

Title Wastewater Technology	Code 1010101251010130357
Field Environmental Engineering First-cycle Studies	Year / Semester 3 / 5
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: 1 Projects / seminars: 2	Number of credits 6
	Language polish

Lecturer:

Tymoteusz Jaroszyński, Ph.D. Eng.
Institute of Environmental Engineering
60-965 Poznań, street Piotrowo 3A
tel: +48 61 665-2438, fax.: +48 61 665-2439,
e-mail: tymoteusz.jaroszynski@put.poznan.pl

Faculty:

Faculty of Civil and Environmental Engineering
ul. Piotrowo 5
60-965 Poznań
tel. (061) 665-2413, fax. (061) 665-2444
e-mail: office_dceef@put.poznan.pl

Status of the course in the study program:

Wastewater Technology

Assumptions and objectives of the course:

Knowledge of the quantify and quality characteristic of wastewater and sludge. Basic processes for wastewater and sludge treatment and principled of their design

Contents of the course (course description):

Ecology in water and wastewater management. Type and characteristic of wastewater. Flowrates (quantify characteristic). Composition of wastewater (quality characteristic). Loading of contaminants. Unit loads. Population equivalent (p.e.). Regulation effluent for sewer systems and recipient. Efficiency of wastewater treatment plants (WWTP). Wastewater treatment plants ? typical flow diagrams, processes, type of removal contaminants, type of device and objects, efficiency. Mechanical WWTP ? screening, grit removal, grease tank, primary settling tanks. Chemical WWTP. Conventional biological WWTP (trickling filters, activated sludge). Nutrient Removal. Biological processes for BOD removal (organic components) and Nutrient Removal (nitrogen and phosphorus). New wastewater treatment technologies. Advanced wastewater treatment. Type of solids and sludge produce of WWTP. Sludge characteristic. Processes and devices used for treatment and disposal of sludge: thickening, stabilization (anaerobic digestion, aerobic digestion, alkaline stabilization), dewatering. Utilization of wastewater sludge.

Introductory courses and the required pre-knowledge:

Environmental Chemistry, Environmental Biology and Ecology, Water Technology.

Courses form and teaching methods:

Multimedial presentation

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

Written classes, written tests, projects.

Basic Bibliography:

Additional Bibliography:

