

Lesson Plan
Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans- (Semester-III)
Session – 2016-17

Names of the Teachers- Dr.Ruchi
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	11-07-2016	31.07.2016	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	01.08.2016	31.08.2016	Chromatography - Principles and applications of : Gel permeation, Ion-Exchange, Affinity, Paper, Thin-Layer Chromatography, HPLC and Gas Chromatography.	Lecture, PPT, Online Videos
September	01.09.2016	30.09.2016	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
October	1.10.2016	31.10.2016	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 Radioimmunoassay, Immunofluorescent assay, Enzyme linked Immunosorbent assay and Flow cytometry in food industry.	Lecture, PPT
November, December	01.11.2016	02.12.2016	Spectroscopy - Basic principle of absorption of light, Principle and applications of UV and Visible; Atomic absorption; Nuclear magnetic resonance and Mass spectroscopy. Fluorescence spectroscopy - Fluorescence methods; filter fluorometers; Fluorescence Spectrophotometer	Lecture, PPT, Online Sources

			Biosensors: Principle; types and applications of biosensors	
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Lesson Plan
Mehr Chand Mahajan DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans- (Semester-IV)
Session – 2016-17

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	11.01.2017	31.01.2017	<p>Genome organization in prokaryotes – Molecular nature of the genetic material, Composition and structure of prokaryotic DNA and RNA, Types of RNA.</p> <p>DNA Replication- DNA replication mechanism in prokaryotes, Enzymes involved in DNA replication, theta and sigma modes of replication.</p> <p>Gene Expression – Prokaryotic transcription process- Initiation, Elongation and Termination;</p>	Interactive Lecture method, Power Point Presentations, Audio-visual aid
February	01.02.2017	28.02.2017	<p>Gene Expression: General characteristics of the genetic code, Charging of tRNA, Prokaryotic translation process- Initiation, Elongation and Termination.</p> <p>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.</p> <p>Genetic Exchange – Gene transfer by Transformation; Generalized and Specialized transduction; Conjugation processes.</p> <p>6. Gene Regulations – Operon concept- Lactose operon and Tryptophan operon in</p>	Interactive Lecture method, Power Point Presentations, Audio-visual aid

			<i>E.coli.</i>	
March	01.03.2017	31.03.2017	<p>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</p>	Interactive Lecture method, Power Point Presentations, Audio-visual aid
April	01.04.2017	19.04.2017	<p>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</p>	Lecture method, Group discussion and PPT

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

Name of the Teacher: Ms. Sonu

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	11.01.2017	31.01.2017	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
Departmental Meeting on 06.02.17 to coordinate and review the monthly completion of syllabus as per lesson plans				
February	01.02.2017	28.02.2017	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

March	01.03.2017	31.03.2017	<p>Cheese – Definition, composition and types of cheese; Basic steps in cheese making;</p> <p>Cheddar cheese, Cottage cheese, Blue cheese, Mozzarella cheese and Processed cheese.</p> <p>Chemistry and microscopic structure of meat tissue; Meat pigments and color changes.</p> <p>Antemortem inspection and Postmortem changes – rigor mortis.</p> <p>Slaughtering and dressing of chicken and lamb, factors affecting post-mortem changes and their effect on shelf life of meat.</p> <p>Nutritive value of meat.</p> <p>Tenderization and ageing of meat.</p> <p>Curing, smoking and sausages of meat, Modified atmospheric packaging of meats.</p> <p>Structure and composition of egg.</p> <p>Measures of egg quality and grading and preservation.</p> <p>MST</p>	<p>Lecture method, PPT, Online videos, Class assignments</p>
April	01.04.2017	19.04.2017	<p>Technology of egg products – Egg powder, Albumen flakes and Liquid frozen egg.</p> <p>Nutritional value of fish; procurement of fish. Canning of fish and fish products;</p> <p>Fish products – Fish oil, Fish flour, Fish sauce, Dried fish meal and Fish protein concentrates.</p> <p>Revision and Class test</p>	<p>Lecture, Online videos</p>

***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