Lesson Plan

Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh

Monthly Teaching Plans- (Semester-I)

Session – 2016-17

Name of the Teacher- Dr. Vandana Sharma

Department- Food Science

Class- B.Sc. I MFT

Subject- Microbiology

BMF 1001 – GENERAL AND FOOD MICROBIOLOGY (Odd semester)

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
July	11.07.2016	31.07.2016	**Organization of Cell -** Concept of Prokaryotic and Eukaryotic cell, extra nuclear and nuclear organization of cell.	Interactive Lecture method, Power Point Presentations
August	01.08.2016	31.08.2016	**Characteristics of major groups of microorganisms**: Archaebacteria, 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	01.09.2016	30.09.2016	**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**:- Physical and Chemical methods	Interactive Lecture method, Power Point Presentations Practical demonstration

			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	01.10.2016	31.10.2016	**Food-borne Pathogens**: General characteristics and brief account of food borne diseases caused by- *Staphylococcus aureus; Clostridium botulinum; C. perfringen; Listeria monocytogene; Salmonella; Escherichia.coli; Yersinia enterocolitica; Vibrio parahaemolyticus,* 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	01.11.2016	03.12.2016	**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

(Lesson Plan)
MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Semester-I)
Session–(2016-17)

Name of the Teacher: Ms. Sonu
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	11.07.2016	31.07.2016	**Introduction to major biomolecules**	**Lecture, Online Sources**
August	01.08.2016	31.08.2016	**Bioenergetics, Bioavailability of nutrients, Enzymes classification, Enzyme kinetics, Enzyme inhibitions**	**Lecture**
September	01.09.2016	30.09.2016	**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	01.10.2016	31.10.2016	**Lipid classification, catabolism of fatty acids Vitamins and minerals Biological membranes, membrane transport**	**Lecture, PPT**
November, December	01.11.2016	03.12.2016	**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- (Semester-II)
Session – 2016-17

Name of the Teacher-Dr. Ruchi
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	11.01.2017	31.01.2017	**Introduction –** Importance of fermentation technology, Basic steps of industrial fermentation; Primary and Secondary metabolites. **Industrially important microbes –** Industrially important microbes; Isolation and Screening, Improvement and Preservation of Industrial microorganisms. **Fermentation media and inoculum development** - Medium formulation and common substrates used in fermentation industry; Methods of media sterilization, Inoculum preparation for microbial fermentations.	Lecture, PPT, Online Sources
February	01.02.2017	29.02.2017	**Fermentation** – Types of fermentations- Aerobic and anaerobic fermentation, Submerged and solid state fermentation, Batch and Continous fermentation systems. **Design of Fermenter** – Design and types of fermenter, antifoam agents, sterilization of fermenter, Basic Control Panels (aeration, agitation, pH and temperature). **Downstream Processing of industrial fermentations –** General procedures for recovery and purification of products- separation of biomass and insolubles; cell	Lecture, PPT, Online Sources

			disruption and recovery and purification.	
March	01.03.2017	31.03.2017	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.	Lecture, PPT, Online Sources
April	01.04.2017	19.04.2017	**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