



MODERN ENVIRONMENTAL ANALYTICS

3 ECTS (ELECTIVE)

AGH University of Science and Technology

Course responsible: dr. Ewa Felis (SUT)

Course overview

The aim of the course is to introduce students to selected modern instrumental methods applied in environmental analysis.

The course consists of lectures and laboratory.

Lecture content: Theory and theoretical problem solving. This is an introductory course to the modern environmental analysis. There are several sections in this part, namely: environmental sample preparation, fundamentals of spectroscopy, separation techniques, Beer-Lambert's law, liquid and gas chromatography, detectors in chromatographic analysis, examples of application of chromatographic methods in environmental science, data analysis.

Laboratory exercises and practical problem solving: laboratory exercises will be performed in groups of several students. By this, students will practice analysis of various environmental samples by means of advanced equipment and measuring apparatus (UV-VIS, IR, HPLC, HPIC). The second part of these exercises consists of practical problem-solving tasks such as interpretation and discussion of obtained results.

Outcome of the course

After this course the student should be able to

- use the theoretical knowledge acquired during the course to solve specific problems in the field of the environmental analytics
- properly collect and prepare environmental samples for further analysis
- correctly interpret the measurement data obtained during analysis by means of sophisticated measuring instruments
- analyze the course of the analytical procedures
- choose the appropriate analytical techniques and calibration methods, depending on the substances and environmental matrix.
- identify and eliminate measurement errors
- perform quantitative and qualitative analyses using discussed measurement equipment.

Course coordinator & teachers

Dr. Ewa Felis, Silesian University of Technology, E-MAIL: