

Title (Oczyszczanie ścieków)	Code 1010702311010710682
Field Environmental Protection Technologies	Year / Semester 1 / 1
Specjalty -	Course core
Hours Lectures: 1 Classes: 1 Laboratory: 2 Projects / seminars: -	Number of credits 5
	Language polish

Lecturer:

dr Małgorzata Osińska
Instytut Chemii i Elektrochemii Technicznej

Faculty:

Faculty of Chemical Technology
ul. Piotrowo 3
60-965 Poznań
tel. (061) 665-2351, fax. (061) 665-2852
e-mail: office_dctf@put.poznan.pl

Status of the course in the study program:

-Obligatory, Sewage Cleaning

Assumptions and objectives of the course:

-The student should obtain knowledge within the scope of sewage and industrial wastes treatment with special attention with respect of toxic substances. He should be acquainted with technological methods used to decontaminate liquid, solid and gaseous wastes and to remediate the polluted environment.

Contents of the course (course description):

-The contamination indicators, limiting factors, standards. The sewage treatment. The waste of high BOD treatment methods. The cyanide and chromium containing waste treatment methods. The heavy-metals removal. The stabilization and solidification of hazardous waste. The measures undertaken to limit the effluents and to prevent the emission of gas and dust. The solid and liquid waste utilization by burning. In the Laboratory exercises the students perform the ammonium and heavy metals ions removal from the liquid wastes, cyanide and chromium(VI) wastes treatment and recovery of metals. Within the Project-exercises they become acquainted with waste treatment technologies and perform the mass-balance calculations for wastes treatment in the metal-surface finishing plant.

Introductory courses and the required pre-knowledge:

-The basic knowledge about chemical technology processes, the produced products, by-products and the kinds of generated wastes and emissions.

Courses form and teaching methods:

-Lectures supported by transparencies. Laboratory exercises. Classes.

Form and terms of complete the course - requirements and assessment methods:

-Current check of the knowledge during the Laboratory exercises and waste treatment Project preparation, written examination.

Basic Bibliography:

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Additional Bibliography:

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