

**Lesson Plan**  
**Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh**  
**Monthly Teaching Plans- Even Semester (Semester-I)**  
**Session – 2017-2018**

**Name of the Teacher- Dr. Vandana Sharma**  
**Department- Food Science**

**Class- B.Sc. I MFT**  
**Subject- Microbiology**  
**BMF 1001 – GENERAL AND FOOD MICROBIOLOGY**

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
July	11.07.2017	31.07.2017	<b>Organization of Cell -</b> Concept of Prokaryotic and Eukaryotic cell, extra nuclear and nuclear organization of cell.	Interactive Lecture method, Power Point Presentations
August	01.08.2017	31.08.2017	<b>Characteristics of major groups of microorganisms:</b> Archaeobacteria, Eubacteria, Fungi, Protozoa and Viruses and Bacteriophages. <b>Prokaryotic cell structure and function:</b> Cell morphology; the capsule and slime layer; cell wall; cell membrane; ribosome; flagella; fimbriae and pilli; nuclear region and spores. <b>Microbial Nutrition:</b> Nutritional requirements of microbes; Types of culture media; Classification of microbes on the basis of nutritional requirements, Identification of bacteria.	Interactive Lecture method, Power Point Presentations, Audio-visual aid
September	01.09.2017	30.09.2017	<b>Bacterial Growth -</b> Bacterial growth curve, Methods of measurement of growth, Bacterial growth at high and low temperature; Other environmental factors affecting microbial growth, Synchronous and Diauxic growth. <b>Control of microorganisms:-</b>	Interactive Lecture method, Power Point Presentations Practical demonstration

			Physical and Chemical methods of sterilization/Disinfection. <b>Human-Microbial Interactions:</b> Normal flora – Gastrointestinal tract; Pathogenic mechanisms of food borne bacteria, Brief account of mechanisms of action of chemotherapeutic agents, Introduction to specific and nonspecific defense mechanisms to infections.	
October	01.10.2017	31.10.2017	<b>Food-borne Pathogens:</b> General characteristics and brief account of food borne diseases caused by- <i>Staphylococcus aureus</i> ; <i>Clostridium botulinum</i> ; <i>C. perfringens</i> ; <i>Listeria monocytogene</i> ; <i>Salmonella</i> ; <i>Escherichia.coli</i> ; <i>Yersinia enterocolitica</i> ; <i>Vibrio parahaemolyticus</i> , Mycotoxins. <b>Detection of food pathogens:</b> Overview of Conventional and Rapid methods to detect food pathogens. <b>MST</b>	Interactive Lecture method, Power Point Presentations, Group Discussion
November, December	01.11.2017	03.12.2017	<b>Food Spoilage -</b> Contamination of foods from natural sources, Intrinsic and Extrinsic parameters of food that affect microbial growth, Associations of microorganisms involved in spoilage, Physical and Chemical changes in food caused by micro-organisms. <b>Microbiology of different foods</b> –Spoilage of the different food products: a) Cereal and cereal products b) Vegetables and fruits c) Meat and meat products d) Milk and milk products e) Egg and egg products f) Canned foods.	Lecture method, PPT and group discussion

**MCM DAV College for Women, Sector – 36A, Chandigarh**  
**Monthly Teaching Plans (Semester I)**  
**Session–(2017-18)**

**Name of the Teacher: Dr. Sucheta**

**Department: Department of Food Science**

**Class: B.Sc. MFT (I)**

**Subject: BMF 1002 – MICROBIAL AND FOOD BIOCHEMISTRY**

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
July	22.07.2017	31.07.2017	Introduction to major biomolecules	Lecture, Online Sources
August	01.08.2017	31.08.2017	Bioenergetics, Bioavailability of nutrients, Enzymes classification, Enzyme kinetics, Enzyme inhibitions	Lecture
<b>Departmental Meeting on 04.09.17 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>				
September	01.09.2017	30.09.2017	Glycolysis, TCA, ETC, ED, PPP, Sweeteners Classification of Proteins, amino acids, protein synthesis, protein catabolism, urea cycle Introduction to lipids	Lecture method, Cycles slides, online videos
October	01.10.2017	31.10.2017	Lipid classification, catabolism of fatty acids Vitamins and minerals Biological membranes, membrane transport	Lecture, PPT
November, December	01.11.2017	03.12.2017	Pigments and flavors Changes in food constituents during processing Biosynthesis pathways Revision and Class test	Lecture, PPT, Online Videos

**\*Any of these** – (i) Lecture Method; (ii) PPT; (iii) Online Sources; (iv) Group Discussion; (v) Case Studies etc. Other Methods adopted by the teacher – Please write the specific teaching method

**Lesson Plan**  
**Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh**  
**Monthly Teaching Plans- Even Semester (Semester-II)**  
**Session – 2017-18**

**Name of the Teacher- Dr.Ruchi**  
**Department- MFT (Food Science)**  
**Industrial and Fermentation technology**

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
January	08.01.2018	31.01.2018	<p><b>Introduction</b> – Importance of fermentation technology, Basic steps of industrial fermentation; Primary and Secondary metabolites.</p> <p><b>Industrially important microbes</b> – Industrially important microbes; Isolation and Screening, Improvement and Preservation of Industrial microorganisms.</p> <p><b>Fermentation media and inoculum development</b> - Medium formulation and common substrates used in fermentation industry; Methods of media sterilization, Inoculum preparation for microbial fermentations.</p>	Lecture, PPT, Online Sources
February	01.02.2018	28.02.2018	<p><b>Fermentation</b> – Types of fermentations- Aerobic and anaerobic fermentation, Submerged and solid state fermentation, Batch and Continuous fermentation systems.</p> <p><b>Design of Fermenter</b> – Design and types of fermenter, antifoam agents, sterilization of fermenter, Basic Control Panels ( aeration, agitation, pH and temperature).</p> <p><b>Downstream Processing of industrial fermentations</b> – General procedures for recovery and purification of products- separation of biomass and insolubles; cell disruption and recovery and purification.</p>	Lecture, PPT, Online Sources

March	01.03.2018	31.03.2018	Alcoholic beverages and Solvent: Industrial production of Beer, Wine and Ethanol Organic acids: Acetic Acid, Citric Acid, Lactic acid. Amino Acids: Industrial production of Glutamic Acid, Lysine and Aspartic acid.  <b>MST</b>	Lecture, PPT, Online Sources
April	01.04.2018	19.04.2018	<b>Microbial Biomass:</b> Single cell protein production <b>Microbial Enzymes :</b> Industrial production of microbial enzymes-amylase and protease; Immobilization of enzymes and their applications. <b>Probiotics:</b> Production of probiotics, Probiotic and Food products. <b>Revision and Class test</b>	Lecture, PPT, Online Sources