SRI VENKATESWARA UNIVERSITY:TIRUPATI

B.Sc. FOOD SCIENCE TECHNOLOGY Course Syllabus under CBCS

(with effect from the Academic Year 2020-21)

COURSE STRUCTURE

Structure of FOOD SCIENCE and TECHNOLOGY Course Syllabus under CBCS

Sem	Paper	Title of course	Credits	Hrs	Marks		
					Int	Univ	Total
V	6 (a)	Dairy Technology	4	4	25	75	100
		Practical-VI : Dairy Technology	1	2	0	50	50
	7 (a)	Baking Technology	4	4	25	75	100
		Practical-VII : Baking Technology	1	2	0	50	50
		(or)					
	6 (b)	Food & Beverage Production	4	4	25	75	100
		Practical VI : Food & Beverage Production	1	2	0	50	50
	7 (b)	Food & Beverage Service	4	4	25	75	100
		Practical VII : Food & Beverage Service	1	2	0	50	50
		(or)					
	6 (c)	Food Safety, Sanitation And Hygiene	4	4	25	75	100
		Practical VI : Food Safety, Sanitation And Hygiene	1	2	0	50	50
	7 (c)	Technology of Food Packaging	4	4	25	75	100
		Practical VII : Technology of Food Packaging	1	2	0	50	50
		(or)					
	6 (d)	Plant Layouts and Utilities	4	4	25	75	100
		Practical VI : Plant Layouts and Utilities	1	2	0	50	50
	7 (d)	Food Plant Sanitation & Hygiene	4	4	25	75	100
		Practical VII: Food Plant Sanitation & Hygiene	1	2	0	50	50

Note – 1 : For Semester-V, for the domain subject Food Science Technology, any one of the five pairs of SECs shall be course as courses 6 and 7, i.e. 6A&7A or 6B&7B or 6C&7C or 6D&7D. The pair shall not be broken (ABC allotment is random, not one any priority basis).

Note – 2 : One of the main objectives of skill Enhancement Courses (SEC) is to inculcate skills related to the domain subject in students. The syllabus of SEC will be partially skill oriented. Hence, Teachers shall also impart practical training to students on the skills embedded in syllabus citing related real field situations.

Note – 3 : Faculty eligibility for teaching the course : M.Sc (Food Technology / Bio-Technology / Micro Biology).

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(*with effect from the Academic Year 2020-21*)

SEMESTER–V
PAPER-6(a)::DAIRY TECHNOLOGY

TeachingHours: 4Hours/Week (Total –60Hours) Credits:4
MidSem.Exam:25Marks Sem. endexam:75Marks

UNIT-I:(12Hours)
INTRODUCTION:

- History and development of dairy industry in India.
- Sources of milk and its composition.
- Definition and characteristics of milk.

UNIT-II:(12Hours)
COLLECTON OF MILK:

- Milk collection practices and transportation.
- Receiving the milk and quality check at RMRD.
- Chilling and storage of milk.

UNIT-III:(12Hours)
PROCESSING:

- Homogenization and pasteurization of milk.
- Cream separation process and standardization of milk.
- Manufacturing of various kinds of market milk.
- Storage and transportation.

UNIT-IV:(12Hours)
MILK PRODUCTS:

- Processing and storage of butter and ghee.
- Processing of fermented milk products.
- Processing of miscellaneous milk products.

UNIT-V:(12Hours)
HYGIENE AND SANITATION PRACTICES:

- Cleaning of received milk cans.
- CIP in dairy industry.
- Various sanitation practices in dairy
- Quality standards

RECOMMENDED READINGS

1. De Sukumar, Outlines of Dairy Technology, Oxford University Press, Oxford. 2007
2. Hall GM, Fish Processing Technology, VCH Publishers Inc., NY, 1992
3. Sen DP, Advances in Fish Processing Technology, Allied Publishers Pvt.Limited 2005
4. Shahidi F and Botta JR, Seafoods: Chemistry, Processing, Technology and Quality, Blackie Academic & Professional,London,1994
5. Webb and Johnson, Fundamentals of Dairy Chemistry

(LABORATORY COURSE-V)

PRACTICAL–6(a)::DAIRY TECHNOLOGY

(At the End of Semester-V)

