

Study program: Integrated academic studies of Pharmacy			
Type and level of the study program: integrated academic studies			
Course title: HUMAN HEALTH RISK ANALYSIS (PhV-HRISK)			
Teacher: Ljilja D. Torović			
Course status: elective			
ECTS Credits: 3			
Condition: Basic toxicology			
Course aim Introduction to food safety risk analysis, training for the interpretation of the risk assessment results, risk management and communication.			
Expected outcome of the course: Knowledge: Guidelines, recommendations, approaches and tools used in the risk analysis process. Knowledge in the field of risk assessment and risk management measures. Introduction to the scientific framework for risk-benefit analysis. Skills: Possibility of professional and scientific work in the field of risk assessment for human health due to the presence of various chemical substances in food, formulation of recommendations and legislative actions for risk reduction.			
Course description <i>Theoretical education</i> Risk analysis - the significance and structure of the process. Introduction of the relevant legal, scientific and professional bodies. Food safety legislative framework. Preventive systems in ensuring food safety. Portals for the international exchange of information on risks related to food. Risk management. Communication in the risk analysis. Risk Assessment. Hazard identification. Hazard characterization. Dose - response relationship. The critical effect. The reference points. The scientific substantiation of the evidence. Biomarkers of exposure and biomarkers of effect. Exposure assessment. Bioavailability. Data collection approaches and food composition and consumption databases. Risk characterization. Risk-benefit analysis: the structure of the process. Cost-benefit analysis: dietary interventions - food fortification and supplementation; impact of technological processes. Safety of cosmetic products, borderline products, product information file. <i>Practical education: exercises, other forms of education, research related activities</i> Case studies - chemical contaminants in food ; natural toxic substances in food; processing contaminants; food fortification and supplementation. HACCP plan. Cosmetic product information file.			
Literature <i>Compulsory</i> 1. WHO/FAO. Environmental health criteria 240: Principles and methods for the risk assessment of chemicals in food. Geneva: World Health Organization; 2009. Available from: www.who.int . 2. Selected publications (available on internet): EFSA (www.efsa.europa.eu), EC (https://food.ec.europa.eu), WHO (www.who.int), FAO JECFA (www.fao.org), IARC (www.iarc.fr)			
Number of active classes			Other:
Lectures: 30	Practice: 15	Other types of teaching:	Research related activities:
Teaching methods Theoretical and practical; essay.			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	5	Written	-
Practices	5	Oral	50
Colloquium	-	
Essay	40		