

M. Sc. FOOD SERVICE MANAGEMENT AND DIETETICS

Syllabus

Programme Code : 2PSFSM

2022-2023



**SENGAMALA THAYAAR EDUCATIONAL TRUST
WOMEN'S COLLEGE
(AUTONOMOUS)**

(Affiliated to Bharathidasan University, Tiruchirappalli)
(Accredited by NAAC) | (An ISO9001:2015 Certified Institution)

**Sundarakkottai, Mannargudi-614 016,
Thiruvarur (Dt.), Tamil Nadu, India.**

DEPARTMENT OF NUTRITION AND DIETETICS

PROGRAMME OUTCOME FOR M.Sc., DEGREE

PO No.	Programme Outcomes <i>(Upon completion of the M.Sc. Degree Programme, the postgraduate will be able to)</i>
PO-1	Disciplinary Knowledge: demonstrate in-depth knowledge and understanding of theories, policies, and practices in one or more disciplines that form a part of a Post Graduate program of study in Master of Science.
PO-2	Critical Thinking and Problem Solving: apply analytic thought to a body of knowledge, analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence, identify relevant assumptions or implications, formulate coherent arguments, critically evaluate practices, policies and theories by following scientific approach to knowledge development: solve problems and extrapolate the same to real life situation
PO-3	Information/digital literacy and Communication Skills : use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources, and use appropriate software for analysis of data: communicate thoughts and ideas analytically and effectively in writing and orally using appropriate media, and present complex information in a clear and concise manner to different groups.
PO-4	Research-related skills: conduct independent inquiry in a chosen scientific discipline,demonstrate sense of inquiry and capability for asking relevant/appropriate questions, problematising, synthesising and articulating; recognise cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; plan, execute and report the results of an experiment or investigation.
PO-5	Scientific reasoning and Reflective Thinking: analyse, interpret and draw conclusions from quantitative/qualitative data and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective; critically and sensibly evaluate life experiences, with self awareness and reflexivity of both self and society.
PO-6	Multidisciplinary Approach, Innovation and Entrepreneurship: propose novel ideas of interdisciplinary approach in providing better solutions and new ideas for the sustainable developments; identify opportunities, entrepreneurship vision and use of innovative ideas to create value and wealth for the betterment of the individual and society.
PO-7	Moral and ethical awareness/reasoning: embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work, demonstrate the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopt objective, unbiased and truthful actions in all aspects of work.

PO-8	Self directed Learning: work independently, identify appropriate resources required for a project, and manage a project till completion.
PO-9	Lifelong Learning: engage in continuous learning for professional growth and development, acquire knowledge and skills, adapt to changing environment and adapt to changing trades and demands of work place through knowledge/skill development/reskilling.
PO-10	Multicultural Competence, Social Interaction and Effective Citizenship: understand the values and beliefs of multiple cultures, global perspectives, engage and interact respectfully with diverse groups and elicit views of others, mediate disagreements and help reach conclusions in group settings, and demonstrate empathetic social concern and equity centred national development.

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

PROGRAMME SPECIFIC OUTCOME

PSO No.	Programme Specific Outcomes <i>(Upon completion of the M.Sc.Food Service Management and Dietetics, the Postgraduate will be able to)</i>
PSO-1	Understand the core knowledge of food service management and dietetics in –depth.
PSO-2	Ability to counsel, apply, synthesize novel approaches relating to food science, diet formulations in the treatment of communicable and non –communicable disease.
PSO-3	Capability to differentiate, evaluate and develop unique food product for all age groups to foster healthy society.
PSO-4	Manage and administrate of hospital /hotel food service effectively.
PSO-5	Competent to perform experimental, clinical and translation research in disease prevention and utilization of food service resources
PSO-6	Become a successful professional, entrepreneur and researchers to peruse higher education
PSO-7	The graduates will successfully serve as Dietitians, Nutritionist, Food Service Administrators, course instructors, Project officers in Nutrition and Child care.



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SUNDARAKKOTTAL MANNARGUDI-614016.

TAMILNADU, INDIA.

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS COURSE STRUCTURE UNDER CBCS

(For the candidates admitted in the academic year 2022-2023)

ELIGIBILITY: Those who have completed UG Degree in Home Science, Nutrition and Dietetics, Food and Nutrition, Food Science and Nutrition, and other related disciplines in home Sciences viz, Clinical Nutrition and Dietetics, Food Service Management and Dietetics, with not less than 50 % marks in aggregate for Part III from a recognized University rules.

Sem.	Name of the Course	Course Code	Title of the Paper	Ins Hours /week	Credit	Exam Hours	Marks		
							CIA	ESE	Total
I	Core Course – I (CC)	22PND101	Advances in Food Science	6	5	3	25	75	100
	Core Course – II (CC)	22PND102	Applied Nutrition	6	5	3	25	75	100
	Core Course – III (CC)	22PND103	Hospital Administration	6	5	3	25	75	100
	Core Practical – I (CP)	22PND104P	Advances in Food Science Practical	6	3	3	40	60	100
	Elective Course-I (EC)	22PNDE1A /22PNDE1B	Applied Food Microbiology / Management in Food Service Operations	6	4	3	25	75	100
	Value added course I	22PNDVA11	Human Nutrition	-	2*	3	25	75	100*
TOTAL				30	22	-	-	-	500
II	Core Course – IV (CC)	22PND205	Advanced Dietetics	6	5	3	25	75	100
	Core Course – V (CC)	22PND206	Biochemical Changes in Diseases	5	5	3	25	75	100
	Core Course – VI (CC)	22PND207	Front Office Management and Housekeeping	5	5	3	25	75	100
	Core Practical – II (CP)	22PND208P	Advanced Dietetics Practical and Dietary Internship*#	6	3	3	40	60	100
	Elective Course – II (EC)	22PNDE2A/ 22PNDE2B	Food Packaging / Food Preservation	5	4	3	25	75	100
	Extra Disciplinary Course-I(EDC)			3	2	3	25	75	100
TOTAL				30	24	-	-	-	600
III	Core Course – VII (CC)	23PND309	Advanced Food Service Management	6	5	3	25	75	100
	Core Course – VIII (CC)	23PND310	Research Methods and Statistical Techniques	5	5	3	25	75	100
	Core Course – IX (CC)	23PND311	Quantity Food Production	5	5	3	25	75	100
	Core practical –III(CP)	23PND312P	Quantity Food Production practical and Catering Internship *#	6	3	3	40	60	100
	Elective Course III(EC-III)	23PNDE3A/ 23PNDE3B	Dietary Guidance and counseling/ Nutrition in Clinical Critical Care	5	4	3	25	75	100
	Extra Disciplinary Course-II(EDC)			3	2	3	25	75	100
TOTAL				30	24	-	-	-	600
IV	Core Course –X(CC)	23PND413	Food Safety and Quality Control	6	5	3	25	75	100
	Core Course –XI(CC)	23PND414	Food Service Facilities	6	5	3	25	75	100
	Entrepreneurship / Industry Based course	23PNDI41	Food product development	6	5	3	25	75	100
	Project	23PNDPW	Project	12	5	-	25	75	100
	Value added course II(VAC-II)	23PNDVA42	Waste Management in Food Industries	-	2*	3	25	75	100*
TOTAL				30	20	-	-	-	400
GRAND TOTAL				120	90				2100

CURRICULAM DESIGN

Subject	Number of Courses	Total Credits
Core Courses	11	55
Core practical /Internship	3	09
Elective Course	3	12
Extra Disciplinary course	2	04
Project	1	05
Entrepreneurship / Industry Based course	1	05
Total	21	90
Value added courses	2	4*

***The value added courses credit will not be included in the total CGPA**

Note:

- | | | |
|---|----------|----------|
| 1. Theory | 25 marks | 75 marks |
| 2. Practical | 40 marks | 60 marks |
| Internal | | External |
| 3. Separate passing minimum is prescribed for CIA and ESE | | |

FOR THEORY

1. The passing minimum for CIA shall be 40% out of 25 marks [i.e. 10 marks]
2. The passing minimum for University Examinations shall be 40% out of 75 marks [i.e. 30 marks]

FOR PRACTICAL

1. The passing minimum for CIA shall be 40% out of 40 marks [i.e. 16 marks]
2. The passing minimum for University Examinations shall be 40% out of 60 marks [i.e. 24 marks]

ELECTIVE COURSE COURSES (EC) OFFERED BY THE DEPARTMENT

Semester	Name of the Course	Course code	Title of the course (Any one from the list)
I	Elective Course – I (EC)	22PNDE1A/ 22PNDE1B	Applied Food Microbiology / Management in Food Service Operations
II	Elective Course – II (EC)	22PNDE2A/ 22PNDE2B	Food Packaging / Food Preservation
III	Elective Course – III (EC)	23PNDE3A/ 23PNDE3B	Dietary Guidance and counseling/Nutrition in Clinical Critical Care

EXTRA DISCIPLINARY COURSES (EDC) OFFERED BY THE DEPARTMENT

Semester	Name of the Course	Course code	Title of the course (Any one from the list)
II	Extra Disciplinary Course – I (EDC)	22PNDED1A/ 22PNDED1B	Food laws, standards and Health policies/ Women's Health and fitness
III	Extra Disciplinary Course – II (EDC)	23PNDED2A/ 23PNDED2B	Public Health Nutrition/ Nutrition in emergency and disaster management

VALUE ADDED COURSE (VAC) OFFERED BY THE DEPARTMENT

Semester	Name of the Course	Course code	Title of the course
II	Value Added Course-I (VAC)	22PNDVA11	Human Nutrition
IV	Value Added Course-II (VAC)	23PNDVA42	Waste Management in Food Industries

*#- Practical Exams to be conducted

*#- Should include both internal and external components in the dietary/ catering internship. Evaluation of the dietary/ catering internship should be done by the hospital/ hotel industry in which the student undergoes training and marks should be obtained for the external component and the case study work sheet and viva should be considered for the internal component.

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DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester –I- CC – I: Advances in Food Science

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 22PND101

OBJECTIVES:

- Familiarize the students with changes occurring in various foodstuffs as a result of processing and cooking
- Explain the principles and current practices of processing techniques and the effects of processing parameters on product quality.
- Apply and incorporate the principles of food science in practical, real- world situations and problems.

UNIT- I: Food constituents (20 Hours)

Constituents of Foods: Structure and properties of water and ice; Types of water; Water solution interactions; Phase transition of foods containing water; heat transfer during processing; relationship between viscosity and temperature; Water activity and food spoilage; Food dispersion: Colloidal system, and rheology of food dispersions; Structure, formation and stability of gels, sols, emulsion and foams.

UNIT- II: Carbohydrates and Sugars (20 Hours)

Starch and Polysaccharides: Structure and composition of starch; Properties and characteristics of food starches; Effect of heat on food starch properties and the factors influencing gelatinization and dextrinization changes; Modified food starches;

Structure, composition and characteristics of non-starch polysaccharides such as cellulose, hemicelluloses, pectin and gums; Role of starch and non-starch polysaccharides in food and industrial applications;

Properties of sugars and sweeteners: Sugars, syrups, sugar alcohols, potent sweeteners, sugar products; Role of sweetener in food products.

UNIT-III: Proteins and Enzymes (16 Hours)

Proteins and Enzymes: Amino acid - types and their properties; Structure and composition of proteins; Classification and properties of proteins; Effect of heat on physio-chemical properties of proteins; Role of proteins in food products; Texturized vegetable protein, protein concentrate and isolates preparation methods;

Enzymes: Classification and its nature; Mechanism of action; Factors influencing enzyme activity; Role of enzymes in food products; Immobilized enzymes and its application in food industries.

UNIT- IV: Fats and Oil (15 Hours)

Structure and composition of fat; properties of fat; Method of oil extraction; oil composition and the properties; Refining of oil and winterization; Methods to determine the quality of fats and oil; Effect of processing on physico-chemical properties of fat/oil; Sources of fat and its shelf life; Quality changes in fat and oil during storage and prevention of fat spoilage; Role of fats and oil in food products; Fat substitutes.

UNIT- V: Pigments and Flavours (19 Hours)

Pigments: Pigments classification, structure and properties; Effects of processing on stability

of pigments in foods and the factors influencing stability of colours in foods; Role of colours in food products.

Flavours: Taste and nonspecific vaporous sensations, Flavour compounds in vegetables, fruits and spices; Flavours produced from fermentation and volatiles on foods; Effect of processing on food flavours; Role of flavours in food products.

Total Lecture Hours-90

COURSE OUTCOME:

The students should be able to,

1. Recognize the characteristics and behaviour of food constituents during processing
2. Understand the changes in physiochemical and functional properties of carbohydrates and sugars
3. Identify the chemistry underlying the properties and reactions of various proteins and enzymes
4. Understand the knowledge on fats and oil and to control their interactions reactions with foods.
5. Criticize the role of applications and uses of pigments and flavours in food product development.

TEXT BOOK(S)

1. Julians BO, 1985. Rice Chemistry and Technology, 2nd edition, American Association Chemists, St. Paul Minnesota, USA.
2. Potter N. and Hotch Kiss JH, 1996. Food Science. 5th edition, CBS Publishers.
3. Shakuntala Manay N. Shadaksharaswamy M. 2001. Food Facts and Principles. Second Edition, New Age International.
4. Srilakshmi B. 2005. Food Science. New Age International (P) Ltd, Publishers, New Delhi.
5. Srilakshmi B. 2002. Food Science. New Age International (P) Ltd, New Delhi.
6. Swaminathan M. 2003. Advanced Textbook on Food and Nutrition. Second Edition, The Bangalore Printing and Publishing Co., Ltd, Bangalore.

REFERENCE BOOK(S)

1. Arthey D. and shurst PR, 1996. Fruit Processing. Blackie Academic and Professional, London.
2. Charley H. 1982. Food Science. Second Edition, John Wiley and Sons, New York.
3. Desrosier NW, and James N. 2007. Technology of food preservation. AVI Publishers.
4. Gopalan C. Ramasastry S.V. and Balasubramaniam SC. 2008. Nutritive Value of Indian Foods, National Institute of Nutrition, Hyderabad.
5. Manay S. and Shadaksharamasamy. Food: Facts and Principles. New Age International (P) Publishers, New Delhi.
6. Meyer LH. 1974. Food Chemistry. AVI Publishing Company. Inc,

E-RESOURCES

1. http://crystal.med.upenn.edu/sharp-lab-pdfs/sharp_EncLifeSci.pdf
2. <https://www.biotechnologynotes.com/food-biotechnology/food-chemistry/colloidal-systems-in-food-functions-types-and-stability-food-chemistry/14096>
3. <https://www.slideshare.net/NimishaK4/polysaccharides-in-foods>
4. <https://dravyagunatvpm.files.wordpress.com/2010/10/food-coloring-agents-pptnew.pdf>
5. <https://hmhub.me/classification-food-flavours-uses>.

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DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester –I- CC – II: Applied Nutrition

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 22PND102

OBJECTIVES:

- To be able to discriminate in dealing with a vast amount of nutrient information.
- Recognize the consequences of over nutrition, under-nutrition, and malnutrition.
- Describe the principle of caloric balance.

Unit-I: Energy

(20 Hours)

Definition of Energy, Components of energy requirements: Basal Metabolic Rate, Resting Metabolic Rate, Thermic effect of food, physical activity. Energy Content of Foods, Total Energy Expenditure, Energy balance, Factors affecting energy requirements, methods of measuring energy expenditure, Energy utilization in cells, Energy metabolism during Physical Activity, Recommended Dietary Allowances- ICMR, FAO and WHO.

Carbohydrates -Classification, Digestion Absorption, Utilization and Metabolism of Carbohydrates, Glycemic Index and Glycemic Load; Dietary Fibre -Classification, Sources and its role in Human Nutrition.

