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| **Study program** Applied chemistry with the management basics |
| **Course title** Chemical analysis of food (H264C) |
| **Name of lecturer/lecturers** Violeta D. Mitić |
| **Type of course** Elective |
| **Number of ECTS allocated** 7 |
| **Course objectives**Introducing students to the practical application of previously acquired knowledge in the field of analytical determinations to the analysis of foodstuffs |
| **Course outcomes**After successfully completing the Chemical analysis of food program and passing the exam, the student can: successfully analyze food samples, process, evaluate and interpret the obtained analysis results based on the data obtained, work as a fully qualified chemist in laboratories where food quality control is carried out. |
| **SYLLABUS***Lectures*Foods, nutrients and food ingredients, energy value of food and food legislation. The compositional analysis of food, quality and safety of food. Sampling process (sampling protocol, sample preparation, analysis) and equipment Laboratory quality assurance program. Validation method for food analysis. Methods for water determination. Determination of water by oven drying method. Determination of water by distillation. Chemical methods of water determination. Other methods of determining water. Evaluating of total ash, water soluble and insoluble ash, sulphated ash, ash insoluble in dilute HCl, ash—rapid (magnesium acetate), alkalinity of soluble and insoluble ash and total alkalinity of ash, sample preparation - dry ashing and wet ashing. Determination of specific mineral content. Crude protein, nitrogen balance, protein content measurement, identification and determination of amino acids. Edible fats, oils and olive oil, determination of lipid content, application of fats in some food products, identification of fats and oils. Fat spoilage (rancidity). Qualitative and quantitative analysis of mono- and oligosaccharides. Determination of additives. Antioxidants. Food preservative. Food colours and colouring foods (colouring foodstuff). Other additives. Hydrosoluble and liposoluble vitamins.*Laboratory work*Qualitative and quantitative determination of table salt in meat. Qualitative and quantitative determination of citric acid in fruit products. Qualitative and quantitative determination of sulfuric acid in fruit products. Qualitative determination of starch in tomato juice concentrate and marmalade. Qualitative determination of decomposition products in rancid fats. Qualitative determination of artificial color in pasta Qualitative determination of artificial colors in ground pepper. Identification of artificial honey. Determination of milk acidity. Volumetric determination of ethanol in wine. Quantitative determination of calcium content in chocolate. |
| **References**Violeta Mitić, Vesna Stankov Jovanović, Analitika prehrambenih proizvoda, PMF Niš, 2015.Trajković, J. Baras, M. Mirić, S. Šiler, Analize životnih namirnica, Tehnološko-metalurški fakultet, Beograd, 1983.Zbirka propisa o kvalitetu proizvoda sa objašnjenjima, Privredni pregled, Beograd, 1981. |
| **Active teaching classes** | **Lectures** 45 | **Laboratory work** 30 |
| **Teaching mode**Interactive lectures, individual experimental work in the laboratory and consultations. |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** |
| **Pre exam duties** | **Points** | **Final exam**  | **Points** |
| Activity during lectures | 5 | Written examination |  |
| Practical teaching | 15 | Oral examination | 40 |
| Teaching colloquia | 40 |  |  |
| Seminar |  |  |  |