UNIVERSITY
OF WARMIA AND MAZURY
IN OLSZTYN

Faculty of Geoengineering

Course title: MONITORING OF AEROBIC STABILIZATION OF MUNICIPAL SOLID WASTE

ECTS credit allocation (and other scores): 1.0

Semester: spring

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

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 15

Course coordinator/ Department and e-mail: Slawomir Kasinski PhD Eng., Department of Environmental Biotechnology, slawomir.kasinski@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Observation of the municipal waste stabilization process under passive aeration conditions. Preparation of the test stand in semi-technical scale. Getting to know the basic ones physicochemical analyzes related to the biological treatment of municipal waste solids. Determining selected parameters of municipal solid waste stability during their processing in conditions of passive aeration. Evaluation of the level of waste stability based on the obtained results

LECTURES: no lectures

Learning purpose: The aim of the course is to provide basic knowledge in the field of biological waste treatment municipal in aerobic conditions, as well as the development of skills allowing for optimization such systems in technical conditions.

On completion of the study programme the graduate will gain:

Knowledge: The student learns the basic technological aspects of the process of stabilizing waste in conditions aerobic, tendencies of changes in physicochemical parameters during the process, including their dependence on the degree stability of waste. After completing the course, the student should have basic knowledge in the field of optimization the process of stabilizing municipal waste on a technical scale, based on the analysis of basic criteria stability, such as AT4 - four-day respirometric activity or LOI - loss on ignition

Skills: During classes, the student acquires the ability to assess the effectiveness of the technological process based on the biological treatment of municipal waste under aerobic conditions. The student masters the basics of laboratory techniques in the analysis of conditions taking place inside an aerobic stabilization reactor.

Social Competencies: The program of the classes has been prepared to provide students with competences to work in factories processing of municipal and organic waste, having in its technological equipment composting of municipal waste, sewage sludge or green waste. Knowledge acquired Technological also gives the basics from mastering the technology of bio-waste management.

Basic literature: Roger Tim Haug, The Practical Handbook of Compost Engineering, wyd. CRC Press, 1993; Heribert Insam, Nuntavun Riddech, Susanne Klammer, Microbiology of Composting, wyd. Springer, 2002, t. 14; L.F. Diaz, M. de Bertoldi, W. Bidlingmaier, Compost Science and Technology, wyd. Elsevier, 2011;

Supplementary literature: T. V. Ramachandra, Management of Municipal Solid Waste, wyd. TERI Press, 2006

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 0.68

Student's independent work: 0.32