Lesson Plan

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

Monthly Teaching Plans- (Semester-III)

Session – 2017-18

Names of the Teachers- Dr. Sandeep Kaur

Department- MFT (Food Science)

Class- B.Sc. II (MFT)

PAPER–I: Bio-analytical Techniques (BMF-3001)

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
July	22.07.2017	31.07.2017	**Microscopy** - Principle and applications of Bright field, Fluorescence, Dark field microscopy, Electron microscopy, Direct Epifluorescent Filter Technique, Fixation and Staining	Lecture, PPT, Online Sources
August	01.08.2017	31.08.2017	**Chromatography** - Principles and applications of : Gel permeation, Ion-Exchange, Affinity, Paper, Thin-Layer Chromatography, HPLC and Gas Chromatography.	Lecture, PPT, Online Videos
Departmental Meeting on 04.09.17 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
September	01.09.2017	30.09.2017	**Centrifugation:** Principles and applications of Density gradient and Differential centrifugation; Ultracentrifugation. **Electrophoresis** – Types of electrophoresis; Principles and application of Agarose Gel Electrophoresis; SDS-Page electrophoresis; Immuno electrophoresis and 2-D Electrophoresis.	Lecture, PPT, Online Videos
Departmental Meeting on 10.10.17 to Coordinate and Review the Monthly completion of Syllabus as per lesson plans				
Autumn Break 30-09-17 To 09-10-17 (10 days)				
October	10.10.2017	31.10.2017	**Refractometry -** Basic Principle; specific and molar refractions; Refractometers- Principle and its Applications. **Polarimetry -** Basic principle of Polarimeter and its applications **Immunoassays**: Principle and applications of Radioimmunoassy, Immunofluorescent assay, Enzyme linked Immunosorbent assay and Flow cytometry in food industry.	Lecture, PPT
November, December	01.11.2017	3.12.2017	**Spectroscopy -** Basic principle of absorption of light, Principle and applications of UV and Visible; Atomic absorption; Nuclear magnetic resonance and Mass spectroscopy. **Fluorescence spectroscopy -**	Lecture, PPT, Online Sources

			Fluorescence methods; filter fluorometers; Fluoroscence Spectrophotometer **Biosensors**: Principle; types and applications of biosensors	

Lesson Plan

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

Monthly Teaching Plans- (Semester-IV)

Session – 2017-2018

Name of the Teacher- Dr. Vandana Sharma

Department- Food Science

Class- B.Sc. II MFT

Subject- Microbiology

BMF 4001 – MICROBIAL GENETICS & r-DNA TECHNOLOGY

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
January	11.01.2018	31.01.2018	**Genome organization in prokaryotes** – Molecular nature of the genetic material, Composition and structure of prokaryotic DNA and RNA, Types of RNA. **DNA Replication-** DNA replication mechanism in prokaryotes, Enzymes involved in DNA replication, theta and sigma modes of replication. **Gene Expression** – Prokaryotic transcription process- Initiation, Elongation and Termination;	Interactive Lecture method, Power Point Presentations, Audio-visual aid
February	01.02.2018	28.02.2018	**Gene Expression:** General characteristics of the genetic code, 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. **Genetic Exchange** – Gene transfer by Transformation; Generalized and Specialized transduction; Conjugation processes. 6. **Gene Regulations –** Operon concept- Lactose operon and Tryptophan operon in *E.coli*.	Interactive Lecture method, Power Point Presentations, Audio-visual aid

March	01.03.2018	31.03.2018	**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. **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. **MST**	Interactive Lecture method, Power Point Presentations, Audio-visual aid
April	01.04.2018	19.04.2018	**DNA Transferring Mechanisms** – Chemical methods, biolistic gun, Electroporation, Liposome mediated gene transfer and phage transfection. **DNA amplification**- PCR; Types and Applications. **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, Oligonucleotide mediated site directed mutagenesis. **Revision and Class test**	Lecture method, Group discussion and PPT

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Semester IV)
Session–(2017-18)

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

Month	Date		Topics to be Covered	Academic Activity Undertaken
	From	To		
January	08.01.2018	31.01.2018	**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, Reference from book, online videos**
February	01.02.2018	28.02.2018	**Processing of different types of market milk – Pasteurized, Sterilized, Homogenized, Flavored, Toned and Double Toned milk. Definition, composition and technology of milk products – a. Butter. b. Ghee. c. Ice cream. d. Evaporated and condensed milk. e. Dried milk. 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 method, PPT, Online videos**