

Table 5.2 Course specification

Level: Bachelor
Course title: Chemical analysis of materials
Status: elective
ECTS: 6
Requirements: none
Course aim To provide the students with necessary theoretical and practical knowledge of key aspects of quality control of various materials - To develop the skills for successful performance of selected analyses of various materials - To provide the basis for successful inclusion of graduate students into chemical laboratories of different types
Course outcome On completion the course, students will be able to: define the basic principles of quality assessment and control through application of international and national low regulations, understand the essential meaning of standardization, certification and accreditation; define the principles of quality control of certain materials in a certain branch of industry or production, name and reason the most important methods of analysis in an industry, successfully perform the standard methods of analysis of selected materials, develop skills of using the equipments safely, calculate the results of performed analyses and present them in the graphical and statistical ways.
Course content <i>Theory</i> Selected contents from the fields of international and national low regulations in the domain of quality control (standardization, accreditation, certification, etc.). Principles of the control in the production processes. Principles and methods of sampling. Selected methods of analyses of water, air and gases. Standard methods of quality control of raw materials and products in various industries (pharmaceutical, cosmetics, metallurgical, food, base chemical, polymer, etc.). <i>Practice: Practical classes, OFT, SRW</i> Sampling. Representative analyses of samples of water, air and gases. Analyses of characteristic components of selected acids, bases and salts. Analyses of some characteristic ingredients of pharmaceutical products, soaps, detergents and cosmetics. Selected analyses of foodstuff materials and additives. Selected analyses of polymeric materials.