food preparation, type of cooking, ingredients required, fermentation and its benefits -recipes for parathas, purees, rice pulao, biriyani, lemon rice, dosa, idli, preparations using noodles, macroni, spaghetti, murukku. Pulses- method of food preparation , type of cooking, ingredients required, sprouting and its benefits-recipes for khatta channa, rajmah, sambar etc., vada, dhokla, khandvi, kadis and boli.

**Unit-II Vegetables and Fruits:** Vegetables-method of food preparation , type of cooking, quantity of ingredients required for preparation of vegetable koftas, cutlets and baked vegetable dishes. Beverages-fruit and milk based punches, juices etc. Soups- variations in soups, benefits of consuming soup. Stews- vegetable and mutton. Salads and salad dressings- vegetable salads, whole meal salads, frozen salads and its benefits.

**Unit –III Milk and Fleshy Foods:** Milk and Fleshy Foods -method of food preparation ,type of cooking, ingredients used, recipes for paneer, cheese and khoa . preparations of Indian sweets: burfis, gulabjamun, sandesh, rasgulla, milk peda, yoghurt. meat, fish and poultry – type of cooking, benefits of marinating and curing, ingredients required. recipes for roasted, baked, fried, curries, kababs and tandoori preparations.

desserts – halwas, variations in ice cream, souffle, baked and steamed desserts, other hot and cold desserts.

**Unit- IV Cakes and Cookies:** Cakes and Cookies-type of cooking, uses of ingredients required used in bakery, recipes for cakes, variations: creamed, sponge pastries, swiss rolls etc. biscuits/cookies - variations, short crust pastry, choux pastry, flaky pastry and their preparations. sandwiches – open and toasted. snacks – savoury- mathri, kachoris, samosa. sweets: ladoos, gujias, malpuras.

**Unit- V Food Preservation :** Food Preservation -types of drying, freezing and canning. preparations of pickles and jams.

#### **Text Books:**

1. Sumati *Food science* (1 ed.), New Age International Pub., New Delhi, 2008.
2. Thangam E.Philp *Modern cookery* (6 ed.), Orient Blackswan Private Ltd, New Delhi, 2008.

#### **Reference Books:**

1. Margret *Illustrated Guide to Food Preparation* (2 ed.), Surjeet Publications Delhi, 2002.
2. Thangam Philp *Book of Baking* (2 ed.), Orient Longman Pvt Ltd, Chennai,, 2008.
3. Potter. N, *Food Science*, (5 ed.), CBS Publishers., New Delhi, 1996.
4. Shakuntala Manay and Shada Sharaswamy, *Food: Facts and Principles*, Wiley Esatern Co, New Delhi, 1995.
5. Srilakshmi. B *Food Science* (6 ed.), New Age International Pub., New Delhi, 2015.

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**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 onwards)

**NON – MAJOR ELECTIVE**

**Title of the Paper : Food Preservation**

**Semester : II**

**Contact Hours: 2**

**Sub Code : 17NMN2**

**Credits: 2**

**Objectives:**

To enable students to

1. To develop the ability in preserving foods by laboratory and house hold Measures.
2. To make the students understand the basic principles understand the basic Principles underlying food preservation.

**UNIT-I**

**Introduction to Food Preservation, Preservatives - meaning, importance, principles, types of preservation and preservatives.**

**UNIT-II**

**Preservation by use of Low Temperature - principles, types of refrigeration, cold storage, freezing and Methods of Freezing.**

**UNIT-III**

**Preservation by use of High Temperature - principles, types of pasteurization, steam sterilization, canning –types of Spoilage in canned Foods and bottling.**

**UNIT-IV**

**Drying and dehydration –definition, principles, types- sun drying, spray drying, mechanical dehydration. Merits and demerits and factors affecting of drying.**



**UNIT-V**

**Preserved foods**

Preparation of jam, jelly, squashes, Syrups, marmalades, ketchups, Problems in Jelly making, Pickle, rice vadam, and vegetable vatthal.

**Text Books:**

1. B. Srilakshmi, Food Science, New Age International (P) Ltd, Publishers, 2006.
2. Potter. N (1978) Food Science, AVI Pub, Co, West Port.

**Reference Books:**

1. Mohini Sethi & Eran S. Rao (2001) food science – experiments and applications. CBS publishers, New Delhi.
2. Shakuntala Manay & Shada Sharaswamy (1995) Food; Facts and Principles, Wiley Eastern Co, New Delhi.
3. Srilakshmi. B (2003) Food Science-Laboratory manual, Scitech Pub Pvt Ltd, Chennai.
4. Usha Chandrasekaran (2002) Food Science and its application to Indian Cookery, Phoenix Pub, New Delhi.

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### CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Core – Fundamentals of Nutrition**

**Semester : III**

**Contact Hours: 4**

**Sub Code :17N31**

**Credits: 4**

#### Objectives:

1. Understand the functions and sources of nutrients.
2. Apply the knowledge in maintenance of good health.
3. Be familiar with factors affecting nutrient availability and requirements.

