

CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS)

NATIONALLY ACCREDITED (IHCYCLE) WITH “A” GRADE BY NAAC

ISO 9001:2015 Certified

TIRUCHIRAPPALLI

DEPARTMENT OF FOOD SERVICE MANAGEMENT AND DIETETICS



M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS

SYLLABUS

2023-2024 and Onwards



CAUVERY COLLEGE FOR WOMEN (AUTONOMOUS), TRICHY-18
DEPARTMENT OF FOOD SERVICE MANAGEMENT AND DIETETICS
M.Sc., FOOD SERVICE MANAGEMENT AND DIETETICS
LEARNING OUTCOME BASED CURRICULUM FRAME WORK (CBCS-LOCF)
(For the Candidates admitted from the Academic year 2023-2024 onwards)
Semester I

Semester	Course	Course Title	Course Code	Inst. Hrs. /week	Credits	Exam			Total
						Hrs.	Marks		
							Int.	Ext.	
I	Core Course -I(CC)	Food Service Management	23PFS1CC1	6	5	3	25	75	100
	Core Course –II(CC)	Food Science	23PFS1CC2	6	5	3	25	75	100
	Core Course–III(CC)	Human Physiology	23PFS1CC3	6	5	3	25	75	100
	Core Practical-I(CP)	Food Science (P)	23PFS1CC1P	6	5	3	40	60	100
	Discipline Specific Elective Course-I(DSE)	A. Food Microbiology, Safety and Quality Control	23PFS1DSE1A	6	3	3	25	75	100
		B. Nutrition Through Life Cycle	23PFS1DSE1B						
		C. Front Office Operations	23PFS1DSE1C						
Total				30	23				500

SEMESTER I	INTERNAL MARKS: 25	EXTERNAL MARKS:75		
COURSE CODE	COURSE TITLE	CATEGORY	HRS / WEEK	CREDITS
23PFS1CC1	FOOD SERVICE MANAGEMENT	CORE	6	5

Course Objectives

- Understand principles of organization and management in food service units
- Understand and apply current concepts in equipment design, selection and use, hygiene, safety and sustainability of food services
- Develop skills required for managing a food service unit

Pre requisites

- Basic knowledge on principles of management
- Fundamentals of tools of management

Course Outcome

CO Number	CO Statement	Cognitive Level
	On Successful Completion of the course, students will be able to	
CO 1	Recall the classification of food services, distinguish between different food service systems, relate the food production systems to the relevant food service operations, explain current trends in food service facility design and regulations for specific food service types.	K1, K2
CO 2	Define the different types of organization; Explain the approaches, principles, functions and tools of management, apply the tools of management to the various management functions.	K1,K2, K3
CO 3	Classify equipment based on type and order of use, explain the different finishes, design and construction features of equipment, develop SOP for selection, operation and care of major equipment.	K2, K3,
CO 4	Ascertain the principles of cleaning and sanitation, create a checklist to ensure personal hygiene of food handlers, evaluate the causes of food hazards and suggest solutions based on principles of HACCP	K4, K5
CO 5	Identify the causes for accidents and suggest methods for prevention; Analyze methods of conserving energy, conserving resources and ensure zero waste. Evaluate strategies for conserving natural resources, energy saving and facility waste assessment and management.	K1, K3, K5

Mapping of CO with PO and PSO

COs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3	3	3	2	3	1
CO2	3	3	3	2	3	3	3	2	3	1
CO3	3	3	3	2	3	3	3	2	3	1
CO4	3	3	3	1	3	3	3	2	3	1
CO5	3	3	3	2	3	3	3	2	3	1

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation
“3” – Substantial (High) Correlation “-” indicates there is no correlation.

SYLLABUS

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
I	<p>Food Service Industry- Classification and regulatory requirements</p> <p>a) Classification of food services based on food production systems: (i) Conventional (ii) Commissary (iii) Ready prepared (Cook chill/ cook freeze) (iv) Assembly/ serve foods service systems (v) Cloud kitchens.</p> <p>b) Classification based on market segment/ Food service style</p> <p>c) Commercial and non commercial food services.</p> <p>d) Catering in hotels and specialty restaurants, clubs, café/coffee shop, dhaba, fast food outlets (Quick Serve Restaurants) food trucks, food carts and stands, meals on wheels, food vending machines, take away, online app – based delivery.</p> <p>e) Catering transport services – Air, railway, cruise ships, space missions.</p> <p>f) Catering in hospital and educational institutions.</p> <p>g) Industrial catering and community feeding (Places of worship), Social catering (weddings, functions).</p> <p>h) Franchise, chain, contract and outdoor catering services.</p> <p>i) Current trends in facility design, regulatory requirements and special considerations for each specific type of food services.</p>	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	<p>Organization and Management</p> <p>a) Organization – Definition and types.</p> <p>b) Approaches to management – classical, neo classical, systems approach, behavioral and human relations approach, contingency approach, JIT (Just in time) approach.</p> <p>c) Principles, functions and tools of management and their application in the food service industry.</p>	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
III	<p>Equipment design, selection, installation and use</p> <p>a) Classification of equipment – equipment for food storage, pre-preparation, cooking, holding, serving, dishwashing and auxiliary equipment.</p> <p>b) Equipment design, construction and finishes.</p> <p>c) Factors influencing selection of equipment; Trends in equipment available in the market.</p> <p>d) Installation, principles of operation and care of major equipment.</p>	20	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
IV	<p>Hygiene and Sanitation in the Food Service Unit</p> <p>a) Personal hygiene of employees Employee health and personal hygiene, proper food handling – precautions for safe food production.</p> <p>b) Hygiene of plant and equipment Principles of cleaning and sanitation. Dishwashing – types and uses.</p>	25	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

