Lesson Plan

BSC. (MFT)-II year (Semester III and IV; 2021-22)
Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans- Odd Semester (Semester-III)
Session – 2021-22
Name of the Teacher- Dr. Deepika Malik
Department- MFT (Food Science)

Class- B.Sc. II (MFT)

PAPER–I: BMF 3001 – BIOANALYTICAL TECHNIQUES

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
August & September	17.09.2021	30.09.2021	1. **Microscopy** - Principle and applications of Bright field, Fluorescence, Dark field and Electron microscopy, Direct Epifluorescent Filter Technique, Fixation and Staining. 2. **Chromatography** - Principles and applications of : Gel permeation, Ion-Exchange, Affinity, Paper, Thin-Layer Chromatography, HPLC and Gas Chromatography. 3. **Centrifugation** - Principles and applications of Density gradient and Differential centrifugation; Ultracentrifugation.	Lecture, PPT, Online Sources
Departmental Meeting regarding Webinar on Business Opportunities on 09.09.21 ; for celebrating Fungal Awareness Week on 27.09.2021 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
October	01.10.2021	31.10.2021	4. **Electrophoresis** – Types of electrophoresis; Principles and application of Agarose Gel Electrophoresis; SDS-Page electrophoresis; Immuno electrophoresis and 2-D Electrophoresis. 5. **Refractometry** - Basic Principle; specific and molar refractions; Refractometers- Principle and its Applications. 6. **Polarimetry** - Basic principle of	Lecture, PPT, Online Sources

			Polarimeter and its applications.	
Departmental Meeting regarding conduction of PMFME training on 05.10.21 and for celebration of World Food Day on 25-26 Oct, 2021 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
November	01.11.2021	30.11.2021	7. **Spectroscopy** - Basic principle of absorption of light, Principle and applications of UV and Visible; Atomic absorption; Nuclear magnetic resonance and Mass spectroscopy. 8. **Fluorescence spectroscopy** - Fluorescence methods; filter fluorometers; Fluoroscence Spectrophotometer. 9. **Immunoassays**: Principle and applications of Radioimmunoassy, Immunofluorescent assay, Enzyme linked Immunosorbent assay and Flow cytometry in food industry.	Lecture, PPT, Online Sources
Departmental Meeting regarding MST on 15.11.21 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans on 26.11.2021				
December	01.12.2021	16.12.2021	10. **Biosensors**: Principle; types and applications of biosensors. 11. **Tracer techniques:** Use of radioisotope, detection and measurement of radioactivity; specific activity; applications in food sector.	Lecture, PPT, Online Sources
Departmental Meeting on 04.12.2021 to discuss the conduction of Final Practical examination				

Lesson Plan

Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans- Even Semester (Semester-IV; EVEN SEM)
Session – 2021-22

Name of the Teacher- Dr. Deepika Malik
Department- MFT (Food Science)

Class- B.Sc. I (MFT)

PAPER–I: BMF 4001 – INDUSTRIAL MICROBIOLOGY & FERMENTATION TECHNOLOGY

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
February & March	14.02.2022	31.03.2022	**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
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
April	01.04.2022	30.04.2022	**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 disruption and recovery and purification.	Lecture, PPT, Online Sources

Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
May	01.05.2022	31.05.2022	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**	Lecture, PPT, Online Sources
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
June	01.06.2022	15.06.2022	**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
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				

Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Semester IV; EVEN SEM)
Session–(2021-2022)

Name of the Teacher: Dr. Kirti Singla
Department: Department of Food Science
Class: B.Sc. MFT (II)
Subject: BMF 4002- PROCESSING OF FOODS OF ANIMAL ORIGIN

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	03.02.2022	10.02.2022	**FSSAI/PFA Definition of milk; Chemical composition of milk of different species i.e. Buffalo, Cow (foreign), Cow (sindhi), Goat, Murrah, Jersey. Diagrammatic representation of milk constituents; Factors affecting milk composition.**	**Lecture, Online Sources**
2.	11.02.2022	20.02.2022	**Physico – chemical properties of milk, Production, distribution and storage of liquid milk**	**Lecture, Group Discussion**
3.	21.02.2022	28.02.2022	**Processing of different types of market milk – Pasteurized, Steri-**	**Lecture, PPT, Online Videos.**

			lized, Homogenized, Flavoured, Toned and Double Toned milk.	
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
4.	03.03.2022	10.03.2022	**Definition, composition and technology of milk products – Butter, Ghee, Ice cream, Evaporated and condensed milk, Dried milk.**	**Lecture, Online Videos.**
5.	11.03.2022	20.03.2022	**Fermented milk products – Nature and type of starters in fermented milks. Composition and processing of fermented milk products – Curd, Acidophilus milk, Buttermilk, Bulgaricus milk, Kefir, Kumiss, Srikhand.**	**Lecture, Group Discussion**
6.	21.03.2022	31.03.2022	**Cheese – Definition, composition and types of cheese; Basic steps in cheese making; Cheddar cheese, Cottage cheese, Blue cheese, Mozzarella cheese and Processed cheese.**	**Lecture, Online video.**
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
7.	01.04.2022	10.04.2022	**Chemistry and microscopic structure of meat tissue; Meat pigments and colour changes.**	**Lecture, PPT.**
8.	11.04.2022	20.04.2022	**Ante mortem inspection and Post-mortem changes – rigor mortis. Slaughtering and dressing of chicken and lamb, factors affecting post-mortem changes and their effect on shelf life of meat. Nutritive value of meat.**	**Lecture, Online video.**
9.	21.04.2022	30.04.2022	**Tenderization and ageing of meat. Curing, smoking and sausages of meat, Modified atmospheric packaging of meats. Structure and composition of egg. Measures of egg quality and grading and preservation.**	**Lecture, Group Discussion**
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
10.	01.05.2022	11.05.2022	**Technology of egg products – Egg powder, Albumen flakes and Liquid frozen egg. Nutritional value of fish.**	**Lecture, Group Discussion**
10.	12.05.2022	20.05.2022	**Procurement of fish. Canning of fish and fish products; Fish products – Fish oil, Fish flour, Fish sauce, Dried fish meal and Fish protein concentrates.**	**Lecture, Online Sources.**
11.	21.05.2022	25.05.2022	**Remedial Classes**	**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