#### Unit -I

**Nutrition and Health** : Definition, relation of food to health, RDA, factors affecting RDA, reference man and woman.

**Energy**: Units of energy, determination of energy content of foods – bomb calorimeter, determination of energy requirements, basal metabolic rate, factors affecting BMR, SDA of foods.

#### Unit – II

**Carbohydrates** :classification, sources, functions, digestion, absorption.

**Dietary fibre** :classification, sources, role of dietary fibre.

**Water** :functions, types, distribution, dehydration

#### Unit - III

**Protein**: Nutritional Classification, functions, digestion, absorption, protein quality (BV, PER, NPU), types of amino acids.

#### Unit - IV

**Lipids** :Classification, functions, digestion, absorption.

**Fatty acids** : Classification-saturated, unsaturated, monounsaturated and polyunsaturated, sources.

### **Unit - V**

**Vitamins:** Fat soluble –A,D,E and K , water soluble –B<sub>1</sub>,B<sub>2</sub>,B<sub>6</sub>,B<sub>12</sub> and C functions, sources, deficiency.

**Minerals:** Classification, functions, sources and deficiencies - calcium, phosphorus, iron, iodine, zinc.

### **Text Books:**

1. Gajalakshmi.R ,*Nutrition Science* (1<sup>st</sup> edn) CBS Publisher & Distributers Pvt Ltd New Delhi, 2014
2. Srilakshmi. B, *Nutriton Science* (5<sup>th</sup> edn.), New Age International Publications, New Delhi, 2017.
3. Sunetra Roday, *Food Science & Nutrition*, (2<sup>nd</sup> edn.), Macmillan publishing co., New Delhi, 2012.

### **Reference Books:**

1. Raneena Begum.M, *Foods, Nutrition & Dietetics* (3<sup>rd</sup> edn), Sterling Publishing Privat Limited, New Delhi , 2013.
2. Shrinandan Bansal, *Food and Nutrition* (3<sup>rd</sup> edn), AITBS Publisher, India , 2012.
3. Shubhangini A Joshi, *Nutrition and Dietetics with Indian Case Studies* (4<sup>th</sup> edition.), Tata McGraw Hill Education Pvt Ltd 2011.
4. Srilakshmi. B, *Human Nutriton( For B.Sc Nursing Student )* (2<sup>nd</sup> edn.), New Age International Publications, New Delhi, 2011.
5. Swaminathan, M. *Advanced Text Book on Food and Nutrition*, Vol. I & Vol. II (22<sup>nd</sup> edn.), Published by The Bangalore Printing and Publishing Co.Ltd, 2010.

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To enable the students to

1. Understand the basic concepts of bakery and food preservation.
2. Familiarize with baking processes and operations.
3. Develop skills and techniques in food preservation.

**Unit - I**

Introduction to bakery, baking principles, role of wheat flour in bakery products, types of flour, composition of flour, characteristics of good quality flour, flour test.

**Unit - II**

Functions of ingredients in baking-yeast, eggs, sugar, fats, milk products, emulsifiers, enzymes, cream and leavening agents, water, salt, flavouring and colouring materials.

**Unit - III**

Commercial bread making methods- sponge, straight dough, fermented dough.

**Unit – IV**

**Pastry making** - principles of pastry making, types – puff, flaky, philo and vegetables.

**Cakes** – types-sponge, plain cake, cake faults and their remedies, types of icings-butter and royal.

**Unit – V**

**Baking process:** Flying fermentation, mixing, bulk fermentation, knock back, dividing and rounding, intermediate proofing, moulding and panning, final proofing, depanning, cooling, slicing, packing.

**Text Books:**

1. Srilakshmi, B. *Food Science*, New Age International (P) Ltd, Publishers, 2006.
2. Yogambal Sivalingam, *Theory of Bakery and Confectionery* Visaga Publication, 2005.

**Reference Books:**

1. Dubey S. *Bakery*, Wheat Associates of India, 1979.
2. Malik ,R.K.and Dhingra,K.C. *Technology of Bakery products*, Modern Bakery industries, Small Industry Research Institute, New Delhi, 1981.
3. Matz, S.A *Bakery Technology*, Packaging, Nutrition, Product Development and Quality Assurance, Elsevier, Science publisher Limited, New York, USA, 1989.
4. Thangam E. Philip *Modern Cookery* (Vols I and II), Orient Long Man, Mumbai, 1999.
5. Wade, P. *Biscuits, cookies and cracker*, Vol. 1., Elsevier Applied science publishers Ltd., New York, USA, 1988.

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1. Develop an understanding on the principles of biochemistry.
2. Obtain an insight into the chemistry of major nutrients and physiologically Important compounds.
3. Understand the biological processes and systems as applicable to human nutrition.

**Unit - I****Carbohydrates**

Structure - glucose, fructose, galactose, maltose, lactose, sucrose, dextrin, starch and glycogen. Metabolism - glycolysis, glycogenesis, glycogenolysis, gluconeogenesis, Kreb's cycle, HMP shunt, blood sugar regulation.

**Unit - II****Protein**

Proteins- structure

Amino acids – structure and classification

Nucleic acids -structure and biological functions.

