UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Environmental Management and Agriculture

Course title: MOBILE SYSTEMS FOR ENVIRONMENTAL MONITORING

ECTS credit allocation (and other scores): 1.5

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 25

Course coordinator/ Department and e-mail: dr inż. Kazimierz Warmiński, Department of Chemistry, kazimierz.warminski@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: Becoming acquainted with sample equipment used in environmental quality measurement systems, with particular focus on water quality. Types of data recorders working with the equipment. Examining the possibilities of controlling the equipment from the computer - uni- and bidirectional communication (analogue and digital connections). Calibration of the measuring equipment. Operation of mobile measuring systems using the example of a “MobiLab” mobile environmental monitoring laboratory.

LECTURES: Importance of the use of mobile measurement systems in environmental monitoring. Definition and classification of measuring systems. Configuration and structures of measuring systems. Measuring system interfaces, computer buses. Remote transmission of measurement data. System calibration, gauging and adjustment. Trends in measurement technology development. Miniaturization of measurement systems

Learning purpose: Learning the principles and methods used in environmental monitoring measurement systems.

On completion of the study programme the graduate will gain:

Knowledge: The student knows the advantages, disadvantages, operating principles and use of advanced systems for measuring the quality of the environmental elements.

Skills: The student is able to use mobile measurement systems to evaluate the degree of environmental pollution.

Social Competencies: The student is able to identify the condition of the environment based on modern measurement methods.

Basic literature: 1) Warmiński K., Bęś A. 2011. Współczesna analiza instrumentalna w monitoringu jakości powietrza atmosferycznego. Automatyzacja systemów. Rozdział w: Analityka i monitoring środowiska. Teoria i praktyka. Wyd. UWM w Olsztynie.

Supplementary literature: –

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 0.96 ECTS points

Student's independent work: 0.54 ECTS points