

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Waste Management		Code 1010701331010710430
Field of study Environmental Protection Technologies	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 3
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: - Laboratory: - Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 3 100%
Responsible for subject / lecturer: dr inż. Ewa Nowak email: ewa.nowak@put.poznan.pl tel. 61 6652806 Faculty of Chemical Technology ul. Piotrowo 3 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	The student has a basic general knowledge of env. prote.; has a general knowledge about the concept of "waste" as a component of environmental protection.
2	Skills	The student has the ability to acquire the necessary information from the literature database.
3	Social competencies	The student understands the need for further education.
Assumptions and objectives of the course: Familiarizing with the concepts of waste, rules for dealing with them and technologies permitted in Poland for reclamation and disposal.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. The student explains the importance of waste management. - [K_W05,K_W13] 2. The student defines the structure and the organization of waste law in Poland. - [K_W11] 3. The student identifies and characterizes waste's reclamation and disposal methods and technologies. - [K_W02,K_W07,K_W09,K_W10,K_W11,K_W12,K_W13,K_W16]		
Skills:		
1. The student interprets the information obtained, justifies and draws conclusions. - [K_U01] 2. The student searches for, selects and compares the relevant legal acts. - [K_U01] 3. The student creates a documented paper on the given problem using the above-mentioned skills. - [K_U04] 4. The student prepares oral multimedia presentation on a specific issue. - [K_U05] 5. The student takes self-directed learning in the area of waste management. - [K_U06] 6. Calculates and estimates the need for the process of obtaining the relevant licenses in the field of waste management needed for the functioning of a particular company. - [K_U10,K_U14,K_U16,K_U18]		
Social competencies:		
1. The student is willing to organize the learning process individually and in groups. - [K_K04] 2. Awareness of the issues related to waste management. - [K_K02]		

Assessment methods of study outcomes		
Current control during lectures, test.		
Course description		
Legal aspects of waste management; Raw materials and waste in the environment (including the life cycle of the product, utility); Principles and methods of waste management; Processes and plant for the preparation and processing of waste (including the production of alternative fuels); The functioning of the management of waste business (include Organizacje Odzysku); Disposal of problematic waste (eg. maintenance of order and cleanliness in the municipalities; Recycling of end-of-life vehicles; electrical waste and electronic equipment, batteries and accumulators, waste oils).		
Basic bibliography:		
1. Kompleksowe zarządzanie gospodarką odpadami, Praca zbiorowa pod redakcją Tadeusza Marcinkowskiego, Polskie Zrzeszenie Inżynierów i Techników Sanitarnych Oddział Wielkopolski, Poznań 2011		
2. Z. Bukowski, Wybrane zagadnienia zrównoważonego rozwoju w prawie ochrony środowiska, Wyższa Szkoła Biznesu w Pile, Piła 2002		
3. Ustawa o odpadach		
Additional bibliography:		
1. www.odpady.pl		
2. www.mos.gov.pl		
3. www.gios.gov.pl		
Result of average student's workload		
Activity	Time (working hours)	
1. Prepare for the test	10	
2. Preparation for lectures	5	
3. Participation in lectures	30	
4. Participation in consultation	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	50	3
Contact hours	35	2
Practical activities	5	0