TeachingHours:2 Hours/Week **Credits:1**

MidSem.Exam:0Marks **Sem.endexam:50Marks**

1. Platform tests for milk in dairy industry
2. Estimation of fat by Gerber method
3. Comparison of raw milk with market milk
4. Preparation of flavored milks
5. Preparation of fermented products
6. Preparation of miscellaneous milk products

(*with effect from the Academic Year 2020-21*)

SEMESTER– V
PAPER-7(a) : BAKING TECHNOLOGY

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4
MidSem.Exam:25Marks Sem. End exam: 75Marks

UNIT I (12 Hours)

Baking - Definition, Principles of baking, classification of baked foods. Types of equipments in baking industry, cleaning and sanitizing methods of baking equipments, baking temperature of different products, operation techniques of different baking equipments.

UNIT II (12 Hours)

Ingredients and Their Role in Baking - Flour, Yeast, sugar, egg, butter, salt, baking powder, coloring and flavoring agents.

Usage limits of food additives in bakery and confectionary processing.

UNIT III (12 Hours)

Preparation of baked foods - Quick breads, cakes and its varieties, different types of biscuits, cookies and pastries.

Decoration of baked foods - Icing- Types of Icing used in different bakery product. Role of other ingredients used in icing.

UNIT IV (12 Hours)

Types of packaging materials used for bakery products, method of packaging.

Quality control- Quality control of raw material / finished products. Spoilage of bread – Causes, Rope and mold spoilage and prevention.

UNIT V (12 Hours)

Baking unit/ plant layout & design of a baking unit sanitation and hygiene.

Role of different equipments used in bakery and confectionary processing unit.

RECOMMENDED READINGS:

1. Potter, N. Food Science, The AVI Publishing Co., Inc., West Port, Connecticut,1975.
2. Modern Pastry Chab, Vol.I and II, A VI Publishing Co., Inc., West Port, Connecticut, 1977.
3. Dubey, S.C. (2007). Basic Baking 5th Ed. Chanakya Mudrak Pvt. Ltd.
4. Manay, S. & Shadaksharaswami, M. (2004). Foods: Facts and Principles, New Age Publishers.
5. Raina et.al. (2003). Basic Food Preparation-A complete Manual. 3rd Ed. Orient Longman Pvt. Ltd.
6. Barndt R. L. (1993). Fat & Calorie – Modified Bakery Products, Springer US.
7. Samuel A. Matz (1999). Bakery Technology and Engineering, PAN-TECH International Incorporated.
8. Faridi Faubion (1997). Dough Rheology and Baked Product Texture, CBS Publications.

(LABORATORY COURSE-V)

PRACTICAL–7(a):: BAKING TECHNOLOGY

(At the End of Semester-V)

TeachingHours:2 Hours/Week **Credits:1**

MidSem.Exam:0Marks **Sem.end exam:50Marks**

1. Preparation of pizza base and assessment of its quality
2. Preparation of bread and assessment of its quality
3. Preparation of buns and assessment of quality
4. Preparation of butter cake and assessment of its quality.
5. Preparation of sponge cake with icing and assessment of its quality.
6. Preparation of cookies and assessment of quality.
7. Preparation of biscuits and assessment of quality.
8. Visit to a baking industry and preparation of report

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SEMESTER– V

PAPER-6(b) : FOOD & BEVERAGE PRODUCTION

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4

MidSem.Exam:25Marks Sem. End exam: 75Marks

UNIT I (12 Hours)

Kitchen- Hierarchy- Duties and responsibilities of kitchen staff - Kitchen Planning–Meal Production - Purchasing - Receiving -Storage of food.

UNIT II (12 Hours)

Types of fuels used in cooking (Solid, Liquid, Gas, Electricity, Fuel less cooking) Advantages and Disadvantages of all the fuels. Classification of Kitchen equipment - Large, Mechanical, Ancillary equipment.

UNIT III (12 Hours)

Menu planning – Principles of Menu planning – Factors to be considered while planning menu- Importance of menu planning, Types of menus - A-la- Carte, Table d hote menu, Hospital, Institutional, Industrial menus - planning.

UNIT IV (12 Hours)

Basic food preparation, Stocks – Types of stock - method of preparation, Soups – Classification, method of preparation, Sauces – Types of sauces – Basic sauces & derivative sauces, Salads – basic components of a salad, Types of salads, Garnishes-types and uses, Sandwiches – types of sandwiches- preparation methods.