Unit-II: Protein and Lipids

(19 Hours)

Protein -Functions, Classification, Sources, Digestion, Absorption, Utilization and storage proteins. Evaluation of Protein quality – Biological assays, Biological Value(BV), Net protein utilization(NPU), Net Dietary protein ratio, Protein Efficiency Ratio(PER), and chemical score. Supplementary value of proteins related to Recommended intakes-ICMR, FAO and WHO

Lipids-Classification, Digestion and absorption of lipids, metabolism and transport of lipids in blood. Lipid transformation in the liver, role of essential fatty acids, deposition of fat in the body

Unit-III: Body fluids and Gut Microbiome in Nutrition

(18 Hours)

Body fluids and body composition-Body fluid compartments, Water-Sources, Distribution, Functions and Requirements. Regulation and disorders of Water Balance, Importance of Dehydration; Assessment of Hydration Status-Common indices Body composition Methods of assessment, relation of body composition to nutritional status

Gut Microbiome- Introduction Human microbiota- Distribution, composition and function of the gut microbiota, role of gut microbiota in human nutrition.

UNIT- IV: Fat Soluble Vitamins and Water Soluble Vitamins

(18 Hours)

Fat Soluble Vitamins - Functions, food sources, requirements, unit of measurements and hyper vitaminosis of vitamins A, D, E and K, Effect of deficiency.

Water Soluble Vitamins - Ascorbic acid and B Complex vitamins- Thiamine, Riboflavin and Niacin- Functions, effects of deficiency, food sources and requirements for different age groups. Importance of folic acid, Pyridoxine, Vitamin B12, Biotin and Pantothenic acid to the body.

UNIT-V: Macro and Micro Minerals

(15 Hours)

Macro Minerals- Calcium, Phosphorous, Magnesium, Potassium, & Sodium Distribution in the body; functions, effects of deficiency, food sources and RDA.

Micro / Trace Minerals- Iron, Zinc, Iodine, Selenium, Fluoride and Copper Distribution in the body; functions, effects of deficiency, food sources and requirements for different age groups.

COURSE OUTCOME:

The students should be able to,

1. Infer knowledge on carbohydrates and energy
2. Understand the relationship between health and nutrition and identify food sources of macro and micro nutrients
3. Understand the role of macro nutrients and are able to evaluate the energy value of foods
4. Understand the important role of vitamins and water in human body.
5. Gain knowledge of minerals and their functions.

TEXT BOOK(S)

1. Gajalakshmi R .2014 .Nutrition Science. CBS Publishers and Distributors Pvt. Ltd.
2. Longvah R, Anandhan K, Bhaskarachar Y and Venkaiah K. 2017. Indian Food Composition Table. National Institute of Nutrition, Hyderabad.
3. Mahtab S. Bamji, 2017. Textbook of Human Nutrition. Oxford & IBH Publishing Company Private Limited.
4. Mahtab S. Bamji, Prahlad Rao N and Vinodhini Reddy, Textbook of Human Nutrition ,Oxford IBH Publishing Co Pvt Ltd, 2004
5. Recommended dietary allowances, ICMR, National Institute of Nutrition, Hyderabad, 2020.

REFERENCE BOOK(S)

1. Krause, M. V and Hunsher, M. A, Food, Nutrition and Diet Therapy, 14th edition, W. B. Saunders company, Philadelphia, London, 2016.
2. Sareen, S, James, J, Advanced Nutrition in Human Metabolism, 4th Edition, Thomson Words Worth Publication, USA, 2005.
3. Michael J. Gibney, Hester V Vorster and Frans J Kok, Introduction to Human Nutrition, Black well publishing Oxford, U.K., 2003
4. Edward Ishiguro Natasha Haskey Kristina Campbell, Gut microbiota: Interactive effects on Nutrition and Health, 1st Edition, Academic Press, 2018

E-RESOURCES

1. <https://foodfuturefoundation.org/media/i0ld30zx/recommended-dietary-allowances-rda-for-indians-2020.pdf>
2. <http://www.signutra.com/nutripedia/role-of-dietary-fiber-in-health-and-disease>
3. https://www.researchgate.net/publication/293012690_Protein_Evaluation_of_Foods
4. <https://www.healthline.com/nutrition/micronutrients#types-and-functions>
5. <https://www.uofmhealth.org/health-library/ta3868>

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DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester –I- CC – III: Hospital Administration

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 22PND103

OBJECTIVES:

- To gain knowledge in hospital functions and administration.
- To acquire skills in maintaining medical records.
- To understand the management of resources in hospitals.

UNIT-I: Hospital based health care and its changing scenario (18 Hours)

Effects of globalization on health care, concepts of corporate hospitals in developing countries, infrastructure and layout of an ideal corporate hospital, functioning of modern hospital and changing needs of patients, hospitality in hospital care.

UNIT-II: Patient Care Services (18 Hours)

Patient Admission – Purpose, Policy and Procedure, Discharge - Process, Discharge Protocol and Discharge Summaries, Cafeteria and Dietary services, Front Office Services, Housekeeping Services, Blood Bank, Diagnostic services, Laboratory – scope, equipment, reagents and materials, Physiotherapy, Pharmacy – Objectives, Functions and Scope, Operation theatre, Outpatient ward admission and Inpatient ward admission.

UNIT-III: Principles of Hospital management (18 Hours)

Managerial activities for effective hospital functioning, duties and responsibilities of hospital managers, qualities of office managers and effective inter and intra departmental co-ordination. NABH standards.

UNIT-IV: Marketing and Material management (18 Hours)

Human Resource Management – Process, Performance Appraisal System, Managerial accounting and Financial Management, Material management – Objectives and Process and Inventory management – Systems and Methods, Marketing principles and methods. Basics of Computer: Components of computer, Knowledge about computer software and programmes commonly used in healthcare sector.

UNIT-V: Management of dietary units (18 Hours)

Management of dietary department- diet planning for hospital diets, purchasing, storage, quantity food production, serving to patient- tray and trolley service, plate waste management, washing and garbage disposal.

Total Lecture Hours- 90

COURSE OUTCOME:

The students should be able to,

1. Identify the functions of modern hospital.
2. Illustrate the infrastructure and layout of modern hospital.
3. Classify various patient care services administered in hospitals.
4. Determine the managerial activities of hospital Functioning
5. Evaluate the significance of marketing, materials, and financial management in hospitals.
Integrate the importance of hospitality services for patient support.

TEXT BOOK(S)

1. Dr. D.K.Sharma & Goyal R C (2017). Hospital Administration and Human Resource Management, Phi Learning, New Delhi.
2. Francis C M, (1995). Hospital Administration, Jaypee Brothers Medical Pubs, New Delhi.
3. Llewellyn Davis R and Macaulay H M C (1995). Jaypee Brothers Publications, New Delhi.
4. S.L.Goel & Dr.R.Kumar, (2007). Hospital Administration and Management
5. Sue Grossbauer, RD (2001), Managing Food Service Operations, A System Approach for Healthcare and Institutions, Kendall/Hunt Publishing Company, Iowa, USA.

REFERENCE BOOK(S)

1. Goel S L, (2009). Health Care System and Hospital Administration, Vol.7, Deep Publications Pvt.Ltd.
2. Jan Abel Olsen, (2009). Principles in Health Economics and Policy Oxford University Press.
3. Mohinder Chand, (2009). Managing Hospitality Operations, 1st Edition, Anmol Publications Pvt. Ltd. New Delhi.
4. Savitha Sharma, (1996), Hospital Management, Commonwealth Publishers, New Delhi.
5. Sherry Glied and Peter Smith, (2011). The Oxford Handbook of Health Economics.

E-RESOURCES

1. <https://www.ibef.org/download/Healthcare-January-2017.pdf>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1299207/>
3. https://www.who.int/hiv/pub/imai/om_5_infrastructure.pdf
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1208931/>
5. https://www.researchgate.net/publication/259389319_hospital_administration

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Semester: I-CP –I: Advances in Food Science Practical

Ins. Hrs. /Week: 6

Course Credit: 3

Course Code: 22PND104P

OBJECTIVES:

- To understand the sensory evaluation methods.
- To analyze the cooking quality of foods.
- To understand the scientific principles involved in food preparation.

PRACTICAL:

1. Starch- microscopic examination, gelatinization of starch, preparation of idli, dosai, appam, chappathi, paratha and poori. Starch as binding and coating agent.
2. Pulse – effect of soaking (time and types of water), germination, Factors affecting the cooking quality of pulses.
3. Effect of acid and alkali. Effect of heat on pigments in vegetables and fruits
4. Fats-Smoking temperature, factors affecting absorption. Deep fat fried foods, preparation of pastries and Salad dressings.
5. Meat, fish and poultry. Changes in cookery. Tenderness, different methods of cooking
6. Coagulation of egg white and egg yolk. Boiled egg, poached egg, scrambled egg, custard, cake, emulsion, mayonnaise. Egg quality testing. Egg as binding and coating agent.
7. Principles involved in the preparation of tomato soup, cooking vegetables in milk, cheese setting of curds.
8. Sugar cookery, stages, preparation of fondant, fudge, caramel, pulled toffee and brittles. Preparation of syrup for gulab jamoon, coconut burfi, brittle
9. Evaluating the quality-acceptability of foods, subjective and objective methods

REFERENCE BOOK(S)

1. Avantina Sharma 2006. Textbooks of Food. International book science and technology distributing Company.
2. Krishna Arora 2011. Theory of Cookery. Frank Bros. and Co. publishers, Noida.
3. Parvinder.S.Bali., 2016. Food Production. Oxford University Press, Operations New Delhi.
4. Srilakshmi, B., 2015. Food Science. New Age International (P), Ltd, New Delhi.
5. Thangam E., 2015. Modern Cookery for Orient Blackswan Philip Teaching and the Trade Private Limited, New Delhi, Volume-I.

E-RESOURCES

1. <https://slideplayer.com/slide/4376430/>
2. http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S000444FN/P000546/M011687/ET/1458042757et32.pdf
3. https://www.slideshare.net/ANSHIKA_SAXENA/cooking-methods-for-different-meat-cuts-103521626
4. <https://www.doubtnut.com/question-answer-chemistry/coagulation-of-egg-white-on-boiling-is-an-example-of-denaturation-of-protein-explain-it-in-terms-of--160820421>
5. <https://www.youtube.com/watch?v=s9vYZAfpkqA>.



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Semester: I-EC –I: Applied Food Microbiology

Ins. Hrs. /Week: 6

Course Credit: 4

Course Code: 22PNDE1A

OBJECTIVES:

- To understand the microorganisms related to food
- To know the beneficial effects of the microorganisms
- To evaluate the principles of sanitation
- To know the laws related to food safety

UNIT- I: Introduction to Microbiology

(18 Hours)

Structure, Growth and Multiplication of micro-organisms

Definition and History: Microscopy, General Morphology and Types of microorganisms
Bacteria, Fungi, Algae, Yeast and Virus - Bacteriophage. Growth curve, batch and continuous culture, factors affecting growth: intrinsic factors, nutrient content, pH, redox potential, antimicrobial barrier and water activity; extrinsic factors: relative humidity, temperature and gaseous atmosphere.

UNIT- II: Microbiology of Foods, Benefits of Microbes

(17 Hours)

Contamination, spoilage and preservation of cereal and cereal products, sugar and sugar products vegetables and fruits, milk and milk products and canned foods, meat and meat products, egg and poultry, fish. Food fermentation- types; fermented food products.

UNIT- III: Food borne diseases

(17 Hours)

Food hazards, significance of food borne diseases, risk factors associated with food borne illness.

- a. Bacterial agents of food borne illness – *Clostridium botulinum*, *clostridium perfringens*, *Escherichia coli*, *salmonella*, *shigella*, *vibrio* and *staphylococcus aureus*.
- b. Non-bacterial agents of food borne illness – Toxigenic fungi – Mycotoxins, ergotism and aflatoxins. Food borne viruses – Polio, Hepatitis and Gastroenteritis viruses.

UNIT- IV: Hygiene and sanitation

(19 Hours)

Importance of Personal hygiene of food handlers

General principles of hygiene – personal and environmental hygiene. Hygienic Practices in Handling and Serving Foods. Planning and implementation of training programme for health personnel.

Safety Measures: Safety in food procurement, storage, handling and preparation, control of spoilage, safety of leftover foods, disposal of food waste Control of Infestation and Cleaning Methods, Importance of pest control, various pests and their control measures, cleaning and sanitizing, need for efficient cleaning programme. Cleaning Agents, Equipments, and Methods to wash rinse and sanitize Food Contact Surfaces.

UNIT- V: Food Laws and Recent Concerns in Food Safety (19 Hours)

International and National food laws, Essential Commodities Act (ECA). Indian Standards Institute (ISI), Bureau of Indian Standards (BIS), AGMARK, Prevention of Food Adulteration Act (PFA), Fruit Products Order (FPO), Food Safety and Standards Bill 2005, Food and Agriculture Organization (FAO), World Health Organization (WHO), Codex Alimentarius, World Trade Organization (WTO), Joint Expert Committee for Food Additives (UN Food and Agriculture Organization and World Health Organization JECFA), Agricultural and Processed Food Products Export Development Authority (APEDA), ISO 22000 series. Hazard Analysis Critical Control Point (HACCP) - definition and principles.

Total Lecture Hour-90

COURSE OUTCOME:

The students should be able to,

1. Identify the types of microorganisms and explain the morphology of microorganisms
2. Classify beneficial effects and preservation of microbes in food products.
3. Determine the Food hazards, significance of food borne diseases, risk factors associated with food borne illness.
4. Evaluate the importance of Personal hygiene of food handlers.
5. Compile the various food standards to maintain the quality of foods.

TEXT BOOK(S)

1. Adams MR, Moss MO. 2008. Food Microbiology. Third Edition, The Royal Society of Chemistry, Cambridge.
2. Pechkam GC. 1998. Foundations of Food Preparation. 3rd Edition, MacMillan Publishing Co., New Jersey.
3. Pelczar JR. 2014. Microbiology. McGraw Hill Education (India) Private Ltd.
4. Roday S. 1999. Hygiene and Sanitation in Food Industry. Tata McGraw Hill Publishing Co., New Delhi.
5. Sunetra Roday 2012. Food Hygiene and Sanitation with Case studies. Tata McGraw Hill companies.

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1. Charley 1998. Hand Weaver Foods – A Scientific Approach. 3rd Edition, Prentice Hall Inc., New Jersey.
2. Fennema OR. 1996. Food Chemistry. 3rd Edition, Marcel Dekker Inc, New York.
3. Rajender Singh 2009. Food Microbiology and Food Processing. Arpit printer, New Delhi.
4. Sugandhar B. Apu RP. 2008. Food Microbiology. Daryaganj, New Delhi -2: Adhyayan Publishers and distributors.
5. Vijaya Ramesh K. 2009. Food Microbiology. New Delhi: New Age International Publishers.

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1. https://fac.ksu.edu.sa/sites/default/files/140_mbio-final_notes.pdf
2. <https://faculty.weber.edu/coberg/class/3853/3853%20mos%20and%20food%20spoilage%20notes.htm>
3. https://www.who.int/foodsafety/publications/foodborne_disease/Section_6.pdf
4. <https://nptel.ac.in/courses/102103015/pdf/mod5.pdf>
5. https://www.cartercenter.org/resources/pdfs/health/ephti/library/modules/finalmodule_food_borne_disease_diploma.pdf

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI – 614016

(For the candidates admitted in the academic year 2022–2023)

**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester: I-EC –I: Management in Food Service Operations

Ins. Hrs. /Week: 6

Course Credit: 4 Course Code: 22PNDE1B

OBJECTIVES:

- Gain knowledge on the role of front office and housekeeping operations in hotels.
- Develop skills in food handling equipment and in space allocation of food plants.
- Compile the functions of front house and back house operations in food service

UNIT-I: Front Office

(20 Hours)

Scope of hospitality industry and classification of hotels Objectives and Functions of front office, Duties and qualities of front office staff and Importance of efficient front desk Room types and rates, categories, rate factor, room rate code and classification, special and miscellaneous rate policies. Basic reservation procedures, Individual and group reservations, on line reservations and check –in and check – out procedures and settlement of bills Linkages of Tourism and hospitality industry.

