

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester)
Session (2021-22)

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY (MAFS)

Subject: MFS-103, Microbiological Safety of Foods

| S.No. | Dates (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|---|--------------------|------------|--|--|
| | From | To | | |
| 1. | 20.09.2021 | 30.09.2021 | Introduction to Food microbiology: Classification and nomenclature of microorganisms. Morphology and Structure of Microorganisms in Foods, Microbial growth in foods, Sources of microorganisms in food chain, Bacterial groups, coliforms, faecal coliforms, enteric pathogen, Emerging microbes. | Lecture method, PPT, Blackboard teaching |
| Departmental Meeting regarding Webinar on Business Opportunities on 09.09.2021; for celebration of Fungal Awareness Week on 27.09.2021 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 2. | 01.10.2021 | 16.10.2021 | Shelf life indicators, Methods of preservation and shelf life extension, Enzymatic or fermentative food spoilage, Significance of contamination, preservation and spoilage of different groups of foods. | Lecture, PPT, |
| 3. | 18.10.2021 | 30.10.2021 | Characteristics and incidence- global and Indian scenario, Food poisoning and food intoxications of microbial origin, bacterial, viral, protozoa animal parasite food borne diseases; Biological hazards in foods other than food poisoning bacteria, Investigation and management of food borne diseases. | Lecture, PPT |
| Departmental Meeting regarding conduction of PMFME training on 05.10.2021 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 | | | | |
| 4. | 01.11.2021 | 12.11.2021 | Sample collection (BIS method), importance of replicates, sample weighing, slurry preparation, pre-incubations, serial dilution and standard plate counts, spiral plate, droplet technique, coliform, yeast and mold count, CFU enumeration and data reporting. | Lecture, PPT |
| 5. | 18.11.2021 | 25.11.2021 | MID SEMESTER EXAMINATIONS | |
| 6. | 26.11.2021 | 30.11.2021 | Microbiological safety of Dairy and Food products and Water potability (MPN) | Lecture, PPT |
| Departmental Meeting regarding MSTs on 15.11.2021 and Review meeting regarding completion of Syllabus as per lesson plans on 26.11.2021 | | | | |
| 7. | 01.12.2021 | 16.12.2021 | Microbiological standards and criteria: Indicator of food and water safety. | Lecture, PPT |
| Departmental meeting on 4.12.2021 to discuss the conduction of Final Practical Examination. | | | | |

*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

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY

Subject: MFS -104, Fundamentals of Food Chemistry and Analysis

| S.No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|---|----------------|------------|--|-------------------------------|
| | From | To | | |
| 1. | 20.09.2021 | 30.09.2021 | Introduction to chemical composition of food components, Chemical reactions and changes occurring in food components during processing and effect of storage on food quality, Introduction to food analysis (chemical and physical analysis). | Lecture method, PPT |
| Departmental Meeting regarding Webinar on Business Opportunities on 09.09.2021; for celebration of Fungal Awareness Week on 27.09.2021 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 2. | 01.10.2021 | 16.10.2021 | Introduction to food analysis (sensory, chemical and physical analysis). Instrumentation in Food Analysis; Sensory analysis of foods: Overview of the sensory principles and practices. | Lecture, PPT |
| 3. | 18.10.2021 | 30.10.2021 | Principle of Moisture Analysis: Water activity and its influence on food quality and stability, Importance of moisture content analysis, Principal techniques of food moisture content analysis. Principle of Protein Analysis Physico-Chemical properties of protein and their structure, Importance of protein analysis, Principal technique of protein analysis, Chemical interactions involving amino acids and proteins; Introduction, chemical nature and properties of enzymes, Enzymes involved in food deterioration, Enzymes as aids in food processing operations. | Lecture, PPT |
| Departmental Meeting regarding conduction of PMFME training on 05.10.2021 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 | | | | |
| 4. | 01.11.2021 | 12.11.2021 | Principle of Carbohydrate Analysis, Resistant starches, Gelatinization of starch and its industrial importance | Lecture, PPT |
| 5. | 18.11.2021 | 25.11.2021 | MID SEMESTER EXAMINATIONS | |
| 6. | 26.11.2021 | 30.11.2021 | Vitamins, Minerals and Ash Content analysis | Lecture, PPT |
| Departmental Meeting regarding MSTs on 15.11.2021 and Review meeting regarding completion of Syllabus as per lesson plans on 26.11.2021 | | | | |
| 7. | 01.12.2021 | 16.12.2021 | Principle of fat/oil and food color analysis, Food additives and contaminants | Lecture, PPT |
| Departmental meeting on 4.12.2021 to discuss the conduction of Final Practical Examination. | | | | |