UNIT V (12 Hours)

Components of a menu - Appetizer- Main course- Dessert, Menu planning & characteristics of -South Indian menu, North Indian menu, Continental menu– High Tea– Afternoon Tea–Brunch–Lunch– Dinner.

RECOMMENDED READINGS:

1. Food and Beverage Service-R. Singaravelavan, Head Department of Catering Science and Hotel Management, SNR College, Coimbatore. Oxford University Press.
2. Theory of Cookery, Krishna Arora, New Delhi.
3. Mohini Sethi & Surjeet Mahan "Catering Management-An Integrated Approach",3rd edition, 2015, New Age International Publishers, New Delhi.
4. Mohini Sethi, "Institutional Food Management", 2nd edition, 2016, New Age International Publishers, New Delhi.
5. "Food Service Management", published by Directorate of Distance Education, Alagappa University, Karaikudi.
6. Ruby P. Puckett "Food Service Manual for Health Care Institutions", 3rd edition,

2004, Publishd by Jossey-Bass, a Wiley Imprint, San Francisco.

(LABORATORY COURSE-V)
PRACTICAL –6(b) :: FOOD AND BEVERAGE PRODUCTION

(At the End of Semester-V)

Teaching Hours: 2 Hours / Week **Credits: 1**

Mid Sem. Exam: 0 Marks **Sem. end exam: 50 Marks**

1) Visit to Industrial (Hotel) kitchen and stores.
2) Planning different types of menus.
3) Basic and derivative sauce preparations - Mother sauces, White sauce, Brown sauce, Mayonnaise sauce, Béchamel sauce, etc.
4) Salad preparation and service – Vegetable, Chicken, Egg and Meat salads, Raw and Cooked salads.
5) Sandwiches – Preparation and service.
6) Appetizer and Desert preparation and service.
7) Styles of Menus preparation and service – North Indian, South Indian, Continental menus.
8) High tea, Afternoon tea, Brunch, Lunch, Dinner – planning and service.

SRI VENKATESWARA UNIVERSITY:TIRUPATI

B.Sc. FOOD SCIENCE TECHNOLOGY Course Syllabus under CBCS

(*with effect from the Academic Year 2020-21*)

SEMESTER– V

PAPER-7(b) : FOOD & BEVERAGE SERVICE

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4

MidSem.Exam:25Marks Sem. End exam: 75Marks

UNIT I (12 Hours)

Types of Catering establishment – Commercial catering – Residential & Non-Residential, welfare catering – Industrial-Institutional, Transport catering- Airlines, Railways, Ships & Surface. Organization chart of Food & Beverage Department - Duties and responsibilities of F & B Staff – Functions of F& B Department.

UNIT II (12 Hours)

Food & Beverage service and storage equipment – Furniture –Linen – glassware-tableware-Crockery – Cutlery – Holloware - Miscellaneous equipment- Use, Care & Maintenance – Disposables

UNIT III (12 Hours)

Styles of Food Service – Waiter service- Self-service – Counter Service – Cafeteria Service – Gueridon service – Room Service - Assisted Service, Factors influencing the styles of service

UNIT IV (12 Hours)

Table setting & order taking - Table reservation- Briefing –Greeting & Seating the guests – Table cover laying procedure before and during service - Points to be considered while presenting the menu- Taking order-Writing food order**.**

UNIT V (12 Hours)

Service method & procedure – Table d Hotel menu – Serving Aperitif – Appetizers-Main Course – Dessert – Serving Water- Service of Beverages – Alcoholic - Coffee, Tea, Soft drinks and fruit juices, Non-Alcoholic. Do's & Dont's during the service.

RECOMMENDED READINGS

1) Food and Beverage Service by R. Singaravelavan, Coimbatore. Oxford University Press.
2) Catering Management - An Integrated Approach by Mohini Sethi and Surjeet Malhan, New age International (P) Ltd Publishers, New Delhi.
3) Mohini Sethi & Surjeet Mahan "Catering Management-An Integrated Approach", 3rd edition, 2015, New Age International Publishers, New Delhi.
4) Mohini Sethi, "Institutional Food Management", 2nd edition, 2016, New Age International Publishers, New Delhi.
5) "Food Service Management", published by Directorate of Distance Education, Alagappa University, Karaikudi.
6) Ruby P. Puckett "Food Service Manual for Health Care Institutions", 3rd edition, 2004, Publishd by Jossey-Bass, a Wiley Imprint, San Francisco.