Metabolism-General pathway of amino acid, transamination, deamination, decarboxylation, urea cycle.

**Unit - III****Lipids**

Lipids- classification Fatty acids- types

Metabolism -  $\beta$  oxidation, bio synthesis of fatty acids.

**Unit – IV****Enzymes and co-enzymes**

Enzymes-Definition, classification, factors affecting enzyme activity.

Co-enzymes –Definition, classification, some common co-enzymes

**Unit – V****Hormones**

Biological role - pituitary, adrenal cortex and medulla, thyroid, parathyroid, pancreas.

**Text Books :**

1. Ambiga Shanmugam, *Fundamentals of Biochemistry for Medical Students*, Karthick offset printers, Chennai, 2010.
2. Arumugam N et al., *Biochemistry*, Saras Publication, Nagerkoil, 2014
3. Veerakumar L, *Biochemistry*, MJP Publisher, Chennai, 2010.

**Reference Books :**

1. Chopra H.K et.al, TM, *Food chemistry* (1<sup>st</sup>edn), Narosa Publishing House, New Delhi, 2010 .
2. Lajja Das, *Clinical Biochemistry* (1<sup>st</sup> edn), Venu Books Publishers & Distributors New Delhi 2014.
3. Patricia Trueman, *Nutritional Biochemistry* (1<sup>st</sup>edn), MJP Publishers Chennai 2007
4. Rastogi S C *Biochemistry* (3<sup>rd</sup> edn), Tata McGraw Hill Education Private Limited New Delhi, 2010.
5. Satyanarayan.S et.al *Fundamentals of Biochemistry*, (1<sup>st</sup> edn), Books and Allied (P) Ltd, Kolkata 2008

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**CBCS**

**DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

<b>Title of the Paper</b>	<b>: Core – Nutritional Biochemistry Practicals</b>	
<b>Semester</b>	<b>: IV</b>	<b>Contact Hours: 2</b>
<b>Sub Code</b>	<b>:17N4P</b>	<b>Credits: 2</b>

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### **Contents:**

1. Qualitative analysis of mono, di and poly saccharides .
2. Reactions of amino acids and their identifications in unknown mixtures.
3. Quantitative estimation of reducing sugars in foods (glucose, lactose by Benedict's method)
4. Quantitative estimation of ascorbic acid content of foods by titrimetric method.



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### **CBCS**

### **DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Allied – I Food Preservation**

**Semester : IV**

**Contact Hours: 4**

**Sub Code : 17AN41**

**Credits: 4**

#### **Objectives :**

To enable the students to

1. To develop the ability in preserving foods by laboratory and house hold measures
2. To make the students understand the basic principles underlying food preservation.

#### **Unit - I**

**Food Preservation** -meaning and needs, principles of preservation.

**Food Preservatives** - meaning , types –organic and inorganic, uses of HACCP in food preservation.

#### **Unit-II**

**Preservation by use of Low Temperature** - types – refrigeration, Slow, quick, dehydro freezing, effect of freezing on nutritive value.

**Preservation by use of High Temperature** - principles, types of pasteurization, steam sterilization, canning – process, types of Spoilage in canned Foods.

#### **Unit – III**

**Preservation by dehydration** - principles , treatment, methods – freeze, sun, spray,

foam mat, drying by osmosis effect of freezing on nutritive value, drying by smoking.

**Unit-IV**

**Preservation of food by high concentration sugar and salt** – preparation- jam, jelly, sauces, squashes, crushes, marmalades. types of pickles- tomato, lime, green chillies.

**Unit – V**

**Preservation of food by irradiation-** meaning, uses, effect of nutritive value.

**Fermented beverages-**wine, beer, rum and vinegar.

**Text Books:**

1. B. Sivasankar (2008) Food Processing and preservation, PHI Pub, New Delhi.
2. B. Srilakshmi, Food Science, New Age International (P) Ltd, Publishers, 2006.

**Reference Books:**

1. Mohini Sethi & Eran S.Rao (2001) food science – experiments and applications. CBS publishers, New Delhi.
2. Shakuntala Manay & Shada Sharaswamy (1995) Food; Facts and Principles, Wiley Eastern Co, New Delhi.
3. Srilakshmi.B (2003) Food Science-Laboratory manual, Scitech Pub Pvt Ltd, Chennai.
4. Usha Chandrasekaran(2002) Food Science and its application to Indian Cookery, Phoenix Pub, New Delhi.

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**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Allied- I Bakery and Food Preservation practicals**

**Semester : IV**

**Contact Hours: 2**

**Sub Code :17AN4P**

**Credits: 2**

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**Contents:**

1. Preparation of squashes, syrups, jams, jellies and preserves.
2. Preparation of pickles, chutneys, vatthal and vadagam.
3. Preparation of various types of bread rolls.
4. Preparation of cakes – plain cake, sponge cake, cup cake, pan cake.
5. Preparation of custard, pudding and doughnuts.
6. Preparation of cookies and biscuits.

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## CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Nutrition Through Life cycle**

**Semester : V**

**Sub Code : 17N51**

**Contact Hours: 4**

**Credits: 4**

#### **Objectives:**

To enable students to

1. understand the vital link between nutrition and health
2. know the factors affecting the nutrient needs during the life cycle and the RDA for different age groups.