UNIT-II: Housekeeping

(20 Hours)

Objectives and Functions of housekeeping, Duties and qualities of housekeeping staff and their etiquettes, Importance of efficient housekeeping department. Rules, procedures and principles of Daily, periodic and spring cleaning, List of standard room supplies. Cleaning equipment – types, selection, purchasing and its use, Cleaning agents – types and uses. Linen – types, storage, control of linen and bed making procedures Laundry – their functional design, selection, operation, use, care, maintenance and market trends , Pest and rodent control.

UNIT-III: Materials

(16 Hours)

Used Electrical and non –Electrical equipment Strength and limitation of material Is used. Finishes used for Equipment. Equipment –receiving, storage, pre-preparation , preparation, holding, serving, and dish washing area Fabrication of equipments and customized equipment Care and maintenance of equipment.

UNIT-IV: Kitchen Planning

(17 Hours)

Different types of kitchen, Finishes for walls and floors, Modular and customized kitchen Principles of designing, Space analysis at different work areas and work heights and storage heights for equipment Wiring and insulation.

UNIT-V: Engineering and Maintenance

(17 Hours)

Principles of maintenance, Importance of lighting, types of lighting, lighting fixtures, customized lighting and ventilation Basic concepts of electricity, Safety and Security. Types of fire accident, fire prevention and control, security measures, first aid and pest control.

Total Lecture Hours-90

COURSE OUTCOME:

The students should be able to,

1. Realize and understand more about each department in hotel industry
2. Understand the importance of housekeeping department
3. Comprehend different types of equipment applicable for use in food service operations
4. Understand the work areas, floor finishes, and kitchen layout at catering establishment
5. Compile the ways of handling pest control measures, disasters

TEXT BOOK(S)

1. Alline Ismail, Front office Operations and Management, 2002.
2. Sudhir Andrews, Textbook of Front office Management and Operations, third edition, 2008.
3. Matt, A. Casado, Housekeeping management, second edition, 2012.
4. Thomas, J.A.Jones, Professional management of housekeeping operation, fifth edition, 2008.
5. Borsenik,F.D and Stutts,A.D, The Management of maintenance and engineering systems in the hospitality industry, John Wiley and sons Inc. 4th edition, 1997.

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1. Palacio,P.J. Theis, M. West and Woods, Introduction to Food Service, Prentice Hall, 8thEdition, 1997.
2. Barrows,W.C., Powers,T.and Reynolds,D.R., Study Guide to accompany Introduction to Management in the Hospitality Industry, John Wiley and Sons, 2012.
3. June, Payne.Palacio, and Monica, Theis.,Foodservice Management: Principles and Practices, Pub. Harlow :Pearson, 13th Edition, 2016.

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2. <https://www.uou.ac.in/sites/default/files/slm/DHA-102.pdf>
3. <http://www.egyankosh.ac.in/bitstream/123456789/33508/1/Unit-16.pdf>
4. https://dgfasli.gov.in/sites/default/files/inline-files/rlikolkta_uncovered_pdis201920.pdf
5. https://gcwgandhinagar.com/econtent/document/1587705639Unit_IV_Frank_Moerman.pdf



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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester: I – Value Added Course – I - Human Nutrition

Course Credit: 2

Course Code: 22PNDVA11

UNIT- I: Nutrition and Recommended dietary allowances

Introduction to Nutrition– Definition of nutrition, health, nutrients, nutritional status and malnutrition-under nutrition, over nutrition, imbalance, specific deficiency, Inter-relationship between health and nutrition.

Recommended dietary allowances – Definition, General principles of deriving Recommended Dietary Allowances -Dietary intake, Growth, nutrient balance, obligatory loss of nutrients, factorial approach, nutrient turnover, Factors affecting Recommended Dietary Allowances-variability in nutrient requirements, Dietary factors. Determination of Recommended Dietary Allowances of different nutrients, uses of Recommended Dietary Allowances.

UNIT- II: Carbohydrates

Classification, Sources, Requirements and Functions of carbohydrates in the body. Review of digestion, absorption and metabolism. Hormonal control of Blood sugar. Dietary fibre- Definition, soluble and insoluble fibres, sources of fibre, Role of fibre in human nutrition.

UNIT- III: Proteins

Amino acids - Indispensable and dispensable amino acids. Classification, Sources, Requirements and functions of protein. Mutual supplementation of proteins.

Protein deficiency-Protein Energy Malnutrition- Kwashiorkor and Marasms – etiology, clinical features, treatment and prevention

Evaluation of Protein quality – Biological assays, Biological Value(BV), Net protein utilization(NPU), Net Dietary proteinratio ,Protein Efficiency Ratio(PER),and chemical score

UNIT- IV: Lipids

Classification, Sources, Requirements and functions, Essential fatty acids- deficiency, food sources and functions, dietary lipids and its relation to Cardiovascular diseases.

UNIT- V: Energy

Units of Energy -Kilocalories, Kilojoules, Conversion of KJ to Kcal, determination of energy value of foods using Bomb calorimeter, , gross calorific values. Physiological energy, value of foods, relation between oxygen used and calorific value.

Basal metabolism, factors affecting BMR - Determination of energy requirements, Direct and Indirect calorimetry direct calorimetry. Relation between Respiratory quotient and energy output – Specific dynamic action of food (Thermogenic food in REE), Benedict Roth basal Metabolism Apparatus, determination of energy metabolism, during work-energy requirements for various types of activities, energy, calculation of energy value

of foods, Energy requirements for different age groups.

COURSE OUTCOME:

The students should be able to,

1. Infer Knowledge on Nutrition, Recommended dietary allowances.
2. Identify the Sources, Requirements and Functions of carbohydrates in the body.
3. Understand the Knowledge on Sources, Requirements ,Functions and Evaluation of Protein quality
4. Predict the Requirements, functions, Essential fatty acids and deficiency.
5. Understand the role of macro nutrients and are able to evaluate the energyvalue of foods

TEXT BOOK(S)

1. David A Bendor. 2021, Introduction to Nutrition Metabolism sixth Edition, CRC Press,New York, ISBN9780367190811
2. Jyeshtha, 1939, Human Ecology and Family Sciences, National Council of Educational Research and Training, ISBN: 978-81-7450-972-7.
3. Keith Frayn. 2018. Human Metabolism, Fourth Edition, Wiley-Blackwell, ISBN-10. 1119331439
4. Sunetra Roday, Food Science and Nutrition Third Edition, Oxford ISBN 139780199489084.
5. William, S.R. – Nutrition and Diet Therapy (1985) 5th edition, Mosbey Co. St. Louis.

REFERENCE BOOK (S)

1. Bogert, J.G.V. Briggs, D.H. Calloway Nutrition and physical fitness (1985), 11th edition – W.B. Saunders Co., Philadelphia, London, Toronto.
2. Guthrie H.A. – Introductory Nutrition C.V. Mosby Co. St. Louis.
3. M. Swaminathan “Principles of Nutrition and Dietetics”, 1993, Bappco 88, Mysore Road, Bangalore-560 018.
4. Maurice E. Shils, James A. Olson, Moshe Shike “Modern Nutrition in health and disease” (1994) eighth edition, Vol. I & II Lea & febiger Philadelphia, A waverly Company.
5. Wardlaw, G.M. Insel, P.H. – Perspectives in Nutrition (1990) TimesMirror / MosbyCollege Publishing Co. St. Louis, Toronto, Boston.

E-RESOURCES

1. <https://www.healthline.com/nutrition/malnutrition>
2. <https://medlineplus.gov/definitions/nutritiondefinitions.html>
3. https://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/S000444FN/P000552/M012213/ET/1533535925Q1.pdf
4. https://www.youtube.com/watch?v=bCjaT_WtwTU
5. <https://www.youtube.com/watch?v=2UfjwZAGTIO>

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester: II- CC-IV: Advanced Dietetics

Ins.Hrs./Week: 6

Course Credit: 5

Course Code: 22PND205

OBJECTIVES:

- To understand the role of dietitian and to Gain knowledge about the principles of diet therapy and different therapeutic diets
- To develop aptitude for taking up dietetics as a profession.
- To provide comprehensive knowledge on principles and planning of therapeutic diets and acquire knowledge on nutritional needs of normal and sick persons.

UNIT- I: Nutritional Screening, Nutritional Intervention and Special Feeding Techniques

(20 Hours)

Nutritional screening/ assessment and identification of nutritional problem.

Nutritional Intervention and Diet Modification based on interpretation of Patient data- clinical, biochemical and other relevant data. Role of dietician in the hospital and community- Types of dietician, education and personal qualifications- Professional ethics and obligations Feeding the patients – Psychology of feeding the patients, assessment of patient's needs. Routine hospital diets- regular diet, soft diet, full fluid diet, clear fluid diet Special feeding methods- Parenteral and enteral nutrition.

UNIT- II: Diet in fevers and Disease of Gastrointestinal tract

(20 Hours)

Causes, symptoms, dietary management for febrile conditions- Acute, chronic and recurrent fevers- typhoid, influenza, rheumatic fever, tuberculosis, malaria and poliomyelitis.

Causes, symptoms, dietary management of Gastrointestinal tract -Chro'n's, Celiac Disease, Irritable bowel syndrome (IBS), Acid Reflux (Gastroesophageal reflex (GER) and Gastroesophageal reflex diseases (GERD) in Infants, Children and adult, Zollinger-Ellison Syndrome (peptic ulcer with pancreatic cancer) and Hirschsprung disease (constipation - surgery)

UNIT- III: Hepato /Biliary Diseases and Diseases of Excretory System

(17 Hours)

Causes, symptoms, dietary management of Disease of liver and Gall bladder- Hepatitis, Leptospirosis (liver failure) Amoebiasis (hepatomegaly, liver abscess) cirrhosis, cholecystitis, cholelithiasis, pancreatitis.hepatocellular carcinoma, Gilbert's syndrome, and polycystic liver disease.

Causes, symptoms, dietary management of renal disorders acute and chronic glomerulonephritis, nephrosis, nephrosclerosis, uremia, nephrolithiasis.Kidney Cancer.

UNIT- IV: Diet in Metabolic disorders, and Cancer

(15 Hours)

Causes, symptoms, dietary management of Diabetes mellitus, obesity, underweight, hypothyroidism and hyperthyroidism, gout, arthritis and osteoporosis.

Nutritional Care in Inborn Errors of Metabolism- Nutritional care for the patients

with inborn errors of metabolism- prognosis, symptoms, dietary management - phenylketonuria, galactosemia. Pathogenesis, aetiology, types, grading, symptoms, treatment and dietary modification for cancer.

UNIT- V: Life Style Disorders, Diet in food allergy and Palliative Care (18 Hours)

Causes, symptoms, dietary management of Obesity and eating disorders (Anorexia, and Bulimia nervosa), Dementia and Alzheimer, Polycystic Ovarian Diseases (PCOD) and Polycystic Ovarian Syndrome (PCOS).

Cardio vascular diseases – Hypertension, atherosclerosis, hyperlipidemia, hypercholesterolemia, acute and chronic cardiac diseases, congestive cardiac failure

Diet in food Allergies – food allergy and intolerance – mechanism, factors influencing, symptoms, tests for allergy, nutritional care and elimination diet. Basics of palliative care- definition, types, objectives and principles of palliative care.

Total Lecture Hours-90

COURSE OUTCOME:

The students should be able to,

1. Understand the nature and scope of Nutrition care process and Therapeutic Nutrition; and identify circumstances where diet may need modification.
2. Infer knowledge on aetiology, incidence, nature, clinical symptoms, diagnosis, and medical and dietary management of fevers and gastrointestinal tract.
3. Apply appropriate knowledge on dietary adjustments that should be made for people with hepato-biliary, disorders and to gain experience in preparing and serving therapeutic diet for person suffering from Diseases of excretory system.
4. Deliberate and evaluate the dietary requirements of a client or patient suffering from metabolic disorders, and Cancer and to identify responsible options for diet planning in response to the situation.
5. Exemplify the dietary requirements of a client or patient suffering from Diet in food allergy and Palliative Care and to identify responsible options for diet planning in response to the situation.

TEXT BOOK(S)

1. Maity SP. 2016. Pharmacology for Second Professional Students. Books and Allied Pvt.Ltd.
2. Robinson CH. 1987. Normal and Therapeutic Nutrition. Oxford and IBH, publishing Calcutta, Bombay.
3. Shils EM, Olson AJ, and Shike MC. 1994. Modern Nutrition in Health and Diseases. Vol.II, Lea and Febriger Philadelphia.
4. Srilakshmi B. 2002. Dietetics .New Age International, New Delhi.
5. Swaminathan M. 1995. Essentials of Food and Nutrition. Vol.I and II, Ganesh and Company, Madras.

REFERENCE BOOK(S)

1. Antia FP, Philip Abraham, 1998. Clinical Dietetics and Nutrition. Oxford, University Press, New Delhi.
2. Cooper Et. Al., 1963. Nutrition in health and disease. 4th edition, Pitman Medical Publishing Co.
3. Davidson Passmore P, and Breck JP. 1986. Human Nutrition and Dietetics. The English Language Book Society, Livingstone.
4. Gopalan C. Ramasastri BV. and Balasubramaniam SC. 2010. Nutritive value of Indian Foods National Institute of Nutrition. Hyderabad.
5. Krause MV. Horsch MA. 1993. Food Nutrition and Diet Therapy. W.B. Saunders Company, Philadelphia.
6. Mahan LK, Raymond JL, and Krause's 2016. Food and the Nutrition Care Process (Krause's Food and Nutrition Therapy). New York.

E-RESOURCES

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2. https://youtu.be/_dcwRBh-5iM
3. <https://youtu.be/bD8KCcipGaY>
4. https://www.researchgate.net/publication/320299103_Inborn_Errors_of_Metabolism
5. <https://www.slideshare.net/felixviyayan/kidney-cancer-58644953>

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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SUNDARAKKOTTAI, MANNARGUDI – 614016

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester: II- CC-V: Biochemical Changes in Diseases

Ins. Hrs. /Week: 5

Course Credit: 5

Course Code: 22PND206

OBJECTIVES:

- To understand the metabolism of the nutrients and the associated diseases
- To know the organ specific function tests associated with the disease
- To comprehend the role of hormone in health.

UNIT- I: Disorders of carbohydrate metabolism (15 Hours)

Diabetes mellitus, glycosylated-haemoglobins, and hypo-glycaemia, galactosemia and ketone bodies. Various types of glucose tolerance tests- Oral glucose tolerance, Intravenous glucose tolerance, cortisone stress glucose tolerance tests, multiple dose glucose tolerance tests
Glycogen storage diseases- Glycogen storage diseases Type I -Von Gierke disease, Type II - Pompe's disease, acid maltase deficiency, Type III -Cori's disease, Type IV - Andersen's disease, Type V -McArdle's disease, VI GSD or Hers disease and Inborn errors of carbohydrate metabolism

UNIT- II: Protein and Fat metabolism (15 Hours)

Disorders of amino acid metabolism- Phenylalanemia, homocystinuria, tyrosinemia, MSUD, phenylketonuria, alkaptonuria, albinism and aminoaciduria.
Disorders of nucleic acid metabolism- Disorders in purine/ pyrimidine metabolism.
Disorders of fat metabolism- Dyslipidemia, Atherosclerosis, Coronary Artery Disease, Disorders of Lipoproteins and Steatorrhea.

UNIT-III: Evaluation of organ function tests (15 Hours)

Assessment and clinical manifestations of renal, hepatic, pancreatic, gastric and intestinal functions. Clinical importance of bilirubin. Enzymes of clinical importance, Enzymes of pancreatic origin and biliary tract.

UNIT- IV: Hormonal disturbances (18 Hours)

Protein hormones (anterior pituitary hormones, posterior pituitary hormones), steroid hormones, adrenocorticosteroids, and reproductive endocrinology.

Disturbances in thyroid function.