	<p>c) Food hygiene</p> <ul style="list-style-type: none"> • Infestation of foods – signs of infestation, control of infestation. • Time – Temperature relationships, potential hazards in food production. • The seven principles of Hazard Analysis Critical Control Points (HACCP) and their application in ensuring food safety and quality. • Introduction to ISO specifications; COVID Protocol according to FSSAI for food production. 			
V	<p>Safety and Sustainability</p> <p>a) Safety in Food Service Units – causes and prevention of accidents, 3Es of safety and action for emergencies.</p> <p>b) Sustainable practices and green initiatives</p> <p>i. Conservation of natural resources – water and energy conservation.</p> <p>ii. Green design and energy saving in electrical equipment.</p> <p>iii. Integrated solid waste management – sources, reduction, reuse/up cycle and recycle; facility waste assessment; pest control.</p>	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
VI	<p>SELF STUDY FOR ENRICHMENT (Not to be included for External Examination) Difference between commercial and non commercial food services, Relate functions of management with food industries, Difference between electrical and nonelectrical equipment used in food service institution, Hygienic practices to be followed by food handlers, Methods of pest control.</p>	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

Text Books

1. Arora R K. (2007). *Food Service and Catering Management*. A.P.H Publishing Corporation. New Delhi.
2. Malhotra R.K.(2005). *Food Service and Catering Management*. Anmol publications Pvt Ltd. New Delhi.

Reference Books

1. West B.B, Wood L, Harger V.P. (2006). *Food Service in Institutions*. John Willey and Sons, Inc., New York
2. Sethi, M. (2016). *Institutional Food Management*, (2nded). New Age International Pvt. Ltd., New Delhi.
3. Payne-Palacio J and Theis M. (2019). *Food Service Management-Principles and Practices*. Pearson India Education Services Pvt. Ltd. Noida, India.
4. Negi J. (2006). *Food and Beverage: Management and Cost control*. Kanishka publishers distributors

Web links

- <https://legaldocs.co.in/blog/food-safety-and-hygiene-norms-in-india>
- https://www.brainkart.com/article/Definition-and-Types-of-Equipment_35155/
- <https://www.mooc-list.com/course/innovation-food-industry-futurelearn>
- https://www.tutorialspoint.com/food_and_beverage_services/food_and_beverage_services_hygiene_and_safety.htm

Journals

1. The Journal of Food Service Management and Education, published by Food Service systems management education council
2. Journal of Food Service Business Research, Taylor & Francis

Pedagogy

Chalk and talk, Power Point Presentation, Discussion, Assignment, Quiz, Seminar

Course Designer

- MS. C. NIVETHA

SEMESTER I	INTERNAL MARKS:25		EXTERNAL MARKS:75	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
23PFS1CC2	FOOD SCIENCE	CORE	6	5

Course Objectives

- Learn the basic scientific principles underlying food preparation, processing, storage and preservation
- Comprehend the Nutritional significance of various food groups
- Get acquainted with the recent trends and novel concepts in food science

Pre requisites

- Basic knowledge about food groups and nutritional composition
- Fundamentals of food chemistry

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
	On the successful completion of the course, students will be able to	
CO1	Understand the basic nutrition facts of different food groups and state the best cooking practices to retain the nutrients	K1, K2
CO2	Illustrate the chemistry of foods	K2
CO3	Apply the scientific principles underlying food preparation, processing, storage and assess innovative practices to retain the quality of food	K3, K5
CO4	Identify and apply the appropriate subjective and objective methods while evaluating food quality	K3,
CO5	Analyze the role of nutraceuticals, functional foods and alternative protein sources and evaluate their potential as indispensable future foods	K4, K5

Mapping of CO with PO and PSO

Cos	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3	3	3	1	3	1
CO2	3	3	3	2	3	3	3	1	3	1
CO3	3	3	3	2	3	3	3	1	3	1
CO4	3	3	3	2	3	3	3	1	3	1
CO5	3	3	3	2	3	3	3	1	3	1

“1” – Slight (Low) Correlation “2” – Moderate (Medium)

Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation.

SYLLABUS

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
I	<p>Evaluation of food quality, Food adulteration and Food additives</p> <p>a) Physical Characteristics of Foods-Colour, appearance, density, volume, viscosity, tenderness and loss of weight. Microscopic Examination, Chemical and physico - chemical methods. Sensory characteristics of food.</p> <p>b) Subjective techniques- Sensitivity tests, Difference tests, Rating tests and Descriptive tests. Selection of taste panel members. Objective Techniques- Measurement of colour, texture, viscosity and consistency. Factors affecting the acceptability of foods.</p> <p>c) Food adulteration- types, adulterants, and ways to detect them.</p> <p>d) Food additives- role in cooking- FSSAI-regulations.</p>	20	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	<p>Cereals and Pulses</p> <p>a) Cereals- Rice, Wheat, Millets-structure, composition, nutritive value, and processing- cereal products. Storage of grains. Nutritional significance of pseudocereals- quinoa, amaranth seeds, and buckwheat.</p> <p>b) Cereal cookery-Starch- Gelatinisation, factors affecting gelatinisation - changes in cooked starches-gel formation, retrogradation and syneresis. Cereal protein-gluten, factors affecting gluten formation, nutrient changes during different processing methods of cereals. Dextrinization.</p> <p>c) Pulses-composition, nutritive value, and processing methods-pulse products, TVP, toxins in pulses- Pulse cookery-soaking, germination, fermentation, roasting and puffing process of pulses. Effect of cooking on nutritive value, quality, and quantity of legumes.</p>	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

