

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



(Affiliated to Bharathidasan University)
(Accredited with "A" Grade by NAAC; An ISO 9001:2015 Certified Institution)
SUNDARAKKOTTAI, MANNARGUDI - 614016.
TAMILNADU, INDIA.

**M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS
COURSE STRUCTURE WITH REVISED SYLLABUS UNDER CBCS
(For the candidates admitted in the academic year 2021–2022)**



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SUNDARAKKOTTAI, MANNARGUDI-614016.

TAMILNADU, INDIA.

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

(For the candidates admitted in the academic year 2021-2022)

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)	21PND101	Advanced Food Science	5	4	3	25	75	100
	Core Course-- II (CC)	21PND102	Nutrition for Health and Fitness	5	4	3	25	75	100
	Core Course - III (CC)	21PND103	Advanced Food Service Management	5	4	3	25	75	100
	Core Course-- IV (CC)	21PND104	Housekeeping Management	5	4	3	25	75	100
	Core Practical - I(CP)	21PND105P	Advanced Food Science Practical	6	3	3	40	60	100
	Elective Course-I(EC)	21PNDE1A/ 21PNDE1B	Food Safety and Quality Control/Food Microbiology and Sanitation	4	3	3	25	75	100
TOTAL				30	22				600
II	Core Course-- V (CC)	21PND206	Advanced Dietetics	6	6	3	25	75	100
	Core Course - VI (CC)	21PND207	Community Nutrition	6	6	3	25	75	100
	Core Course-- VII (CC)	21PND208	Front Office and Personnel Management	5	4	3	25	75	100
	Core Practical - II(CP)	21PND209P	Advanced Dietetics Practical and Dietary Internship*#	6	3	3	40	60	100
	Elective Course - II(EC)	21PNDE2A/ 21PNDE2B	Biochemical Changes in Diseases /Nutrition in Child Care	4	3	3	25	75	100
	Extra Disciplinary Course - I(EDC)	21PNDED1A/ 21PNDED1B	-	3	2	3	25	75	100
TOTAL				30	24				600
III	Core Course-- VIII (CC)	-	-	6	6	3	25	75	100
	Core Course-- IX (CC)	-	-	6	6	3	25	75	100
	Core Course-- X (CC)	-	-	5	4	3	25	75	100
	Core Practical--III (CP)	-	-	6	3	3	40	60	100
	Elective Course - III(EC)	-	-	4	3	3	25	75	100
	Extra Disciplinary Course - II(EDC)	-	-	3	2	3	25	75	100
TOTAL				30	24				600
IV	Core Course-- XI (CC)	-	-	6	5	3	25	75	100
	Core Practical--IV(CP)	-	-	6	5	3	40	60	100
	Project	-	-	18	10	3	25	75	100
TOTAL				30	20				300
GRAND TOTAL				120	90				2100

CURRICULAM DESIGN

Subject	Number of Courses	Total Credits
Core Courses	11	47
Core practical /Internship	04	20
Elective Course	03	09
Extra Disciplinary course	02	04
Project	01	10
Total	21	90

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)	21PNDE1A / 21PNDE1B	Food Safety and Quality Control /Food Microbiology and Sanitation
II	Elective Course – II(EC)	21PNDE2A / 21PNDE2B	Biochemical Changes In Diseases / Nutrition In Child Care
III	Elective Course – III(EC)	-	-

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)	21PNDED1A/ 21PNDED1B	Functional Foods and Nutraceuticals / Nutrition In Emergency and Disaster Management
III	Extra Disciplinary Course – II(EDC)		

*– 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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QUESTION PAPER PATTERN-(Theory)

Max Times: 3 Hours

Max Marks: 75

Section-A (10 ×2=20)

Answer all the questions

Answer in one or two sentences each

1. Unit-I
2. Unit-I
3. Unit-II
4. Unit-II
5. Unit-III
6. Unit-III
7. Unit-IV
8. Unit-IV
9. Unit-V
10. Unit-V

Section-B (5 ×5=25)

Answer all the questions

Each answer should not exceed 500 words

11. a (or) Unit-I
- b
12. a (or) Unit-II
- b
13. a (or) Unit-III
- b
14. a (or) Unit-IV
- b
15. a (or) Unit-V
- b

Section-C (3 ×10=30)

Answer any THREE questions in 1200 words

- 16.....Unit-I
- 17.....Unit-II
- 18..... Unit-III
- 19.....Unit-IV
- 20.....Unit-V

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

Semester –I- CC – I: Advanced Food Science

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code: 21PND101

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 (15 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 (17 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 (14 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 (12 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

(17 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-75

COURSE OUTCOME:

The students will be able to,

1. Know the characteristics and behaviour of food constituents during processing
2. Find 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. Have sufficient knowledge on fats and oil and to control their interactions reactions with foods.
5. Know the role 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 Balasubramanium 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: Nutrition for Health and Fitness

Ins. Hrs. /Week: 5

Course Credit: 4

Course Code: 21PND102

OBJECTIVES:

- Understand the components of health and fitness and the role of nutrition.
- Make nutritional, dietary and physical activity recommendations to achieve fitness and well-being.
- Develop ability to evaluate fitness and well-being.