(LABORATORY COURSE-V)
PRACTICAL – 7(b) :: FOOD AND BEVERAGE SERVICE

(At the End of Semester-V)

Teaching Hours: 2 Hours / Week **Credits: 1**

Mid Sem. Exam: 0 Marks **Sem. end exam: 50 Marks**

1) Visit to a various Hotels and Food Catering establishments
2) Identification of different storage and service equipment, their use and care.
3) Table setting, cover laying styles, Briefing, Greeting & seating the guests.
4) Demonstrate – Menu card presentation – Order taking, KOT.
5) Food service procedure – Different styles.
6) Serving water and Main course.
7) Preparation and service of Alcholic beverages-Cocktails, Speciality Coffee.
8) Preparation and service of Non-alcoholic Beverages – Mocktails, Coffee, Tea, Fruit juices, soft drinks etc

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SEMESTER– V

PAPER-6(c) : FOOD SAFETY, SANITATION AND HYGIENE

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4

MidSem.Exam:25Marks Sem. End exam: 75Marks

Unit – I

Food safety- Definition, Meaning - factors affecting food safety - importance of food safety - Risks and hazards - Food related hazards - microbial consideration in food safety- Food safety and standards bill 2005

Unit – II

Basic principles of Food hygiene and Sanitation - Personal and environmental Hygiene – Hygiene aspects of Food handlers- Hygiene aspects in preparation and storage of food - dish washing and garbage disposal- Safety of leftover foods Methods of sanitation and hygiene

Unit – III

Food Adulteration and Adulterants: Meaning, Methods to identify the presence of adulterants-Types of adulteration in various foods-Intentional, incidental and metallic contaminants - Consequences of adulteration

Unit – IV

Safety in Food processing –Regulatory compliance requirement for establishment of food outlets - Frame work for enabling environment for serving safe and nutritious food at food establishment or outlets. Sterilization and disinfection using heat and chemicals – Solid and liquid waste management and disposal.

Unit –V

Objectives of developing Food Safety and Standards- Enforcement of structure and procedure - Role of food analyst- good practices- statutory and regulatory requirements - Certification - HACCP, ISO-22000, FSSC-22000

RECOMMENDED READINGS

1. Manay,S. and shadaksharamasamy, Food;Facts and principles, New age International.(p) publishers,New delhi.
2. Mahtab,S,Bamji.S,Kamala Krishnaswamy, Brahmam G.N.V,Text book of Human Nutrition,Third edition, Oxford and IBH publishing co. private limited,New Delhi.
3. Srilakshmi,B.,Food Science,2nd edition,New Age International private limited.,New Delhi.
4. Swaminadhan ,M., Advanced Text book on Food and Nutrition,Vol.1,Second Edition, Bangalore printing and publishing Co.Ltd,Banglore,2012
5. Dietary Guidelines for Indians, ICMR, National Institute of Nutrition
6. Norman Marriott (1999), Principles of Food Sanitation, 4th ed., Sanitation in Food Processing, JohnA.Troller, 1993, Academic press.

(LABORATORY COURSE-V)

PRACTICAL – 6(c) :: FOOD SAFETY, SANITATION AND HYGIENE

(At the End of Semester-V)

Teaching Hours: 2 Hours / Week **Credits: 1**

Mid Sem. Exam: 0 Marks **Sem. end exam: 50 Marks**

1. Detection of common adulterants in foods
2. Bacteriological analysis of water
3. Microbiological examination of different food samples.
4. Assessment of personal hygiene
5. Assessment of surface sanitation by swab/ rinse method
6. Scheme for detection of food borne pathogens
7. Market survey of preserved fruits and vegetable products.
8. Demonstration of safe food handling procedure
9. Visit to Food Service Centre-Hotel/Fast food centre to study the food safety measures and report writing
10. Visit to Food service Institution- Hostel /Hospital to study the food safety, hygiene & sanitation measures and report writing.