Disorders of mineral metabolism: Hypercalcemia, Hypocalcemia, Hypophosphataemia and Hyperphosphataemia.

UNIT-V: Biochemical aspects of haematology (12 Hours)

Disorders of erythrocyte metabolism, hemoglobinopathies, thalassemia thrombosis and anaemias.

Detoxification in the body: enzyme system and phases of detoxification, regulation of detoxification.

Total lecture Hours-75

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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester -II -CC – VI: Front Office Management and House Keeping

Ins. Hrs. /Week: 5 Course Credit: 5 Course Code: 22PND207

OBJECTIVES:

- To establish knowledge and skills of the front office management operation.
- To understand the overall concepts of front office management and operation.
- To understand the Organization, function of Housekeeping department and its Different sections.
- To understand the Housekeeping coordination with different departments, Procedure of cleaning different status of room.
- To understand the Cleaning equipments and cleaning agent. Lost and found procedure in the control.

UNIT- I: Introduction to Front Office Management. (15 Hours)

Classification of hotels and other departments and Scope of hospitality industry , Front Office organization, layout, planning, furniture and equipment, staffing pattern-according to sizes and types, rules for Front Office staff, duties and attributes of different level of staff, coordination and communication between the Front Office and the other departments. Linkages of Tourism and hospitality industry.

UNIT- II: Reservation (14 Hours)

Reservation - Definition, modes of room reservation and source of reservation, system of room reservation, Basic reservation procedures, Individual and group reservation, Forecasting, computerized reservation system. Check – in check – out procedures.

Settlement of bills, dealing with walk-in guests with scanty baggage, change of guest rooms, handling of guest mail, key handling and control, use and function of the key rack, handling guest messages and enquiries, calculating room occupancy reports. Role of lobby manager.

UNIT-III: Communication and Care of Guest (15 Hours)

Communications, guest care and billings – Knowledge of PBX, EPABX, handling the telephone, reading of directories, phonograms, method of operation of e-mail, fax, facsimile, mobile phones, public address system and accessing web sites.

Caring for guests-Accounts and Records, Revenue control – handling of credit cards, travellers cheques, travel agents coupons and airline vouchers, foreign exchange regulations in the hotels regarding payment of hotel bills by foreigners and NRIs, handling of guest valuables.

UNIT -IV: Introduction to Housekeeping and Housekeeping Procedures (16 Hours)

Introduction: Meaning and definition. Importance of Housekeeping, Housekeeping Department: Organizational framework of the Department (Large/Medium/Small Hotel). Briefing, Debriefing, Gate pass, indenting from stores. Inventory of Housekeeping Items, Housekeeping control desk, Importance, Role, Co-ordination, check list, key control. Handling Lost and Found. Forms, Formats

and registers used in the Control Desk, Paging systems and methods, Handling of Guest queries, problem, request, General operations of control desk.

UNIT –V: Cleaning Science

(15 Hours)

Characteristics of a good cleaning agent, PH scale and cleaning agent with their application, Types of cleaning agent, cleaning products (Domestic and Industrial). Daily, periodic and spring cleaning. Cleaning Equipment, Routine Services: Cleaning of Check out room, Cleaning of Occupied Room, Cleaning of Vacant Room., Evening service. Cleaning of Guest Rooms: Daily cleaning of Occupied/Departure vacant Under repair VIP rooms, Weekly cleaning/spring cleaning, Evening service, Systems and procedures involved, Forms and Formats, Guest room cleaning - Replenishment of Guest supplies and amenities. Use of Maids Cart and Caddy

Total Lecture Hours-75

COURSE OUTCOME:

The students should be able to,

1. Identify the independent components of the lodging front desk/front office system.
2. Identify and explain the impacts of the front desk/ front office on the overall lodging operation.
3. Apply and explain skills necessary to seek employment in front desk/ front office supervision and management.
4. Explain the Role, Significance and organization set up of Housekeeping Department and in the Hospitality Industry.
5. Understand and apply the procedures typically followed by housekeeping and Identify and elaborate the various kinds of surfaces to clean.

TEXT BOOK(S)

1. Deepak Singh Negi, and Dr. Shiv Mohan Verma, 2020. Fundamentals of Hotel Housekeeping: Operations and Management. 1st New Edition, Bharti Publications, ISBN-13: 978-9389657210.
2. Pralay Ganguly 2019. Housekeeping Management in Hotel and Service Industry. Dreamtech Press, ISBN-13: 978-9388425957.
3. Raghubalan G. and Smritee Raghubalan. 2015. Hotel Housekeeping-Operations and Management. 3rd edition, Oxford University Press, India. ISBN-13: 978-0199451746.
4. Sudhir Andrews 2017. Hotel Housekeeping: A Training Manual. Third edition, McGraw Hill Education, ISBN-13: 978-1259004988.
5. West and Wood BB. 1996. Food service in institutions. Jonewiley and sons.

REFERENCE BOOK(S)

1. Bardi JA. 1982. Hotel Front Office Management. Van No strand Reinhold Publishing Company Limited, New Delhi.
2. Renner PF. 1993. Basic Hotel Front office Procedures. 3rd edition, Van No strand Reinhold, New York.
3. Schneider M. and Tucker G. 1985. The Professional Housekeeper. Van No strand Reinhold, New York.
4. Sudhir Andrews, 2017. Hotel Housekeeping Management and Operations. 1st edition, McGraw Hill Education, ISBN-13: 978-0070655720.
5. Thomas JA. 2018. Professional Management of Housekeeping Operations. Wiley, ISBN-13: 978-0470450086

E-RESOURCES

2. <https://setupmyhotel.com/train-my-hotel-staff/hk/255-hk-dep-chart.html>

3. <https://www.slideshare.net/SunilKumar148/5-cleaning-agents>
4. <https://www.slideshare.net/GautamKumar143/linen-uniform-tailor-room>
5. <https://www.ihmnotes.in/assets/Docs/Sem-2/Accomodation/Ch-2%20AREA%20CLEANING.pdf>
6. <https://www.harpercollege.edu/about/directory/ehs/pdf/Section%2026%20-%20Housekeeping%20Procedures.pdf>.

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester: II -CP-II: Advanced Dietetics Practical and Dietary Internship*#

Ins. Hrs. /Week: 6 Course Credit: 3 Course Code: 22PND208P

OBJECTIVES:

- To develop skills in planning and preparing therapeutic diets.
- To learn techniques in diet counselling and feeding of patients.
- To Plan and prepare appropriate diets for therapeutic conditions.

Advanced Dietetics Practical:

1. Practical experience in weighing and measuring food items
2. Preparation of clear and full liquid diets and soft diet
3. Planning and preparing diets for:
 - **Febrile conditions:** Preparation of diets in acute, chronic and recurrent fevers.
 - **Conditions/ Disease of Gastrointestinal tract:** Preparation of diets in Irritable Bowel Syndrome, GERD, Zollinger-Ellison Syndrome (peptic ulcer with pancreatic cancer), Hirschsprung disease (constipation - surgery).
 - **Hepato /Biliary Diseases and Diseases of Excretory System-** Disease of liver and Gallbladder- Hepatitis, cirrhosis, cholecystitis, cholelithiasis, pancreatitis. hepatocellular carcinoma, Gilbert's syndrome, Polycystic liver disease.
 - Renal disorders acute and chronic glomerulonephritis, nephrosis, nephrosclerosis, uremia, nephrolithiasis. Kidney Cancer
 - **Diet in Metabolic disorders, and Cancer-** Diabetes mellitus, obesity, underweight, hypothyroidism and hyperthyroidism, gout, arthritis and osteoporosis, Nutritional Care in Inborn Errors of Metabolism, cancer
 - **Life style disorders/diseases:** Anorexia and Bulimia nervosa Alzheimer, Polycystic Ovarian Diseases(PCOD)/ Polycystic Ovarian Syndrome(PCOS), Congestive heart failure

DIETARY INTERNSHIP:

The Practical work consists of internship in a teaching hospital for 4-6 weeks.

- Visits to the different wards to observe patients requiring Special diets.
- Experience in calculating and planning any six modified diets.
- Supervising and handling the Food preparation and service in the dietary department of the hospital
- Case study- Selecting and observing ten patients requiring a therapeutic diet in relation to Patient's dietary history - income, occupation, food habits and social factors.
- Calculating the diet according to medical prescription
- Accompanying the doctor while visiting the patient.
- Use of the computer in diet
- Counselling and patient education

Preparation of the report should include

- History of the hospital
- Location
- Facilities provided
- Layout of the kitchen
- Work organization
- Organization structure
- Duties of the dietitian
- Special dietary preparation
- Menus
- Types of service
- Equipments
- Storage of food
- Handling of leftovers and shortages
- Sanitation and hygiene

TEXT BOOK(S)

1. Frances Sienkiewicz Sizer 2009. Nutrition-concept and controversies. Peter VIII edition, Marshall Publishers.
2. Passmore DP, Break JP. 2008. Human Nutrition and Dietetics. English Language Book Society, Livingston.
3. Shils EM, Olson AJ, and Shike MC. 1994. Modern Nutrition in Health and Diseases. Vol. II, Lea and Febiger Philadelphia.
4. Srilakshmi B. 2002. Dietetics. New Age International, New Delhi.
5. Swaminathan M. 1995. Essentials of Food and Nutrition. Vol. I and II, Ganesh and Company, Madras.

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1. Burtis J, Davis J and Martin S. 2010. Applied Nutrition and Diet Therapy. WB Saunders Co, Philadelphia.
2. Garrow J, James WPT. and Ralph A. 2008. Human Nutrition and Dietetics. Churchill Livingston.
3. Garrow J, James WPT, Ralph A. 2009. Human Nutrition and Dietetics. 10th Edition, Harcourt Publishers.
4. Jame B. Morgan 2011. Nutrition in early life. John Wiley and Son Publishers.
5. Lori A. Smolin 2007. Nutrition, Science and applications. 3rd edition, Sanders College publisher.
6. Mahan LK. and Stump SE. 2015. Krause's Food Nutrition and Diet Therapy. 11th Edition, W.B. Sanders Co.
7. Rose MS. 2007. A Laboratory handbook for Dietetics. 4th edition, McMillan publishing

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2. https://youtu.be/_dcwRBh-5iM

3. <https://youtu.be/bD8KCcipGaY>
4. https://www.researchgate.net/publication/320299103_Inborn_Errors_of_Metabolism
5. <https://www.slideshare.net/felixviyayan/kidney-cancer-58644953>
<https://www.slideshare.net/AnshuYadav31/food-allergies-120057018>.

**SENGAMALA THAYAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAL, MANNARGUDI - 614016.

(For the candidates admitted in the academic year 2022-2023)

DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester- II- EC- II: Food Packaging

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code: 22PNDE2A

OBJECTIVES:

- To understand the basic principles of packaging.
- To use the technique in the processing, preservation, distribution and promotion of food products.
- To familiarize themselves with the available packaging materials, to understand how to link materials to safety, quality and shelf life of foods .
- To compare packaging materials to each other and understand their differences and similarities.

UNIT-I: Introduction of Food packaging

(19 Hours)

Definition; Scope/ Need of food packaging; importance of food packaging

Role of packaging in extending shelf life of foods. Objectives and functions and purpose of packaging and packaging materials, types of packaging materials: paper: glass, methods of bottle making; metals: tinplate containers, tinning process, components of tinplate, types of cans, aluminium containers, lacquers; plastics: types of plastic films laminated plastic materials. Techniques of food packaging.

UNIT –II: Properties and testing of packaging material

(15 Hours)

Characteristics of good Packaging, Properties of packaging materials - tensile strength, bursting strength, tearing resistance, puncture resistance, impact strength, tear strength, methods of testing and evaluation; theory of permeability, factors affecting permeability, permeability coefficient, gas transmission rate and its measurement, water vapor transmission rate and its measurement.

UNIT- III: Equipments and packaging advancement

(14 Hours)

Equipment and Packaging Type - vacuum machine; gas packaging machine; seal and shrink-packaging machine; form and fill sealing machine; aseptic packaging systems; bottling machine; carton making machine; Package printing machines.

UNIT- IV: Packaging Systems & Methods

(15 Hours)

Introduction of food packaging system, Food packaging systems, product characteristics and package requirements. Different forms of packaging: Rigid, semi-rigid, flexible forms of packaging. Retort-able pouches, tetra pack. Different packaging system for-Dehydrated foods, Frozen foods, Dairy products, Fresh fruits, Vegetables, Meat, Poultry, Sea foods.

UNIT- V: Laws and Regulations of Food packaging

(12 Hours)

Standard packages - package laws and regulation – general guidelines on giving declarations – FSSAI Label, types of label, importance of Nutritional Labeling. Functions and Regulations.

Total Lecture Hours-75

COURSE OUTCOME:

The students should be able to,

1. Analyse and synthesize the data and information on packaging methods, with the use of the necessary technology.
2. Gain proficiency in the testing methods of packaging material.
3. Choose the appropriate packaging materials and types in relation to the food that is to be packaging.
4. Understand the problems that may occur due to inappropriate packaging.
5. Gain knowledge on nutritional labelling and regulatory affairs.

TEXT BOOK(S)

1. Coles R. McDowell D. and Kirwan, M.J. (Eds.) 2003 Food Packaging Technology, CRC Press.
2. Eiri Board 2008. Hand Book Of Food Packaging Technology. Engineers India Research Institute ISBN-13 : 978-8186732908
3. Fakunle ZA (Ed.) 2018. Novel Food Packaging Techniques. AGRI HORTI Press,
4. Han JH. 2005. Innovations in Food Packaging. Elsevier Academic Press. ISBN: 9789387642720.
5. Parry RT. and Blakistone B A. 1999. Principles and Applications of MAP – Springer, New York.
6. Robertson GL. 2006. Food Packaging: Principles and Practice, 2nd Taylor & Francis.

REFERENCE BOOK(S)

1. Gordon L. Robertson 2010. Food Packaging and Shelf Life. A Practical Guide.
2. Gordon L. Robertson, 2013. Food Packaging: Principles and Practice, Third Edition.
3. Ruben Hernandez, Susan E. M. Selke, John Culter, John D. Culter, 2000. Plastics Packaging: Properties, Processing, Applications, and Regulations.
4. Sattegari VD. 2016. Packaging materials and packaging commodities – Law and Regulation. Food safety quality control laboratory, CFTRI, Mysore-570020.
5. Walter Soroka 2002. Fundamentals of Packaging Technology. Fourth Edition.

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1. <http://bcas.du.ac.in/wp-content/uploads/2020/04/week-1.pdf>
2. <http://icpe.in/Plastics%20in%20Food%20Packaging/pdf/13-Final.pmd.pdf>
3. <https://www.pdfdrive.com/food-packaging-materials-testing-quality-assurance-d158188465.html>
4. <https://www.pdfdrive.com/packaging-essentials-100-design-principles-for-creating-packages-e157786945.html>
5. <http://www.ucarecdn.com/ad92a553-a70b-442a-8256-b905b39c466c/>

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**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester-II EC-II: Food Preservation

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code:22PNDE2B

OBJECTIVES:

- To learn the principles behind the methods of preservations
- To understand the stages of cookery and chemical characteristics in the preservation of fruits and vegetables
- Able to formulate preserved food products
- Acquire skills to preserve different types of food items based on their perishability.

UNIT-I: Concept of Food Preservation

(15 Hours)

Importance of Food Preservation, Review of the basic Principles behind food preservation: Asepsis, removal, anaerobic conditions: Types of spoilages and methods of preventing them, Food preservatives- Use of Salt, Acid, Sugar, natural food preservatives and artificial preservatives. Preservation of fruits as Sugar concentrates, Jam, Jelly, Marmalade, preserves, candies, crystallized or glazed fruits, Factors affecting jelly formation. Product Promotion strategies and marketing skills.