#### **Unit – I Nutrition during adulthood**

Health, nutritional status, food pyramid, principles of menu planning ,balance diet, low cost balanced diet, RDA.

#### **Unit – II Nutrition during pregnancy**

Physiological stages of pregnancy-stages of gestation, weight gain during pregnancy, nutritional needs during pregnancy, complication of pregnancy and their dietary implications, RDA.

#### **Nutrition during lactation**

Physiological adjustments during lactation, process of stimulation of milk production, factors influencing the volume and composition of breast milk, Nutritional requirements during lactation , RDA.

#### **Unit – III Nutrition during infancy**

Growth and development, nutritional allowances for infants, breast feeding VS formula feeding , introduction of weaning foods and supplementary foods, nutrition related problems and feeding pattern .

**Nutrition during preschool period**

Growth and development, need and health care, food habits and nutrient intake, RDA.

**Unit – IV Nutrition during school going period**

Physical development, nutritional status, school lunch programme, food habits, nutritional requirements, importance of snacks, food choices, factors influencing eating habits.

**Nutrition during adolescence**

Change of growth, physical, physiological changes, eating behavior, nutritional needs and nutritional problems, RDA.

Nutrition for sport person – pre game, during game and post game.

**Unit – V Nutrition during old age**

Physical changes, food intake, choice of foods, nutrient needs, factors affecting nutrient requirements, nutrition related problems, RDA.

**Text Books :**

1. SriLakshmi, B. *Dietetics*, New Age International (p) Ltd, seventh edition Chennai, 2014.
2. Swaminathan, M *Essential of food and Nutrition*, Vols.I&II: Ganesh & CO., Madras, 1985.

**Reference Books :**

1. Antia F.E *Clinical Dietetics and Nutrition* Oxford university press, New Delhi, 1996.
2. Davidson Passmore P. and Break J.P., *Human Nutrition and Dietetics*. The English Language Book Society, Livingston, 1996.
3. Gopalan, C., Ramasastri, B.V and BalaSubramaniam, S.C. *Nutritive value of Indian Foods*, National Institute of Nutrition, Hyderabad, 1996.
4. Judith, E. Brown *Nutrition Through the Life Cycle*, Wadsworth Publishing, 2016.
5. Krause M.V., Horch M.A *Food, Nutrition and Diet Therapy* (10<sup>th</sup> edn), W.B. Saunders company, Philadelphia, 2000.

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### CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Dietetics - I**

**Semester : V**

**Contact Hours: 4**

**Sub Code : 17N52**

**Credits: 4**

#### Objectives :

To enable students to

1. develop attitude towards the profession as dietitian.
2. understand the recent trends in diet therapy and planning and preparation of therapeutic diets.

#### Unit – I

**Dietitian** – classification, responsibilities, code of ethics, assessment of diet planning, diet counseling and nutrition education. use of computers in diet planning and counseling.

#### Unit – II

**Concept of diet therapy**- purpose and principles of therapeutic diets, modification of normal diets , classification of therapeutic diets. Basic concepts of oral feeding , tube feeding , parenteral nutrition and feeding problems.

#### Unit - III

**Peptic ulcer** - causes, symptoms and dietary management.

**Liver diseases** jaundice , hepatitis , cirrhosis- causes, symptoms and dietary management.

#### Unit – IV

**Obesity and Underweight** - causes, symptoms and dietary management.

**Hypertension and Atherosclerosis** - causes, symptoms and dietary management.

**Diabetes mellitus-** causes, symptoms ,types of diabetes, complication of diabetes , glycemic index and dietary management.

**Unit – V**

**Kidney diseases** -nephritis , nephrosis , renal calculi –calcium oxalate ,renal failure- causes, symptoms and dietary management, dialysis.

**Cancer**– types , risk factors, symptoms, role of antioxidants in prevention of cancer and dietary management.

**Text Books :**

- 1.AvantinaSharma*Principles of Therapeutic Nutrition andDietetics*(1<sup>st</sup>edn.), CBS Publishers &Pvt.Ltd,New Delhi, 2017.
- 2.Srilakshmi. B, *Dietetics* (7<sup>th</sup>edn.), New 4Age International Publications, New Delhi, 2014.

**Reference Books :**

- 1.PoojaVerma, *Foods,Nutrition&Dietetics* (1<sup>st</sup>edn), CBS Publishers &Pvt.Ltd, New Delhi ,2015.
- 2.RaneenaBegum, M,*Foods,Nutrition&Dietetics*(3<sup>rd</sup>edn),Sterling Publishing Pvt Limited,New Delhi ,2013.
- 3.ShrinandanBansal, *Food and Nutrition* (3<sup>rd</sup>edn), AITBS Publisher,India,2012.
- 4.Srilakshmi.B, *Human Nutriton( For B.Sc Nursing Student )*(2<sup>nd</sup>edn.), New Age International Publications, New Delhi, 2011.
- 5.Swaminathan, M. *Advanced Text Book on Food and Nutrition*, Vol. I & Vol. II (2<sup>nd</sup>edn.),Published by The Bangalore Printing and Publishing Co.Ltd, 2010.