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SEMESTER– V

PAPER-7(c) : TECHNOLOGY OF FOOD PACKAGING

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4
MidSem.Exam:25Marks Sem. End exam: 75Marks

Unit-I (12 Hours)
Packaging - Definition, History, Introduction and functions of food packaging.
Status of Packaging industry in India, Economics, Environmental hazards, Waste management and Consumer awareness.
Packaging laws and Regulations - SWMA Rules - PFA Rules - FPO

Unit – II (12 Hours)
Need and role of food Packaging to different types of foods.
Principle in the development of protective packaging.
Food packages- Bags, pouches, wrappers, cartons and other traditional package.

Unit – III (12 Hours)
Types of Packaging Materials - Uses, Application, Advantages and Disadvantages.
Food containers: Wooden boxes, crates, plywood and wire bound boxes, corrugated and fiber board boxes, textile and paper sacks. Metal containers, tin plate, corrosion of containers. Paper packaging materials.

Unit-IV (12 Hours)
Classification of Packages, Primary, Secondary and Tertiary – Special Box / Cartoon, Shrink, Aerosol, Vacuum, Boil-in-bag, Tetra pack, Squeeze tubes, etc.
Packaging requirements - Levels of Packaging - Protection - Convenience - Printability – Differentiability.

Unit-IV (12 Hours)
Trends in latest packaging- Modified atmospheric packing (MAP), Controlled atmospheric packaging(CAP), Oxygen Scavengers, Shrink packaging, Aseptic and retortable pouches etc. Flexible and laminated pouches, biodegradable packaging, Active packaging.

RECOMMENDED READINGS

1. Gorden l Robertson, *Food Packaging Principles and Practice*, CRC Press, London.
2. Ranganna S, *Handbook of Analysis and Quality Control, Fruits and Vegetables Products,* Tata Mc Graw Hill, New Delhi, 1986
3. Crosby NT, *Food Packaging: Aspects of Analysis and Migration Contaminants*1981. App. Sci. Publ.
4. Kadoya T. (Ed). 1990. Food Packaging. Academic Press.
5. Mahadeviah M & Gowramma RV. 1996. *Food Packaging Materials*. Tata McGraw Hill.
6. Painy FA. 1992. *A Handbook of Food Packaging*. Blackie Academic.

(LABORATORY COURSE-V)

PRACTICAL–7(c):: TECHNOLOGY OF FOOD PACKAGING

(At the End of Semester-V)

TeachingHours:2 Hours/Week **Credits:1**

MidSem.Exam:0Marks **Sem.end exam:50Marks**

1. Observation of different packaging materials used for different foods.
2. Measurement of thickness of paper and paper boards.
3. Measurement of basic weight of paper and paper boards.
4. Measurement of bursting strength of paper and paper boards.
5. Measurement of resistance of packaging materials
6. Visit to a food Industry and observing different packaging machines and methods.

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(*with effect from the Academic Year 2020-21*)

SEMESTER– V

PAPER-6(d) : PLANT LAYOUT AND UTILITIES

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4

MidSem.Exam:25Marks Sem. End exam: 75Marks

UNIT-I : INTRODUCTION TO PLANT LAYOUT

- Importance of a plant layout for constructing any food processing plant.
- Factors to be taken into account while constructing a plant layout.
- Selection and utilization of resources while constructing a plant.

UNIT-II : Extrinsic factors

- Plant location.
- Plant size.
- Raw material availability.
- Utilities .

UNIT-III: Intrinsic factors

- Procedure for economic estimation of plant size (break even analysis and optimization) and to find estimated volume of each product
- Process design
- Process planning and scheduling (flowcharts)
- Selection of equipment

UNIT-IV: Plant layouts

- Plant layouts- types of layouts, considerations to be taken while planning a layout, alternative layout and use of digital system for designing layout
- Planning and designing of service facilities and plant surroundings- requirement of steam, water, electricity, waste disposal etc.,
- Designing waste disposal management system, CIP systems
- Worker safety and health aspects

UNIT-V: Utilities

- Utilites- definition and importance of utilities
- Water use in food industry- types of water used in food industry for different operations.
- Heat generating sources- types and applications.
- Electric sources- types, capacity and requirement.