UNIT-II: Preservation by use of low temperature

(14 Hours)

Preservation by use of low temperature-Refrigeration – Principles of working system: cold storage defects. Freezing a. Principles of freezing b. Methods of freezing- Slow freezing, Quick freezing, Air freezing, Plate freezing, Liquid immersion freezing, Sharp freezing Cryogenic freezing, Band freezers, Spiral freezer, Rotary freezer. Changes associated with Ice Formation, c. Advantages and disadvantages. Guidelines for types of frozen foods-Fruits, Vegetables, fish, meat and poultry.

UNIT- III: Preservation by use of High temperature

(19 Hours)

Canning -Canning process, Principles, Spoilages encountered, Aseptic Canning. Preservation by using chemicals- Mechanism of microbial inhibition, Class I preservatives -Common salt, sugar, dextrose, glucose, spices, vinegar or acetic acid, honey, edible vegetable oil, Class II preservatives - Benzoic acid including salts, sulphurous acid including salts, [Nitrates of] nitrites of sodium or potassium, sorbic acid including its sodium, potassium and calcium salts, Niacin, Propionic acid including salts, Methyl or propyl para-hydroxy benzoate, Sodium diacetate, Sodium, potassium and calcium salts of lactic acid, Antibiotics, Developed preservatives. Radiation method of preservation of foods - Principles, Sources of radiation, Units of radiation dosimetry, Applications of irradiation, Effect on food constitutions, Micro wave heating.

UNIT-IV: Preparation of dehydrated products

(15 Hours)

Methods of drying & dehydration - different types of driers, freeze drying- lyophilisation, packing & storage. Drying methods for the selected products -Rice, Sago, Wheat, Maida, Rice flakes, black gram dhal, green gram dhal, Horse gram dhal, Roots and Tubers. General tips with drying foods. Preparation of salted, dehydrated, preserves (Traditional Indian varieties of chips, Papads, Khakharas, etc., and Masala Powders, onion, garlic, ginger powder etc).

UNIT-V: Role of major and minor ingredients in baking**(12 Hours)**

Introduction of bakery – Definition, Principle and classification of baked products, Major/Minor equipments required to start a small bakery unit. Role of major and minor ingredients in baking:

1. Role of flour (gluten), fat and egg in baking.
2. Leavening agents – Definition, types (Physical biological and chemical) and role in baking.
3. Sugar – Sources, types and role in baking.
4. Role of minor ingredients – milk, water and salt.

Preparation of bakery items:

- Bread: Types, methods, faults, bread diseases and improvers
- Cake: Ingredients, types, methods and faults frosting/cake decorations
- Biscuits and cookies: Ingredients, types, methods.

Total Lecture Hours-75**COURSE OUTCOME:**

The students should be able to,

1. Know the principles of preservation behind the methods of preservation and understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products.
2. Explore the principles of preservation by use of low temperature.
3. Explore the principles of preservation by use of high temperature.
4. Acquire skills to formulate dehydrated food based products.
5. Develop skills for setting up a bakery unit and to enhance entrepreneurial skills in bakery and confectionery.

TEXT BOOK(S):

1. Dearosier NW. 1975. The Technology of Food preservation. AVU Publishing co., West Port, Connecticut.
2. Dubey SC. 2017. Basic Baking. 5th Edition, Chanakya Mudrak Pvt. Ltd., New Delhi.
3. Siddappa GG, Tandon GN. 1967. Preservation of fruits and vegetables. ICAR, New Delhi.
4. Peckham CG. 1969. Foundation of food preparation. Freeland-Graves, Jeanne Himich, Sixth Edition
5. Potter NN. 1973. Food Science. AVI Publishing Co., West Port, Connecticut.

REFERENCE BOOK(S)

1. Faridi F. 2004. Dough Rheology and Baked Product Texture. CBS Publication, New Delhi.
2. Manay S and Shanaksharaswami M. 2014. Foods: Facts and Principles. New Age Publishers, New Delhi.
3. Maria Parloa, 2009. Canned fruit preserves and jellies: Household methods of preparation. US Department of Agriculture, Washington.
4. Rainact AL. 2013. Basic Food Preparation .Complete Manual, 3rd Edition, Orient Longman, Private limited, Mumbai.
5. Samuel A, Martz, 2004. Bakery Technology and Engineering. PAN-TECHI International Incorporated, Private limited, Madras.
6. Shafiur, Rahman, M. 2007, Handbook of Food Preservation. 2nd edition, CRC press, New Delhi

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2. <http://ecoursesonline.iasri.res.in/mod/resource/view.php?id=147593>
3. <http://www.eagri.org/eagri50/HORT381/pdf/lec15.pdf>
4. <https://timesofindia.indiatimes.com/life-style/food-news/basic-food-preservation-methods- that-can-be-very-useful-in-lockdown/photostory/74969999.cms>
5. <https://patents.google.com/patent/US3041185A/en>
6. <https://fdocuments.in/document/major-and-minor-ingredients-of-baking.html>

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS



Semester – II - EDC –I: Food Laws, Standards and Health Policies

Ins. Hrs. /Week: 3

Course Credit:2

Course Code:22PNDED1A

OBJECTIVES:

- To enable the students to acquire knowledge of constitutional protections with respect to health.
- To impart knowledge to the students of basic laws relating to protection of health.
- To impart knowledge about need and nature of right to food and nutrition in India.
- To expose students to need and nature of programme on food safety and standards in India.
- To expose students to need and nature of programme of national food security in India..

UNIT –I: Introduction to food laws and Health Policies

(9 Hours)

History of food regulations , Federal Regulatory agencies, Major federal laws, Introduction to the Food, Drug, and Cosmetic Act, Federal and Provincial Legislative Jurisdiction, Statutory Jurisdiction, and Provincial Statutes. .Concept and importance of health, Public health in India- Ancient, medieval and modern perspectives.

UNIT –II: Regulation of labeling and health claims

(9 Hours)

Food labeling regulations, - Definition of Label, Constitutional Considerations, Prohibited Elements, Mandatory Labeling, Restricted Claims, Voluntary Claims, and Product Specific Labeling Requirements. Regulations of nutrition labeling - History of Nutritional Labeling, Requirements, Prohibitions, Exemptions, Proposed Changes to Nutritional Facts Label, Nutrition Labeling Regulations for Foods Sold in Restaurants, and Food Service Establishments. nutrient level claims, and health claims. Regulations of standard of identity and quality, Constitutional Considerations.

UNIT- III: Food Safety and Standards Act and National Food Security Act

(11 Hours)

Food Safety and Standards Act : Need, Objects and Basic Concepts Food Safety and Standards Authority of India, General Principles of Food Safety, General Provisions as to Articles of Food, Provisions Relating to Import, Enforcement of the Act, Analysis of Food, Offences and Penalties, Adjudication and Food Safety Appellate Tribunal

National Food Security Act : Need, Objects and Basic Concepts, Provisions for Food Security and Food Security Allowance, Identification of Eligible Households, Reforms in Targeted Public Distribution System, GMPs, SSOPs, and HACCP regulations, Acidified food and low-acid canned food regulations, Regulations of food additives, color additives, and irradiation

UNIT –IV: Health and Constitutional Protections and Right to Food and Nutrition (7 Hours)

Fundamental Rights - Right to Health, Right to Decent Environment, Right to Shelter, Reproductive Rights of Women, Directive Principles of State Policy and Health. Fundamental Rights - Right to Food and Nutrition, Directive Principle of State Policy on Food and Nutrition, Human Rights Perspectives of Food and Nutrition - an Overview

UNIT –V: Health, Legal Protection and Specialized Food Regulation

(9 Hours)

The Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994, The Factories Act, 1947, Law on Mental Health, The Maternity Benefit Act, 1961, The Infant Milk Substitutes, Feeding Bottles and Infant Foods Act, 1992, The Transplantation of Human Organs Act, 1994, The Indian Penal Code, 1860 - Chapter XIV (Sections 269 to 278) . Regulations of dietary supplements, Regulations of biotechnology and genetically modified foods, Food terrorism.

Total Lecture Hours -45

COURSE OUTCOME:

The students should be able to,

1. Describe the history and development of the food laws and regulations
2. Examine the major food legislation, including the Food, Drug, and Cosmetics Act (FDCA), Food Additives Amendment, Dietary Supplement Health and Education Act (DSHEA).
3. Examine current issues in food regulation today, including food safety regulation and food security
4. Enable the students to acquire sound knowledge of health and food regulatory mechanism in India
5. Recognize the critical role of laws and regulations play in ensuring the food safety and quality.

TEXT BOOK(S):

1. Satarkar, A. 2008. Food Science and Nutrition. ABD Publishers. Jaipur.
2. Sethi, M. 2008. Institutional Food Management. New Age Publishers. New Delhi.
3. Subbulakshmi, G. and S. A. Udipi, 2006. Food Processing and Preservation. New Age Publishers, New Delhi.
4. Gaur, A., 2008, Text Book on Indian Penal Code Universal Law Publishing.
5. Savaria, R. A., 2010, Nelson's Indian Penal Code (4 Volumes), LexisNexis Delhi.

REFERENCE BOOK(S)

1. JOSHI, S.A. 2010. Nutrition and Dietetics with Indian Case Studies. Tata McGraw Hill Education Pvt. Ltd., Mumbai.
2. MANAY, S. N. AND M. SHADAKSHARAWAMY, 2001. (Eds) Foods, Facts and Principles. 3rd edition, New Age International. New Delhi.
3. MUDAMBI, S. R. AND M. V. RAJGOPAL 2006. Fundamentals of Foods and Nutrition. Wiley Eastern Ltd.
4. RAHEENA BEGUM. 1989. A Textbook of Foods, Nutrition and Dietetics. Sterling Publishers Pvt. Ltd. New Delhi.
5. RAO, J.P. 2006. Nutrition and Food Science. Aavishkar Publishers, Distributors, Jaipur.

E-RESOURCES:

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2. <https://blog.ipleaders.in/right-health-part>
3. <http://qi.nhsrindia.org/sites/default/files/Chapter%205->
4. <https://fssai.gov.in/cms/food-safety-and-standards-act-2006.php>
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**SENGAMALA THAYAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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SUNDARAKKOTTAI, MANNARGUDI - 614016.

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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SEMESTER -II- EDC- I: Women's Health and Fitness

Ins. Hrs. /Week: 3

Course Credit: 2

Course Code: 22PNDED1B

OBJECTIVES:

- Gain knowledge on common health problems of women
- Adopt simple dietary practices to prevent common health problems and to stay healthy.
- Acquire skills to overcome nutritional diseases.

UNIT-I: Common Health Problems of Women (10 Hours)

Concept and definition of nutrition- Common nutritional disorders among women and their preventive measures. Importance of Women's Health, Psycho social aspects of women's health. Common Health Problems of Women- major and minor nutritional problems of women - protein energy malnutrition (PEM), vitamin A deficiency (VAD), iron deficiency anemia (IDA) and iodine deficiency disorders (IDD- Causes, symptoms and preventive measures. rich sources of foods.

UNIT- II: Life style disorders (10 Hours)

Eating Disorder -Bulimia nervosa, Binge and purge, Stress eating, Calcium deficiency Definition of osteoporosis, causes, symptoms and preventive measures, Calcium rich sources of foods. Obesity: Definition, causes, assessment of obesity, preventive measures, Polycystic Ovarian Disease, Low calories and low fat foods. Under weight: Definition, causes, assessment of underweight preventive measures. High calorie and high fat foods, nutritious foods.

UNIT-III: Nutrition during Pregnancy and Lactation (09 Hours)

Nutrition during Pregnancy- Physiological changes during pregnancy. Importance of Nutrition during pregnancy. Complications in pregnancy, food and nutritional requirements.

Nutrition during Lactation- Physiology and psychology of lactation, hormonal control, composition of colostrums and breast milk, nutritional requirements of a nursing mother.

UNIT-IV: Nutrition during Adolescents and Adulthood (08 Hours)

Nutrition during adolescence- Growth during adolescence, nutritional requirements, hormonal influences, age of menarche-factors affecting, physiological problems and nutritional problems in adolescence.

Nutrition in adulthood – Physiological changes, reference man and reference women, activity classification, nutritional requirements of an adult man and women, body composition, nutrition and health issues- under nutrition, anaemia, iodine deficiency disorder, lifestyle related disorder, obesity, metabolic syndrome, hypertension, cardiovascular diseases, diabetes, cancer. Planning diet to suit different income levels.

UNIT-V: Exercise, Stress and Health Management

(08 Hours)

Stress Assessment and Management Techniques-Exercise at medium and high altitudes, Underweight, Overweight and Obesity, Relaxation Techniques, Yoga and Meditation for Health, Clinical Exercise Physiology for Cancer, Cardiovascular Disease, and Pulmonary rehabilitation.

Total Lecture Hours-45

COURSE OUTCOME:

The students should be able to,

1. Understand the common health problems of women.
2. Acquire skills to overcome life style disorders and gain knowledge to overcome Obesity and PCOD.
3. Develop the skills in planning healthy dietary practices for pregnancy and lactation.
4. Develop the skills in planning healthy dietary practices for Adolescents and Adulthood.
5. Acquire skills to overcome the diseases through Relaxation Techniques, Yoga and Meditation for Health.

TEXT BOOK(S):

1. Mehan LK and Arlin MT. Krause's, 1992. Food, Nutrition and Diet, Therapy. W.B. Saunders Company, Philadelphia.
2. Robinson CH. 1987. Normal and Therapeutic Nutrition. Oxford and IBH, publishing Calcutta, Bombay.
3. Srilakshmi B .2002. Dietetics. New Age International, New Delhi.
4. Sue Rodwell Williams 1994. Nutrition and Diet therapy. CRC Press.
5. Swaminathan M. 2007. Essentials of Food and Nutrition. An Advanced Textbook Vol.I, The Bangalore Printing and Publishing Co. Ltd, Bangalore.

REFERENCE BOOK:

1. Bamji MS, Prahlad Rao N, Reddy V ,2004. Textbook of Human Nutrition. II Edition, Oxford and PBH Publishing Co. Pvt. Ltd , New Delh
2. Neiman N. Catherine, 1990. Nutrition. Wm.C. Brown Publishers. USA.
3. Passmore R. and Eastwood MA, 1986. Human Nutrition and Dietetics. English language book Society/Churchill Livingstone, Eighth edition, Hong Kong.
4. Shubhangini A. Joshi, 1992. Nutrition and Dietetics. Tata Mc Grow- Hill publishing Company Ltd, New Delhi.
5. Srilakshmi. B , 2007. Nutrition Science. V Edition, New Age International (P) Ltd, Publishers, Chennai,

E-RESOURCES

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2. <https://www.eatingdisorderhope.com/information/eating-disorder>
3. https://www.medicinenet.com/obesity_weight_loss/article.htm
4. <https://www.pdfdrive.com/handbook-of-nutrition-and-pregnancy-nutrition-and-researchgate-e13771269.html>
5. <https://www.pdfdrive.com/nutrition-guide-for-physicians-nutrition-and-health-e34767854.html>.

**SENGAMALA THAYAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SEMESTER -III- CC-VII: Advanced Food Service Management

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 23PND309

OBJECTIVES:

- To understand the organization and management of Food Service Institutions.
- To gain knowledge on principles and functions of management.
- To study the importance of tools of management

UNIT –I: Food Service Institutions

(18 Hours)

- a) Food Service Institutions - Classification of food service institutions: Commercial and Non Commercial food service institutions. Objectives and workflow.
- b) Functional Areas in Food Service Institutions-Front office, Housekeeping, Receiving area, Storage area, Production area, Serving area and Garbage disposal –Layout, role and activities.
- c) Event management -Types of events, role of staff, event administration, event organization- weddings, and outdoor catering (off premises catering)

UNIT- II: Management

(18 Hours)

- a) Introduction to Management-Principles, Functions and Theories of Management.
- b) Tools of management-Organization Chart, job description, job specification, work schedule, job analysis, production and staff analysis statement and budget.

UNIT –III: Planning, Organization and Human Resource Management

(18 Hours)

- a) Planning - Definition, Nature, importance and steps in planning. Steps and kinds of forecasting.
- b) Organization -Definition, Process of organization, Types– Formal and Informal Organization and importance of organization.
- c) Human Resource Management –Staffing, man power planning, recruitment, selection and training. Directing - Definition, characteristics and principles of directing, delegation, decentralization, centralization, supervision, authority and responsibility.