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### CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

#### ELECTIVE I –(OPTIONAL)

**Title of the Paper :Catering Management**

**Semester :V**

**Contact Hours: 4**

**Sub Code :17NE5A**

**Credits: 5**

#### **Objectives:**

To enable students to

1. understand the different types of food service and styles.
2. gain knowledge about the functioning of food service institutions.
3. develop skills in setting up food service units.

#### **Unit I**

**Food Service**-Types -Commercial and Non commercial, objectives, Styles of service-waiter service, buffet, English and French service ,menu planning, types of menu.

#### **Unit II**

**Equipments in food service**-Classification of equipment, factors for selection of equipments, electrical and non-electrical equipments for food storage, preparation and food serving.

#### **Unit III**

**Management tools**-Organization chart,job description,job specification,job analysis,time &work schedule, production and service ,budget, leadership style and training, decision making and communication.

#### **Unit IV**

**Personnel Management**-Recruitment-sources , procedure and policy, selection and training, labour laws.



**Unit V**

**Cost Accounting**-Cost concepts-types, fixed cost, semi fixed cost, variable cost, food cost control, records to be maintained, book keeping, book of accounts-cash book, purchase book, sales book , purchase return book, sales return book and journal.

**Text Books:**

1. Mohini Sethi, Surjeet Malhan, *Catering Management (Revised 2<sup>nd</sup> Edn)*, New Age International pvt .Ltd publishers, 2007.
2. George B and Chatterjee S, *Food and Beverage service*, Jaico Publishing company, Mumbai, 2009.

**Reference Books:**

1. Kotas R and Davis B, *Food cost control*, Macmillan, Publication, 1973.
2. Longree. K, *Food Service Sanitation*, John Wiley and Sons 1973
3. Mohini Sethi, Surjeet Malhan, *Catering Management (2<sup>nd</sup> Edn)*, New Age International pvt. Ltd publishers, 2006.
4. Roday. s, *Food Hygiene and Sanitation*, Tata Mc Graw Hill Publishing Company Ltd, 2006.
5. West B. B, Wood. L, Hoglet .F and Shukart. G. *Food Service in Institutions*, John Wiley and Sons 1977.

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## **CBCS**

### **DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017–2018 Batch onwards)

#### **ELECTIVE I –(OPTIONAL)**

**Title of the Paper :Functional Foods and Nutraceuticals**

**Semester :V**

**Contact Hours:4**

**Sub Code :17NE5B**

**Credits:5**

#### **Objectives :**

To enable students to

1. understand the meaning and function of functional foods and nutraceuticals properties.
2. gain knowledge on the scientific basis of foods and nutrient supplements.

#### **Unit - I**

**Functional Foods** – Introduction, definition , classification, role of functional foods in disease prevention ,advantages and disadvantages.

#### **Unit - II**

**Nutraceuticals**-from plant, animals, microbes, classification as per sources of chemical nature and function, role of nutraceuticals in prevention of disease.

#### **Unit - III**

**Perspective for food Applications** –Sources, bioavailability and potential application for health of polyphenols, flavonoids, catechins , isoflavones,tannins ,phytoestrogens, phytosterols, glucosinolates& protease.

#### **Unit – IV**

**Health Functionality of Food Components**-Definition, sources and health benefits of

probiotics & prebiotics, synbiotic and microbiota dietary fibre, oligosaccharides, amino acids, peptides and protein, fatty acids.

### **Unit - V**

Consumer marketing- factors for marketing functional foods and nutraceuticals, role of functional foods in food industries.

### **Text Books :**

1. Mary et.al., *Essentials of functional foods*, Culinary and hospitality industry publications services, 2005.
2. Robert et. al., *Nutraceuticals and Functional foods*, Culinary and hospitality industry publications services, 2005.

### **Reference Books :**

1. David et.al., *Performance functional foods*, culinary and hospitality industry publications services, 2005.
2. Israel Goldberg, *functional food, designer, pharma foods, nutraceutical*, Culinary and hospitality industry publications services, 2006.
3. Srilakshmi. B, *Nutrition Science* (5<sup>th</sup>edn.), New Age International Publications, New Delhi, 2017.
4. Sunetra Roday, *Food Science & Nutrition*, (2<sup>nd</sup>edn.), Macmillan publishing co., New Delhi, 2012.
5. Robert E.C Wildman, *Hand book of Nutraceuticals and Functional foods*, Culinary and hospitality Industry publications services, 2005.

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### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

#### SKILL BASED ELECTIVE

**Title of the Paper :Hotel House Keeping**

**Semester :V**

**Contact Hours:2**

**Sub Code :17SEN51**

**Credits:2**

#### Objectives :

To enable students to

1. understand of the different areas and functions of housekeeping department.
2. acquire knowledge regarding maintenance of rooms.

#### Unit-I

**House keeping department** - Introduction, layout of housekeeping department, organization, job description, training, recruitment and selection, qualities of housekeeping staff.

