



Faculty of Geoengineering

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Course title: WATER TECHNOLOGY

ECTS credit allocation (and other scores): 3.0

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 30

Course coordinator/ Department and e-mail: Dr. Habil. Eng. Magdalena Zielińska, Department of Environmental Biotechnology; magdalena.zielinska@uwm.edu.pl

Type of classes: classes and lectures

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Substantive content

CLASSES: Determination of the effect of the dose and type of coagulant on the removal of colour, turbidity and organic compounds from water. Determination of the effect of filter type and filtration velocity on iron and manganese removal from the groundwater. Determination of the influence of ionite type on the effectiveness of water softening. Determination of the ion-exchange capacity.

LECTURES: Quality of drinking water - pollution indicators. Unit processes in treatment of surface water and groundwater. Coagulation. Filtration. Advanced chemical oxidation. Adsorption. Membrane processes. Technological solutions in groundwater and surface water purification.

Learning purpose: Acquainting with unit processes used in water treatment. Formation of skills in assessment of technological solutions used.

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On completion of the study programme the graduate will gain:

Knowledge: Student can select, based on water properties, unit processes for removing pollutants from liquids and describes the efficiency of unit processes in technological systems.

Skills: Student can experimentally determine the parameters of unit processes used in water treatment; interprets and makes conclusions about the results of the performed experiments.

Social Competencies: Student has an active attitude to the proposed technological solutions and awareness of the existing progress in the technologies used.

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Basic literature: Materials and laboratory protocols provided by a teacher; selected publications from journals: Water Research, Desalination, Water Science and Technology; Desalination and Water Treatment, Journal of Water Process Engineering, and other.

Supplementary literature:

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The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 1.36

Student's independent work: 1.64