*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

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY

Subject: MFS-105, Principles of Food safety and Sanitation

| S.No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|---|----------------|------------|--|-------------------------------|
| | From | To | | |
| 1. | 20.09.2021 | 30.09.2021 | The importance of microbial food analysis in food quality and food safety assurance system in both food industry and government perspectives, Key Practices for ensuring Food Safety, Definition, importance of sanitation, application of sanitation to food industry and food service establishments, Food processing sanitation - Cleanness, healthiness and good practice of food processing personnel, Purchasing and receiving safe food, food storage, sanitary procedures in food preparation, serving and displaying of food. | Lecture method, PPT |
| Departmental Meeting regarding Webinar on Business Opportunities on 09.09.2021; for celebration of Fungal Awareness Week on 27.09.2021 and to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 2. | 01.10.2021 | 16.10.2021 | Sanitizing agents and Methods | Lecture, PPT |
| 3. | 18.10.2021 | 30.10.2021 | Utilization and disposal of waste generated | Lecture, PPT |
| Departmental Meeting regarding conduction of PMFME training on 05.10.2021 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 | | | | |
| 4. | 01.11.2021 | 30.11.2021 | Introduction, regulatory agencies, control of food quality, local health authority; Environment management systems (ISP 14000) and its application in food industry; | Lecture, PPT |
| Departmental Meeting regarding MSTs on 15.11.2021 and Review meeting regarding completion of Syllabus as per lesson plans on 26.11.2021 | | | | |
| 5. | 01.12.2021 | 16.12.2021 | Legislation related to waste management; standards for emission or discharge of environmental pollutants from food processing industries. | Lecture, PPT |
| Departmental meeting on 4.12.2021 to discuss the conduction of Final Practical Examination. | | | | |

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Other Methods adopted by the teacher – Please write the specific teaching method

(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Even Semester)
Session (2021-22)

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY

Subject: MFS-203, Analytical Quality Assurance in Food Laboratories

| S.No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|--|----------------|------------|--|-------------------------------|
| | From | To | | |
| 1. | 03.02.2022 | 12.02.2022 | Accreditation of food laboratory, referral laboratories, functions of food analysts, hierarchy of food safety authorities, analysis of food samples and reports, other regulatory provisions pertaining to analysis of food. | Lecture method, PPT |
| 2. | 14.02.2022 | 28.02.2022 | Good Laboratory Practices (GLP)- history of GLP, areas of application, facilities, test systems, test and reference items, Standard Operating Procedure (SOP), study performance and reporting. | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 3. | 01.03.2022 | 31.3.2022 | Principles, types and application of spectroscopy, photometry, electrophoresis, chromatography, Atomic absorption spectrophotometry, Principles and applications of NIR, NMR, X-ray diffraction analysis in food systems. | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 4. | 01.04.2022 | 30.04.2022 | Serological And Molecular Based Methods In Food Analysis | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 5. | 02.05.2022 | 24.05.2022 | Biosensor Technology As Novel Food Pathogen Analysis Tool | Lecture, PPT |

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Other Methods adopted by the teacher – Please write the specific teaching method

