Table 5.2 Course specification

Type and level of studies: Bachelor

Course name: QUALITY MANAGEMENT IN ANALYTICAL LABORATORY

Number of ECTS credits: 6

Requirement: No requirement

Course aim

The course provides students with the necessary theoretical and practical knowledge of the statistical analysis of measurement results and their proper interpretation. Introduction with quality standards and procedures for their implementation in real conditions. Mastering the procedures of validation and verification of analytical methods and their implementation in the analytical laboratory. Getting acquainted with the proper way of keeping documentation on the quality of measurements and the results of the analyzes performed.

Course outcome

Upon successful completion of this course, students will be able to understand the necessity of introducing a quality system in the analytical laboratory as well as the justification for conducting quality analytical measurements. They will be able to practically carry out the validation and verification procedures of the various analytical methods. They will be able to properly report and keep records of the quality of analysis done in their laboratory.

Course content

Theory

Standards and legal regulation of laboratory quality management and analytical measurements. Quality control of analytical measurements, statistical processing of the obtained results and their interpretation. Validation and verification of analytical methods. Procedure of introduction in the analytical laboratory. Inter-laboratory testing and method revalidation.

Practice: Practical classes, OFT, SRW

Crosschecking and evaluation of the quality of analytical measurement done. Validation of one selected analytical method, statistical calculations related to it and writing of the final report. Application of various software solutions for calculations.

Literature

1. D. A. Skoog, D. M. West, F. J. Holler, S.R. Crouch, Fundamentals of analytical chemistry**,** Cengage Learning, 2014.
2. B.W. Wanclawiak, M. Koch, E. Hadjicostas, Quality Assurance in Analytical Chemistry: Training and Teaching, Springer, 2004.
3. Authorized lecture script
4. ISO standards

Number of classes of active teaching: 5 (75)

Lectures:	**Practice:**
3 (45)	Pratice 1 (15), OFT 1 (15)

Teaching methods

Lectures, practical and numerical exercises, consultations.

Assessment of knowledge (maximum of 100 points)

Pre-exam obligations	**Points**	Final exam	**Points**
activity during lecture classes	5	written exam	30
practical teaching	5	oral exam	30
colloquia	30		