

## MONTHLY TEACHING PLAN

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

**Monthly Teaching Plans - Odd semester (Semester - III)**

**Session – 2023-24**

**Department** : Food Science

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

**Subject** : Bioanalytical Techniques (BMF 3001)

**Name of the Teacher** - Dr. Deepika Malik

Sr. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken
	From	To		
1.	21.07.2023	30.08.2023	<p>1. <b>Microscopy</b> - Principle and applications of Bright field, Fluorescence, Dark field and Electron microscopy, Direct Epifluorescent Filter Technique, Fixation and Staining.</p> <p>2. <b>Chromatography</b> - Principles and applications of : Gel permeation, Ion-Exchange, Affinity, Paper, Thin-Layer Chromatography, HPLC and Gas Chromatography.</p> <p>3. <b>Centrifugation</b> - Principles and applications of Density gradient and Differential centrifugation; Ultracentrifugation.</p>	Lecture, PPT, Online Sources
<b>Departmental Meeting on 26.07.23 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>				

2.	01.09.2023	30.09.2023	<p>4. <b>Electrophoresis</b> – Types of electrophoresis; Principles and application of Agarose Gel Electrophoresis; SDS-Page electrophoresis; Immuno electrophoresis and 2-D Electrophoresis.</p> <p>5. <b>Refractometry</b> - Basic Principle; specific and molar refractions; Refractometers- Principle and its Applications.</p> <p>6. <b>Polarimetry</b> - Basic principle of Polarimeter and its applications.</p>	Lecture, PPT, Online Sources
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**Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans**

3	1.10.2023	31.10.2023	<p>7. <b>Spectroscopy</b> - Basic principle of absorption of light, Principle and applications of UV and Visible; Atomic absorption; Nuclear magnetic resonance and Mass spectroscopy.</p> <p>8. <b>Fluorescence spectroscopy</b> - Fluorescence methods; filter fluorometers; Fluorescence Spectrophotometer.</p> <p>9. <b>Immunoassays</b>: Principle and applications of Radioimmunoassay, Immunofluorescent assay, Enzyme linked Immunosorbent assay and Flow cytometry in food industry.</p>	Lecture, PPT, Online Sources
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**Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans**

4.	01.11.2023	10.11.2023	<p>10. <b>Biosensors:</b> Principle; types and applications of biosensors.</p> <p>11. <b>Tracer techniques:</b> Use of radioisotope, detection and measurement of radioactivity; specific activity; applications in food sector.</p>	Lecture, PPT, Online Sources
<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>				

## TEACHING PLAN

**Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh**  
**Monthly Teaching Plans – Odd Semester**  
**Session (2023-2024)**

**Name of the Teacher/s: DR. GEETA MEHRA**

**Department: DEPARTMENT OF FOOD SCIENCE**

**Class: B. Sc. (MFT), Sem. III;**

**Subject: Processing of Food of Plant Origin (BMF 3002);**

**Section (s): NA**

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1	26.07.2023	31.07.2023	Ch. 2, Revision	Lecture method, Group Discussion, Case Studies
2	01.08.2023	08.08.2023	Ch. 2, Ch. 3	Lecture method, Group Discussion, Case Studies  Discussion on Practicals
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
3	09.08.2023	16.08.2023	Ch. 1, Revision	Lecture method, Group Discussion, Case Studies  Discussion on Practicals  Summer Internship evaluation
4	17.08.2023	23.08.2023	Ch. 10, Revision	Lecture method, Group Discussion, Case Studies  Discussion on Practicals

				<b>Summer Internship evaluation</b>
5	24.08.2023	31.08.2023	<b>Ch. 11, Revision</b>	<b>Lecture method, Group Discussion, Case Studies, Tests</b>  <b>Discussion on Practicals</b>  <b>Summer Internship evaluation</b>
<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>				
6	01.09.2023	12.09.2023	<b>Ch. 12, Revision</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals</b>
7	14.09.2023	23.09.2023	<b>Ch. 7, Revision</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>
8	24.09.2023	30.09.2023	<b>Ch. 8, Revision</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>
<b>Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans</b>				
9	02.10.2023	09.10.2023	<b>Ch. 9, Revision</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>

10.	10.10.2023	20.10.2023	<b>Ch. 4</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>
11.	21.10.2023	31.10.2023	<b>Ch. 5</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>
12.	01.11.2023	10.11.2023	<b>Ch.6</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>
13.	11.11.2023	18.11.2023	<b>Revision</b>	<b>Lecture method, Group Discussion, Case Studies</b>  <b>Discussion on Practicals, Assignments, Do it yourself ex.</b>

