	Study program: Integrated academic studies of Pharmacy						
	Type and level of the study program: integrated academic studies						
	Course title: APPLICATION OF INSTRUMENTAL METHODS (PhIII-APINM)						
	Teacher: Jelena M. Cvejić Hogervorst, Milica T. Atanacković Krstonošić, Mira P. Mikulić						
	Course status: elective						
	ECTS Credits: 3						
	Condition: Instrumental pharmaceutical analysis						
	Course aim						
	The main objective of this course is to introduce students to the possibilities of using different instrumental methods in pharmacy and other related						
	fields. Primarily, application of chromatographic and spectroscopic methods is studied. Also, the goal is to analyze numerous practical examples in						
	order to point out the specific application of certain techniques and the selection of suitable methods for solving analytical problems.						
	Expected outcome of the course:						
	It is necessary that student learn about application and choice of analytical methods - their purpose, advantages and limitations.						
	Practical application of learned skills in order to resolve real problems connected with the choice of the best method to analyse samples.						
	Course description						
	Theoretical education						
	1. Basic principles of instrumental methods						
	2. The choice of instrumental techniques according to the type of analysis						
	3. Advantages and limitations of certain methods						
	4. Examples of the application of spectroscopic methods						
	5. Examples of application of chromatographic methods						
	Practical education: exercises, other forms of education, research related activities						
	1. Application of instrumental methods in pharmacy						
	2. Applications instrumental methods in medicine						
	3. Applications instrumental methods in food analysis						
	4. Applications instrumental methods of analysis of cosmetic products						
	Literature						
	Compulsory						
	1. Rouessac F, Rouessac A. Chemical analysis, modern instrumentation methods and techniques, 2 nd ed. England: John Wiley & Sons, 2007. <i>Additional</i>						
	1. Gratzfeld-Husgen A, Schuster R. HPLC for food analysis. Germany: Agilent technologies, 2001.						
	 Gratzield-Husgen A, Schuster R. HPLC for food analysis. Germany: Agilent technologies, 2001. Pungor E. A practical guide to instrumental analysis. CRC press; 1995. 						
	2. Pungor E. A practical guide to instrumental analysis. CRC press; 1995. Number of active classes Other:						
			Oth	er types of teaching:	Research related activities:	Other.	
	30	15	Our	er types of teaching.	Research related activities.		
30 15 Teaching methods: lectures, laboratory work.							
	Student activity assessment (maximally 100 points)						
Pre-exam activities				points	Final exam	points	
	Lectures		10	Written	70		
Practices				20	Oral	/0	
				20			
	Colloquium Essay						
	E SSAV			1			