UNIT- I: Health and Fitness (18 Hours)

Definitions, components and assessment criteria of age: specific fitness and health status. Holistic approach to the management of fitness and health: Energy input and output. Definition of health and fitness, Factors influencing health and wellbeing Gender and health. Nutritional status: Definition, methods to assess nutritional status- (Relevant to maintenance of fitness).

UNIT-II: Energy system and Power (12 Hours)

Review of different energy system for endurance and power activity: Fuels and nutrients to support physical activity. Mobilization of fat stores during exercise. Energy for Exercise performance: Energy expenditure during physical activity, carbohydrate metabolism and performance, fat metabolism and performance, effect of exercise on protein requirements.

UNIT- III: Management of Fitness and Health (15 Hours)

Approaches to the management of fitness and health; Diet and exercise: Effect of specific nutrients on work performance and physical fitness. Fuel and other nutrients that support physical activity (metabolic pathways. Mobilization of fuel stores during exercise.

UNIT –IV: Physical fitness and Nutrition (15 Hours)

Significance of physical fitness and nutrition in prevention and management of weight control regimes. Nutrition guidelines for maintenance of health and fitness. Awareness about the alternative systems for health and fitness, like ayurveda, yoga, Meditation, vegetarianism and traditional diets.

UNIT –V: Fitness and Prevention management (15 Hours)

Defining nutritional goals/guidelines appropriate to health, fitness and prevention and management of the chronic degenerative disorder. Nutrition and exercise regimes for pre- and post-natal fitness.

Total Lecture Hours - 75

COURSE OUTCOME:

The students will be able to,

1. Know the importance of health and fitness and its role in nutrition.
2. Gain knowledge in general metabolic principles, primarily fuel sources for the working muscle during exercise
3. Develop knowledge of the macronutrient principles of sports nutrition for different types of athletes based on their goals, specifically related to energy and recovery
4. Assess an athlete's current intake and develop a sport nutrition plan based on type of sport and goals and understand the role of nutrition in recovery from injury
5. Translate sports nutrition research into practical applications for athletes, and be able to effectively communicate verbally, in written form, and using digital platforms

TEXT BOOK(S)

1. Anita Bean 2017. The Complete Guide to Sports Nutrition. 8th edition, Publisher Bloomsbury, Sport. ISBN-13: 978-1472924209.
2. Dr. Balbinder Singh 2018. Sports Nutrition and Weight Management. Publisher Friends Publication, India. ISBN-13: 978-8172165567.
3. Dr. Mishra SC, 2011. Concepts issues in Sports Nutrition. Publisher: Sports Publication. Delhi. ISBN: 81-7879-243-5-0.
4. Dr. Rajeev Kumar 2011. Physical Fitness and Diet. 1st Edition, Publisher Sports Publication, Delhi. ISBN: 978-81-7879-655-0.
5. Dr. Tahir P. Hussain, 2011. Hand Book of Sports Nutrition. Publisher Sports Publication, Delhi. ISBN: 978-81-7879-657-4.

REFERENCE BOOK(S)

1. Ira wolinsky 1998. Nutrition in Exercise and Sports. 3rd Edition, CRC press.
2. Mahan LK, and Ecott stumps S, Krause's 2000. Food, Nutrition and Diet Therapy. 10th Edition, WB, Saunders Ltd.
3. McArdle W, Katch F, and Katch V, 1996. Exercise Physiology. Energy, Nutrition and Human Performance. 4th edition, Williams and Wilkins, Philadelphia.
4. Parizkova J. Nutrition, Physical activity ad Health in early life. CRC press.
5. Shills ME, Osian J.A. Shike N. and Ross AC. (Ed) 1999. Modern Nutrition and Health and Disease. 9th Edition, Willams and Wilkins, Philadelphia.
6. Sizer F. and Whitney E. 2000. Nutrition -Concepts and Controversies. 8th Edition, Thomson Learning, Wadsworth.
7. Whitney EN, and Rolfes SR, 1999. Understanding Nutrition, 8th Edition, An International Thomson Publishers, West/ Wadsworth.

E-RESOURCES

1. <https://www.slideshare.net/arjitektundu88/holistic-concept-of-health>
2. <http://www.gssiweb.org/en-ca/article/sse-59-fat-metabolism-during-exercise-new-concepts>
3. <https://www.slideshare.net/RasheedPerry/food-nutrition-and-exercise-64403832>
4. https://bp-fitnessaustralia_production.s3.amazonaws.com/uploads/uploaded_file/file/219/Pre-and-Post-Natal-Exercise-Guidelines.pdf
5. http://www.scielo.org.co/scielo.php?script=sci_arttextandpid=S003474502006000500011

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

Semester - I -CC – III: Advanced Food Service Management

Ins. Hrs. /Week: 5 Course Credit: 4 Course Code: 21PND103

OBJECTIVES:

- The Students will gain a basic understanding of the Food industry
- Growth, development, and reviewing its organizational structure.
- Investigating its relationship with the hotel's other departments, and by focusing on industry opportunities and future trends.

UNIT-I: Definition and scope of food service Management (15 Hours)

Food Industries – Introduction to Food Service, Review of objectives and classification of food service. Definition, Principles and scope of management

UNIT –II: Planning and Organization (15 Hours)

Nature, importance, steps in Planning, and kinds of forecasting, assessment of needs of food service based on present and future trends. Organizing- present and future trends. Process of organization. Principles of organization, types of organization, tools of management.

UNIT- III: Staffing and Controlling (20 Hours)

Staffing -Man power planning, labour sources, selection, recruitment and training, wages, salaries, incentives, promotion, demotion, transfer, dismissal. Managerial problems of Food Service Unit.

Directing and Controlling – Direction, leadership, delegation, decentralization, centralization, supervision, human relations in industry, authority and responsibility, motivation, communication, evaluation techniques.

UNIT- IV: Finance Control (15 Hours)

Review of maintenance of accounts daily, weekly, monthly accounts for food, labour equipment and furnishing, rent, water, fuel, light, licenses, cleaning supplies, maintenance and miscellaneous. Book keeping -Double entry book keeping, ledger accounts, journal and balance sheet, budgetary control, non- budgetary control.

Cost control, fixed, variable, average, and marginal and unit cost, break even analysis- production planning control.

UNIT –V: Administrative Leadership (10 Hours)

Qualifications of effective food service administrator and/ or dietitians. Responsibilities, communications, academic requirements and opportunities Professional and trade associations.

Evaluation of self and department.

Total Lecture Hours-75

RELATED EXPERIENCE

1. Visit to commercial and non-commercial (welfare) food service institutions.
2. Planning work sheet for different categories of personnel in Food Service Institution.
3. Preparation and use of check sheet for use by administrator and dietitians.

COURSE OUTCOME:

The students will be able to,

1. Understand the human resources within a food services organization or department.
2. Communicate appropriately with clients, staff and management.
3. Apply food services technology and operate industry equipment.
4. Manage and demonstrate professional behaviours expected within the food service industry.
5. Manage food services budgets, better inventory control; adhere to regulations, standards and best practices of food service industry.

TEXT BOOK(S)

1. Arora RK,2009. Food Service and Catering Management.APH Publishers Corporation, ISBN-13: 978-8131300671.
2. Dr. Umesh Kumar 2018. Food Service Management. Random Publications, ISBN-13: 978-9386372239.
3. June Payne-Palacio, Monica Theis, 2019. Foodservice Management.13th edition, Principles and Practices Pearson Education, ISBN-13: 978-9353066987.
4. Mohini Sethi 2018. Catering Management. An Integrated Approach, 3rd edition, New Age International Private Limited, ISBN-13: 978-8122436891.
5. Tripathi PC. 2000. Personnel Management and Industrial Relations.Sultan Chand and Sons.

REFERENCE BOOK (S)

1. Kaufman R.2000. Mega planning- Practical tools for Organizational Success. Sage Publications, Inc.
2. Shring YP. 2001. Effective Food Service Management. Anmol Publishers, Private Limited, New Delhi.
3. Stephen B. Williams SR, Bill Jardine, and Richard JN. 2001. Introduction to Catering.Ingredients for Success, Thomson learning, Delmar.
4. West and Wood BB. 1996. Food service in institutions. Jonewiley and sons.
5. Yadav CP.2001. Management of Hotel and Catering Industry, Anmol Publishers and Institute of sustainable development, Lucknow, New Delhi.

E-RESOURCES

1. <https://www.slideshare.net/iamrealmelissa/food-service-67652942>
2. <http://anandahusseini.lecture.ub.ac.id/files/2015/09/Article-11.pdf>
3. <https://www.nestleprofessional.com.au/trends/8-everyday-problems-food-service-industry-contend>
4. <file:///C:/Users/svharishram/Downloads/Unit-2.pdf>
5. [file:///C:/Users/svharishram/Downloads/Catering%20Management,%203rd%20Edition.pdf%20\(%20PDFDrive%20\).pdf](file:///C:/Users/svharishram/Downloads/Catering%20Management,%203rd%20Edition.pdf%20(%20PDFDrive%20).pdf)

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M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

Semester -I -CC – IV: House Keeping Management

Ins. Hrs. /Week: 5 Course Credit: 4 Course Code: 21PND104

OBJECTIVES:

- Organization, function of Housekeeping department and its Different sections.
- Housekeeping coordination with different departments, Procedure of cleaning different status of room.
- Cleaning equipments and cleaning agent. Lost and found procedure in the control.

UNIT -I: Introduction to Housekeeping (18 Hours)

Introduction: Meaning and definition. Importance of Housekeeping, Housekeeping Department: Organizational framework of the Department (Large/Medium/Small Hotel).Job Description, Job Specification of staff in the house keeping department, Attributes and Qualities of the Housekeeping staff - skills of a good Housekeeper, Inter departmental Coordination with more emphasis on Front office and the Maintenance department. Hygiene and Grooming, Standards of Housekeeping Personnel.

UNIT –II: Housekeeping Procedures (12 Hours)

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 –III: 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: Types of Equipment, Operating Principles of Equipment, characteristics of Good equipment (Mechanical/Manual), Storage, Upkeep, and Maintenance of equipment. Care and Cleaning of Different Surfaces: Metal, Glass, Leather, Rexene, Ceramic, Wood, Wall and floor covering, Stain Removal.

UNIT- IV: Cleaning of Guest Rooms and Guest room cleaning (18 Hours)

The Hotel Guest Room: Layout of guest room (Types), Layout of corridor and floor pantry, Types of guest rooms. Guest Room Features.
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.

