

TEACHING PLAN

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

Monthly Teaching Plans - Odd semester (Semester - III)

Session – 2022-23

Name of the Teacher- Dr. Deepika Malik

Department - 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	22.08.2022	30.09.2022	<p>1. Microscopy - Principle and applications of Bright field, Fluorescence, Dark field and Electron microscopy, Direct Epifluorescent Filter Technique, Fixation and Staining.</p> <p>2. Chromatography - Principles and applications of : Gel permeation, Ion-Exchange, Affinity, Paper, Thin-Layer Chromatography, HPLC and Gas Chromatography.</p> <p>3. Centrifugation - Principles and applications of Density gradient and Differential centrifugation; Ultracentrifugation.</p>	Lecture, PPT, Online Sources
Departmental Meeting on 01.10.22 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				

October	01.10.2022	15.10.2022	<p>4. Electrophoresis – Types of electrophoresis; Principles and application of Agarose Gel Electrophoresis; SDS-Page electrophoresis; Immuno electrophoresis and 2-D Electrophoresis.</p> <p>5. Refractometry - Basic Principle; specific and molar refractions; Refractometers- Principle and its Applications.</p> <p>6. Polarimetry - Basic principle of Polarimeter and its applications.</p>	Lecture, PPT, Online Sources
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Departmental Meeting on 16.10.22 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans

November	16.10.2022	31.10.2022	<p>7. Spectroscopy - Basic principle of absorption of light, Principle and applications of UV and Visible; Atomic absorption; Nuclear magnetic resonance and Mass spectroscopy.</p> <p>8. Fluorescence spectroscopy - Fluorescence methods; filter fluorometers; Fluorescence Spectrophotometer.</p> <p>9. Immunoassays: 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 on 01.11.22 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans

December	01.11.2022	24.11.2022	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 25.11.22 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				

Monthly Teaching Plans - ODD semester (Semester - III)

Session – 2022-23

Name of the Teacher- Dr. Geeta Mehra

Department - Food Science

Class - B.Sc. II (MFT)

PAPER-I: BMF 3002: PROCESSING OF FOODS OF PLANT ORIGIN

**Monthly Teaching Plans (Even Semester)
Session–(2021-22)**

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.	16.01.2023	22.01.2023	Introduction to Microbial genetics; Genome organization in prokaryotes	Interactive Lecture method, Power Point Presentations, videos
2.	23.01.2023	27.01.2023	Molecular nature of the genetic material	
3.	28.01.2023	5.02.2023	Composition and structure of prokaryotic DNA and RNA, Types of RNA and DNA	
Departmental Meeting				
4.	6.02.2023	10.02.2023	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.	11.02.2023	18.02.2023	Gene Expression I – Prokaryotic transcription process- Initiation, Elongation and Termination. Gene Expression II- General characteristics of the genetic code	
6.	19.02.2023	28.02.2023	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.	
Departmental Meeting				
7.	1.03.2023	10.03.2023	Genetic Exchange – Gene transfer by Transformation; Generalized and Specialized transduction; Conjugation processes. Gene Regulations – Operon concept- Lactose operon and Tryptophan operon in E.coli.	Interactive Lecture method, Power Point Presentations, Audio-visual aid, Practical demonstration
8.	11.03.2023	19.03.2023	Recombinant DNA Technology - 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.	
9.	20.03.2023	31.03.2023	Gene cloning – Basic techniques used to identify, amplify and clone genes; Construction of genomic and cDNA libraries and Screening of DNA libraries. Applications of Recombinant DNA Technology in health and food sector. DNA amplification - PCR; Types and Applications.	
Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
10.	1.04.2023	9.04.2023	DNA Transferring Mechanisms – Chemical methods, biolistic gun, Electroporation, Liposome mediated gene transfer and phage transfection.	Interactive Lecture method, Power Point Presentations and Audio-visual aid
10.	10.04.2023	19.04.2023	Techniques of molecular	

			biology- Dot- Blot, Southern blotting, Northern blotting and Western blotting techniques, DNA sequencing by Maxam-Gilbert, Dideoxy - chain termination and Automated dideoxy method,	
11.	20.04.2023	29.04.2023	Revision and Remedial Classes	Discussion

**Monthly Teaching Plans – Even Semester (Semester IV)
Session (2022-2023)**

Name of the Teacher: Dr. Kirti Singla
Department: Food Science
Class: B.Sc. MFT (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.	16.01.2023	23.01.2023	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.	24.01.2023	02.02.2023	Processing of different types of market milk – Pasteurized, Sterilized, Homogenized, Flavoured, Toned and Double Toned milk.	Lecture, PPT and Online Videos
Departmental Meeting to coordinate and review the monthly completion of syllabus as per lesson plans				
3.	03.02.2023	17.02.2023	Definition, composition and technology of milk products – Butter, Ghee, Ice cream, Evaporated and condensed milk, Dried milk.	Lecture and Online Videos

4.	18.02.2023	24.02.2023	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.	25.02.2023	02.03.2023	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.	03.03.2023	16.03.2023	Chemistry and microscopic structure of meat tissue; Meat pigments and colour changes.	Lecture and PPT.
7.	17.03.2023	28.03.2023	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, PPT, online videos.
8.	29.03.2023	07.04.2023	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.
Departmental Meeting to coordinate and review the monthly completion of syllabus as per lesson plans				
9.	08.04.2023	12.04.2023	Technology of egg products – Egg powder, Albumen flakes and Liquid frozen egg. Nutritional value of fish.	Lecture.
10.	13.04.2023	22.04.2023	Procurement of fish. Canning of fish and fish products; Fish products – Fish oil, Fish flour, Fish sauce, Dried fish meal and	Lecture, Online Sources.

			Fish protein concentrates.	
11.	23.04.2023	29.04.2023	Remedial Classes	Discussion and Class Test

***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