



**Children's University**  
**School of Nutrition and Health**  
**Department of Home Science**  
**Gandhinagar**

**ACADEMIC  
 YEAR  
 2020-2021**

**M.Sc.-FN**

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

	<b>Reference</b>	
	<ol style="list-style-type: none"><li>1. Microbiology by Pelczar and reid</li><li>2. Microbiology by Pawar and Daginawala</li><li>3. Microbiology by Chakravorty</li><li>4. સુક્ષ્મજીવાણુશાસ્ત્રલેખકગીરાબેનમાંકડ</li><li>5. Jay JM (2004). Modern Food Microbiology (7thed.). CBS Publishers and</li><li>6. Distributors. Springer Publications, Delhi</li><li>7. Banwart GJ (1998). Basic Food Microbiology (2nded.). CBS Publishers and</li><li>8. Distributors, New Delhi</li><li>9. William Frazier (2008). Food Microbiology (4thed.). The McGraw Hill Co</li><li>10. Inc.,New York</li><li>9. Dr. K. Vijaya Ramesh (2007). Food Microbiology. MJP Publishers, Chennai.</li><li>10. માઈક્રોબાયોલોજીતથાખાધવિજ્ઞાનમાંતેનીઅગત્યતા</li></ol>	