#### Unit-II

**Practices and procedures** – briefing and scheduling of staff, rules on guest floor, knowledge of rooms, maids cart, cleaning a room, room report. Control desk – role of the control desk, types of registers and files maintained.

#### Unit-III

**Linen and uniform room** – storage conditions, equipment and accessories, types of uniforms and linen, records maintained in linen room, par stocks, inventory control, exchange of linen and uniforms, housekeeping supply room.

**Unit-IV**

**Laundry Services** - Organization of laundry department in a hotel, different types of laundry and cleaning agents , cleaning equipments. Public area – cleaning, care and storage of out of service, furniture.

**Unit-V**

**Current trends in Housekeeping practices** – Ecotel Practices in house keeping department budgeting, lost and found procedure, cleaning methods and standards, pest control, control of odours. fire prevention .

**Text Books:**

1. Raghubalan G and Smritee Raghubalan, *Hotel Housekeeping*, Oxford University Press, New Delhi, 2007.
2. Sudhir Andrews, *Hotel House Keeping*, (2<sup>nd</sup> edn) Tata McGraw Hill Publishing Co. Ltd. 2010.

**Reference Books**

1. Dr. B.K. Chakravati, “ *A Technical guide to Hotel operation* ” , Metropolitan, New Delhi India.
2. JoanC Boason , Lennox M, *Hotel, hostel & hospital housekeeping*, 5<sup>th</sup> edition Bookower publishers, New York. 2004.
3. Longree. K., *Food Service Sanitation*, John wiley and Sons 1973.
4. Sudhir Andrews, *Hotel House Keeping*, Tata McGraw Hill Publishing Co. Ltd. 2010.
5. West B.B., Wood .L, Hoglet F, and Shukart. G, *Food Service in institutions* John Wiley and Sons 1977.

# E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.

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## CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Food processing**

**Semester : VI**

**Sub Code :17N61**

**Contact Hours: 4**

**Credits: 4**

#### Objectives:

To enable students to

1. understand the physical and chemical principles of food processing.
2. gain knowledge on recent trends in food processing.

#### Unit - I

##### Food processing

Introduction, types, scope, aims and principles of food processing.

##### Cereal processing

Milling – traditional and modern milling, by products of milling of wheat, storage of processed cereal grains, extruded processing – production of pasta, noodles.

#### Unit - II

##### Pulse & Legumes Processing

Processing methods, quick cooking legumes, instant legume powders.

##### Nuts and oil seeds

Oilseed pressing, solvent extraction, purification, processing of oil.

#### Unit - III

##### Vegetable & fruit processing

Pre-processing considerations in different vegetables & Fruits,

Processing – blanching, canning, pickling process, chutneys, puree , tatty fruity, Fruit concentrates and vegetable paste.

Carrot, tomato and beetroot juice processing

#### **Unit - IV**

**Milk processing-** operations, types & manufacture of milk and milk products,

#### **Unit - V**

**Fleshy foods-** fish & meat –processing –smoking, dehydration, canning, preservation using class I &II preservatives , food packaging .

#### **Text Books:**

1. Avantina Sharma, *Textbook of Food Science and Technology*, International Book Distributing Company, Lucknow, 2006.
2. Subbulakshmi G and Udipi S A, *Food Processing and Preservation*, New Age International Publishing, New Delhi, 2007.

#### **Reference Books:**

1. Norman N. Potter, Joseph H. Hotchkiss *Food Science* 5<sup>th</sup> Edition, CBS Publishers and Distributors, 1997.
2. Radhakrishna G and Balakrishna, AV, *Indian Food Processing Industry*, The ICFAI university Press, 2007.
3. SathyaprakashSinha, *Principles of food processing*, Adhyayan Publishers and Distributors, New Delhi, 2009.
4. ShakuntalaManay and Shadaksharaswamy, *Food facts and principles* (3 Edn.), New Age International Publication, New Delhi, 2008.
5. Sivasankar B, *Food processing and preservation*, Prentice Hall India Private Limited, New Delhi, 2008.

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**CBCS**

**DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper : Dietetics - II**

**Semester : VI**

**Sub Code : 17N62**

**Contact Hours: 4**

**Credits: 4**

**Objectives :** To enable students to

1. know about the principles of medical nutrition therapy.
2. develop the skills & principle in modification of the normal & therapeutic diet to suit the different disease condition .

### **Unit – I**

**Deficiency disorders** - PEM , Vitamin – A , Iron, Iodine-causes, symptoms and dietary management.

**Lung diseases** COPD - causes, symptoms and dietary management.

### **Unit - II**

**Febrile diseases** – causes, symptoms and dietary management-Acute diseases-typhoid , influenza and malaria ,Chronic disease- tuberculosis.

**Gastro intestinal disorders**- causes, symptoms and dietary management -diarrhoea, dysentery and constipation.

### **Unit – III**

**Genetic disorders** –phenyl ketonuria, galactosemia , fructosuria- definition, diagnosis, symptoms and dietary treatment.

