
Course title: SEWAGE SLUDGE MANAGEMENT

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: Prof. Dr. Habil. Eng. Irena Wojnowska-Baryła, Department of Environmental Biotechnology, irka@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: Calculation of the amount of sewage sludge generated during municipal wastewater treatment with the use of ATV and EPA methods. Design tasks concerning thickening of sewage sludge, methane fermentation with the energy balance of the process, oxygen stabilization, conditioning and dewatering of sewage sludge.

LECTURES: Generation of sewage sludge in wastewater treatment systems. Principles of operation of devices used for the processing of sewage sludge. Methods of stabilization and hygienization of sewage sludge. Principles of drainage, substances supporting the process. Methods of reducing the amount of sewage sludge. Principles of natural neutralization of sewage sludge. Drying and burning of sewage sludge. Possibilities of phosphorus recovery from sewage sludge, use of ashes and slags from sewage sludge incineration.

Learning purpose: Getting to know the basics of sewage sludge management.

On completion of the study program the graduate will gain:

Knowledge: Has knowledge of sewage sludge management, knows the technological solutions of sludge management.

Skills: Can estimate the quantity and quality of sewage sludge and select technological solutions depending on the management strategy.

Social Competencies: Understands the risks of sewage sludge management.

Basic literature:

- 1) Bishop P. 1995. Municipal Sewage Sludge Management, Processing Disposal, Volum IV. Published October 27, 1995 by CRC Press.

Supplementary literature:

Journals in the field of sewage sludge management

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 1.96

Student's independent work: 1.04