GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 3

Food Processing & Technology

Subject Code
Subject Name BASIC FOOD MICROBILOGY

Sr.No	Course contents
1.	Introduction to Microbiology: The scope of microbiology.
2.	History and Classification: History of microbiology, Characterization and Identification of micro organisms.
3.	Microscopy:Principles and types of different microscopes, Dyes, staining and staining techniques.
4.	Morphology and Fine Structure: External and Internal structures of Bacteria, Appendages, Spores. Morphology and Characteristics of Fungi and Algae.
5.	Microbial Growth: Bacterial Growth and Reproduction.
6.	Microbial Nutrition: Types of Media, Cultivation of Microorganisms, Batch and Continuous cultures.
7.	Pure Cultures: Isolation of pure cultures and cultural characteristics. Preservation of micro- organisms by various techniques.
8.	Control of Microorganisms: Control of micro organisms by Physical and Chemical agents.
9.	Introduction to microbial genetics: Genotype changes, Bacterial recombination, conjugation, transformation and transduction.
10.	Environmental and Industrial Microbiology: Microbiology of Soil, Air and Water.
11.	Microbiology of Food: Microbiology of Foods.
12.	Significance of Microorganisms in Foods: Primary sources of microbes in food, Role of intrinsic and extrinsic parameters that effect microbial growth in foods.

Reference Books:

1. General Microbiology by Roger Y. Stanier, John L. Ingram, Mark L. Wheels and Page R. Painter. (Macmillan Press Ltd.)

2. Basic Food Microbiology by G. J. Banwart, Van Nostrand Reinhold Publisher, NY.
3. Microbiology by M. J. Pelczar Jr., E.C.S Chan and Noel R Krieg. Tata McGraw-Hill
4. Elementary Microbiology: Vol 1 and Vol 2 H A Modi, Ekta Prakashan
5. Food Microbiology, W C Frazier and D C Westhoff, McGraw Hill Book Company, NY.