UNIT-V: Linen care and Layout**(12 Hours)**

Linen/Uniform Tailor Room: Layout, Types of Linen, sizes and Linen exchange procedure, Selection of linen, Storage Facilities and conditions, Par stock: Factors affecting par stock, calculation of par stock, Discard Management, Linen Inventory system, Uniform designing: Importance, types, characteristics, selection. Laundry – their functional design, selection, operation, use, care, maintenance and market trends.

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

The students will be able to,

1. Explain the Role, Significance and organization set up of Housekeeping Department and in the Hospitality Industry.
2. Understand and apply the procedures typically followed by housekeeping
3. Identify and elaborate the various kinds of surfaces to clean .
4. Apply the methods of cleaning procedures while servicing / cleaning guestrooms.
5. Analyze and evaluate the proper storage procedures of linen and uniforms and elaborate the laundry work flow.

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

1. <https://setupmyhotel.com/train-my-hotel-staff/hk/255-hk-dep-chart.html>
2. <https://www.slideshare.net/SunilKumar148/5-cleaning-agents>
3. <https://www.slideshare.net/GautamKumar143/linen-uniform-tailor-room>
4. <https://www.ihmnotes.in/assets/Docs/Sem-2/Accommodation/Ch-2%20AREA%20CLEANING.pdf>
5. <https://www.harpercollege.edu/about/directory/ehs/pdf/Section%2026%20-%20Housekeeping%20Procedures.pdf>

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

Semester: I-CP –I: Advanced Food Science Practical

Ins. Hrs. /Week: 6

Course Credit: 3 Course Code: 21PND105P

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, gelatinisation 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. Principals 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.

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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-denaturaton-of-protein-explain-it-in-terms-of-160820421>
5. <https://www.youtube.com/watch?v=s9vYZAfpkqA>.

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



SUNDARAKKOTTAI, MANNARGUDI – 614016
(For the candidates admitted in the academic year 2021–2022)

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

Semester: I- EC-I: Food Safety and Quality Control

Ins. Hrs. /Week: 4 Course Credit: 3 Course Code: 21PNDE1A

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

(14 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

(14 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

(10 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

(10 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

(12 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-60

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.

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



SUNDARAKKOTTAI, MANNARGUDI – 614016
(For the candidates admitted in the academic year 2021–2022)

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

Semester: I- EC-I: Food Microbiology and Sanitation

Ins. Hrs. /Week: 4 Course Credit: 3 Course Code: 21PNDE1B

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 (11 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 (12 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 (11 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 (15 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 (11 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-60

COURSE OUTCOME:

The students will 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.

REFERENCE BOOK (S)

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. VijayaRamesh 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/finalmodulefoodbornediseasediploma.pdf>.

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



SUNDARAKKOTTAI, MANNARGUDI – 614016

(For the candidates admitted in the academic year 2021–2022)

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

Semester: II- CC-V: Advanced Dietetics

Ins. Hrs. /Week: 6

Course Credit: 6

Course Code: 21PND206

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**

(12 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 **(18 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 -Chron'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 **(15 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 **(12 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-75

COURSE OUTCOME:

The students will be able to,

1. Discuss the nature and scope of Nutrition care process and Therapeutic Nutrition; and identify circumstances where diet may need modification.
2. Know the 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. Deliberate and evaluate 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 III, 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.

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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>
6. <https://www.slideshare.net/AnshuYadav31/food-allergies-120057018>

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



SUNDARAKKOTTAI, MANNARGUDI – 614016
(For the candidates admitted in the academic year 2021–2022)

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

Semester: II- CC-VI: Community Nutrition

Ins. Hrs. /Week: 6

Course Credit: 6

Course Code: 21PND207

OBJECTIVES:

- To learn the concepts of community nutrition
- To enable the students to assess the health status of the community
- To describe skills needed to deliver nutrition services and methods of accessing community nutrition resources and information.

UNIT- I: Introduction to Community Nutrition (15 Hours)

Community Nutrition –meaning and concept of community nutrition, relationship between health and nutrition. Malnutrition and infection- vicious cycle. Application of modern science and technology for effectively increasing the production and conservation of foods.

Community nutrition programme planning - Identification of problem, analysis of causes, resources constraints, selection of interventions, setting a strategy, implementations and evaluation of the programme.

UNIT- II: Communicable Diseases (13 Hours)

Communicable diseases and its control Socioeconomic and demographic status – relation to nutritional status importance of sanitation and hygiene in health. Factors involved in the transmission of communicable diseases, Natural history of a communicable diseases.

UNIT- III: Nutritional approach (12 Hours)

Nutritional status- definition, Methods of assessments- anthropometry, clinical, biochemical and biophysical assessment. Diet surveys- food weightment survey, 24 hour recall, food dairy and food frequency. Vital statistics- mortality and morbidity statistics.

UNIT- IV: Nutrition Education (15 Hours)

Meaning, nature and importance of Nutrition education to the community and lessons to be taught. Methods of education- use of audio visual aids, Use of computers to impart nutrition education – power point presentation, E- learning,

Organization of Nutrition education programmes:

Objectives and methods used, integration of nutrition education with extension work, when to teach, whom to teach and who is to teach. Principles of planning, executing and evaluating, nutrition education programmes, problems in conducting nutrition education programmes.

