

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

FOOD PROCESSING AND TECHNOLOGY

Subject Name: **FOOD PLANT UTILITIES AND SANITATION**

| Sr. No. | Course Contents | Total Hrs |
|---------|--|-----------|
| 1. | Steam generation -Boiler operation and design considerations, forced and induced draught. Flue gas composition and performance analysis. | 08 |
| 2. | Water treatment for prevention against boil corrosion and scale formation on heat exchange equipment. | 07 |
| 3. | Water treatment against microbial contamination. Process plant sanitation - chemistry and CIP cleaning systems. | 08 |
| 4. | Detergent types, properties and corrosion inhibition. | 04 |
| 5. | Waste water treatment- BOD and its reduction, fundamentals of batch and continuous type effluent treatment system. | 06 |
| 6. | Principles for biochemical reaction engineering. | 02 |
| 7. | Process air requirement & supply system. Air Moving and vacuum equipment. | 02 |
| 8. | Power supply system for food process plants. Equipment and Plant earthing. | 03 |
| 9. | Water supply system for food process plants: Layout and distribution. Industrial and potable water. | 03 |
| 10. | Cleaning, sanitizing and Sterilization: Basic principles and problems, cleaning and sterilizing agents, methods of sterilization, methods of cleaning, choice of cleaning methods, introduction to special cleaning methods. | 10 |

Reference Books:

1. Food Plant Design: Antonio López-Gómez Gustavo V. Barbosa-Cánovas, Published in 2005 by CRC Press, Taylor & Francis Group, 6000 Broken Sound Parkway NW, Suite 300, International Standard Book Number-10: 1-57444-602-9.
2. Food Plant Sanitation, edited by Y. H. Hui, Bernard L. Bruinsma, J. Richard Gorham, Wai-Kit Nip, Phillip S. Tong, and Phil Ventresca.
3. Food Plant Sanitation: design, maintenance, and good manufacturing practices by Michael M. Cramer, CRC Press, 2006, ISBN: 0849341973, 9780849341977.
4. Handbook of Food Processing Equipment, *Food engineering series* by George D Saravacos, A. E. Kostaropoulos, Springer, 2002 ISBN: 0306472767, 9780306472763
5. Food Engineering and Dairy Technology, by Professor Dr.-Ing. H.G. Kessler, 1981, Published by VERLAG. A. KESSLER, Germany.