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY

Subject: MFS-204, FOOD ADULTERATION AND SAFETY

| S. No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|---|----------------|------------|--|------------------------------------|
| | From | To | | |
| 1. | 03.02.2022 | 12.02.2022 | Adulteration of Food Products Types of food adulterants - intentional and incidental adulterants, Adulteration of Milk and Milk products, Oil and Fats, Spices and condiments, Food Grains, Flours, Canned Foods, Fruit and Vegetables products, Meat and poultry, Sugar and Preserves, Beverages- Alcoholic and Non Alcoholic. | Lecture method, PPT |
| 2. | 14.02.2022 | 28.02.2022 | Detection, quantification and health hazards of direct contaminants – acrylamide, PAHs, oxyhalides, and haloacetic acids, preservatives, flavor enhancers, color additives. | Lecture, Online Videos |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 3. | 01.03.2022 | 31.3.2022 | Indirect contaminants- boiler water additives, peeling aids, defoaming agents, building and equipment contaminates: lubricants, paint and coatings, contaminants during packaging, storage and transport: cleaners, sanitizers and cross contaminants. Toxicity of food and significance, Natural and pollutant toxicants, Potential toxicants formed during food processing, Natural toxins in mushrooms. The toxicity of poisonous mushrooms in humans. The toxicity of poisonous mushrooms in humans. Carcinogens, | Lecture, PPT, Online Videos |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 4. | 01.04.2022 | 30.04.2022 | Genetically engineered Food and their safety, Potential toxicity of GM foods. Determination of toxicants in foods and their management, toxicological evaluation of food adulterants. | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 5. | 02.05.2022 | 24.05.2022 | Food allergy and hypersensitivity. Introduction to the immune system, mechanisms of allergic type reactions, and allergenic components in foods. Natural sources and chemistry of food allergens; true/untrue food allergies; handling of food allergies; food sensitivities | Lecture, PPT |

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Other Methods adopted by the teacher – Please write the specific teaching method

Name of the Teacher: Dr. Anila Kumari

Department: Department of Food Science

Class: Diploma in MICROBIAL ANALYSIS AND FOOD SAFETY

Subject: MFS-205, Food Laws and Regulations

| S.No. | Date (Monthly) | | Topics to be Covered | Academic Activity Undertaken* |
|---|----------------|------------|--|-------------------------------|
| | From | To | | |
| 1. | 03.02.2022 | 12.02.2022 | Introduction to Food Regulations, Various organizations dealing with inspection, traceability and authentication, certification and quality assurance (FPO, PFA, FSSAI, AGMARK, BIS, GRAS and permissible limits for chemical preservatives and legal aspects for γ -irradiations | Lecture method, PPT |
| 2. | 14.02.2022 | 28.02.2022 | Basic concept, Prerequisites - GHPs, GMPs and SSOPs, HACCP, ISO series, TQM - concept and need for quality, components of TQM, Kaizen. Risk Analysis, Accreditation and Auditing, Product labelling, Nutritional labelling and safety assessment of food packaging material, Advertisement regulation, | Lecture, Online Videos |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 3. | 01.03.2022 | 31.3.2022 | Food labelling guideline, Agricultural and Processed food Export Development Authority, Marine Product Export Development Authority, Export Inspection council and Export Inspection Agency. | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 4. | 01.04.2022 | 30.04.2022 | International Standardization Organization (ISO), Joint FAO/WHO Food Standards Program. Codex Alimentarius Commission (CAC), Other International Organizations Active in Food Standard Harmonization. Advantages of Utilizing International Standards. Rapid Alert system. | Lecture, PPT |
| Departmental Meeting to Coordinate and Review the Monthly completion of Syllabus as per lesson plans | | | | |
| 5. | 02.05.2022 | 24.05.2022 | European Committee for Standardization (CEN), PAN American Standards Commission (COPANT), Euro-Asian Council for Standardization, FDA, EPA, EU, ASEAN, EFSA (European Food Safety Authority). | Lecture, PPT |

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