

<b>Study Programme:</b> Food Engineering			
<b>Course Unit Title:</b> Selected Electrochemical Methods of Analysis			
<b>Course Unit Code:</b>			
<b>Name of Lecturer(s):</b> Professor Jaroslava Švarc-Gajić, Professor Snežana Kravić, Associate Professor Zorica Stojanović			
<b>Type and Level of Studies:</b> Master Academic Degree			
<b>Course Status (compulsory/elective):</b> Elective			
<b>Semester (winter/summer):</b> Winter			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 7			
<b>Prerequisites:</b> /			
<b>Course Aims:</b> The course aim is to upgrade the knowledge and improve the skills related to electrochemical methods of analysis and their application in the frame of other instrumental methods for detection purposes. Quantitative analysis. Trace elements analysis by electroanalytical techniques.			
<b>Learning Outcomes:</b> The students will be fully familiar with the principles, use, advantages, and limitations of electroanalytical techniques. They will be able to plan experiments in order to apply those techniques for the quantification of trace quantities of various analytes in different samples and to individually solve interferences problems.			
<b>Syllabus:</b> <i>Theory</i> Diffusion techniques. Hronopotentiometry and voltammetry. Amperometry and amperometric titration. Potentiometry and potentiometric titration. Electrochemical stripping analysis (ESA). Pre-concentration and analytical steps. Interferences in ESA. Coulometry. The behaviour of the solution in the field of the high-frequency electric field. Application of electrochemical methods in real samples analysis. <i>Practice</i> Laboratory exercise. Potentiometry and potentiometric titration. Coulometric titration with bi-amperometric end-point detection. Electrochemical stripping analysis. Application in real sample analysis.			
<b>Required Reading:</b> 1. Wang, J.: Analytical Electrochemistry, 2nd ed., Wiley-VCH, 2000.			
<b>Weekly Contact Hours:</b>	<b>Lectures:</b> 3	<b>Practical work:</b> 3	
<b>Teaching Methods:</b> Lectures and students group work.			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	5	written exam	
Practical work		oral exam	30
Preliminary exam(s)	25		

Seminar(s)	40		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			