UNIT- IV: Motivation and Leadership

(18 Hours)

- a) Motivation - Definition, importance, types, theories -Traditional (Fear and Punishment theory, Efforts and Rewards Theory, Carrot and Stick Theory), Modern Theories (Maslow's hierarchy of needs theory, Herzberg's Motivation – Hygiene theory, McClelland's Three –Need theory, Vroom's Expectancy theory). Approaches and techniques to enhance motivation - wages, salaries, incentives, promotion, demotion, transfer and dismissal.
- b) Leadership – Definition, Characteristics, Theories of Leadership – Trait Leadership Theory, Behavioural Theories of Leadership, Tannenbaum and Schmidt's leadership continuum. Types of Leadership styles – Authoritarian, Paternalistic, Democratic, Laissez-faire, Expert or Functional Leader and Institutional Leader.

UNIT- V: Communication, Controlling and Performance appraisal (18 Hours)

- a) Communication – Meaning, Characteristics, Significance, Channels of Communication – formal and informal channel. Communication media – Oral, Written, Nonverbal and Barriers of Communication
- b) Controlling - Definition, characteristics and importance of controlling, techniques of control – Break Even Analysis, PERT (Programme Evaluation and Review Technique), MIS (Management Information System) and Budgetary control.
- c) Performance appraisal – Importance, methods – Traditional trait approach – Rating Scales, Ranking methods, Critical incident, Check-list methods. Appraisal by results or objects –Management by Objectives

Total Lecture Hours-90

COURSE OUTCOME:

The students will be able to,

1. Identify commercial and non – commercial food service institutions
2. Explain the principles, functions and tools of management
3. Predict the significance of planning and organization in the managerial process
Determine the importance of tools of management
4. Evaluate the role of motivation in management
5. Generalize the significance of controlling in managerial process

TEXT BOOK(S):

1. Ahmed Ismail 2004 Front office operations and Management Delmar Publications, Singapore.
2. Mohini Sethi 2011 Catering management – An Integrated approach New Age International Pvt. Ltd. New Delhi
3. Premavathy N 2008 Principles of Management (Business Management) Sri Vishnu Publication
4. Raghubalan G and Smritee Raghubalan 2009 Hotel housekeeping - Operations and Management Oxford University Press, New Delhi
5. Vijay R. Thakur 2007 Food and Beverage Service Denetis Co

REFERENCE BOOK(S):

1. Anil Bhat 2016 Principles of Management competencies, Practices, Processes Oxford University Press, New Delhi
2. Chakravarthi B K 2011 Hotel and Hospitality Management A.P.H. Publishing corporation
3. Malhotra R K 1998 Fundamentals of hotel Management Anmol Publications, New Delhi
4. Peter Jones 2016 Food service operations Library cataloguing in publishing data, London
5. Sharma Jyothi S 2006 Catering Management Practices Akansha Publishing house, New Delhi
6. Singaravelan R 2016 Food and Beverage Service Oxford university Press, New Delhi
7. West and B.B.Wood 1996 Food service in Institutions Jonewiley and sons

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2. <https://egyankosh.ac.in/bitstream/123456789/35874/5/Unit-1.pdf>
3. <https://qmcmen.com/qmcintra/bcomism/HUMAN%20RESOURCE%20MANAGEMENT.pdf>
4. <https://www.dynamictutorialsandservices.org/2019/09/leadership-meaning-types-and-theories.html>
5. <https://www.vedantu.com/commerce/communication>

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

SEMESTER -III- CC-VIII: Research Methods and Statistical Techniques

Ins. Hrs. /Week: 5

Course Credit: 5

Course Code: 23PND310

OBJECTIVES:

1. To provide comprehensive knowledge on Research Ethics
2. Understand the fundamental principles and techniques of methodology Concerning research
3. To comprehend diverse categories of researches.
4. Apply statistical procedure to analyze numerical data and draw inferences.

UNIT- I: Research Ethics

(16 Hours)

Philosophy- definition, nature, scope and concept. Ethics- definition, moral philosophy, nature of moral judgments and reactions. Ethics with respect to science and research - Scientific misconducts - falsification, fabrication, and plagiarism- Use of plagiarism software - Turnitin, Urkund and other open source software tools. Redundant publications- duplicate and overlapping publications. Publication ethics- definition and importance. Publication misconduct- definition, concept, problems that lead to unethical behavior, types, Violation of publication ethics, authorship and contributor ship. Software tool to identify predatory publications developed by SPPU. Subject ethical issues- authorship, Conflicts of specific interest.

UNIT-II: Introduction to Research, Types of research and Research design

(15 Hours)

Introduction to Research and types of research- Definition, Objectives and characteristics of research. Different Types of Research, Basic components of any research design - Data and methods of data collection Types of data-Primary and secondary data. Data sources. Primary data collection methods- direct personal investigation, indirect oral investigations, schedules and questionnaires. Interviews and Type of Interviews. Pre-testing and Pilot study, Editing and coding of data.

UNIT-III: Tools of data collection and Sampling Techniques

(16 Hours)

Classification of data: types of classification, Formation of discrete and continuous probability distributions. Tabulation of data: parts of a table, general rules of tabulation, types of tables, Diagrammatic representation of data, Graphic representation of data.

Sampling Design - Census and sample survey- Steps in sampling design, Sample size and its determination, Types of sampling: Random Sampling, Simple random sampling, Stratified random sampling, Systematic sampling, Cluster sampling, Non random sampling methods: Judgement sampling, Convenience sampling, quota sampling, Benefits of sampling, Sampling errors, Non sampling errors

UNIT-IV: Statistical Methods

(14 Hours)

Measures of central tendency: mean, median and mode, their relative advantages and disadvantages, Measures of dispersion: Mean deviation, standard deviation, Coefficient of variation, percentile, Types of correlation, coefficient of correlation and its interpretation-Rank correlation, Regression equations and predictions, Analysis of variance, Contingency tables, Chi-square test, „ttest: student's t test, paired „ttest, unpaired „ttest,, Ftest.

**Unit- V: Sampling Statistics and Introduction to Statistical Package for Social Sciences (SPSS)
and Report Writing (14 Hours)**

Sampling Statistics and Introduction to Statistical Package for Social Sciences (SPSS), Introduction to Statistical Package for Social Sciences (SPSS), Interpretation and Report writing, Meaning of Interpretation, why Interpretation, Technique of Interpretation, precaution in Interpretation. Significance of report writing, Different steps in writing Report, Layout of the Research Report, Types of Report, Oral Presentation, Mechanics of writing a Research Report, Precautions for writing Research Reports ,Conclusions.

Total Lecture Hours-75

COURSE OUTCOME:

The students will be able to,

1. Comprehend the Research ethics and different types of research
2. Translate the knowledge gained on types of data and tools of data Collection in compiling editing and coding of data and hypothesis.
3. Perform Statistical analysis.
4. Interpret and justify the research findings.
5. Design, execute and document a research. Prepare the research report by using appropriate research methods and statistical tool s/w to get solution to the existing problem based on research ethics.

TEXT BOOK (S)

1. Devadas RPA. 2000. Handbook on methodology of Research. Sri Ramakrishna Vidyalaya,Coimbatore.
2. Grumani N.2014. Research Methodology for Biological Sciences. First Edition ,MJPPublishers
3. Kothari GR. 2004. Research Methodology, Methods and Techniques. Wiley EasternLimited, Second Revised Edition .New Delhi,
4. Saravanavel P.2013.Research Methodology. Kitab Mahal Allahabad
5. Wasserman L.2010.All of statistics. A concise course in statistical Inferences.springer,Newyork.

REFERENCE BOOK(S)

1. Gosh BN. 2017 .Scientific Methods and Social Research. Sterling Publishers Pvt.ltd.,NewDelhi.
2. Kulbir Singh Sidhu, 2006. Methodology of Research in Education. Sterling Publishers Pvt.Ltd., New Delhi.
3. Gupta SP.2002.Statistical Methods. Sultan Chand &Sons, New Delhi,
4. Srivastava ABL and Sharma KK. 2003. Elementary Statistics in Psychology and Education,.,Sterling Publishers Pvt.ltd.
5. Ramadas P andWilson A.2014. Research and writing.MJP publishers.

E-RESOURCES:

1. http://shodhganga.inflibnet.ac.in/bitstream/10603/2019/8/08_chapter-1.pdf
2. <https://swayam.gov.in/courses/5143-research-methodology>
3. <http://southcampus.uok.edu.in/Files/Link/DownloadLink/RM%20U2%20P2.pdf>
4. https://www.sheffield.ac.uk/polopoly_fs/1.96442!/file/graphical-presentation-06-07.pdf
5. <https://www.examrace.com/Study-Material/Research-Methodology/Types-of-Rsearch- Methods-YouTube-Lecture-Handouts.html>

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI - 614016.

(For the candidates admitted in the academic year 2022-2023)

**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

SEMESTER -III- CC-IX: Quantity Food Production

Ins. Hrs. /Week: 5

Course Credit: 5

Course Code: 23PND311

OBJECTIVES:

- Gain knowledge in menu planning and product standards to maintain quality
- Learn aspects on quantity production and quality control.
- To understand the importance of styles of services and courses of menu.

UNIT- I: Menu planning and purchasing (15 Hours)

Study of menus for different types of quantity food outlets. Courses of menu, uses of menu cards, important cookery terms used in menus, common terms in French and English Menu. Menu format. Purchasing- Purchase and storage procedures. Procurement, product, selection, specification, method of purchasing, purchasing procedures, receiving, storage and inventory control.

UNIT- II: Production, Planning and Standardization of recipes (15 Hours)

Production forecasting, production scheduling, standardization of recipes, portion control, cost control, menu pricing. Standardization of recipe files and adapting recipes. Quantity Food Transportation and buying-Transportation, receipt and handling of foods. Storage of foods (dry & refrigerated), use of processed and convenience Foods.

UNIT III Quantity food production and Quality control (15 Hours)

Methods of production, product standards, effective utilization of leftovers, waste disposal, service management and service equipments. Food preparations - main dishes and their usual accompaniments. Soups, salads and salad dressings. Common sauces and chutneys. Dishes for special catering- Functions, festivals.

UNIT- IV: Food Service techniques (16 Hours)

Food Service techniques- Rules of service. Mis-en-place and Mis-en-scene. Preparation of service- Linen , table cloths, table mats, napkins, flowers for the table, rules for laying a table, rules for waiting at a table, types of service –formal, informal and Indian service, carving at table, food and beverage service for special catering functions, like wedding receptions, outdoor catering.

UNIT- V: Service systems (14 Hours)

Style of service- North Indian, South Indian, Chinese, Italian, Mexican cuisines. Indian service - Banana leaf, Thali. Table service - English, American, French. Gueridon, Trolley, Tray, Buffet and Banquet service. Service in Take aways, Vending Machines and Kiosks. Role and influence of culture, ingredients used and special equipments, Traditional, Commissary, Ready prepared – Cook chill, cook freeze, assembly serve.

Total lecture Hours-75

Course Outcome:

The students will be able to,

1. Formulate the planning menus and Design
2. Gain knowledge on Standardization of recipes, recipe files and adapting recipes.
3. Understand the Methods of production and quality control
4. Plan and implementation of large scale production and service
5. Understand the different food and beverage service techniques

TEXTBOOK(S)

1. Krishna Arora 2005. Theory of cookery. Fronk Bros and co. Publishers, New Delhi
2. Negi J. 2000. Professional Hotel Management. S.Chand and Company Limited, New Delhi.
3. Palacio JP. Harger V. Shugari G. 2001. West and Woods Introduction to Food Service. Mac Millan Pub Co., New York.
4. Singara velavan R.2006. Food & Beverage Service. Oxford University press.
5. Vijay Dhawan 2007. Food & Beverage Service. Frank Bros & co, New Delhi.

REFERENCE BOOK(S)

1. Cessarani V. Kinton R. 2002. Practical Cookery. seventh edition. Hodder and Stoughton publishers.
2. Khan MA. 2003. Food Service Operations. AVI Publications Co., Connecticut.
3. Sethi M. and Malhan S.M .2007. Catering Management-An Integrated Approach. Wiley Eastern Limited, Mumbai.
4. Thangam Philip ,2005. Modern Cookery. Orient Longman Limited. Third edition.
5. Tharun Bansal 2015. Hotel Facility Planning, Oxford University Press

E-RESOURCES:

1. [https://www.ihmbbs.org/upload/CHAPTER-%20 \(MEALS%20&%20MENU%20PLANNING\).pdf](https://www.ihmbbs.org/upload/CHAPTER-%20(MEALS%20&%20MENU%20PLANNING).pdf)
2. <https://psu.pb.unizin.org/hmd329/chapter/chapter-6-standardized-recipes/>
3. <https://dpi.wi.gov/sites/default/files/imce/school-nutrition/pdf/recipe-standardization-steps.pdf>
4. <file:///C:/Users/svharishram/Downloads/Unit-7.pdf>
5. <https://psu.pb.unizin.org/hmd329/chapter/ch1/>
6. <https://opentextbc.ca/foodsafety/chapter/storage-temperatures-and-procedures/>
7. http://www.searo.who.int/entity/world_health_day/2015/whd-what-you-should-know/en/



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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SEMESTER -III- CP-III: Quantity Food Production Practical and Catering Internship*#

Ins. Hrs. /Week: 6

Course Credit: 3

Course Code: 23PND312P

OBJECTIVES:

- To plan various regional cuisines.
- To understand the principles of table setting and napkin folding.
- To study the operational aspects of commercial and non- commercial food service institutions.
- Gain knowledge of origin, equipment and food service techniques in institutions.
- Obtain practical training in quantity catering and service

PRACTICAL

COURSE OUTLINE

- Standardization of recipes
- Portion control and Pricing
- Planning and Preparation of South Indian cuisine
- Planning and Preparation of North Indian cuisine
- Planning and Preparation of Western cuisine
- Planning and Preparation of Chinese cuisine
- Planning and Preparation of Thai cuisine and
- Planning and Preparation of Continental cuisines
- Table Setting and Napkin folding

INTERNSHIP

1. Internship for a period of Four Weeks in well established catering centre, to develop professional competence.
 - Hands on training in front office, housekeeping, kitchen and restaurant.
 - Detailed observation on meal planning, food standards and service.
2. Case study of 5 quantity food outlets to be recorded with reference to staff organization, Kitchen layout, purchase, preparation and service of food, processing, holding and storage, specific equipment used and convenience products, Supervising control and accounting procedures.
3. Development of check sheets for:
 - Menu
 - Employee performance
 - Kitchen safety
 - Sanitation

TEXT BOOK(S):

1. Krishna Arora 2005.Theoryof cookery, Fronk Bros and co. Publishers, New Delhi.
2. NegiJ, 2000.Professional Hotel Management. S.Chand and Company Limited, New Delhi.
3. Palacio JP, Harger VG, Shugari M.2001.West and Woods. Introduction to Food Service.Mac Millan PubCompany, New York.
4. Singaravelavan R.2006.Food and Beverage Service. Oxford University press.
5. VijayDhawan 2007.Food and Beverage Service. Frank Bros and company, New Delhi.

REFERENCE BOOK(S):

1. Cessarani and Kinton.R, 2002.PracticalCookery, odder and Stoughton. Publishers
2. Mohini Sethi and Malhan. S .M, 2007,Catering Management – An Integrated Approach, Thangam Philip, 2005.Modern Cookery. Orient Longman Limited.

