

FST-404, Food Plant Layout and Sanitation 2 (2-0)

Educational Objectives:

This course will provide each student with an exposure about principles of hygiene, hygienic handling of foods, cleaning and sanitation of processing equipment and food plants. It provides fundamental understanding and knowledge of food processing plant layout, equipment, building and operating procedures. This course aims to impart knowledge on food plant layout and design of food industries as well as techniques for testing equipment, air, and surfaces for food processors. Upon successful completion of the course, students should be able to explain the importance of Standard Sanitation Operating Procedures (SSOPs) in your food safety plan, evaluating rapid sanitation monitoring tools. The students will acquire knowledge on theoretical aspects to be considered for site selection, layout selection and design considerations for a food plant and will also develop skills and acquaint in project preparations, estimations and sanitary procedures of different equipment and utilities of various food plants.

Course Outcomes:

- Plant location and layout: Significance, location analysis, selection criteria, availability of portable water, raw material, labor, energy supply, communication facilities, facilities for waste disposal.
- Building design and construction : floors, drains, walls, doors, windows, ceilings, ventilation, lighting, auxiliary facilities.
- Food plant equipment: requirements, design, construction, choice of material, layout
- Plant Cleaning: soil types, methods, detergents, water conditioners
- Sanitizing: chemical, heat irradiation
- Principles of sanitation for food processors.
- Selecting the appropriate methods and chemicals for sanitation events.
- The ecology of a food processing environment.
- How to detect, monitor, and control for microorganisms and chemicals that are pertinent to your sanitation program.
- How to implement sanitary design in the processing plant.
- The importance of Standard Sanitation Operating Procedures (SSOPs) in your food safety plan.

Recommended Books:

1. Ahmed, J. and Rahman, M.S. 2012. Handbook of food process design, Wiley-Blackwell, England.
2. Michael M Cramer, 2022, Food Plant Sanitation: Design, Maintenance, and Good Manufacturing Practices, Taylor & Francis Group
3. Y. H. Hui, 2014, 2nd Edition, plant sanitation for food processing and food services
4. Cramer, M.M. 2013. Food plant sanitation: design, maintenance and good manufacturing practices. CRC Press LLC. Chicago. USA.
5. Parker, M.E. and Litchfield, J.H. 2013. Food plant sanitation. Literary Licensing, LLC. USA.