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| **Study program:** Doctoral academic studies **-** Chemistry | | |
| **Course title:** Analysis of Organic Pollutants (H335C) | | |
| **Name of lecturer/lecturers:** Vesna P. Stankov Jovanović | | |
| **Type of course:** elective | | |
| **Number of ECTS allocated:** 10 | | |
| **Course objectives**  Acquiring detailed knowledge about groups of pollutants in the environment and food, ways of taking samples, their treatment, and appropriate analytical methods for their analysis. Application of theoretical knowledge when choosing the appropriate method of sample preparation and analysis in relation to the set requirements. | | |
| **Course outcomes**  Upon successful completion of this course, the student will be able to:  - define and describe the main groups of pollutants in the environment and food,  - apply the appropriate sampling method depending on the specific case,  - explain and apply the appropriate sample preparation depending on the type of analysis to follow,  - analyze and argue the application of certain methods of analysis in specific cases,  - practically apply the appropriate method of sampling, sample preparation and analysis in scientific research work. | | |
| **SYLLABUS**  *Lectures*  Persistent organic pollutants in food and the environment. Sampling, sample preparation and methods of analysis of petroleum hydrocarbons in environmental samples. Sampling, preparation of food, soil, water and air samples and methods of analysis of polycyclic aromatic hydrocarbons. Sampling, preparation of environmental samples and methods of analysis of brominated flame retardants. Sampling, preparation of food, water and soil samples and methods of analysis of perfluorinated organic compounds. Sampling, sample preparation and methods of analysis of polychlorinated biphenyls in environmental samples. Sampling, sample preparation and methods of dioxin analysis in environmental samples. Sampling, food, water and soil sample preparation and pesticide analysis methods. Sampling, sample preparation and methods of analysis of organometallic compounds of mercury, tin, lead and arsenic in food and environmental samples. Sampling, sample preparation and methods of analysis of microplastics in environmental samples. Sampling, sample preparation and methods of analysis of algal and mycotoxins in food and environmental samples. Sampling, sample preparation and methods of analysis of antibiotics and other drug classes in food and environmental samples. Sampling, sample preparation and methods of analysis of endocrine disruptors in food and environmental samples. | | |
| **References**  1. S. Harrad, ed. Persistent organic pollutants, Blackwell Publishing Ltd, 2010.  2. J. Tadeo, ed. Analysis of Pesticides in Food and Environmental Samples, CRC Press, Taylor & Francis Group,  Boca Raton, USA, 2008.  3. R. Smith, ed., Handbook of analytical separations, Elsevier science b.v., Amsterdam, The Netherlands, 2001  4. T. Shibamoto, ed., Chromatographic analysis of environmental and food toxicants, Marcel Dekker INC, New  York, 1998.  5. P. Patnaik, Handbook of environmental analysis: chemical pollutants in air, water, soil, and solid wastes. 2nd  ed., Boca Raton, 2010.  6. T. Đurkić, Metode analize zagađujućih materija. 1. izd., Beograd, 2015.  7. S. Škunca Milovanović, B. Đurović (urednici), Pesticidi u hrani, standardne metode za određivanje ostataka  pesticida u namirnicama, Deo 1, Beograd, 1989. | | |
| **Active teaching classes** | **Lectures:** 105 | **Laboratory work:** / |
| **Teaching mode:** lectures, project teaching, seminar, case studies | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | |
| activity during the lecture - 10 points; case study-project - 20 points; seminar - 40 points; written exam - 30 points | | |