



SARDAR PATEL UNIVERSITY
VallabhVidyanagar, Gujarat
(Reaccredited with 'A' Grade by NAAC (CGPA 3.25)
Syllabus with effect from the Academic Year 2021-2022

P.G.Diploma in Dietetics
Semester-I

Course Code	PH1EPGDD51	Title of the Course	Food Microbiology
Total Credits of the Course	04	Hours per Week	04

Course Objectives	<ul style="list-style-type: none">• To get brief knowledge about various groups of microbes.• To understand the importance of microorganisms in food i.e. food spoilage, food fermentation and causing food borne infections.
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Course content		
Unit	Description	Weightage %
1	Introduction to Microbiology – Mold, Yeast, Bacteria, Viruses, Protozoa, General Classification Family, Genus, Species. Study of their morphology, cultural characteristics and biochemical activities. Important microorganisms in foods, general.	10%
2	Growth curve of a typical bacterial cell – Effect of intrinsic and extrinsic factors on growth of organisms, pH, water activity, O- R potential, nutritional requirements, temperature, relative humidity and gaseous environment.	10%
3	Primary sources of micro-organisms in foods – Physical and chemical methods used in the destruction of micro-organisms, pasteurization, sterilization.	15%
4.	Fundamentals of control of micro-organisms in foods – Extrinsic and intrinsic parameters affecting growth and survival of organisms. Use of high and low temperature, controlling moisture as water content, freezing, freezing-drying, irradiation, and use of preservatives in food. Storage of food-correct handling and techniques of correct storage, Temperatures at which growth is retarded and bacteria are killed, Storage temperatures for different commodities to prevent growth or contamination and spoilage.	15%
5.	Food spoilage and contamination in different kinds of foods and their prevention – Cereal and cereal	20%



	products, pulses and legumes, Vegetables and fruits, Meat and meat products, Eggs and poultry, Milk and milk products.	
6.	Public health hazards due to contaminated foods – Food poisoning and infections -Causative agents, symptoms, sources and mode of transmission, foods involved, Method of prevention, Fungal toxins, Investigation and detection of food-borne disease outbreak.	15%
7.	Microbes used in biotechnology – Useful micro-organisms, Fermented foods – raw material used, organisms and the product obtained, Benefits of fermentation	15%

Teacher Learning Methodology	Classroom lectures (Blackboard/Power Point Presentations), Discussion on recent updates with related examples.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage %
1.	Internal Written examination	15%
2.	Internal Continuous Assessment in the form of Viva voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Note: Students will have to score a minimum of 40 % to pass the course.

Course Outcomes	
1.	Able to understand the basic knowledge of food microbiology and spoilage of food.
2.	Get Knowledge Food Hazard and Contamination

Suggested References:	
Sr. No.	References
1.	Frazier WC, Westoff DC. (1998) Food Microbiology. 4 th ed. Tata McGraw-Hill Publishing Co. Ltd.
2.	Nelson, D.L. and Cox, M.M. (2000): 3rd Ed. Lehninger's Principles of Biochemistry, Macmillan Worth Publishers.
3.	Garbutt John (1997) Essentials of Food Microbiology. Arnold London.
4.	Geogee J. Banwart 'Basic Food Microbiology', Delhi, CBS Publishers and distributors.
5.	James M. Jay 'Modern Food Microbiology' New Delhi, CBS Publishers and distributors.
6.	Pelczar Micheal J. JR and Robert D. (1974) , Reid Microbiology' Iind edition Tata Me Graw Hill.
7.	ReetaArora'Microbiology and diseases', New Delhi, Anmol Publications Pvt. Ltd.

