

MBPC4014 AGRIFOOD PROCESSING MANAGEMENT (3-0-0)

Course Objectives:

1. Gain insights into the present status, organization, and operations of the food industry in India, including identifying deteriorative factors.
2. Learn the basic principles of food processing and preservation, including manipulation of parameters, energy application, and non-thermal processing techniques.
3. Understand the analysis of costs, risk management, and laws and regulations related to food industry operations, focusing on food safety, quality standards, and compliance with regulatory bodies.
4. Apply theoretical knowledge to practical scenarios through case studies across various food industries, including milk and dairy, milling, processing of fruits, vegetables, eggs, poultry, fish, and meat.

Module –I

Present status of food industry in India; Organization in food industry; Introduction to operations of food industry; Deteriorative factors and hazards during processing, storage, handling and distribution.

Basic principles of food processing and food preservation by manipulation of parameters and factors and application of energy, radiations, chemicals and biotechnological agents; Non-thermal food processing techniques (aseptic processing, individual quick freezing and cryogenic freezing, high pressure technology, heat and ultrasound, high voltage pulse technology, irradiation, membrane technology). Packaging of foods, Labelling techniques, Advanced packing techniques- Active & intelligent packaging, Retort pouch packaging etc.)

Module-II

Analysis of costs in food organization; Risk management; Laws and regulations related to food industry and food production and marketing; Food Safety & Quality, Food Standards (AGMARK, Codex alimentations, BIS/ISO, PFA, FPO, FSSAI, Total Quality Management (TQM), Hazard Analysis and Critical Control Points (HACCP), etc.

Module – III

Case studies on project formulation in various types of food industries – milk and dairy products, cereal milling, oil-seed and pulse milling, sugarcane milling, honey production, baking, confectionery, oil and fat processing, fruits and vegetable storage and handling, processing of fruits and vegetables, egg, poultry, fish and meat handling and processing, etc. Case studies relating to HACCP (identification of CCP in various processing lines/methods) etc.

Course Outcomes:

CO-1: Develop a comprehensive understanding of the food industry landscape, including operations, challenges, and regulatory compliance, enabling effective decision-making and strategic planning.

CO-2: Acquire proficiency in food processing and preservation principles and techniques, facilitating efficient and safe food production, storage, and distribution.

CO-3: Ensure adherence to food safety and quality standards, including compliance with laws and regulations, and implementation of Total Quality Management

CO-4: Apply theoretical knowledge to practical scenarios through case studies across various food industries, enabling the identification of critical control.

Books:

1. Acharya SS & Aggarwal NL. 2004. Agricultural Marketing in India. Oxford & IBH.
2. Early R. 1995. Guide to Quality Management Systems for Food Industries. Springer
3. Jelen P. 1985. Introduction to Food Processing. Reston Publishing.
4. Potly VH & Mulky MJ. 1993. Food Processing. Oxford & IBH.
5. P. J. Fellows (2016). Food Processing Technology Principles and Practice, Woodhead Publishing, 4th Edition
6. Potter, N. N. (2018). Food science. McGraw-Hill Education, 6th Edition
7. Singh R.P, Heldman D.R (2013). Introduction to Food Engineering. Elsevier Inc., 5th Edition
8. J. Scott Smith, Y.H. Hui (2013) Food Processing: Principles and Applications, Wiley