### **Unit - IV**

**Diet in allergy** – definition, classification, food allergens, symptoms, test for allergy, dietary management.



**Unit -V**

**Burns-** types , dietary management.

**AIDS** -causes, symptoms and dietary management.

**Text Books :**

1. Avantina Sharma *Principles of Therapeutic Nutrition and Dietetics* (1<sup>st</sup>edn.), CBS Publishers & Pvt. Ltd, New Delhi, 2017.

2. Srilakshmi. B, *Dietetics* (7<sup>th</sup>edn.), New 4Age International Publications, New Delhi, 2014.

**Reference Books :**

1. Pooja Verma *Foods, Nutrition & Dietetics* (1<sup>st</sup>edn), CBS Publishers & Pvt. Ltd, New Delhi ,2015.

2. Raneena Begum.M, *Foods, Nutrition & Dietetics* (3<sup>rd</sup>edn), Sterling Publishing Pvt Limited, New Delhi ,2013.

3. Shrinandan Bansal , *Food and Nutrition* (3<sup>rd</sup>edn), AITBS Publisher, India, 2012.

4. Srilakshmi.B, *Human Nutrition ( For B.Sc Nursing Student )* (2<sup>nd</sup>edn.), New Age International Publications, New Delhi, 2011.

5. Swaminathan, M. *Advanced Text Book on Food and Nutrition*, Vol. I & Vol. II (22<sup>nd</sup>edn.), Published by The Bangalore Printing and Publishing Co. Ltd, 2010.

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To enable students to

1. understand the knowledge of storages of grains
2. gain knowledge about food spoilage and its prevention.
3. know about various agencies in controlling food losses.

**Unit I**

**Introduction to post harvest technology** - Definition, importance , role, principles, methods involved in post harvest technology , advantages and disadvantages.

**Unit II**

**Agents causing food losses**- Physical agents, (moisture, temperature), Chemical losses, biological losses, insects attacking food grains , detection of insect infestation.

**Unit III**

**Control of spoilage agents** - Importance and method of sanitary handling, physical, chemical, biological and control of pests, rats , rodents and birds. Insect& pest control methods- Physical and chemical methods.

**Unit IV**

**Storage of grains** - Importance , requirements of storage , methods of storage units- traditional -warehouse , underground & above ground storage modern storage-cold storage unit, retention of nutrients.

**Unit V**

**Agencies governing Food Losses - Role of SGC, FCI, CWC, SWC, IGSI.**

**Text Books:**

1. Pingale, *Handling and storage of food grains*- ICAR, New Delhi, 2000.
2. Potter, *Food Science*, - The A VI Publishing Co., The Westport, 2000.

**Reference Books:**

1. Avantina Sharma, *Textbook of Food Science and Technology*, International Book Distributing Company, Lucknow, 2006.
2. Gajalakshmi R *Nutrition science* CBS Publishers & Distributors Pvt Ltd New Delhi, 2010.
3. Potter, *Food Science*, - The A VI Publishing Co., The Westport, 1973.
4. Shakuntala many et.al *Food facts and principles*(3<sup>rd</sup> Edn), new age international publishing, New Delhi ,2009.
5. Subbulakshmi et.al *Food processing and preservation*, new age international publishing, New Delhi ,2009.

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To help the students to

- 1.study about quality control and food safety.
- 2.gain knowledge on food laws.
- 3.acquire knowledge on food adulteration and common food standards.

**Unit I****Food safety** – definition, food safety quality factors , food related hazards- physical, chemical, and biological hazards, microbiological considerations in food safety.**Unit II****Quality control** – meaning ,principles of quality control in food, raw material control, process control ,inspection of finished product, sensory evaluation, packaging, labelling and storage, Total quality management.**Unit III****Sensory Assessment** – Sensory assessment on food quality- appearance, color, flavour, texture and taste, reasons for testing food quality and trained panel members, different method of sensory analysis –difference test –paired comparison, duo-trio, triangle, rating tests-ranking, hedonic rating, numerical scoring, sensitivity tests – sensitivity threshold - dilution and descriptive test.

**Unit IV**

**Food Additives** – definition , functions, food colours –types –natural & chemical advantage and disadvantages. food adulteration-definition – intentional and incidental adulteration.

**Unit V**

**Food laws and regulations** –standard of weight and measures act, mark of BIS, AGMARK, PFA, FPO, Food Safety and Standards Act, GMP, GHP, Codex Alimentarius, HACCP- principles and application of HACCP.

**Text Books:**

1. Shakunthla Manay .N. Shadaksharaswamy. M.(2005).*Food Facts and Principles*, New Age International Publishers.
2. Srilakshmi. B *Food Science*(6<sup>th</sup> edn.), New Age International Pub., New Delhi, 2015.

**Reference Books:**

1. Potter N. and Joseph H, *Food Science* (5<sup>th</sup> ed.), CBS Publishers & Distributors Pvt, Ltd, New Delhi, 1996
2. Raheena Begum, *Food Nutrition and Dietetics* (3<sup>rd</sup> ed.), Sterling Publishers Private limited New Delhi, 2013
3. Srilakshmi. B, *Food Science* (6<sup>th</sup> ed.), New Age International Pub., New Delhi, 2015.
3. Srivastava .R.P. and Sanjeev Kumar , *Fruits and Vegetables Preservation principles and practices.*,(3<sup>rd</sup> ed )CBS Publishers & Distributors Pvt, Ltd, New Delhi, 1994
5. Sunetra Roday, *Food Hygiene and Sanitation with case studies.*,(2<sup>nd</sup> ed) Published by Tata Mc Graw Hill Education Pvt, Ltd, New Delhi 2011.