UNIT- V: Nutrition Intervention programmes (20 Hours)

Genesis objectives and operation of nutrition intervention programmes in India– School Lunch Programme, Integrated Child Development Services (ICDS), Indian Council of Medical Research (ICMR), National Institute of Nutrition (NIN), Central Food Technological Research Institute (CFTRI), Defence Food Research Laboratory (DFRL) and Food and Agriculture Organization (FAO), World Health Organization (WHO) and United Nations Children's Emergency Fund (UNICEF), International Vitamin A Consultative Group (IVACG), International Nutritional Anemia Consultative Group (INACG) organized by government

for vulnerable sections of the population. National Nutritional Anaemia Prophylaxis Programme, National Prophylaxis Programme against Vitamin A Deficiency Diseases, Goitre Control Programme. National Nutrition policy- National food security, National nutrition policy- thrust areas and implementation at national level, Impact of National Nutrition policy.

Total Lecture Hours-75

COURSE OUTCOME:

The students will be able to,

1. Assess the health status of the community
2. Discuss and understand the various nutrition monitoring and surveillance methodologies and how they are used.
3. Understand beliefs, customs and food practices of various cultural groups and apply this knowledge in planning nutrition education and intervention programs.
4. Develop an educational session or program/educational strategy for a target population.
5. Know the various organizations related with food and nutrition with its functions.

TEXT BOOK(S)

1. Anshu Chaturvedi 2017. Nutrition for the Community. Gullybaba Publishing House ISBN: 9789382688433, 9382688439.
2. Dash Bijayalakshmi 2016. A Comprehensive Textbook of Community Health Nursing. 1st Edition, Jaypee Brothers Medical Publishers. ISBN: 9789386056054.
3. Dr. Prabha Bisht 2017. Community Nutrition in India. First Edition, Publisher Star Publications, ISBN: 9789381246795, 9381246793.
4. Sehgal Sal 2016. Text Book of Community Nutrition, Indian Council of Agricultural Research, ISBN: 9788171640744, 9788171640744,
5. Suryatapa Das, 2020. Textbook of Community Nutrition. 4th Edition: Publisher: Academic Publisher, ISBN: 9789387162532.

REFERENCE BOOK(S)

1. Baurle PA. 1992. Inducible Gene Expression, Part I: Environmental Stresses and Nutrients, Boston, Birkhauser.
2. Berdanier CD. 4th, Hargrove JL. 1996. Nutrients and gene expression: Clinical Aspects. Boca Raton, FL CRC Press.
3. Bodwell CE. and Erdman JW. 1998. Nutrient Interactions. Marcel Dekker Inc, New York.
4. Chandra RK. 1992. Nutrition Immunology. ARTS Biomedical, New Found land.
5. Shills ME, Olson J, Shike M. and Roos C. 1998. Modern Nutrition in Health and Disease. 9th Edition, Williams and Williams. A. Beverly Co. London.

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4. <https://www.open.edu/openlearncreate/mod/oucontent/view.php?id=84and printable=1>
5. <https://www.cartercenter.org/resources/pdfs/health/ephti/library/modules/degree/maternalnutritiondegree.pdf>

**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- CC-VII: Front Office and Personnel Management

Ins. Hrs. /Week: 5 Course Credit: 4 Course Code: 21PND208

OBJECTIVES:

- To establish knowledge and skills of the front office management operation.
- To understand the overall concepts of front office management and operation.
- To apply the knowledge and skills involved in professional hotel services.

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 (17 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: Personnel Management (16 Hours)

Personnel Development Program: Employee training, executive development and career Planning and development, performance appraisal.

Job Compensation: Job evaluation, wage and salary administration, incentive plans and fringe benefits, variable compensation individual and group.

Promotions, demotions, transfers, separation, absenteeism and turnover.

UNIT-V: Employee welfare and Human resource (13 Hours)

Quality of work life and quality circles, job satisfaction and morale. Social security, health and safety, employee welfare. Counseling for effective Human Resource Development. Human Relations: definition, objectives and approaches to human relations and employee Grievances and discipline, participation and empowerment, Introduction to collective bargaining.

Total Lecture Hours-75

COURSE OUTCOME:

The Students will 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. Develop, implement, and evaluate employee orientation, training, and development programs.
5. Establish grooming standards in personnel management and their role in the designing and evaluation of the performance management program.

TEXT BOOK(S)

1. Andrew, S., 1995. Hotel Front Office – Training manual, Tata Mac Graw Hill Publishing co ltd, New Delhi.
2. Bardi, J .A., 2012. Hotel Front Office Management, 5th Edition, John Wiley publisher, ISBN: 9788126537242.
3. Bhakta Anutosh -Professional Hotel Front Office Management, McGraw Hill, India. ISBN: 9780071078009, 9780071078009.
4. Dr. Sharma, D.K., and Goyal, R.C., 2017. Hospital Administration and Human Resuorce Management, Phi Learning, New Delhi.
5. Jatashankar Tewari, Hotel Front Office: Operations and Management, oxford publishing house.