III	Animal Foods a) Milk and milk products-composition, nutritive value, physical and chemical characteristics-effect of heat, acid, enzymes and tannins. Milk cookery-problems in milk cookery. Processing of milk. Milk products. Milk storage. b) Meat- structure, composition, nutritive value, post-mortem changes in meat, rigormortis, ageing, tenderisation of meat. Meat cookery- selection of meat and methods of cooking, changes in meat during cooking. Poultry- classification, composition, nutritive value, selection of poultry and methods of cooking. Storage and preservation of meat. Fish- classification, composition, nutritive value, selection of fish, methods of cooking, storage and preservation of fish. c) Egg-structure, composition and nutritive value. Grading and selection. Egg cookery-coagulation of egg protein- factors influencing coagulation-role of egg in cookery. Egg white foam- factors influencing foam formation. Storage and preservation of egg.	25	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
IV	Vegetables, Fruits, and Beverages a) Vegetables- classification, composition, nutritive value, selection, storage and preservation. Pigments- classification- effect of cooking on pigments, flavour compounds, texture. b) Fruits- classification, composition, nutritive value, selection, storage, and preservation. Enzymatic browning and its prevention. Physico-chemical changes in vegetables and fruits-ripening, respiration and textural changes. Changes in nutritive value due to cooking and processing. c) Beverages- classification, types of beverages-fermented, non- fermented beverages, fruit beverages, malted beverages. Coffee, tea and cocoa processing.	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	Nuts, oilseeds, Fats, sugar and spices, Recent concepts in food science a) Nuts and oilseeds- composition and nutritive value, toxicants present. Fats and oils-sources and processing- fat cookery- fat as emulsifying, leavening, shortening agent, factors affecting fat absorption- rancidity, its types. b) Sugar- crystallisation and factors affecting crystallisation, caramelisation- Stages of sugar cookery and its role in Indian sweet preparations. Spices, herbs, and condiments used in cookery- its medicinal value.	15	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

	c) Recent concepts in Food Science- Nutraceuticals, Functional foods, sustainable alternative proteins (plant proteins, algae, and microalgae, mycoprotein), biofortification, organic food.			
VI	SELF STUDY FOR ENRICHMENT (Not to be included for External Examination) Role of food additives in food industry, Benefits of Sprouting, Coagulation of egg protein, Reactions of enzymatic browning, Processing methods of nuts and oilseeds.		CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

Text Books

1. Shakuntala Manay, N. (2013). *Foods: Facts and Principles*. (3rded.). New Age International Publishers, New Delhi.
2. Swaminathan. M. (2019). *Advanced Text Book on Food and Nutrition*. (2nded.). Bangalore Printing and Publishing Co. Ltd, Bangalore.
3. Srilakshmi.B. (2020). *Food Science*. (8thed). New Age International Publishers, New Delhi.
4. Avantika Sharma. (2019). *Textbook of Food Science and Technology*. (3rded.). CBS Publishers and Distributors, New Delhi.
5. Iqbal, Syed Aftab. (2011). *Advanced Food Chemistry*. Discovery Publishing House, New Delhi.
6. Chopra H,K and Panesar P,S.,(2015). *Food Chemistry*. Narosa Publishing House (P) Ltd, New Delhi.

Reference Books

1. Norman N.Potter, (2007). *Food Science*, (5th ed). CBS Publishers and Distributors Pvt.Ltd.
2. Sadasivam.S.A,Manickam, (2008). *Biochemical methods for agricultural sciences*. New Age International Publishers, New Delhi.
3. Vickie, A., Vaclavik Elizabeth, W., Christian, (2014). *Essentials of Food Science*,(4th ed.), Springer Science and Business Media, New York.
4. Raheena Begum, M., (2015). *Textbook of Foods, Nutrition and Dietetics*, (3rd ed.), Sterling Publishers Pvt. Ltd, New Delhi.
5. Rick Parker, Miriah Pace (2020), *Introduction to Food Science and Food Systems* (2nd ed.), CBS Publishers

Web Links:

- <https://epgp.inflibnet.ac.in/>
- <https://www.ifst.org/lovefoodlovescience/resources>
- <https://libguides.reading.ac.uk/food/e-resources>
- <https://libguides.ntu.edu.sg/food-science-technology/eresources>
- <https://foodresearchgh.org/e-resources>

Journals

1. Food Chemistry, Elsevier Sci. Ltd, England
2. Food Science and Technology, Soc Brasileira Ciencia Tecnologia Alimentos, Brazil
3. Food Research International, Elsevier Science Bv, United States
4. Journal of Food and Agriculture, Wiley-Blackwell, England
5. Journal of Food Science and Technology, Scientific Publishers, India

Pedagogy

Chalk and talk, E-content, Lecture, Power point presentation, Seminar, Assignment.

Course Designers

- Ms.T.R.REVATHI

SEMESTER I	INTERNAL MARKS: 25		EXTERNAL MARKS: 75	
COURSE CODE	COURSE TITLE	CATEGORY	HRS / WEEK	CREDITS
23PFS1CC3	HUMAN PHYSIOLOGY	CORE	6	5

Course Objective

- Gain basic understanding of human anatomy and physiology.
- Understand the integrated functioning of cells, tissues, organs and systems to maintain life.
- Describe the structure of major human organs and explain their role in maintenance of health

Pre requisites

- Prior knowledge on human physiology
- Fundamentals of structure and function of human organs.

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
	On the successful completion of the course, students will be able to	
CO1	Label composition and functions of blood and physiology of cell	K1
CO2	Interpret physiological of circulatory and respiratory system	K2
CO3	Predict various homeostasis of human body.	K3
CO4	Ascertain regulation of digestive and excretory system	K4
CO5	Evaluate structure and function of endocrine and reproductive system	K5

Mapping of CO with PO and PSO

Cos	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	-	3	1	-	3	-	3	3	2
CO2	3	-	3	1	-	3	-	3	3	2
CO3	3	-	3	1	-	3	-	3	3	2
CO4	3	-	3	1	-	3	-	3	3	2
CO5	3	-	3	1	-	3	-	3	3	2

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation.

