

Study Programme: Master academic studies in forensics			
Course Unit Title: Quality of Analytical Measurement in Forensics			
Course Unit Code: FH-05			
Name of Lecturer(s): Dr. Biljana Abramović, full professor; Dr. Daniela Šojić Merkulov, associate professor, Dr. Borko Matijević, assistant professor			
Type and Level of Studies: Master Academic Degree			
Course Status (compulsory/elective): elective			
Semester (winter/summer): Summer			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: Introduction to students with principles of quality management of analytical laboratories. Acquiring current knowledge related to monitoring the quality of chemical measurements in forensics. Understanding the principles of experimental design and statistical analysis in forensics.			
Learning Outcomes: After the successful completion of this course, the student will be able to: apply the acquired knowledge on modern elements of quality management forensic laboratories in practice; cites the principles of experimental design and statistical analysis; validate the selected analytical method; independently chooses quality methods for determining certain analytes.			
Syllabus: <i>Theory</i> Analytical system (problem, sample, method). Quality assurance in forensic laboratory (good analytical practice, good laboratory practice, good measurement practice, standard work procedures). Sample and sampling. Preparation of samples. Calibration of measuring instruments. Quality control methods. Skills Testing Scheme. Inter-laboratory testing. Choice of analytical method determination. Estimation of measurement uncertainty. Validation of analytical methods. <i>Practice</i> Statistics of repeated measurements. Sampling. Experimental design and optimization. Calibration of instrument. Validation of analytical methods.			
Required Reading: 1. J. N. Miller, J. C. Miller, Statistics and Chemometrics for Analytical Chemistry, 5th Edition, Pearson Education Limited, Edinburgh Gate, Harlow, England, 2005. 2. Mullins, Statistics for the Quality Control Chemistry Laboratory, Royal Society of Chemistry, 2003.			
Weekly Contact Hours: 5	Lectures: 2	Computational exercises: 2	Other forms of teaching: 1
Teaching Methods: Lectures, computational exercises, and consultations.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	20
Seminar(s)	50	oral exam	20