

JSS MAHAVIDYA PEETHA
JSS COLLEGE OF ARTS, COMMERCE AND SCIENCE
OOTY ROAD, MYSORE - 570 025

Model Curriculum

Department	Food Processing and Engineering
Programme / Semester	M.Voc / III Semester
Course	Value Added Course
Course Title	Problem Solving Tools in Food Industries
Course Code	MVC030
Scheme	LTP: 2:0:0 30 Hours Lecture
Exam Pattern	C1:10, C2:10, C3 :30

Unit 1: Introduction to Problem Solving in Food Industries

Hours: 8

Overview of Problem Solving - Importance in food industry, common challenges
 Basic Problem-Solving Concepts - Definitions, key principles, methodologies
 Food Safety and Quality Issues - Types of problems, impact on operations
 Legislation and Standards - Relevant regulations, compliance requirements
 Case Studies - Examples of problem-solving in food industry

Unit 2: Tools for Identifying and Analyzing Problems

Hours: 10

Root Cause Analysis (RCA) - Techniques (5 Whys, Fishbone Diagram)
 Failure Mode and Effects Analysis (FMEA) - Principles, application
 Hazard Analysis and Critical Control Points (HACCP) - Problem identification, risk assessment
 Statistical Process Control (SPC) - Control charts, process capability analysis
 Process Mapping and Flowcharts - Visualizing processes, identifying bottlenecks

Unit 3: Tools for Implementing Solutions

Hours: 6

Plan-Do-Check-Act (PDCA) Cycle - Continuous improvement methodology
 Corrective and Preventive Actions (CAPA) - Development, implementation
 Lean Manufacturing Principles - Waste reduction, efficiency improvement
 Six Sigma - DMAIC (Define, Measure, Analyze, Improve, Control) methodology
 Project Management Basics - Planning, executing, and monitoring solutions

Unit 4: Tools for Monitoring and Evaluating Solutions

Hours: 6

Key Performance Indicators (KPIs) - Development, monitoring
 Internal Audits and Inspections - Techniques, best practices
 Verification and Validation - Methods, continuous improvement
 Benchmarking - Comparing performance, adopting best practices
 Sustainable Practices - Ensuring long-term success, environmental impact

Reference Books

- "Problem Solving in Food Industries: Concepts and Case Studies" by Dr. Rajesh Kumar
- "Tools for Identifying and Analyzing Problems in Food Industry" by Dr. Meera Sharma
- "Implementing Solutions in Food Industry: A Practical Guide" by Dr. Anil Gupta
- "Monitoring and Evaluating Solutions in Food Industry: Techniques and Best Practices" by Dr. Neha Patel
- "Lean Manufacturing and Six Sigma in Food Processing: Applications and Case Studies" by Dr. Sanjay Singh