SYLLABUS

UNIT	CONTENT	HOURS	COS	COGNITIVE LEVEL
I	<p>Physiology of Cell, Cell Membrane, Nerve and Muscle.</p> <p>a. Internal Environment - The Concept of Homeostasis.</p> <p>b. Cellular level of organization – Review of structure and function of cell and its organelles. Cell division, control of cell growth and reproduction; cell differentiation;</p> <p>c. Membrane physiology – Transport of substance – diffusion, facilitated diffusion, Active Transport. Membrane Potential and Action Potential- Resting Membrane Potential.</p> <p>d. Excitation of Skeletal Muscle Neuromuscular Junction; Neuromuscular Transmission, Excitation and Contraction Coupling.</p>	20	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	<p>Digestive system</p> <p>a. Review of structure and function - Secretory, Digestive and Absorptive functions - Role of liver, pancreas and gallbladder.</p> <p>b. Motility and hormones of GIT.</p> <p>c. Regulation of food intake –role of hunger and satiety centres, effect of nutrients.</p>	16	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
III	<p>Circulatory, Cardio-Vascular and Respiratory system</p> <p>a. Blood composition, functions, clotting and haemostasis. Normal levels and functions of plasma proteins, RBC's, WBC's and platelets; Erythropoiesis; Blood groups and histocompatibility.</p> <p>b. Structure and function of heart and blood vessels – Regulation of cardiac output and blood pressure; heart failure; hypertension.</p> <p>c. Respiratory system: Review of structure and function. Role of lungs in the exchange of gases. Transport of oxygen and Co2. Exchange of gases at the lungs and tissues. Regulation of Respiration.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

IV	<p>Excretory and Nervous system</p> <p>a. Structure and function of nephron - Urine formation; Excretion of a concentrated and dilute urine; Role of kidney in maintaining pH of blood.</p> <p>b. Water, electrolyte and acid base balance – diuretics</p> <p>c. Organization of Central and Peripheral nervous system - Structure and functions of the brain, spinal cord; ANS.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	<p>Immune, Endocrine and Reproductive system</p> <p>a. Cell-mediated and humoral Immunity Activation of WBC and production of antibodies. Role in inflammation and defence.</p> <p>b. Endocrine glands (Pituitary gland, Thyroid, parathyroid, Islets of Langerhans, Adrenals, Ovary and Testis, Thymus, Pineal gland – structure, function, role of hormones, regulation of hormonal secretion.)</p> <p>c. Reproductive System – Review of male and female reproductive system; spermatogenesis, ovulation, menstruation, pregnancy and lactation; menopause</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
VI	<p>SELF STUDY FOR ENRICHMENT (Not to be included for External Examination)</p> <p>Types of active transport, Role of Ghrelin, Cardiac Index, Functions of Neuro transmitters, Importance of Interferon.</p>	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

TextBooks

1. Sembulingam.(2016).*Essentials of Medical Physiology*. Health Sciences Publisher. New Delhi.
2. Subramanyam., Sarada.(2018).*Textbook of Human Physiology*. S. Chand and company Ltd, New Delhi.
3. Randhawa.S.S., Atul Kabra.(2017).*Human Anatomy and Physiology*- I.S. Vikas and Company, India.
4. Muruges.N.(2010).*Anatomy Physiology and Health Education*.(6thed.).

ReferenceBooks

1. Guyton (2000). Guyton and Hal *Textbook of Medical Physiology*. Saunders. United States of America.
2. Waugh Anne Ross and Wilson(2003).*Anatomy and Physiology in Health and Illness*. Churchill Livingstone. New York.
3. Muruges.N(2011).*Anatomy and Physiology*. Sathya Publishers. Madurai.
4. Wilson, Ross(2014).*Anatomy and Physiology in Health and Illness*. Reed Elsevier India Private Limited. New Delhi.

Weblinks

- <https://www.khanacademy.org/science/health-and-medicine/human-anatomy-and-physiology>
- <https://www.biologyonline.com/tutorials/the-human-physiology>
- <https://digitaleditions.library.dal.ca/intropsychneuro/chapter/hunger-and-eating/>
- <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=NuAs6SreCGrvddEfs4kkBA==>

Journals

1. Human Physiology, Maik Nauka/Interperiodica Publishing, Russian Federation.
2. Indian Journal of Clinical Anatomy and Physiology, publication Pvt. LTD, India.
3. American Journal of Physiology- Endocrinology and Metabolism, American Physiological Society, United States.
4. Canadian Journal of Physiology and Pharmacology, Canadian Science Publishing, Nrc Research Press, Canada.

Pedagogy

E-content, Lecture, Powerpoint presentation, Seminar, Assignment, Practical.

Course Designers

- Ms. ARTHY . R

SEMESTER I	INTERNAL MARKS:40		EXTERNAL MARKS:60	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/WEEK	CREDITS
23PFS1CC1P	FOOD SCIENCE (P)	CORE PRACTICAL	6	5

Course Objective

- Learn the basic scientific principles underlying food preparation, processing, storage and preservation
- Comprehend the nutritional significance of various food groups
- Get acquainted with the recent trends and novel concepts in food science

Pre requisites

- Basic skills on preparation of various recipes
- Fundamentals of food chemistry

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
	On the successful completion of the course, students will be able to	
CO1	Identify the common food adulterants and additives	K1
CO2	Explain the factors affecting cooking quality of foods	K2
CO3	Prepare various food items by applying innovative practices	K3
CO4	Determine the suitable cooking practices to retain the nutrients	K4
CO5	Evaluate the scientific principles involved in food preparation, processing and storage	K5

Mapping of CO with PO and PSO

Cos	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3	3	3	1	3	1
CO2	3	3	3	2	3	3	3	1	3	1
CO3	3	3	3	2	3	3	3	1	3	1
CO4	3	3	3	2	3	3	3	1	3	1
CO5	3	3	3	2	3	3	3	1	3	1

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation.

List of Experiments

1. Evaluation of food quality, Food adulteration and Food additives

- a) Identify and detect Common food adulterants in foods.
- b) Carryout a Market survey on food additives present in processed foods.

2. Cereals and Pulses

- a) Study the factors affecting gelatinization and prepare recipes where gelatinisation is hastened and retarded.
- b) Interpret the factors influencing the quality of chapathis.
- c) Prepare any two recipes to show the impact of dextrinization.
- d) Find the factors affecting cooking quality of pulses, prepare recipes which enhance nutritional quality of pulses.

3. Animal Foods

- a) Determine the factors affecting coagulation of milk proteins.
- b) List the problems in milk cookery and find ways to prevent them.
- c) Find the optimum temperature and time for boiling egg.
- d) Study the factors influencing egg white foam formation.

4. Vegetables, Fruits, and Beverages

- a) Determine the various factors influencing the changes in vegetables with respect to colour, texture and flavour compounds during cooking.
- b) Observe enzymatic browning reactions in vegetables and fruits and ways to overcome them.
- c) Determine the best method of preparing coffee and tea.
- d) Prepare one nourishing, soothing, refreshing and appetizing beverage.

5. Nuts, oilseeds, Fats, sugar and spices, Recent concepts in food science

- a) Find the smoking point of oils.
- b) Determine the factors affecting oil absorption
- c) Observe the different stages in sugar cookery and prepare crystalline and non- crystalline candies.

Text Books

1. Shakuntala Manay, N. (2013). *Foods: Facts and Principles*. (3rded.). New Age International Publishers, New Delhi.
2. Swaminathan. M. (2019). *Advanced Text Book on Food and Nutrition*. (2nded.). Bangalore Printing and Publishing Co. Ltd, Bangalore.
3. Srilakshmi.B. (2020). *Food Science*. (8thed). New Age International Publishers, New Delhi.
4. Avantika Sharma. (2019). *Textbook of Food Science and Technology*. (3rded.). CBS Publishers and Distributors, New Delhi.
5. Iqbal, Syed Aftab. (2011). *Advanced Food Chemistry*. Discovery Publishing House, New Delhi.
6. Chopra H,K and Panesar P,S.,(2015). *Food Chemistry*. Narosa Publishing House (P) Ltd, New Delhi.

Reference Books

6. Norman N.Potter, (2007). *Food Science*, (5th ed). CBS Publishers and Distributors Pvt.Ltd.
7. Sadasivam.S.A,Manickam, (2008). *Biochemical methods for agricultural sciences*. New Age International Publishers, New Delhi.
8. Vickie, A., Vaclavik Elizabeth, W., Christian, (2014). *Essentials of Food Science*, (4th ed.), Springer Science and Business Media, New York.
9. Raheena Begum, M., (2015). *Textbook of Foods, Nutrition and Dietetics*, (3rd ed.), Sterling Publishers Pvt. Ltd, New Delhi.
10. Rick Parker, Miriah Pace (2020), *Introduction to Food Science and Food Systems* (2nd ed.), CBS Publishers

Web Links:

- <https://epgp.inflibnet.ac.in/>
- <https://www.ifst.org/lovefoodlovescience/resources>
- <https://libguides.reading.ac.uk/food/e-resources>
- <https://libguides.ntu.edu.sg/food-science-technology/eresources>
- <https://foodresearchgh.org/e-resources>

Pedagogy

Chalk and talk, E-content, Lecture, Power point presentation, Seminar, Assignment, Demonstration

Course Designer

- Ms.N.GANGA DEVI

SEMESTER I	INTERNAL MARKS: 25		EXTERNAL MARKS: 75	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
23PFS1DSE1A	FOOD MICROBIOLOGY, SAFETY AND QUALITY CONTROL	DISCIPLINE SPECIFIC ELECTIVE	6	3

Course Objectives

- To identify the beneficial effects of the microorganisms
- To evaluate the principles of sanitation
- To apply the laws and regulations related to food safety and quality control

Pre requisites

- Basic Knowledge on Food Science, Food chemistry
- Fundamentals of Food Microbiology

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
CO1	On the successful completion of the course, students will be able to Recall the important genera of microorganisms associated with food. Understand the Scope of food microbiology and food safety.	K1
CO2	Explain the suitable techniques for enumeration of microbes and methods (traditional to advanced) for preserving food	K2
CO3	Compute the role of different micro organisms in food spoilage, food fermentation and food-borne diseases and suggest ways to prevent food spoilage and food borne diseases	K3
CO4	Determine and recommend methods for microbiological quality control. Create investigation procedures for ensuring food safety and Hygiene	K4
CO5	Assess the food safety rules and regulations, Comprehend the use of Food Safety Management System (FSMS), and conduct Microbiological Risk Assessment.	K5

Mapping of CO with PO and PSO

COs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	2	1	3	2	2	3	2	2	3	1
CO2	2	1	3	2	3	3	2	2	3	1
CO3	2	1	3	2	2	3	2	2	3	1
CO4	2	1	3	2	2	3	2	2	3	2
CO5	2	1	3	2	2	3	2	2	3	1

