

| STUDY MODULE DESCRIPTION FORM | | |
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| Name of the module/subject Waste Management | | Code 1010701331010710430 |
| Field of study Environmental Protection Technologies | Profile of study (general academic, practical) general academic | 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) other | | (university-wide, from another field) university-wide |
| 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 | | |
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| 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 |