

Lesson Plan
Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans- Even Semester (Semester-I)
Session – 2018-2019

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	11.07.2018	31.07.2018	Organization of Cell - Concept of Prokaryotic and Eukaryotic cell, extra nuclear and nuclear organization of cell.	Interactive Lecture method, Power Point Presentations
August	01.08.2018	31.08.2018	Characteristics of major groups of microorganisms: Archaeobacteria, Eubacteria, Fungi, Protozoa and Viruses and Bacteriophages. Prokaryotic cell structure and function: Cell morphology; the capsule and slime layer; cell wall; cell membrane; ribosome; flagella; fimbriae and pilli; nuclear region and spores. Microbial Nutrition: 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	01.09.2018	30.09.2018	Bacterial Growth - 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. Control of microorganisms:-	Interactive Lecture method, Power Point Presentations Practical demonstration

			Physical and Chemical methods of sterilization/Disinfection. Human-Microbial Interactions: 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	01.10.2018	31.10.2018	Food-borne Pathogens: 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. Detection of food pathogens: Overview of Conventional and Rapid methods to detect food pathogens. MST	Interactive Lecture method, Power Point Presentations, Group Discussion
November, December	01.11.2018	03.12.2018	Food Spoilage - 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. Microbiology of different foods –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 (Odd Semester I)
Session–(2018-19)

Name of the Teacher: Dr. Shruti Puri

Department: Department of Food Science

Class: B.Sc. MFT (I)

Subject: BMF 1002 – MICROBIAL AND FOOD BIOCHEMISTRY

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	23.07.2018	01.08.2018	Introduction to major biomolecules	Lecture, Online Sources
2.	02.08.2018	25.08.2018	Bioenergetics, Bioavailability of nutrients, Enzymes classification, Enzyme kinetics, Enzyme inhibitions	Lecture
3.	26.08.2018	30.08.2018	Introduction to carbohydrates	Lecture
4.	01.09.2018	15.09.2018	Glycolysis, TCA, ETC, ED, PPP, Sweeteners	Lecture method, Cycles slides
5.	15.09.2018	25.09.2018	Classification of Proteins, amino acids, protein synthesis, protein catabolism, urea cycle Introduction to lipids	Lecture, Online Videos
6.	26.09.2018	30.09.2018	Lipid classification, catabolism of fatty acids	Lecture, PPT
7.	01.10.2018	05.10.2018	Vitamins and minerals	Lecture, Class assignment
8.	06.10.2018	15.10.2018	Biological membranes, membrane transport	Lecture, PPT
9.	16.10.2018	22.10.2018	Pigments and flavors	Lecture, PPT
10.	23.10.2018	28.10.2018	Changes in food constituents during processing	Lecture, PPT
11.	29.10.2018	15.11.2018	Biosynthesis pathways	Lecture, PPT, Online Videos
12.	16.11.2018	20.11.2018	Revision of topics	Discussion
13.	20.11.2018	30.11.2018	Class tests and Discussions	Discussion

***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 – 2018-19

Names of the Teachers- **Dr. Hina**
Department- **MFT (Food Science)**

Class- B.Sc. I (MFT)

**PAPER-I: BMF 2001 – INDUSTRIAL MICROBIOLOGY & FERMENTATION
TECHNOLOGY**

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
January	14.01.2019	31.01.2019	<p>Introduction – Importance of fermentation technology, Basic steps of industrial fermentation; Primary and Secondary metabolites.</p> <p>Industrially important microbes –Industrially important microbes; Isolation and Screening, Improvement and Preservation of Industrial microorganisms.</p> <p>Fermentation media and inoculum development - Medium formulation and common substrates used in fermentation industry; Methods of media sterilization, Inoculum preparation for microbial fermentations.</p>	Lecture, PPT, Online Sources
February	01.02.2019	28.02.2019	<p>Fermentation – Types of fermentations- Aerobic and anaerobic fermentation, Submerged and solid state fermentation, Batch and Continous fermentation systems.</p> <p>Design of Fermenter – Design and types of fermenter, antifoam agents, sterilization of fermenter, Basic Control Panels (aeration, agitation, pH and</p>	Lecture, PPT, Online Sources

			temperature). Downstream Processing of industrial fermentations – General procedures for recovery and purification of products- separation of biomass and insolubles; cell disruption and recovery and purification.	
March	01.03.2019	31.03.2019	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. MST March 2019	Lecture, PPT, Online Sources
April	01.04.2019	19.04.2019	Microbial Biomass: Single cell protein production Microbial Enzymes : Industrial production of microbial enzymes-amylase and protease; Immobilization of enzymes and their applications. Probiotics: Production of probiotics, Probiotic and Food products. Revision and Class test	Lecture, PPT, Online Sources