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**CBCS****DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper :Core – Nutrition through Life Cycle Practicals**

**Semester :VI**

**Contact Hours: 3**

**Sub Code : 17N61P**

**Credits: 4**

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**1. Planning and preparation of balanced diets for men & women**

**a. Low, middle and high income groups.**

**b. Sedentary, moderate and heavy activities.**

**2. Planning and preparation of balanced diets for special Physiological conditions.**

**a. Pregnancy-Trimester periods.**

**b. Lactation –First & Second six month.**

**3. Planning and preparation of balanced diets for different age groups.**

**a. Infancy.**

**b. Pre-School.**

**c. School going.**

**d. Adolescence.**

**e. Old Age.**

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## CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

**Title of the Paper** : Dietetics I & II Practicals

**Semester** : VI

**Contact Hours:** 3

**Sub Code** : 17N62P

**Credits:** 4

#### Contents:

#### 1. Planning and preparation of therapeutic and modified diets.

- a. Soft diet
- b. Fluid diet-Clear & full fluid diet
- c. Bland diet
- d. High protein diet
- e. High fibre diet
- f. Low fibre diet
- g. Calorie restricted diet
- h. Gluten free diet

#### 2. Planning and preparation of therapeutic and modified diets.

- a. Deficiency disorders – PEM, vitamin – A deficiency, iron deficiency.
- b. Febrile diseases – typhoid, Tuberculosis.
- c. Obesity and leanness.
- d. Diabetes mellitus.
- e. Peptic ulcer.
- f. Cardiac diseases- hypertension, atherosclerosis.
- g. Liver disorders – cirrhosis, jaundice.
- h. Renal disorders – nephritis, nephrosis, renal calculi.(calcium –oxalate )  
dialysis.

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### **CBCS**

### **DEPARTMENT OF NUTRITION AND DIETETICS-UG**

(w.e.f. 2017 – 2018 Batch onwards)

### **ELECTIVE III**

<b>Title of the Paper</b>	<b>: Dietetic Internship – Project</b>	
<b>Semester</b>	<b>: VI</b>	<b>Contact Hours: 2</b>
<b>Sub Code</b>	<b>: 17NEPR6</b>	<b>Credits: 5</b>

#### **Objectives :**

To enable the students to gain practical experience in the management of a dietary department and patient counseling for a period of 15 days.

#### **Content**

1. Observation and study of organization and management of the dietary department.
2. Understanding the medical history of the patients, study of case sheet and diagnostic tests used.
3. Planning therapeutic diets and computation of nutritive value.
4. Observation and study of
  - a. Purchase ,storage and issue.
  - b. Production.
  - c. Service.
5. Participation in diet counselling units, experience in imparting diet counseling and understanding the records maintained in diet counseling units.
6. Submission of case study project report at the end of the internship training.



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### CBCS

### DEPARTMENT OF NUTRITION AND DIETETICS-UG

(w.e.f. 2017 – 2018 Batch onwards)

#### SKILL BASED ELECTIVE

**Title of the Paper : Front Office Management**

**Semester : VI**

**Contact Hours: 2**

**Sub Code : 17SEN61**

**Credits: 2**

#### Objectives :

To enable students to

1. understand the organizational procedures of the front office.
2. know the departments associated with front office.

#### Unit - I

**Introduction to front office** –qualities of front office staff, functions of front office, job specification, job description, duties of a front office person.

#### Unit – II

**Reservation** – types of rooms, types of rates & plan, reservation system- types of reservation ,reservation chart ,cancellations.

#### Unit - III

**Reception**-Role of the receptionist, pre-arrival ,arrival and departure of guest, VIP procedure, handling mail.

#### Unit - IV

**Amenities** –Assignment of room ,spa, club, gym , swimming pool. list of guest supplies, complementary amenities , free wifi facilities.

**Unit - V****Check in & check out procedure & mode of payment.****Text Book:**

1. Sudhir Andrews, *Hotel Front Office Training Manual* – Tata McGraw Hill Publishing Company Ltd. New Delhi, 2013.

**Reference Books:**

1. Hurst Rosemary, *Services and Maintenance for Hotels and Residential Establishments*, William Heinman Ltd., Upper Grosvenor Street, London, 2001.
2. Jagmohan Negi, *Food and Beverage Costing*, Himalaya Publishing House, Bombay, 2001.
3. Raghubalan G and Smritee Raghubalan, *Hotel Housekeeping*, Oxford University Press, New Delhi, 2007.
4. Sudhir Andrews, *Hotel Front Office Training Manual* – Tata McGraw Hill Publishing Company Ltd. New Delhi, 1982.
5. Tharakan, Y G, *A guide to Food and Beverage*, Tata McGraw Hill Publishing Company, New Delhi, 2007.