

MODUL	FOOD 2S.1	COURSE TITLE	Chromatography and hyphenated techniques in food analysis		ECTS	4
FACULTY COORDINATOR		prof.dr hab. Z.Krejpcio	DEPARTMENT	Food Science and Nutrition		
TEACHER			prof.dr hab. H. Jeleń (lect., labs), dr M. Majcher (labs)			
VOLUME (H)		20		PERSONAL WORK (H)	75	
LECTURE (H)	LAB (H)	PLACEMENT (H)	PROJECT (H)	OTHER MODALITIES (H)		
15	5		20			
EVALUATION			TEACHING METHODS			
EVALUATION MODALITIES			Multimedial lectures adressed to all participants,			
ORAL INDIVIDUAL REPORT			Participation in demonstrations and labs			
WRITEN INDYVIDUAL REPORT		10%	Participation in discussions			
FINAL ORAL EXAM						
FINAL WRITTEN EXAM		90%				
COMMENTS OF EVALUATION						
SEMESTER (WINTER/SUMMER)			LANGUAGE			
SS			ENGLISH			
<b>OBJECTIVES</b>						
The aim of the course is to provide a student basic knowledge on main chromatographical/hyphenated methods used in food analysis						
Lab exercises are to understand in practice theory of separation in gas chromatography, separation in liquid chromatography and an introduction to sample preparation techniques used in gas chromatography						
In the project student should propose a method of analysis of a particular compounds in particular matrix and a rational explanation of it						
<b>CONTENTS</b>						
Lectures: 1. Theory of chromatography; 2. GC vs HPLC; 3. Other chromatographical techniques in food analysis; 4. Hyphenated techniques						
5. Mass spectrometry fundamentals; 6. Sample preparation in chromatography; 7. Data processing; 8. Selected applications						
Labs (4 hrs each): 1. GC-lab (theory in practice; analysis of haloanisoles using GC(ECD), GCxGC-ToFMS, GC/MS, GC-MS/MS);						
2. HPLC in practice (retention mechanisms, aminoacidsby HPLC); 3. Sample preparation lab (SPME method development, SPE fractionation)						
PRE-REQUISES			fundamentals of chemistry			