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation

SYLLABUS

UNIT	CONTENT	HOURS	COS	COGNITIVE LEVEL
I	<p>Determination of microorganisms and their relevance in food</p> <p>a) Importance and significance of microorganisms in food. Factors affecting the growth of microorganisms in food – Intrinsic and Extrinsic parameter.</p> <p>b) Sampling, sample collection, transport and storage, sample preparation for analysis. Microscopic and culture dependent methods- ,culture, enumeration and isolation methods.</p> <p>c)Chemical and Physical methods-Chemical ,immunological and nucleic acid based methods; Culture independent techniques – PCR Based, DGGE, Meta genomics, etc.; Analytical methods for microbial metabolites-microbial toxins and metabolites.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	<p>Spoilage and Preservation of Foods from microbial contamination</p> <p>a) Characteristic features, dynamics and significance of spoilage of different groups of foods - Cereal and cereal products, vegetables and fruits, meat poultry and sea foods, milk and milk products, packed and canned foods.</p> <p>b) Chemical, Modified atmosphere, Radiation of foods from the microbiological angle.</p> <p>c) Indicators of water and food safety and quality: Microbiological criteria of foods and their Significance. ISO systems for food safety.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
III	<p>Food borne diseases and food safety concept</p> <p>a)Bacterial food borne diseases (Staphylococcal intoxicification, Botulism, Salmonellosis, Shigellosis, Bacilluscereus Gastroenteritics) Food (Norovirus, Reovirus, Rotavirus, Astrovirus, Adenovirus, Parvovirus, Hepatitis A Virus) Food Borne Animal Parasites Protozoa–Giardiasis, Amebiasis, Taeniasis. Roundworm– Trichinosis, Mycotoxins: Aflatoxicosis, Ergotism. Drug resistance-phenomena and mechanism.</p> <p>b) Food safety concept- Importance of food safety in the food processing industry Risk classification, National and international food regulatory agencies, General food laws and food safety regulations, Nutritional labeling regulation (mandatory and</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

	optional nutrients, nutritional descriptors and approved health claims); Microbial contamination (including cross-contamination/indirect contamination) Chemical contamination, Physical contamination, Allergen contamination.			
IV	<p>Food Safety Programs</p> <p>a) Definitions and importance of Good Manufacturing Practices (GMPs), Facility Maintenance, Personal Hygiene and Supplier Control.</p> <p>b) Sanitary Design of Equipment and Infrastructure, Procedures for Raw Material Reception, Storage and Finished Product Loading.</p> <p>c) Sanitation Program Sanitation Standard Operating Procedures (SSOPs), Product Identification, Tracking and Recalling Program, Preventive Equipment Maintenance Program, Education and Training Program.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	<p>Food Safety Regulation for Quality Control</p> <p>a) An overview of Food Regulation in India; Food Laws and Regulations; Structure, organization and duties of regulatory system.</p> <p>b) Duties and responsibilities of food business operator; Registration and Licensing process and requirements; Traceability; Import and Export of Foods; Liability for Defective Products; Food safety management systems and certifications.</p> <p>c) Regulation of special category Foods: Regulation of Irradiated foods; Regulation of Biotechnology and Genetic Modifications; Regulation of Dietary Supplements, Functional Foods and Nutraceuticals.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
VI	<p>SELFSTUDYFORENRICHMENT (Not to be Included for External Examination) Morphological characteristics of Microorganisms, Application of HACCP principles for food safety, Bacterial food borne diseases –Clostridium Perfringens gastroenteritis, Components of Pest Control Program, Uses of food Labeling.</p>	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

Text Books

1. Frazier William, C. (2014). *Food Microbiology*. (5th ed) McGraw Hill Irwin Companies. New York
2. Adams. (2018) *Food Microbiology*. (2nd ed).New Age International Publishers. New Delhi.
3. Pelczar Jr Michael, J. (2014) *Microbiology*. McGraw Hill Education (India) Private Ltd, New Delhi.

Reference Books

1. Sugandhar Babu R P. (2008) *Food Microbiology*. Adhyayan Publishers and distributors, New Delhi.
2. Vijaya Ramesh k. (2007) *Food Microbiology*. (1st ed).New Age International Publishers. New Delhi.
3. Bohra and Parihar. (2012) *Food Microbiology*. Student edition, Jodhpur
4. Anathanarayan, (2013) *Textbook of Microbiology*. University Press (India) Pvt. Ltd, Hyderabad.

Web Links

- <https://egyankosh.ac.in/bitstream/123456789/61874/1/UNIT%201%20Introduction%20to%20Food%20Microbiology%20Microbiology.pdf>
- <https://egyankosh.ac.in/bitstream/123456789/35007/1/Unit2.pdf><https://egyankosh.ac.in/bitstream/123456789/12424/1/Unit-3.pdf>
- <https://egyankosh.ac.in/bitstream/123456789/33296/1/Unit-4.pdf>

Journals :

1. Journal of Microbiology and Infectious Disease, Turkey.
2. Journal of Basic Microbiology, Wiley-Blackwell, Germany.
3. Journal of Microbiology, Microbiological Society Korea, South Korea.
4. Journal Applied Microbiology, Cardiff, U K.

Pedagogy

E-content, Lecture, Power point presentation, Seminar, Assignment

Course Designer

- Ms. M.VINOTHINI

SEMESTER I	INTERNAL MARKS : 25		EXTERNAL MARKS : 75	
COURSE CODE	COURSE TITLE	CATEGORY	HOURS / WEEK	CREDIT
23PFS1DSE1B	NUTRITION THROUGH LIFE CYCLE	DISCIPLINE SPECIFIC ELECTIVE	6	3

Course Objectives

- Understand the importance of nutrition through various life stages.
- Determine nutrient needs for all age groups and calculate the basic nutritional requirements.
- Develop a plan of action and implement nutritional care plan for every age group.

Pre requisites

- Principles of nutrition and application of meal planning guidelines throughout life cycle.
- Fundamentals of community nutrition.

Course Outcomes

CO Number	CO statement On the successful completion of the course, students will be able to	Cognitive level
CO 1	Identify national nutritional guidelines for various life stages	K1
CO 2	Interpret nutritional care plan for all age groups	K2
CO 3	Predict physiological changes in various stages of life cycle	K3
CO 4	Ascertain nutritional strategies to combat the infections, deficiencies and disorders	K4
CO5	Conclude menu and develop diet charts according to nutritional requirements of different age groups	K5

Mapping of CO with PO and PSO

Cos	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	3	-	3	3	-	3	3
CO2	3	3	3	3	-	3	3	-	3	3
CO3	3	3	3	3	-	3	3	-	3	3
CO4	3	3	3	3	-	3	3	-	3	3
CO5	3	3	3	3	-	3	3	-	3	3

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation.

