



CVVM UNIVERSITY

Aegis: Charutar Vidya Mandal (Estd.1945)

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: Bachelor of Technology (Dairy Technology)

Semester: VII

Course Code: 202200702

Course Title: Food Safety and Quality Assurance in Dairy Industry

Course Group: Professional Core Course

Course Objectives: To emphasize on the importance of food safety, food quality and food laws and regulations. Enables the students in application of basic aspects of public health and food safety and quality surveillance system.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutorial	Practical		Theory		J/V/P*		Total
				Internal	External	Internal	External	
3	0	2	4	50 / 18	50 / 17	25 / 9	25 / 9	150 / 53

* J: Jury; V: Viva; P: Practical

Detailed Syllabus:

S N	Contents	Hours
1	Introduction to Food Safety and Quality Assurance Definition, scope, principles and importance of food safety and quality assurance, Food hazards , Risk analysis , Emerging issues in food safety , Food quality attributes , Total Quality Management (TQM) in the food and dairy industry , Quality standards and certifications (ISO, HACCP, FSSC 22000, etc.)	6
2	Food Laws and Regulations National and international food safety laws (FSSAI, FDA, Codex Alimentarius, EU regulations) , Food labeling requirements and nutritional claims , Role of WTO in food trade and safety , Intellectual property rights in the food industry (patents, trademarks, and GI tags) , Food recall systems and crisis management , Practical implementation of food safety systems in the food industry , Auditing and Certification Process	10
3	HACCP and Food Safety Management Systems Principles of Hazard Analysis Critical Control Points (HACCP) , Implementation and verification of HACCP , Role of Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) , Food safety management systems: ISO 22000, BRC, SQF , Practical implementation of food safety systems in the food industry	8



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4	Microbiological Aspects of Food Safety Role of microorganisms in food spoilage and preservation , Pathogenic microorganisms and their control , Rapid microbiological methods for food safety , Probiotics and their safety , types of contaminants: natural toxins, pesticides, heavy metals, and residues , Food adulteration: methods of detection and prevention.	6
5	Food Analysis and Quality Control Sampling techniques and statistical quality control , Physical, chemical, and instrumental methods for food analysis , Sensory evaluation techniques , Shelf life studies and spoilage detection , Role of biotechnology in food safety	6
6	Hygiene and Sanitation in Food Industry Importance of hygiene and sanitation , Cleaning and sanitation procedures in food and dairy processing units , Water quality standards and waste management , Role of food handlers in ensuring safety , Food recall systems and crisis management.	6
Total		42

List of Practicals:

Sr. No.	Experiment Title
1.	Detection of adulterants in food samples
2.	Quality analysis of raw and processed foods
3.	Quality analysis of Dairy food Products
4.	Determination of moisture content in food products
5.	Estimation of acidity and pH in beverages and food
6.	Shelf-life studies of packaged foods under varying storage conditions
7.	Physical quality analysis (size, weight, and texture measurements)
8.	Study of different types of food packaging materials (glass, plastic, metal)
9.	Identification of critical control points (CCPs) in food processing
10.	Industrial visits to food processing units for practical exposure

Reference Books:

1	Food Safety Management: A Practical Guide for the Food Industry" by Yasmine Motarjemi
2	Modern Food Microbiology" by James M. Jay
3	"Principles of Food Sanitation" by Norman G. Marriott
4	National and International Food Safety Standards and Codes

Supplementary learning Material:

1	http://ecoursesonline.iasri.res.in/course/view.php?id=185
2	https://ncert.nic.in/textbook/pdf/lehe105.pdf



Pedagogy: Following one or more points can be incorporated as relevant pedagogy methods.

- Direct classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Continuous assessment
- Interactive methods
- Seminar/Poster Presentation
- Industrial/ Field visits
- Course Projects

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks in %						R: Remembering; U: Understanding; A: Applying; N: Analyzing; E: Evaluating; C: Creating
R	U	A	N	E	C	
15%	15%	20%	20%	15%	15%	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes (CO):

Sr.	Course Outcome Statements	%weightage
CO-1	To demonstrate knowledge of food safety and quality assurance, along with the ability to identify and address food hazards through effective risk analysis.	20
CO-2	To understand the implement and manage quality standards in food or dairy processing and also national and international food safety laws, food labelling requirements, intellectual property rights, and their impact on food trade and safety.	20
CO-3	To expertise in designing and verifying HACCP-based food safety systems and performing food safety audits and certifications. To understand the practical skills in sampling, physical and chemical analysis, sensory evaluation, and shelf-life studies to ensure food quality and safety	30
CO-4	To learn the role of microorganisms in food spoilage and preservation, methods to control pathogens, and techniques for detecting contaminants, including pesticides, heavy metals, and food adulterants. To demonstrate the ability to implement cleaning and sanitation procedures, ensure water quality standards, and manage waste effectively in food and dairy processing units.	30

Curriculum Revision:

Version:	2.0
Drafted on (Month-Year):	June-2022
Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	June-2025