

Syllabus Modern Methods of Analysis of Food Components and Additives

Course title	Modern Methods of Analysis of Food Components and Additives
Credits number	24
Year	2020/ 2021
Instructor	Dr. Amira HADDARAH

Brief description

The major purpose of this course is to familiarize PhD students with the fundamental concepts of food analysis and the methods and practices of the analysis of foods and nutrients. It is an overview of the principles and basic mechanisms used in many of the analytical procedures commonly used in food and nutrition research.

Sessions

Session 1. Classifications of analytical methods and Performance characteristics of the analytical methods (Selectivity, specificity, Robustness, range of measurement, linearity, Sensitivity, Detection limit).

Session 2. Analytical methods of inorganic components, Classifications of the optical spectroscopic methods, Atomic absorption spectrometry.

Session 3. Chromatography: History of the chromatography, Extraction during chromatography, physicochemical principles of chromatographic separation and Analysis of chromatographic peaks.

Session 4. The most frequently used chromatographic methods in the practice: High performance liquid chromatography, Components of an HPLC system.

Session 5. Specific analysis of mono- and oligosaccharides, determination of the amino acids, analysis of vitamins, determination of antioxidants, volatile acids, fatty acid composition of the fats, Mycotoxin analysis and others.

Session 6. Determination of the fatty acid composition of the fats and Determination of antioxidants.

Session 7. Analysis of Carotenoids and Chlorophylls in Foods. Determination of cholesterol and phytosterols.

Session 8. Protein separation and determination by chromatographic methods. Mycotoxin analysis: Detection and determination.

Session 9. Analytical Methods for Drinking Water. Advances in Sampling and Analysis.

Session 10. Determination and Speciation of Trace Elements and pollutants in Foods. Analysis of Chemical Preservatives.

Session 11. Measuring Radioactive Contaminants in Foods.

Session 12. Rapid Analysis Techniques in Food Microbiology.

References

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