REFERENCE BOOK(S)

1. David A. DeCenzo and Stephen P. Robbins, Personnel/Human Resource Management, Third edition, PHI/Pearson.
2. Dr.Venkatapathy, R. and Assissi Menacheri, 2001. Industrial Relations and Labour Welfare, Adithya Publications, CBE.
3. Robert L.Gibson, and Marianne H.Mitchell, 2005. Introduction to Counseling and Guidance, VI edition, PHI.
4. Savitha Sharma, 1996. Hospital Management, Commonwealth Publishers, New Delhi.
5. VSP Rao, 2000. Human Resource Management: Text and cases, First edition Excel Books, New Delhi.

E-RESOURCES

1. <https://www.ibef.org/download/Healthcare-January- 2017.pdf>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1299207/>
3. http://www.eiconsortium.org/pdf/heart_of_hrd_counseling_competencies.pdf
4. https://www.who.int/hiv/pub/imai/om_5_infrastructure.pdf
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1208931/>
6. https://www.researchgate.net/publication/259389319_hospital_administration
7. <https://www.nabh.co/h-doc.aspx>.

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

Ins. Hrs. /Week: 6 Course Credit: 3 Course Code: 21PND209P

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

COURSE OUTCOME:

The students will be able to,

1. Learn to prepare hospital diets
2. Plan diets based on dietary principles
3. Set up diet trays and calculate nutrients
4. Plan and prepare appropriate diets for therapeutic conditions
5. Apply knowledge in counseling for disease conditions.

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 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. 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, Mc Millan publishing.

E-RESOURCES

1. http://llnutrition.com/mod_III/TOPI3/m31.htm#:~:text=Nutritional%20screening%20is%20a%20rapid,patients%20at%20risk%20of%20malnutrition.
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>
6. [https://www.slideshare.net/AnshuYadav31/food-allergies-120057018.](https://www.slideshare.net/AnshuYadav31/food-allergies-120057018)

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



SUNDARAKKOTTAI, MANNARGUDI – 614016
(For the candidates admitted in the academic year 2021–2022)

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

Semester: II- EC-II: Biochemical Changes in Diseases

Ins. Hrs. /Week: 4

Course Credit: 3

Course Code: 21PNDE2A

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, 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 (10 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 (10 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 (15 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 (10 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-60

COURSE OUTCOME:

The students will be able to,

1. Gain knowledge on fundamental biochemistry related to health and better explain the clinical significance.
2. Evaluate the abnormalities which commonly occur with the deficiency disorders.
3. Evaluate critically clinical disorders by estimating biomarkers and determine various substances including substrates, enzymes, hormones, etc and their use in diagnosis and monitoring the diseases.
4. Review the information from each category of hormones and its related metabolic disorder.
5. Understand and create awareness on diseases/disorders of erythrocyte metabolism increasingly found in present day and also the detoxification mechanism.

TEXT BOOK(S)

1. Chatterjee MN.and Rana Shinde, 2015.Textbook of Medical Biochemistry, Jaypee Brothers,
2. David A Bender and Shauna MC, Cunningham 2021. Introduction to Nutrition and Metabolism.
3. David L. Nelson and Michael M. Cox, Menninger2008. Principles of Biochemistry 5th Ed WH Freeman and Company.
4. Gerhard Meisenberg and William H, Simmons 201 Principles of Medical Biochemistry:.Publisher: Mosby
5. Sharma DC. 2017. Nutritional Biochemistry .CBS Publishers and Distributors private limited.

REFERENCE BOOK(S)

1. Allan Gaw, Michael Murphy, Robert Cowan, Denis O'Reilly, Michael Stewart, and James Shepherd, 2008. Clinical Biochemistry.An Illustrated Colour Text, 3rd Edition, Publisher: Churchill Livingstone.
2. Davidson LSP, MacLeod J. and Edwards CRW, Davidson's Principles and Practice of Medicine: A Textbook for Students and Doctors, 15th Edition, Publisher Churchill Livingstone .
3. John W, Baynes and Marek Dominiczak 2010. Medical Biochemistry. Publisher: Mosby.
4. Richard Luxton, 2008. Clinical Biochemistry. Scion Publishing Limited.
5. Robert K, Murray Daryl K, Granner, Peter A, Mayes and Victor W, Rodwell 2012. Harper's Biochemistry. Publisher: Appelton and Lange.
6. Varley H. Gowenlock AH, and Bell M. 1980. Practical clinical biochemistry. William Heinemann medical books limited, Vol. 1. 5th Edition.
7. William F. Ganong 2012. Review of Medical Physiology.Publisher: McGraw-Hill.

E-RESOURCES

1. <https://www.biologydiscussion.com/biochemistry/carbohydrate-metabolism/glucose-tolerance-test-types-utility-and-procedure/43370>.
2. <https://www.slideshare.net/ErhardRutashobya/disorders-amino-acids>.
3. https://www.iptsalipur.org/wp-content/uploads/2020/08/BP503T_PCOL_UNIT-IV.pdf.
4. <https://www.studocu.com/en-gb/document/university-of-nottingham/cardiovascular-respiratory-and-haematology/summaries/revision-notes-haematology-1-6/132921/view>.
5. <https://www.sciencedirect.com/science/article/pii/S2213231715000907>.