E-RESOURCES:

1. <https://psu.pb.unizin.org/hmd329/chapter/chapter-6-standardized-recipes>
2. <https://psu.pb.unizin.org/hmd329/chapter/ch8/>
3. https://www.brainkart.com/article/Preparation-of-South-Indian-Cuisines_35204/
4. https://en.wikipedia.org/wiki/Napkin_folding
5. https://en.wikipedia.org/wiki/Thai_cuisine

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

SEMESTER -III- EC-III: Dietary Guidance and Counseling

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code: 23PNDE3A

OBJECTIVES:

- To acquire knowledge on basic etiquette of a counsellor.
- To handle different areas of counselling.
- To improve the communication skills
- To acquire knowledge on therapeutic techniques

UNIT- I: Counselling and Role of a Dietician (15 Hours)

Counselling in India, Definition, Goals, Ethics, Scope, Characteristics of counsellor, types of counselling, objectives of counselling in health care, tools of counselling, sources of counselling, e - resources in counseling

Role of a dietician in a hospital and community, team approach to nutritional care, ethical code and responsibility. Defining features of counselling psychology.

UNIT- II: Diet Counseling Skill (15 Hours)

Tactics and techniques of counseling- evaluating and understanding the clients attitude, how to identify and express your feelings towards the client, utilizing proper counselling techniques- non verbal behavior, verbal behavior, covert behavior.

UNIT- III: Communication Skills (15 Hours)

Concepts and principles in communication and their application in developing skills in counseling. Use of communication aids, communication and interviewing skills. Strategies and communication skills, Rapport building and opening techniques, Questioning, listening, reflecting, acceptance, silence, leading reassurance, non-verbal behavior, terminating skills.

UNIT- IV: Therapeutic Relationships and Techniques (16 Hours)

Psychology of feeding the patients- Assessment of needs, education of the patient and follow up and establishing rapport with the patient and the family member. Therapeutic Techniques -Psychoanalytic therapy, group therapy, psychodrama, behavior therapy, Gestalt therapy Cognitive therapy. Nutrition counselling protocols- Involving phase, Exploration and education, resolving, closing. Exploring the expressions, use of art in therapy.

UNIT- V: Diagnosis and Assessment (14 Hours)

Eliciting clinical information- medical history, assessment of diet profile, techniques of obtaining relevant information; dietary diagnosis- 24 hour recall method, food diary, list of food likes and dislikes, lifestyle; interpreting clinical information, case study assessment and evaluation.

Total lecture Hours-75

Course Outcome:

The students will be able to

1. Understand the psychology of the patient
2. Develop diet counseling skills
3. Develop the communication and interviewing skills
4. Create awareness among the communities about the importance of diet and good health.
5. Assess the Nutritional status

TEXTBOOK(S)

1. Gopalan S.C Balasubramanian S.V. Ramestri and Visweswara Rao Diet Atlas. 1971, ICMR New Delhi, India.
2. Shubhangini A. Joshi. 2011. Nutrition and Dietetics, 3rd edition, Tata McGraw Hill Education private limited, New Delhi.
3. Srilakshmi B.2010. Dietetics, New Age International Publishers, New Delhi.
4. Sumati R. Mudambi MV. Rajagopal.2015.Fundamental of food, nutrition and diet therapy. New age international publishers, New Delhi.
5. Swaminathan M.1993.Principles of Nutrition and Dietetics. Bappeo 88, Mysore Road, Bangalore.

REFERENCE BOOK(S)

1. Davidson & Passmore R & Brock JB.1976. Human Nutrition & dietetics. The English Languages Bood Society & Churchill Living stone.
2. Krause M V & Mahan MA.1992.Food Nutrition and Diet Therapy .W.B. Sunders company, Philadelphia London.
3. Maurice E. Shils, James A. Olson, Moshe Shike.1994. Modern Nutrition in health and disease. eighth edition, Vol I & II Lea & Febiger Philadelphia, A waverly company.
4. Micheal J. Gibney IA. Macdonald and Helan M. Roche. 2004. Nutrition and Metabolism. Blackwell Publishing Company, Bangalore.
5. Robinson CH. 2006. Normal and therapeutic nutrition. Macmillan Pub. Company, NewYork
6. Robinson CH. Lawles MR. Chenoweth WL. Garwic AE. 1990.Normal and Therapeutic Nutrition. The Macmillan Co.

E-RESOURCES:

1. <https://article1000.com/characteristics-of-counseling/>
2. <https://www.caluniv.ac.in/academic/Education/Study/Techniques.pdf>
3. <https://pubmed.ncbi.nlm.nih.gov/6787227/>
4. https://www.researchgate.net/publication/332318698_Counselling_Skills_for_a_Dietitian

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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SEMESTER -III- EC-III: Nutrition in Clinical Critical care

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code: 23PNDE3B

OBJECTIVES:

- To understand the special nutritional requirements in critically ill.
- To know the nutritional support system for critically ill.
- To ensure the nutritional needs of the critically ill patient

UNIT- I: Nutritional care of hospitalized patients (14 Hours)

Metabolic response and adaptation to stress, starvation, infection, trauma, sepsis and surgery

UNIT- II: Screening and Nutritional assessment of critically ill patients (15 Hours)

Anthropometry, Biochemical parameters, Clinical and Dietary. Subjective Global assessment

UNIT –III: Nutritional Support system (16Hours)

- a) Enteral nutrition – types, routes, composition of feeds, precautions while feeding and complications.
- b) Parenteral nutrition – types, composition, precautions while feeding and complications. Refeeding syndrome.
- c) Immune suppressants
- d) Special diets in critical care

UNIT- IV: Nutrient requirements in critically ill patients (15 Hours)

Understanding of special nutritional requirements, nutritional management in critical illness – Stress, sepsis, trauma, burns, surgery and cancer.

UNIT- V: Nutritional support for natural calamities (15Hours)

Nutritional support for flood, cyclone, earthquake and drought

Total lecture Hours-75

Course Outcome:

The students will be able to

1. List the types of infection.
2. Explain nutritional assessment methods for critically ill patients
3. Predict complications of enteral and parenteral nutrition.
4. Diagnose nutritional status of critically ill patients.
5. Evaluate role of nutrients in critical care
6. Design the nutritional requirements for natural calamities.

TEXTBOOK(S)

1. Luc A. Cynober, Frederick A. Moore 2003 Nutrition and critical care Karger Medical and Scientific Publishers.
2. Peter Faber, Mario Siervo 2014 Nutrition in critical care Cambridge University Press.
3. RajkumarRajendram, Victor R. Preedy, Vinood B. Patel 2015 Diet and nutrition in critical care Springer New York.

REFERENCE BOOK(S)

1. Gail A. Cresc 2016 Nutrition support for critically ill patient CRC Press
2. Krause M V & Mahan MA.1992.Food Nutrition and Diet Therapy .W.B. Sanders company, Philadelphia London.
3. Maurice E. Shils, James A. Olson, Moshe Shike.1994. Modern Nutrition in health and disease. eighth edition, Vol I & II Lea & Febiger Philadelphia, A waverly company.
4. Micheal J. Gibney IA. Macdonald and Helan M. Roche. 2004. Nutrition and Metabolism. Blackwell Publishing Company, Bangalore.
5. Pierre Singer 2013 Nutrition in Intensive Care Medicine: Beyond Physiology Karger Medical and Scientific Publishers

E-RESOURCES:

1. <http://medind.nic.in/jac/t14/i3/jact14i3p205.pdf>
2. https://www.aarc.org/wp-content/uploads/2014/11/nutrition_guide.pdf
3. <http://www.ccmpitt.com/ebm/nutrition/0105.pdf>
4. <https://www.slhd.nsw.gov.au/rpa/neonatal%5Ccontent/pdf/guidelines/tpn.pdf>

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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SEMESTER -III- EDC-II: Public Health Nutrition

Ins. Hrs. /Week: 3

Course Credit: 2

Course Code: 23PNDED2A

Objectives:

- Gain knowledge about nutritional policies, programs and agencies involved in combating malnutrition.
- Create awareness on improving health and nutrition of the community at large.

UNIT-I: Concept and scope of public nutrition (11 Hours)

Definition, concept, scope and multidisciplinary nature of public nutrition
Nutritional problems affecting the community. Etiology, prevalence, clinical features and preventive strategies for malnutrition related problems and deficiency disorders - Under nutrition (Protein energy malnutrition, Wasting, Stunting), Over nutrition (obesity and related risks), Nutritional anemia, Vitamin A deficiency, Iodine deficiency disorders, Fluorosis.

UNIT-II: Assessment of nutritional status (08 Hours)

Objectives and importance, Methods of assessment: Direct (Clinical signs, Anthropometry, Biochemical tests); Indirect (Diet surveys, vital statistics).

UNIT-III: Nutrition policy and programs (10 Hours)

National nutritional policy; Integrated child development scheme (ICDS), Midday Meal Program-State and National (Poshan Abhyan), National programs for the prevention of anemia, Vitamin A deficiency, Iodine deficiency disorders, Fortification of Foods and Public Distribution System as a preventive approach.

UNIT-IV: Nutrition education (6 Hours)

Objectives, principles and scope of nutrition and health education, creating awareness on current public health issues and devising strategies for prevention and management.

UNIT-V : Role of National and International agencies in combating malnutrition (10 Hours)

World Health Organization (WHO) Food and Agriculture Organization (FAO), United Nations International Children's Emergency Fund (UNICEF); National: Food Safety and Standards Authority of India (FSSAI), The Indian Agricultural Research Institute, (ICAR), Indian Council of Medical Research (ICMR), National Institute of Nutrition (NIN) Central Food Technological Research Institute (CFTRI) NATIONAL NUTRITION MONITORING BUREAU (NNMB)- Role, Target groups (if specified), Policies and Programs.

Total lecture Hours- 45

Course Outcome:

The students should be able to

1. Define terms related to Public Health nutrition.
2. Describe the nutritional problems prevalent in the community
3. Explain the significance of assessment of nutritional status
4. .Assess the role of various organizations in combating nutritional problems.
5. Conduct nutrition education programs to create awareness on improving healthand nutrition of the community at large.

TEXTBOOK(S)

1. Maity SP. 2016. Pharmacology for Second Professional Students. Books and Allied Pvt.Ltd.
2. Robinson CH. 1987. Normal and Therapeutic Nutrition. Oxford and IBH, publishingCalcutta, Bombay.
3. Shils EM, Olson AJ, and Shike MC. 1994. Modern Nutrition in Health and Diseases.Vol.II,Lea and Febriger Philadelphia.
4. Srilakshmi B. 2002. Dietetics .New Age International, New Delhi.
5. Swaminathan M. 1995. Essentials of Food and Nutrition.Vol.IandII, Ganesh andCompany,Madras.

REFERENCE BOOK(S)

1. Wadhwa A and Sharma S (2003). Nutrition in the Community- A textbook.Elite Publishing House Pvt. Ltd. New Delhi.
2. Park K (2011). Park's Textbook of Preventive and Social Medicine, 21st Edition. M/s Banarasidas Bhanot Publishers, Jabalpur, India.
3. Jelliffe DB, Jelliffe ERP, Zerfas A and Neumann CG (1989). Community nutritional assessment with special reference to less technically developed countries. Oxford University Press. Oxford.
4. WHO (2006). Child Growth Standards: Methods and development: height- for-age, weight-for-age, weight-for-length, weight-for-height and body mass index- for-age (<http://www.who.int/childgrowth/standards/en/>).
5. Gupta,MC. And Mahajan BK. (2003) Textbook of Preventive and Social Medicine 3rd Ed Jaypee brothers,Medical Publishers (p) Ltd.

E-RESOURCES:

1. <https://www.who.int/health-topics/malnutrition>
2. [Mohfw.nic.in/NRHM/NIDD](http://mohfw.nic.in/NRHM/NIDD)
3. www.nrhmorissa.gov.in/NIDDCP.html
4. www.Scripts.mit.edu

SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE (AUTONOMOUS)



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(For the candidates admitted in the academic year 2022-2023)

DEPARTMENT OF NUTRITION AND DIETETICS M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester: II-EDC-II Nutrition in Emergency and Disaster Management

Ins. Hrs. /Week: 3

Course Credit: 2

Course Code: 23PNDED2B

OBJECTIVES:

- To identify and contribute to the prevention of public health/ social health problems in the country.
- To combat various National nutritional emergencies and epidemic diseases and effectively manage disaster situations.

UNIT-I: Category of emergency Situations (10 Hours)

Definition of emergency situation /disaster and Factors leading to emergency conditions during disaster. Classification of emergencies– natural -Famine, drought, flood, earthquake, cyclone and manmade - war, civil and political emergencies.

UNIT-II: Health-related Emergencies (8 Hours)

Epidemic diseases – Dengue and chikungunya.

Endemic diseases - Cholera and Plague.

Pandemic diseases – Severe acute respiratory syndrome (SARS), Corona virus diseases

UNIT-III: Nutritional management during Emergencies (8 Hours)

Nutritional relief and rehabilitation- Assessment of food needs, food distribution strategy, targeting food aid, mass and supplementary feeding, special foods/ rations for nutritional relief.

UNIT-IV: Assessment and Surveillance (10 Hours)

Malnutrition in emergency affected populations- Indicators of malnutrition during emergencies, classification of malnutrition, Body measurement indicators, clinical and other impacts, Malnutrition assessment, indicators and simple screening methods.

UNIT-V: Disaster Management Programmes (9 Hours)

Disaster/emergency Management programmes in India and International - Disaster management acts and policies - United nation disaster management team- assessment and humanitarian affairs.

Total lecture Hours- 45

COURSE OUTCOME:

The students will be able to,

- Understand a comprehensive overview of the major emergency situations and its impact on health that likely to be encountered in such circumstances.
- Learn the prevention, treatment, and control of the communicable diseases that are common in emergencies.
- Understand the nutritional implications of an emergency situation and the need to include nutrition in plans for emergency preparedness
- Achieve a thorough knowledge on the methods for assessment and surveillance of the nutritional status of the population affected
- Better analyse and identify the disaster management programmes for humanitarian affairs.

TEXT BOOK(S)

1. Arulsamy 2016. Disaster Management. Publisher: Neelkamal; First Edition
2. Bruce Clements 2009. Disasters and Public Health. 1st Edition.
3. Ramesh R, Rao Jon Eisenberg and Ted Schmitt. 2007. Improving Disaster Management.
4. Rebecca Katz, Jim Banaski, Essentials of Public Health Preparedness and Emergency Management.
5. World Health Education, 2000. The Management of Nutrition in Major Emergencies.

REFERENCE BOOK(S)

1. Gibney 2013. Public Health Nutrition. Blackwell Publishing, ISBN: 978-1-118-69332-2
2. Hari Niwas Mishra, 2016. Functional foods. New India Publishing Rajesh Kapur, Agency, Navneet Singh, New Delhi.
3. Sharma S. Wadhwa A. 2003. Nutrition in the Community- A textbook. Elite Publishing House Pvt. Ltd.
4. Srilakshmi B. 2016. Dietetics. Seventh Edition, New Age International (P) Ltd.
5. Wisner B. Adams J. 2002. Environmental health in emergencies and disasters.

E-RESOURCES

1. <https://www.who.int/disasters/repo/7656.pdf>
2. [https://www.msmanuals.com/en-in/professional/infectious-diseases/respiratory- viruses/coronaviruses-and-acute-respiratory-syndromes-covid-19-mers-and-sars](https://www.msmanuals.com/en-in/professional/infectious-diseases/respiratory-viruses/coronaviruses-and-acute-respiratory-syndromes-covid-19-mers-and-sars)
3. <https://www.who.int/emergencies/diseases/managing-epidemics-interactive.pdf>
4. <http://www.who.int/hac/techguidance/training/Day%204%20nutrition%20assessment.pdf>
5. file:///C:/Users/svharishram/Downloads/disaster_management_in_india.pdf
6. [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200316-sitrep- 56-covid-19.pdf](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200316-sitrep-56-covid-19.pdf)

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

SEMESTER –IV CC-X Food Safety and Quality Control

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 23PND413

OBJECTIVES:

- The testing protocols, standards and importance of quality assurance/assessment in food industry.
- The laws and standards ensuring food quality and safety and the importance and functions of quality control unit in food industries.
- The methods used for evaluation of food quality and the national and international organization enforcing food quality and safety.

