

Subject: Chromatographic methods in analytical chemistry			
Teacher or teachers: Predrag T. Djurdjevic			
Status: Elective			
ECTS : 10			
Requirement: The entered doctoral studies			
The goal of course To familiarize students with the possibility of applying different chromatographic methods in analytical chemistry			
The outcome of cases Students will master the application of various chromatographic method for the determination of analytes in simple and complex patterns. , Manageable condition for chromatography (HPLC) , sample preparation for chromatography, evaluation of results .			
Outline The principle of chromatographic separation of mixtures. Classification of chromatographic methods. Chromatographic elution in the column . The chromatograms . Distribution constants. Retention time . Correlation between retention time and the distribution constants . Appearance of chromatographic peaks and parameters of chromatographic separation. The efficiency of the column and the number of theoretical level . Optimization of the column. Qualitative and quantitative chromatographic analysis . The method of height and peak area . Calibration and Standards . Of the internal standard method . Method normalized peak area . Gas chromatography . Retention volume . Instruments . The carrier gas . The injectors of the sample. Columns and thermostats . Detectors : FID , TCD , SCD , ECD , AED , TID .. Columns and stationary phases. Interface gas chromatography - mass spectrometry . By HPLC . Reservoirs are the steps and the mobile phase with solvents . Pumps . The injectors of the sample. Column. Isocratic and gradient elution . Analytical and casing column. Detectors . UV and fluorescence . Electrochemical and mass spectrometric detectors . Reverse phase and normal phase chromatography. Partition chromatography . Chromatography ion pairs . Adsorption chromatography. Ion exchange chromatography. Chromatography squeezing in size. Thin-layer chromatography. Supercritical fluids and their application in chromatography and extraction . Application of chromatographic methods in inorganic , organic , biochemical and pharmaceutical analysis.			
Literatures: 1. D. Skoog, F. J. Holler, T. Nieman, Principles of Instrumental analysis, Saunders Publ., Philadelphia, 1992. 2. L. R. Snyder, J. J. Kirkland, J. L. Glajch, Practical HPLC Method Development, Wiley, 1997.			
Number of active classes:	Lectures: 5	Research work: /	
Teaching methods: Lectures, seminars.			
Evaluation of knowledge (maximum score 100)			
Exam consists of :	Points	Final exam	Points
Activity during the lectures	10	Test paper	
practical classes		Oral exam	50
Colloquia	-	-	
Seminar	40		