

		Children's University School of Nutrition and Health Department of Home Science Gandhinagar		ACADEMIC YEAR 2020-2021	
P.G.Diploma in Nutrition and Dietetics					
Year	I	Course Type: Elective Compulsory Course No: NDE 104A Course Title: Food Microbiology		Credits	4
Semester	I			Hours/wk	4
Objectives		1. To provide basic knowledge about microorganisms, their environment and factors affecting their growth 2. To enable students to know about the historical developments and taxonomy of microorganisms 3. To provide knowledge on the principles involved in destruction of microorganisms in meaningful foods 4. To understand role of microorganism in disease and immunity			
COURSE CONTENT / SYLLABUS - THEORY					
Unit I:		Need for Food Preservation <ul style="list-style-type: none">• Food Preservation• Food Spoilage• Food Infection• Taxonomy of microorganisms			
Unit II		Role and Significance of Microorganisms in Foods <ul style="list-style-type: none">• Bacteria• Yeast• Mold			
Unit III		Methods of Isolation, Detection and Destruction of Microorganism. <ul style="list-style-type: none">• Newer and Rapid Methods of Isolation and Detection of Microorganisms in Foods<ul style="list-style-type: none">• Conventional methods• Rapid methods (newer techniques)• Microbiological criteria for various food products• Principals Involved in Destruction of Microorganisms for Prolonged Storage of Foods<ul style="list-style-type: none">• Physical methods: drying, freezing, cell storage, heat treatment, irradiation, high pressure processing.• Chemical preservation and natural antimicrobial compounds.• Importance of Prebiotics and Probiotics in human health			
Unit IV		Immunity <ul style="list-style-type: none">• Definition of antigen and antibody• Types of immunity – natural and artificial• Three stages of immunity – primary, secondary and tertiary• Auto immune disease – rheumatoid arthritis, Type 1 Diabetes, Psoriasis			

	<ul style="list-style-type: none"> • Immune body formation
	Reference
	<ol style="list-style-type: none"> 1. Microbiology by Pelczar and reid 2. Microbiology by Pawar and Daginawala 3. Microbiology by Chakravorty 4. સુક્ષ્મજીવાણુશાસ્ત્રલેખકગીરાબેનમાંડડ 5. Jay JM (2004). Modern Food Microbiology (7thed.). CBS Publishers and 6. Distributors. Springer Publications, Delhi 7. Banwart GJ (1998). Basic Food Microbiology (2nded.). CBS Publishers and Distributors, New Delhi 8. William Frazier (2008). Food Microbiology (4thed.). The McGraw Hill Co Inc.,New York 9. Dr. K. Vijaya Ramesh (2007). Food Microbiology. MJP Publishers, Chennai. 10. માઈક્રોબાયોલોજી તથા ખાદ્ય વિજ્ઞાન માં તેની અગત્યતા