UNIT- I: Spoilage and Safety

(20 Hours)

Food Spoilage: Food spoilage definition; factors influencing food spoilage; Types of food spoilage such as microbes, enzymes and insects; Changes in food quality due to spoilage; Methods for detection of food spoilage; principles and Concept of food preservation .

Food Safety: Need and importance of food safety in food industries; Factors affecting food safety; Role of kitchen-hygiene, employee health and food plant hygiene in prevention of food spoilage and contamination; Regulatory authorities at local, district and national levels ensuring food safety in food industries.

UNIT-II: Additives and Adulteration

(16 Hours)

Food Additives: Definition; Common food additives and its function and usage; Permissible limits of additives in foods; Implications of additives on consumers health; Food adulteration: Meaning and definition; Types of food adulterants; Methods used for detection of food adulterants.

UNIT- III: Testing of Food Quality

(18 Hours)

Testing of Food Quality: Food Quality meaning and need of food quality testing; Types of evaluation -Subjective and objective. Subjective evaluation methods based on difference rate, sensitivity etc; Objective evaluation methods – tools and instruments used; quality standards for cereal, pulses and legumes, vegetables and fruits, milk, egg and flesh foods, fat and sugar and related products.

UNIT- IV: Food Quality Control and Assurance

(18 Hours)

Current concepts of quality control and assurance; Need and importance of quality control programmes such as quality plan, documentation of records, product standards, Product purchase specifications and process control; Principles of Hazards Critical Control Point(HACCP) and its role in total quality process; Duties and responsibilities of food quality controller.

UNIT –V: Laws and Standards

(18 Hours)

Need and importance; National food legislation such as Food Safety and Standards Authority of India (FSSAI), Essential Commodities Act, Indian Standards Institution (ISI), Bureau of Indian Standards (BIS), AGMARK, Fruit Products Order (FPO) and Prevention of Food Adulteration Act (PFA); International Organization such as Food and Agricultural Organization(FAO), World Health Organization(WHO), Codex Alimentarius, and Agricultural and Processed Food Products Export Development Authority(APEDA).

Total Lecture Hours-90

COURSE OUTCOME:

The students will be able to,

1. Be familiar with food safety hazards. and analyze hazards that might contaminate foods and causes of food borne illnesses.
2. Capable of identifying additives and their permissible limit and adulterants.
3. Gain better understanding on subjective and objective testing methods on foods.
4. Apply the Hazards Critical Control Point (HACCP) system as part of food safety and quality management.
5. Emphasize on the importance of food safety, food quality, food laws and regulations in food industry.

TEXT BOOK(S)

1. Alok Kumar 2019. Fundamentals of Food Hygiene Safety and Quality. Dreamtech Press, ISBN-13: 978-9389307818.
2. Joan K, Loken 1995. The HACCP- Food Safety . Manual Wiley, First Edition, ISBN-13:978-0471056850.
3. Pulkit Mathur 2018. Food Safety and Quality Control. The Orient Blackswan, ISBN-13:978-9352873791.
4. Suri Malhotra 2013. Food Science, Nutrition and Safety. Pearson Education, India. ISBN-13: 978-8131771105.
5. Virag Gupta 2017. The Food Safety and Standards Act, 2006. Commercial Law Publication Pvt. Ltd, India. ISBN-13: 978-9385075605.

REFERENCE BOOK(S)

1. Askar A. And Treptow H. 1993. Quality Assurance in Tropical Fruit Processing, Springer -Verlag, Berlin.
2. Early R. 1995. Guide to Quality Management Systems for the Food Industry. Blackie, Academic and Professional, London.
3. Gould WA. and Gould, RW. 1988. Total Quality Assurance for the Food Industries. CTI Publications Inc, Baltimore.
4. Hagstad HV. and Hubbert WT. 1986. Food Quality Control, Foods of Animal Origin. Iowa State University Press, AMES.
5. Pomeranz Y. and Meloan CE. 1996. Food Analysis: Theory and Practice. CBS Publishers and Distributor, New Delhi.
6. Ranganna S. 1986. Handbook of Analysis and Quality Control for Fruit and Vegetable Products. 2nd Edition, Tata Mc Graw hill Publishing Co Ltd, New Delhi.

E-RESOURCES

1. <https://www.imedpub.com/articles/food-spoilage-microorganisms-and-their-prevention.pdf>
2. <https://byjus.com/biology/food-adulteration/#:~:text=Food%20Adulteration%20can%20be%20defined,for%20economic%20and%20technical%20benefits.>
3. <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=1034>
4. https://www.food.actapol.net/pub/7_2_2007.pdf
5. <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=3857>

**SENGAMALA THAYAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI - 614016.

(For the candidates admitted in the academic year 2022-2023)

**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester- IV- CC-XI Food Service Facilities

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 23PND414

OBJECTIVES

- Gain knowledge in space allocation and arrangement of equipment in food Service institution.
- Develop skills in selecting and handling equipments for food preparation and service.
- Acquire knowledge in use of computers for catering services.

UNIT – I: Food Service Institution and Facility Planning (16 Hours)

Overview of types and objectives of food service institutions Functional areas of food Service Institution – receiving, storage, pre-preparation, production and service, cleaning and disposal area. Flow of traffic– entry and exit.

Space allocation for food plant according to different capacities.

UNIT – II: Kitchen Design and Layout (20 Hours)

General Kitchen layout – Size and Types of kitchen, Developing kitchen plans, Designing kitchens, Finishes used for walls and floors.

Work Simplification - Work area, Workers area of reach, Work and storage heights,

Work space, centers& their size, Equipment, materials and supplies, Movements and work flow.

UNIT – III: Equipment in Food Service (19 Hours)

Classification of Equipment, Design and functions of Equipment's in receiving, storage, preparation, serving, Dishwashing and Laundry.

Functions of equipment in Ancillary Departments - Pantry, Food pick-up area, Store, Linen room, Kitchen stewarding. Base Materials and Finishes in Equipment's-Materials used for finishers. Factors influencing and affecting the use of equipment in the food service institutions. Types of fuel – factors affecting fuel selection.

UNIT – IV :Physical and Operational Characteristics of Food Service Area (15 Hours)

Organization type, Size and Physical layout, Space requirement, Equipment requirement,

Timing required for meal service, Energy usage in Banquet Service, Bar Service, Cafeteria Service, Coffee Shop Service, Fast Food Service, Room Service, Specialty

Restaurants, Vending Machines, Robotic service

Computer aided design/ computer –aided manufacturing (CAD/CAM) in designing food service area.

UNIT - V : Safety and Security (20 Hours)

Safety and security in Kitchen area, service area and storage area Causes of accidents, safety procedure, safety training, legal responsibilities of a food service manager.

Safety and security aspects – electricity, lighting and ventilation.

Pest control management in production and storage area and garbage disposal.

Total Lecture Hours -90

COURSE OUTCOME:

The students will be able to,

1. Understand the functional areas of food service operations
2. Design kitchen plans and layout.
3. Comprehend the choice of equipment for different functional areas and its utility.
4. Apprehend the operational characteristics of different types of food service.

5. Follow the safety and security aspects in food service areas and also know the
6. procedure for pest control and garbage management.

TEXT BOOK(S)

1. Glow, G., 'Catering Equipment and systems Design' Applied Science Publishers Ltd., London 1977. John Wiley and Sons.
2. Kotschevar and Terrel (1977), 'Food Service Planning, Layout and Equipment' 2nd Edition.
3. Unklebay, N.S. Unklebay K (1982), 'Energy Management in Food Service' Ellis Horwood Ltd., England.
4. West, B.B., Wood, L., Harger, V.F. and Schugart - Food Service in Institutions, John Wiley & Sons., N.Y., 1972.

REFERENCE BOOK(S)

1. Palam E.R.Sc. Steedler.J.A. (1986), 'Preparing for the food service industry' an introductory approach' AVI Publishing Co., West Port.
2. MohiniSethi (2002) Catering Management – An Integrated Approach, Wiley Eastern Publication
3. MohiniSethi, (2004), Institutional Food Management, New Age International (P)limited, Publishers.
4. Lendal H. Kotschevar and Margret E. Terrell, 'Food Service Planning, Layout and Equipment, 2nd Edition, John Wiley and Sons, 1997.
5. Foster, D.L. - V.I.P. An introduction to Hospitality, Glencoe, Macmillan/McGraw - Hill, International Editions, 1993.
6. Foster, D.L. - Food and Beverage Operations, Methods and cost controls, Glencoe, Macmillan/ McGraw – Hill, International Editions, 1993.

E RESOURCES

1. <https://www.wiley.com/en-us/Foodservice+Facilities+Planning%2C+3rd+Edition-p-9780471290636>
2. <http://www.ignouhelp.in/ignou-mscdfsm-study-material/>
3. https://books.google.co.in/books/about/Foodservice_Facilities_Planning.html?id=lx3bBQmP9WsC&redir_esc=y
4. <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=Cdnwi2LUCCLzrJZ76d/o1A==>

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**DEPARTMENT OF NUTRITION AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS**

Semester- IV- Entrepreneurship, Industry Based Course- Food Product Development

Ins. Hrs. /Week: 6

Course Credit: 5

Course Code: 23PNDI41

OBJECTIVES

- To understand the concept of development of a new product
- Prepare new products based on special dietary requirements, functionality, and convenience
- Learn the improvisation of existing traditional Indian foods.

UNIT-I: Introduction to New Product Development (18 Hours)

Definition, significance of product development, food needs and consumer preferences. Steps involved in food product development, Basic principles and concept of food product development, Trends in food consumption pattern. Economical, psychological and sociological dimensions of food consumption patterns. Trends in social change as a base for new product development. Scope of growth in future, principles and purpose of new product development, product design and specifications.

UNIT- II: Product Development (18 Hours)

Steps in product development, standardization methods involved in product development. Portion size and portion control; Calculation of nutritive value, evaluation procedure of developed food products, Development of Score Card and analysis and interpretation of data, Cost of production, shelf life of packaging and storage stability.

UNIT- III: Formulation of new food products (20 Hours)

Formulation of new food products for infants, preschool children, adolescents, pregnant and nursing mothers, old age, sports persons, armed sources personnel and its related therapeutic uses. Traditional foods, weaning foods, convenience foods, Ready-to-eat(RTE), Ready-to-Serve (RTS), extruded foods, Intermediate moisture foods (IMF) foods, specialty products, health foods, nutritional supplements, functional foods, nutraceuticals and designer foods, sports foods, foods for defence services, space foods. General guidelines on giving declarations – Food Safety and Standards Authority of India (FSSAI).

UNIT- IV: Financial Management (14 Hours)

Institutional support (Training and Finance) for entrepreneurship development. Financial Institutions (Central and State Government) banks/ funding agencies, Centralized Online Real-time Exchange (CORE) financial accounting procedures, book keeping/ record keeping system.

UNIT- V: Concept of market and marketing (20 Hours)

Approaches of marketing and marketing functions, market structure, marketing efficiency and market integration, Role of Government in promoting agricultural marketing. Market promotion and positioning of food products. Role of advertisement and technologies in promotion of new products. Conditions for sale, license and identification and quality processing, conditions for distribution, storage and sanitation, Role of export promoting agencies, Economic feasibility of new products.

Total Lecture Hours -90

COURSE OUTCOME:

The students will be able to,

1. Understand and develop better ideologies towards the elements of food product
2. Learn the steps involved in food product development and understand the development cycle of the food product.
3. Apply and analyze the screening and feasibility tests for a products potential launch.
4. Better evaluate the financial resources and constraints onthe project.
5. Distinguish profitable ideas and market opportunities by assessing the saturation of regional market.

TEXTBOOK (S):

1. Aaron L.Brody, John B.Lord 2005. Developing New Food Products for a Changing Market Place. 2nd Edition, Publisher : CRC Press
2. Avantina Sharma 2006. Textbooks of Food science and technology. International book distributing Company.
3. Gordon W. Fuller 2011. New Food Product Development. From Concept to Marketplace, Third Edition, Publisher: CRC Press
4. Shakunthala Manay N. Shadaksharaswamy M. 2008.Food Facts andPrinciples. New Age InternationalPublishers, New Delhi.
5. Sunetra Roday 2012. Food Hygiene andSanitation. Tata Mc Graw HillEducation Private Limited, New Delhi.

REFERENC BOOK (S):

1. Debasis Bagchi and Sreejayan Nair 2016. Developing New Functional Food and Nutraceutical Products. ISBN-13: 978-0128027806 Academic Press.
2. Fuller Gordon 2005. New Food Product Development. 2nd Edition, CRC Press,Boca Raton, Florida,
3. Rao DG .2016. Fundamentals of Food Engineering. PHI Learning Private Limited, New Delhi
4. Robert C Baker 1988. Fundamentals of New Food Product Development (Developments in Food Science).Elsevier Science Ltd. ISBN-13 : 978- 0444429155
5. Schaffner DJ. Schroder WR.2000.Food Marketing and International Perspectives. Web/McGraw Hill Publication.

E-RESOURCES:

1. <https://nzifst.org.nz/resources/foodproductdevelopment/Chapter-3.htm>
2. <https://nzifst.org.nz/resources/creatingnewfoods/documents/CreatingNewFoodsCh5.pdf>
3. <https://cwsimons.com/steps-in-food-product-development/>
4. <https://www.eufic.org/en/food-production/article/processed-food>
5. <https://www.destechpub.com/wp-content/uploads/2015/01/Methods-for-Developing-New-Food-Products-preview.pdf>

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DEPARTMENT OF NUTRITION AND DIETETICS

M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester- IV- Value Added Course- II - Waste Management in Food Industries

Ins. Hrs. /Week: -

Course Credit: 2*

Course Code: 23PNDVA42

OBJECTIVES:

- Know the waste emission of food Industries.
- Learn impact of waste on environment.
- Understand waste treatment methods.
- Acquire knowledge on newer techniques of waste management.

UNIT - I WASTE EMISSION

Waste emission from food industry – Dairy Industry, Fruit and Vegetable Industry, Meat and fish-Agricultural waste, Effects of pollution on organism, Glass, chemicals and other products.

UNIT - II LIQUID WASTE TREATMENT METHODS

Water quality, treatment and recycle. Biochemical Oxygen Demand, Chemical Oxygen Demand and definitions, Discharge limits for effluents. Primary treatment, secondary and tertiary treatments by physical, chemical and biological methods.

UNIT - III SOLID WASTE TREATMENT METHODS

Effluent and solid waste utilization food processing industry by biological methods – for Single Cell Protein, biogas and other products.

UNIT - IV EMERGING TRENDS IN WASTE MANAGEMENT

Value added products from of agri food processing industry. Recovery of biological from dairy, meat, fish and poultry processing industry.

UNIT - V ENVIRONMENTAL LEGISLATION

Environmental impact assessment, ISO 14000, Environmental management system, Life cycle Assessment.

COURSE OUTCOMES:

The students will be able to,

1. Identify waste emission from food processing industry
2. Describe effect of waste emission on environment
3. Explain liquid, solid waste treatment methods
4. Illustrate waste minimization techniques
5. Appraise new useful derived products from waste treatment.

TEXT BOOKS:

1. Loannis S. Arvanitoyannis (2008). Waste management for the food Industry. Elsevier Academic Press 22
2. V. K. Joshi (2011). Food processing waste management: Treatment and utilization, India Publishing Agency

REFERENCE BOOKS:

1. Keith Waldron (2009). Hand book of waste management and co product recovery in food processing volume, CRC press. Wood head publishing Limited. New Delhi.
2. Maria Kosseva, Colin Webb (2013). Food Industry waste, Assessment and recuperation of commodities, Elsevier.
3. Monika Thakur, V. K. Modi, Renu Khedkar (2021). Sustainable food waste management: Concepts and Innovation. Springer.

E RESOURCES:

1. <https://egyankosh.ac.in/handle/123456789/12399>
2. <https://www.pdfdrive.com/waste-management-for-the-food-industries-food-Science-and-Technology-food-science-and-technology-e184360163.html>