RECOMMENDED READINGS

1. Max S. Peters and Klas D. Timmerhaus.1991. Plant Design and Economics for Chemical Engineers, 4th. Ed. McGraw-Hill, Inc., New York.
2. Ed Bausbacher and Roger Hunt. 1993. Process Plant Layout and Piping Design. P.T.R. Prentice-Hall, Inc., New Jersey.
3. Tufail Ahmad. 2003. Dairy Plant Engineering and Management. KitabMahal, Allahabad
4. Swaminadhan ,M., Advanced Text book on Food and Nutrition,Vol.1,Second Edition, Bangalore printing and publishing Co.Ltd,Banglore,2012
5. Dietary Guidelines for Indians, ICMR, National Institute of Nutrition
6. Norman Marriott (1999), Principles of Food Sanitation, 4th ed., Sanitation in Food Processing, JohnA.Troller, 1993, Academic press.

(LABORATORY COURSE-V)

PRACTICAL – 6(d) :: PLANT LAYOUT AND UTILITIES

(At the End of Semester-V)

Teaching Hours: 2 Hours / Week **Credits: 1**

Mid Sem. Exam: 0 Marks **Sem. end exam: 50 Marks**

1. Preparation of project report
2. Preparation of feasibility project report.
3. Layout for grain storage houses.
4. Layouts for fruit processing plant.
5. Layout for bakery product processing plant
6. Layout for milk processing plant.
7. Layout for poultry and meat processing plant

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SEMESTER– V

PAPER-7(d) : FOOD PLANT SANITATION & HYGIENE

Teaching Hours: 4Hours/Week (Total –60Hours) Credits: 4

MidSem.Exam:25Marks **Sem. End exam: 75Marks**

UNIT - I: Sanitation and Hygiene

- Definition and importance of sanitation and hygiene.
- Good manufacturing practices (GMP) and Good hygiene Practices (GHP).
- Sanitation methods and hygiene practices.

UNIT - II: Relationship of microorganisms to Sanitation

- Relationship of microorganisms to sanitation: relationship of microorganisms to food sanitation,
- The relationship of allergens to sanitation – allergen control.
- Sanitizers - sanitizing methods - sanitation equipment: cleaning equipment and sanitizing equipment- waste product handling.
- Solid waste disposal and liquid waste disposal.

UNIT – III: Food Contamination

- Food contamination –protection against contamination– personal hygiene and sanitary food handling.
- Cleaning compounds – characteristics – classification – selection – handling and storage precautions.
- Pest control: insect infestation- cockroaches- insect destruction- rodents and birds- use of pesticides and integrated pest management
- Risk Analysis- procedure, uses and limitations.

UNIT – IV: Applications of Sanitary procedures in various processing plants

- Low-moisture food manufacturing and storage sanitation: sanitary construction considerations, receipt and storage of raw materials- cleaning of low-moisture food manufacturing plants
- Dairy processing plant sanitation: role of pathogens, sanitary construction considerations - soil characteristics in dairy plants- sanitation principles - cleaning equipment
- Meat and poultry plant sanitation: role of sanitation, sanitation principles, cleaning compounds for meat and poultry plants- sanitizers for meat and poultry plants, sanitation practices and sanitation procedures
- Sea food plant sanitation: sanitary construction considerations - contamination sources - sanitation principles - recovery of byproducts

UNIT V: Waste Management System

- Solid waste management- practices and disposal methods
- Effluent Treatment techniques and practices

RECOMMENDED READINGS

1. Michael M. Cramer. 2013. Food Plant Sanitation: Design, Maintenance, and Good Manufacturing Practices. CRC Press, Boca Raton, FL, USA.
2. Norman G. Marriott and Robert B. Gravani. 2006. Principles of Food Sanitation, 5th Ed. Springer Science+Business Media, Inc., NY, USA.
3. Crosby NT, *Food Packaging: Aspects of Analysis and Migration Contaminants*1981. App. Sci. Publ.
4. Kadoya T. (Ed). 1990. Food Packaging. Academic Press.
5. Mahadeviah M & Gowramma RV. 1996. *Food Packaging Materials*. Tata McGraw Hill.
6. Painy FA. 1992. *A Handbook of Food Packaging*. Blackie Academic.

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(LABORATORY COURSE-V)

PRACTICAL–7(d):: FOOD PLANT SANITATION & HYGIENE

(At the End of Semester-V)

TeachingHours:2 Hours/Week **Credits:1**

MidSem.Exam:0Marks **Sem.end exam:50Marks**

1. Determination of hardness of water.
2. Good Manufacturing Practices (GMPs) and personal hygiene
3. Bacteriological examination of water: Coliforms
4. Bacteriological examination of water: MPN Test
5. Sampling of Airborne microorganisms.