SYLLABUS

UNIT	CONTENT	HOURS	COs	COGNITIVE LEVEL
I	<p>Pre natal and Infant nutrition</p> <p>a. Foetal origins of adult disease, intrauterine growth retardation, low birthweight, cleft palate, foetal alcohol syndrome—causes and consequences.</p> <p>b. Infancy – current feeding practices and nutritional concerns, guide lines for feeding normal and low birth weight infants. Growth and nutritional assessment – Growth chart, LBW babies – characteristics and nutritional care.</p> <p>c. Nutritional assessment, nutrient needs, lactose intolerance, infant formula—types, complementary foods—liquid, semi-solid and solid food choices, special nutritional concerns in infant feeding. Feeding the premature infant, allergies and infant obesity. Develop low cost supplementary foods.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
II	<p>Nutrition during childhood</p> <p>a. Childhood – Growth and development, food and nutrient needs, dietary adequacy. Factors influencing food choices, food acceptance, parental influences. Development of healthy gut microbiome. Aetiology and treatment of PEM, Vitamin A Deficiency, Anaemia. Planning meals for children with Attention-deficit/hyperactivity disorder (ADHD), autism and dyslexia. Immunization schedule for children.</p> <p>b. School age - Growth and development, food and nutrient needs, dietary adequacy. Food choices, meal patterns, prevention of nutrition and health problems. Causes and consequences of stunting, underweight, wasting, overweight, obesity and dental caries.</p> <p>c. Packed lunch-Dietary guidelines and nutritional requirements. Planning packed lunch for various income groups.</p>	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

III	Nutrition during adolescence a. Growth and development, food and nutrient requirements b. Food habits, irregular meal pattern, peer pressure, eating disorders. Pros and cons of popular fad diets. Planning balanced diets for adolescents. c. Causes, consequences and treatment of adolescent pregnancy, PCOD, hormonal imbalance, premenstrual syndrome, anaemia, underweight, obesity.	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
IV	Nutrition during pregnancy and lactation a. Lactation and breast milk – Physiology of lactation. Nutritive value and composition of breast milk - Colostrum. Food and nutrient requirements for nursing mother, advantages of breast feeding, importance of breastfeeding over formula feeds. Public health measures for pregnant and lactating women. Complications during lactation. b. COVID protocols for pregnant and lactating women. Planning balanced diets for pregnant and lactating women	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
V	Nutrition in Adulthood and Old Age a. Food and nutrient requirements during adulthood. Nutritional concerns in adulthood related to nutrient deficiencies. Signs and symptoms of menopause. Effect of occupational hazards, stress related disorders and lifestyle modifications to overcome them. b. Geriatric nutrition - Food and Nutritional requirements - Nutritional care of the elderly. Physiological changes affecting digestion and absorption. Food selection patterns of the elderly. Nutritional problems of old age. c. Planning balanced diets for adults and elderly based on special needs and requirements.	18	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5
VI	SELF STUDY FOR ENRICHMENT (Not to be included for External Examination) Classification of weaning foods, Menu planning for PEM, Theories of obesity, Examples of lactogogues foods, Palliative care for elderly people.	-	CO1, CO2, CO3, CO4, CO5	K1, K2, K3, K4, K5

Text Books

1. Brown Judith, E.(2008) *Nutrition*.(3rd ed.)Thomson Wadsworth USA.
2. Park, K. (2008) *Essentials of Community Health Nursing*(5th ed.).M/s Banarsidas Bhanot Publishers.Jabalpur.
3. Josephine Martin and Charlotte Beckett Oakley, (2008).*Managing Child Nutrition Programs*.(2nd ed.) Jones& Bartlett Publishers.
4. Seema Sonkar and Doreas L. Essiamah, (2008) *Food and Nutrition Security challenges towards combating malnutrition*.Chandralok Prakashan. Kanpur.
5. Bamji M.S, PrahladRao N, Reddy. (2016)*Textbook of Human Nutrition*.(4th ed.).Oxford and PBH Publishing Co. Pvt. Ltd. New Delhi.

Reference Books

1. Prakash Shetty,(2002).*Nutrition through the life cycle*.(1st ed.). Leatherhead publishing. Leather head International Ltd. UK.
2. Gibney, M.J.,Margetts, B.M.,Kearney, J.M.,Arab, L., (2004).*Public Health Nutrition*. (2nd ed.).UK.Blackwell PublishingCo.
3. Carolyn D. Berdanice., (2009), *Advanced Nutrition*, (2nd ed.). CRC Press.
4. M.Swaminathan., (2012), *Advanced Textbook on Food and Nutrition*. (2nd ed). Bangalore Printing and Publishing Co. Ltd., Bangalore,
5. Raheena Begum. M., (2015), *A textbook of Foods, Nutrition and Dietetics*.(3rd ed.).Sterling Publishers Pvt. Ltd., New Delhi.
6. Park K.,(2021), *Park's Textbook of Preventive and Social*.(26th ed.). M/S Banarasidas, Bharat Publishers, Jabalpur, India.

