Study programme(s): Doctoral Academic Studies in Chemistry

Level: PhD studies

Course title: Selected Topics in Environmental Analysis  
Subject code: DSH-617

Lecturer(s): Dr. Biljana F. Abramović, Dr. Katalin Mesaroš Sečenji, dr. Daniela Sojić

Status: Elective

ECTS: 15

Requirements: None

Learning objectives
To provide broad and balanced knowledge of key chemical concepts from selected topics in environmental analysis. Students who are oriented to analytical chemistry will be provided with a detailed insight into important principles and modern methods of analysis of atmosphere, hydrosphere or soil.

Learning outcomes
Mastering the principles and methods of modern analysis of a chosen environment material.

Syllabus

Theoretical instruction
Legislation in this field. Sampling and review of modern methods of analysis of a chosen material (atmosphere, hydrosphere or solid). Collecting and analyzing of data. Quality assurance in environmental analysis.

Practical instruction
Seminar preparation. Introduction to a series of electronic educational materials developed within the ERASMUS + "NETCHEM" project and discussion of their content. Searching electronic database, processing, analyzing and discussing specific topics from the selected field.

Literature
4. Internal educational material, a series of electronic teaching materials developed within the ERASMUS + "NETCHEM" project: Determination of limit of detection (LOD) and limit of quantification (LOQ) of HPLC-DAD for metoprolol analysis (B. Abramović), Sample preparation for photocatalytic degradation of alprazolam with ZnO and measurements of its photocatalytic activity (B. Abramović), http://mdl.netchem.ac.rs/course/view.php?id=27, GC/MS Method validation plan (I. Ivančev-Tumbas), Matrix interferences in the flame atomic absorption spectrophotometry (S. Maletić, I. Ivančev-Tumbas) and Method optimisation for analysis of anions by ion chromatography (S. Maletić i I. Ivančev-Tumbas), http://mdl.netchem.ac.rs/course/view.php?id=25.

Supplementary literature:
Scientific and professional literature in the selected topics of environmental analysis.

Weakly teaching load

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<tr>
<th>Lectures: 5</th>
<th>Exercises:</th>
<th>Other forms of teaching: Student research: 5</th>
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Teaching methodology
Plenary lectures, discussions of the content of recommended videos and electronic materials, problem sessions, seminar preparation, independent presentations carried out by students

Grading method (maximal number of points 100)

Pre-exam obligations | points | Final exam | points
----------------------|--------|------------|--------
Seminars             | 50     | Oral exam  | 50     |