**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- EC-II: Nutrition in Child Care

Ins. Hrs. /Week: 4

Course Credit: 3

Course Code: 21PNDE2B

OBJECTIVES

- To understand the growth and development
- To identify the nutritional requirements in critical care
- To get an insight knowledge on pediatric critical care

UNIT-I: Assessment and Management of critically ill children (12 Hours)

Normal growth in children –milestones, weight, height and head circumference in children (Birth to 12 years), factors affecting normal growth in children, immunization schedule. Assessment of nutritional status in pediatric, interaction of nutrition and infection in children, low birth weight and preterm babies, determination of nutritional requirements in hospitalized children, nutritional support in critically ill children – metabolic changes during critical illness, Total parenteral nutrition(TPN),Enteral nutrition(EN)and management of Protein Energy Malnutrition(PEM) – resuscitation, restoration and rehabilitation.

UNIT- II: Dietary management in Paediatrics gastrointestinal disorders (13 Hours)

Diarrhea – Types, Pathogenesis, Adverse effects, Oral Rehydration Therapy (ORT), Fluid and Electrolyte therapy, Dietary management and nutritional support.

Constipation- Pathogenesis, dietary management and nutritional support.

Irritable Bowel Syndrome (IBD), Crohn's disease, Ulcerative colitis – Pathogenesis, dietary management.

UNIT- III: Dietary management in Paediatrics cardiovascular, liver and renal disorders (12 Hours)

Cardio vascular diseases - Congenital Heart disease, Pediatric dyslipidemias - etiology, dietary management. Liver–Jaundice, Hepatitis, cirrhosis- Pathogenesis, dietary management.

Renal Diseases - Nephrotic syndrome, acute renal failure, chronic renal failure- Pathogenesis, dietary management.

UNIT- IV: Dietary management in Paediatrics diabetes, AIDS and Cancer (12 Hours)

Juvenile diabetes - Metabolic changes, diagnosis, complications, Management – Medical Nutrition Therapy, Nutrient requirement, Insulin regime and diet plan.

Cancer – Types, signs and symptoms, diagnosis, treatment and dietary management

AIDS - Effect of HIV infection on Nutritional status, Effect of anti- Retroviral therapy, feeding of HIV exposed child, breast feeding, replacement feeding, role of nutrition and nutritional requirements for HIV infected child.

UNIT-V: Dietary management in special conditions (11 Hours)

Allergies and intolerance-Pathogenesis and types of allergic reactions-Type I hyper sensitivity, Type II hyper sensitivity, Type III immune complex reaction, Cell mediated reaction. Common food allergens and manifestations- skin, respiratory tract, Gastro intestinal tract (milk, egg, soy,

fish, shell fish, peanuts). Diagnosis, treatment and dietary management. Nutrition for children with special needs-Ketogenic diet- Epilepsy, Neutropenic diet-marrow transplant, Autism. Inborn errors- diagnosis and dietary management-carbohydrate-glycogen storage disease, galactosemia, fructosemia, Proteins- phenylketonuria, Maple syrup urine disease, Alkaptonuria Homocysteinuria, Tyrosenemia, Minerals-Wilson's disease.

Total Lecture Hours-60

COURSE OUTCOME:

The students will be able to,

1. Gain knowledge on assessment of nutritional status in pediatric, interaction of nutrition and infection in children.
2. Cite the importance of immunization.
3. Explain the anthropometric assessment techniques in Pediatric to predict the nutritional support in critically ill children.
4. Diagnose the clinical assessment.
5. Assess the metabolic changes and conclude dietary management.

TEXT BOOK(S)

1. Elizabeth KE. 2002. Feeding of infant and children. Pediatrics Publishers, Hyderabad
2. Kelly Kane and Kathy Prelack 2019. Advanced Medical Nutrition. Jones and Bartlett learning publication company. First Edition.
3. Madhu Sharma, 2013. Pediatric Nutrition. Jaypee Brothers Medical Health and Disease, Publishers (P) Ltd, New Delhi.
4. Meenakshi N. 2014. Nutrition and Diet. Medical Mehta Children, Publishers (P) Ltd, New Delhi
5. Swaminathan M. 1995. Essentials of Food and Nutrition. Vol. I and II, Ganesh and Company, Madras.

REFERENCE BOOK(S)

1. Mary Rudolf and Malcolm I. Levene, 2006. Paediatrics and Child Health. Blackwell Publishing Asia Pty Ltd, 550 Swanston Street, Carlton, Victoria 3053, Australia
2. Pamela L. Swearingen 2015. All-in-One Nursing Care Planning Resource: Medical-Surgical, Pediatric, Maternity, and Psychiatric-L. Swearingen, special project editor. – 4th edition.
3. Vinod, K, Paul and Arvind Bagga 2013. Ghai Essential Pediatrics CBS publisher and distributors Private limited Eight Edition.
4. Ronald E, Kleinman., 2020. Pediatric Nutrition. 8th Edition, American Academy of Paediatrics.
5. Garrow J, James and Ralph A. 2008. Human Nutrition and Dietetics, publisher Churchill Livingstone.

