

Study Programme: Master academic studies of Forensics			
Course Unit Title: Xenobiochemistry			
Course Unit Code: FH-04			
Name of Lecturer(s): Associate Professor Bojana Srećo Zelenović			
Type and Level of Studies: Master Academic Studies			
Course Status (compulsory/elective): elective			
Semester (winter/summer): summer			
Language of instruction: Eenglish			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: none			
Course Aims: Gaining a broad and balanced knowledge about xenobiotics, their metabolites, phases of metabolism and different factors which have an impact on xenobiotic metabolism and which are important in the analysis of forensic data.			
Learning Outcomes: After successfully completing this course students are trained to: <ol style="list-style-type: none"> 1. Explain the function of selected xenobiotics in the human body 2. Analyse and explain structure and metabolism relationship of selected xenobiotics 3. Use the knowledge about induction and inhibition of drug metabolism 			
Syllabus: <i>Theory</i> Definition of xenobiochemistry. Destiny of xenobiotics in the human body. Proteins: structure and function. Enzymes: flavin monooxygenase (FMO) and other oxidative enzymes, reductases. Cytochromes P450: chemical structure, nomenclature, significance of oxidative reactions in forensics, mechanisms of catalytic activities. Distribution of enzymes which are responsible for biotransformation of xenobiotics. Pathways of conjugation. Induction of drug metabolism. Drug metabolism inhibition of relevance to forensic chemistry. Factors which are important for xenobiotic metabolism. Chiral aspects of xenobiotic metabolism. Methods of drug investigation in forensic chemistry.			
Required Reading: <ol style="list-style-type: none"> 1. S. Rendić, M. Medić-Šarić, <i>Metabolizam lijekova i odabranih ksenobiotika</i>, Medicinska naklada, Zagreb, Hrvatska, 2013. 2. R. K. Murray, D. A. Bender, K. M. Botham, P. J. Kennelly, V. W. Rodwell, P. A. Weil, <i>Harper's Illustrated Biochemistry</i>, 28th edition, The McGraw-Hill Companies, USA, 2009. 3. D. Whitford, <i>Proteins structure and function</i>, John Wiley & Sons Ltd, England, 2005. 			
Weekly Contact Hours: 5		Lectures: 3	
		Practical work: 2	
Teaching Methods: Lectures and students group work			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	60
Seminar(s)	30		