Web Links

- <https://www.who.int/>
- <https://www.encyclopedia.com/food/encyclopedias-almanacs-transcripts-and-maps/assessment-nutritional-status>
- <https://www.fao.org/about/en/>
- <https://www.nin.res.in/downloads/NNMBREPORT2001-web.pdf>
- <https://www.icmr.gov.in/>

Journals

1. Society for Nutrition Education and Behavior, Elsevier Sci. Ltd, England
2. Journal of the Academy of Nutrition and Dietetics, Elsevier Science Inc publishing, United States.
3. Public Health Nutrition, Cambridge University, England
4. Food Research International, Elsevier Science Inc, United States.
5. Journal of Food and Agriculture, Wiley-Blackwell, England

Pedagogy

Chalk and talk, PPT, Discussion, Assignment, Demo, Quiz, Seminar, Visit to ICDS

Course Designers

- Ms.E.AGALYA

SEMESTER I	INTERNAL MARKS: 25		EXTERNAL MARKS:75	
COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDITS
23PFS1DSE1C	FRONT OFFICE OPERATIONS	DISCIPLINE SPECIFIC ELECTIVE	6	3

Course Objectives

- To gain knowledge on role of front office as functional area.
- To understand the functions of front office.
- To study the operational aspects of front office.

Pre -requisites

- Fundamentals of hotel functional areas.
- Basics of front office operations.

Course Outcome and Cognitive Level Mapping

CO Number	CO Statement	Cognitive Level
	On the successful completion of the course, students will be able to	
CO1	Illustrate operations of hospitality sector	K2
CO2	Classify hotels on the basis of various criteria	K3
CO3	Predict functionalities of all departments in the industry	K3
CO4	Devise strategies for the profitability of the hotel	K4
CO5	Plan check in and check out of guest	K5

Mapping of CO with PO and PSO

COs	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5
CO1	3	3	-	3	3	3	3	-	3	3
CO2	3	3	-	3	3	3	3	-	3	3
CO3	3	3	-	3	3	3	3	-	3	3
CO4	3	3	-	3	3	3	3	-	3	3
CO5	3	3	-	3	3	3	3	-	3	3

“1” – Slight (Low) Correlation “2” – Moderate (Medium) Correlation

“3” – Substantial (High) Correlation “-” indicates there is no correlation.

SYLLABUS

UNIT	CONTENT	HOURS	COs	COGNITIVEL EVEL
I	<p>Hotel Industry Hotel - Definition, Classification based on star Category, size and location. Hotel Organization - Organization Pattern in a large, medium and small sized hotel. Functional Department in a hotel –Front office, Housekeeping, Reservations, Night audit, Loss / Prevention, Security, Food and beverage, Engineering and Sales departments.</p>	18	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5
II	<p>The Guest and Guest Rooms Categorizing the guest room - Room types, Room configuration, Room Designations, Room Numbering, Room status reconciliation, Key control systems.</p>	18	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5
III	<p>Room Rates , Room Rate Designations and Reservation Rack rate, Corporate rate Volume account rates, Government rate, seasonal rates weekday / Weekend rates, membership rates, Industry rates, Walk in rates, Premium rates, half day rates, Advance Purchase rates, Package rates, Per person rates, group rates. Reservations – Determining occupancy and availability, Availability factors overselling and procedure.</p>	18	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5
IV	<p>Front Office Overview The Arrival Chronology - Greeting, Transition, Registration and Completion – Group arrivals. Departure - Front desk Checkout, Guest directed Computer checkout, Automated checkout. Front office operations - Communications, staffing Values added Services – safe deposit boxes, Mail, Telephone and document handling. The Electronic Front Office (EFO).</p>	18	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5
V	<p>Guest Accounting and Night Audit Guest Accounting - Accounting basics, Guest history account – Guest Ledger, City ledger, Accounting entries. Night Audit - Night audit overview, Night audit reporting, Ancillary Night audit duties.</p>	18	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5
VI	<p>SELF STUDY FOR ENRICHMENT (Not to be included for External Examination) Pod hotel, Functioning of lost and found, Point of Sale System, Property Management System, Software and apps used for Reservation.</p>	-	CO1, CO2, CO3, CO4, CO5	K1,K2,K3,K4,K5

Text Books

1. Ahmed Ismail. (2004). *Front office operations And Management*. Delmar Publications
2. Sudhir Andrews.(2014). *Hotel Front Office a Training Manual*, (3rd edition) McGraw Hill Education (India) Private Limited.
3. Dr. B.K.Chakravarthi.(2011). *Hotel Front Office Training Manual*. A.P.H Publishing Corporation.
4. R.K. Arora.(2009).*Hotel Organization And Front Office Management*. A.P.H Publishing Corporation.

Reference Books

1. Ahmed Ismail. (2004). *Front office operations And Management*. Delmar Publications.
2. Kyesung chon and Raymond. T.Sparrowe. (2001). *Welcome to Hospitality An Introduction* (2nd ed) Delmar publication.
3. G.Raghubalan, Smritee Raghubalan. (2015). *Hotel Housekeeping operations and Management*, Oxford University Press.
4. Tarachand.(2000). *Hotel and Restaurant Management*. Mohit Publications, New Delhi.
5. S.K. Bhatnagar (2005). *Front Office Management*. Frank Bros.& Co.(Publishers) Limited.
6. Ravi Aggarwal (2010). *Hotel Front Office – Systems & Procedures*, sublime publications.
7. M.A. khan.(2005).*Front Office*.Anmol Publication Private Limited.

Web Links

- <https://www.ihmnotessite.net/hotel-core-areas>
- <https://www.ihmnotessite.net/classification-of-hotels>
- <https://www.ihmnotessite.net/types-of-rooms>
- <https://www.ihmnotessite.net/fo-organisation>
- https://www.bharatskills.gov.in/pdf/E_Books/FrontOffice1Sem_TP.pdf
- file:///C:/Users/Lenovo/Downloads/BHM-704ET.pdf

Journals

1. The Journal of Hospitality & Tourism Research, Sage Publication.

Pedagogy

E-content, Lecture, Power Point Presentation, Seminar, Assignment, Group discussion.

Course Designers

- Ms. S.FATHIMA
- Ms. M.VINOTHINI