JOURNALS

- The American Journal of Clinical Nutrition, Nutrition Press
- Clinical Pediatric Dermatology, iMed Publication Limited
- Pediatric Cardiology, Springer, United States
- Pediatric Allergy and Immunology, Wiley – Blackwell, Denmark

E-RESOURCES

1. <https://www.pdfdrive.com/all-in-one-nursing-care-planning-resource-medical-surgical-pediatric-maternity-and-psychiatric-mental-health-e175333117.html>
2. <https://www.pdfdrive.com/paediatrics-and-child-health-e157674315.html>
3. <https://www.pdfdrive.com/ghai-essential-pediatrics-e158189795.html>
4. <http://www.ispae.org.in/old/Diabetes%20guidelines%20for%20Web.pdf>
5. <https://www.todaysdietitian.com/pdf/courses/RandallKetogenic.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- EDC-I: Functional Foods and Nutraceuticals

Ins. Hrs. /Week: 3

Course Credit: 2

Course Code: 21PNDED1A

OBJECTIVES:

- To provide students with an overview of the field of functional foods, nutraceuticals and natural health products.
- To develop comprehensive understanding of different nutraceuticals and functional foods.
- To understand the potential of various functional foods in promoting human health.

UNIT-I: Functional Foods and Nutraceuticals

(10 Hours)

Definition and History-Functional foods, traditional foods, nutraceuticals - teleology, designer foods and pharma foods, history of functional foods, components of functional foods, stages involved in development of functional foods.

UNIT-II: Categorization of Nutraceuticals

(9 Hours)

Classification - Based on food source, mechanism of action and chemical nature-isoprenoid, phenolic substances, fatty acids and structural lipids, terpenoids – saponins, tocotrienols and simple terpenes, carbohydrates and amino acid based derivatives, isoflavones.

UNIT-III: Functional Foods of microbial origin

(10 Hours)

Human gastrointestinal tract and its microbiota, functions, probiotic microflora and functions- Lactobacillus and Bifidobacterium, concept of probiotics and prebiotics with examples, role of probiotics in health and disease, spirulina as bioactive component. Safety, foods versus dietary supplements.

UNIT-IV: Functional foods and Nutraceuticals in Health and Disease

(8 Hours)

Sources of functional foods; concept of dietary supplements, photochemical, phytosterols, omega 3 and 6 fatty acids, dietary fiber, role of nutraceuticals in health and disease management, non-essential nutrients as dietary supplements, FOSHU foods.

UNIT-V: Regulatory Aspects of Functional Foods and Nutraceuticals

(8 Hours)

Regulatory aspects- International and national regulatory aspects of functional foods in India, ICMR guidelines for Probiotics, development of biomarkers to indicate the efficacy of functional ingredients, Research frontiers in functional foods.

Total lecture Hours- 45

COURSE OUTCOME:

The students will be able to,

1. Explain the definition, classification of nutraceuticals, functional foods and dietary supplements and role of nutraceuticals in prevention or cure various diseases.
2. Describe about source, chemistry and uses of several natural nutraceuticals.
3. Gain familiarity with the different types of nutraceuticals of microbial origin

4. Explain about effect of nutrition to maintain healthy life of public in normal and therapeutic forms
5. Learn the regulatory aspects of functional foods and the requirements for safety and efficacy assessment of nutraceutical and functional food.

TEXT BOOK(S)

1. Ghosh D et al, 2012. Innovations in Healthy and Functional Foods. CRC Press.
2. Pathak YV, 2011. Handbook of Nutraceuticals .Volume 2, CRC Press.
3. Srilakshmi B 2012. Nutrition Science, 4th edition, New Age International Pvt Ltd.
4. Tamine A 2005. Probiotic Dairy Products. Blackwell Publishing Ltd, United Kingdom.
5. Wildman REC, 2001. Handbook of Nutraceutical and Functional Foods, CRC Press .

REFERENCE BOOK(S)

1. Gordon W. Fuller, 2011. New Food Product Development. From Concept to Marketplace, CRC Press, Newyork.
2. Hari Niwas Mishra, Rajesh Kapur, Navneet Singh Deora,, Aastha Deswal. 2016. Functional foods. New India Publishing Agency, New Delhi.
3. Jim Smith and Edward Charter., 2010. Functional Food Product Development Wiley Blackwell, New Delhi.
4. Nicola Graimes, 1999. The practical Encyclopedia of whole foods. Anness Publishing Ltd.
5. Robert EC. Wildman 2007. Handbook of Nutraceuticals and Functional Foods. CRC Press, Newyork.

E-RESOURCES

1. <https://www.slideshare.net/ektabelwal/development-of-nutraceuticals-functional-foods>
2. https://www.researchgate.net/publication/319980761_Effects_of_Probiotics_Prebiotics_and_Synbiotics_on_Human_Health
3. <http://www.ilsa-india.org/conference-on-feb20-2009/session2/Dr.%20V%20K%20Batish.pdf>
4. <https://fimdefelice.org/library/regulation-of-functional-foods-and-nutraceuticals/>
5. <file:///C:/Users/svharishram/Downloads/FUNCTIONALFOODS.pdf>

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

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

Ins. Hrs. /Week: 3

Course Credit: 2

Course Code: 21PNDED1B

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,

1. Understand a comprehensive overview of the major emergency situations and its impact on health that likely to be encountered in such circumstances.
2. Learn the prevention, treatment, and control of the communicable diseases that are common in emergencies.
3. Understand the nutritional implications of an emergency situation and the need to include nutrition in plans for emergency preparedness
4. Achieve a thorough knowledge on the methods for assessment and surveillance of the nutritional status of the population affected
5. 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. HariNiwas 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>
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>