**\*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

**MCM DAV College for Women, Sector – 36A, Chandigarh Monthly  
Teaching Plans (Even Semester)  
Session–(2023-24)**

**Name of the Teacher: Dr. Vandana Sharma**

**Department: Department of Food Science**

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

**Subject: BMF 4001- Microbial Genetics and r-DNA Technology**

**Lesson Plan**

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	09.01.2024	22.01.2024	Introduction to Microbial genetics; Genome organization in prokaryotes	Interactive Lecture method, Power Point Presentations, videos
2.	23.01.2024	25.01.2024	Molecular nature of the genetic material	
3.	27.01.2024	01.02.2024	Composition and structure of prokaryotic DNA and RNA, Types of RNA and DNA	
<b>Departmental Meeting</b>				
4.	02.02.2024	17.02.2024	Replication- DNA replication mechanism in prokaryotes, Enzymes involved in DNA replication, theta and sigma modes of replication	Interactive Lecture method, Power Point Presentations, Flipped classroom
5.	18.02.2024	29.02.2024	Gene Expression I – Prokaryotic transcription process- Initiation, Elongation and Termination. Gene Expression II- General characteristics of the genetic code	
6.	01.03.2024	09.03.2024	Charging of tRNA, Prokaryotic translation process- Initiation, Elongation and Termination. Mutations – Spontaneous and induced mutations, types of mutations, Physical and chemical mutagenic agents, repair of DNA damage, Replica plating, Transposable elements in bacteria, drug resistance.	

<b>Departmental Meeting</b>				
7.	11.03.2024	18.03.2024	<p><b>Genetic Exchange</b> – Gene transfer by Transformation; Generalized and Specialized transduction; Conjugation processes.</p> <p><b>Gene Regulations</b> – Operon concept- Lactose operon and Tryptophan operon in E.coli.</p>	Interactive Lecture method, Power Point Presentations, Audio-visual aid, Practical demonstration
8.	19.03.2024	28.03.2024	<p><b>Recombinant DNA Technology-</b> Tools of genetic engineering- DNA cloning vectors- Plasmids, Cosmids, Phage vectors, Shuttle vectors, Expression vectors, BAC/YAC vectors; Restriction endonuclease, DNA ligase, Alkaline phosphatase, DNA polymerase, Exonuclease.</p>	
9.	29.03.2024	06.04.2024	<p><b>Gene cloning</b> – Basic techniques used to identify, amplify and clone genes; Construction of genomic and cDNA libraries and Screening of DNA libraries.</p> <p>Applications of Recombinant DNA Technology in health and food sector.</p> <p><b>DNA amplification-</b> PCR; Types and Applications.</p>	
<b>Departmental Meeting</b>				
10.	08.04.2024	13.04.2024	<p><b>DNA Transferring Mechanisms</b> – Chemical methods, biolistic gun, Electroporation, Liposome mediated gene transfer and phage transfection.</p>	Interactive Lecture method, Power Point Presentations and Audio-visual aid
11.	15.04.2024	23.04.2024	<p><b>Techniques of molecular biology-</b> Dot- Blot, Southern blotting, Northern blotting and Western blotting techniques, DNA sequencing by Maxam-Gilbert, Dideoxy - chain termination and Automated dideoxy method,</p>	
12.	24.04.2024	29.04.2024	Revision and Remedial Classes	Discussion



## TEACHING PLAN

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

Monthly Teaching Plans – Even Semester (Semester IV)  
Session (2023-2024)

Name of the Teacher: Dr. Kirti Singla

Department: Food Science

Class: B.Sc. MET (II)

**Paper 2: BMF 4002- PROCESSING OF FOODS OF ANIMAL ORIGIN**

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	09.01.2024	22.01.2024	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. Physico-chemical properties of milk, Production, distribution and storage of liquid milk	Lecture and PPT.
2.	23.01.2024	01.02.2024	Processing of different types of market milk – Pasteurized, Sterilized and Homogenized Milk.	Lecture, PPT and Online Videos
Departmental Meeting to coordinate and review the monthly completion of syllabus as per lesson plans				
3.	02.02.2024	17.02.2024	Definition, composition, and technology of milk products – Butter, Ghee, Ice cream, Evaporated and condensed milk, Dried milk.	Lecture and Online Videos
4.	18.02.2024	29.02.2024	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.
5.	01.03.2024	09.03.2024	Cheese – Definition, composition, and types of cheese; Basic steps in cheese making; Cheddar cheese, Cottage cheese, blue cheese, Mozzarella cheese and Processed cheese.	Lecture and Online videos.
Departmental Meeting to coordinate and review the monthly completion of syllabus as per lesson plans				
6.	11.03.2024	18.03.2024	Chemistry and microscopic structure of meat tissue; Meat pigments and colour changes.	Lecture and PPT.

7.	19.03.2024	28.03.2024	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.	<b>Lecture, PPT, online videos.</b>
8.	29.03.2024	06.04.2024	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.	<b>Lecture.</b>
<b>Departmental Meeting to coordinate and review the monthly completion of syllabus as per lesson plans</b>				
9.	08.04.2024	13.04.2024	Technology of egg products – Egg powder, Albumen flakes and Liquid frozen egg. Nutritional value of fish.	<b>Lecture.</b>
10.	15.04.2024	22.04.2024	Procurement of fish. Canning of fish and fish products; Fish products – Fish oil, Fish flour, Fishsauce, Dried fish meal and Fish protein concentrates.	<b>Lecture, Online Sources.</b>
11.	22.04.2024	Onwards till final exams	<b>Remedial Classes</b>	<b>Discussion and Class Test</b>

**\*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