STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Ecologistics		**1011101351011142999**
Field of study	Profile of study (general academic, practical)	Year /Semester
Logistics - Full-time studies - First-cycle studies	**(brak)**	**3 / 5**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **15** Classes: **-** Laboratory: **15** Project/seminars: **-**		**3**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
(brak)	**(brak)**	
Education areas and fields of science and art		ECTS distribution (number and %)

Responsible for subject / lecturer:

PhD Eng. Magdalena Graczyk-Kucharska
email: magdalena.graczyk-kucharska@put.poznan.pl
tel. 61 665 34 03
Faculty of Engineering Management
ul. Strzelecka 11 60-965 Poznań

Responsible for subject / lecturer:

PhD Eng. Rafał Mierzwiak
email: rafal.mierzwiak@put.poznan.pl
tel. 61 665 34 05
Faculty of Engineering Management
ul. Strzelecka 11, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Has basic knowledge of environmental protection, logistics and organization and management sciences.
2	**Skills**	Can Interpret and describe: phenomena that affect the company, its logistic processes and environmental protection. Can assess the manner of achieving goals while maintaining good relationships with partners and co-workers.
3	**Social competencies**	Is aware of his/her knowledge of logistics, environmental protection and organization and management sciences and understands and analyses related basic social phenomena.

Assumptions and objectives of the course:

The aim of the course is to familiarize students with the nature, objectives and methods of completing ecologically-oriented logistic processes and systems of pro-ecological management of production processes

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Has a basic knowledge of computer science (information technology), economics and transportation, production management, systems design and ecologistics - [K1A_W10]
2. Knows the basic relationship existing in the logistics and the specific issues (ecologistics) and environmentally friendly supply chain management - [K1A_W14]
3. Can recognize the basic phenomena characteristic of logistics and ecologistics and environmentally friendly production processes management - [K1A_W16]
4. Can make basic relations existing in the logistics, ecologistics and pro-ecological production management - [K1A_W18]
5. Can describe best practices in the management of ekologistykiecologistics and pro-ecological supply chain management - [K1A_W20]
6. Can describe historical view of ecologistics. - [K1A_W13]
7. Can point basic relations in ecologictisc including sustainable development and waste logistic systems. - [K1A_W07]
8. Know basic relations in logistics and its details. - [K1A_W14]
9. Can give a definition for logistic and its specific issues including ecologistics. - [K1A_W15]

Skills:

1. Can search on the basis of literature and other sources and present in orderly way information on the issue falling within the ekologistics and environmentally friendly supply chain management - [K1A_U01]

2. Can present with appropriate means issue falling within the ekologistics relating to environmental protection aand logistics - [K1A_U02]

3. Has the necessary preparation to work in an industrial environment, and know safety rules for the job in safety problems in ekologistics - [K1A_U11]

4. Able to assess in economic terms specific problem, which forms part of ekologistics and environmentally friendly supply chain management - [K1A_U12]

5. Can make a critical analysis of the phenomenon within the ekologistics and environmentally friendly supply chain management - [K1A_U13]

6. Can design using appropriate methods and techniques for building such a system or process that meets the requirements within the general framework within ekologistics and environmentally friendly supply chain management - [K1A_U16]

7. Can choose write methods and tools for looking solutions for defined problem in ekogologistic. - [K1A_U15]

8. Can define project task regarding ecologistic with the use of analytical, simulations or experimental methods and solve logistic problems and its specific issues (stock management, logistic in the area of distribution, production and supplies, ecologistic) and supply chain management. - [K1A_U09]

Social competencies:

1. Is aware of his/her knowledge and skills in the area of environmental protection and logistics, and understands the need for continuous improvement - [K1A_K01]

2. Is aware of the importance of eco-friendly approach in management and daily life in maintaining and developing social and economic bonds at different levels - [K1A_K02]

3. Is prepared to actively participate in groups and organizations undertaking activities related to environmental protection and recycling of waste materials in the economy - [K1A_K03]

4. can correctly identify and resolve the dilemmas associated with the profession of logistics in the ekologistyki - [K1A_K05]

5. Is determined to think and act in entrepreneurial way regarding to projected and implemented solutions in ecologistic. - [K1A_K06]

Assessment methods of study outcomes

Forming assesment

a) the project- discussion on solutions that wants to propose in the project b) a lecture on the basis of answers to questions concerning the material discussed in the previous lecture

summary assessment

- labs a) based on a project and public presentation of the results and discussion about them, b) on the basis of the substantive quality of the written raport

- in a lecture at the written test

Course description

The course covers the following topics:

1) The Framework eco-logistics.

2) Logistics orientation on waste management system.

3) The processes of recycling waste materials in the economy.

4) Ecological balances in logistic systems.

5) Logistics of communal waste disposal.

6) Design of recycling-oriented products.

7) Environment-friendly management systems.

8) Environmental aspects of transport policy of the European Union.

DIDACTIC METHODS

1) Konventional lecture, work with books, talk, problem lecture.

2) Case study, symulation method.

3) Execrcises, laboratories, project.

Basic bibliography:

1. Korzeniowski A., Skrzypek M., Ekologistyka zużytych opakowań, Instytut Logistyki i Magazynowania, Poznań, 1999.

2. Korzeń Z., Ekologistyka, Instytut Logistyki i Magazynowania, Poznań , 2001.

3. Jabłoński J., Zarządzanie środowiskowe jako warunek ekologizacji przedsiębiorstwa. próba modelu teoretycznego, WPP, Poznań, 2001.

4. J. Jabłoński (red.), Technologie zero emisji, Wyd. PP, Poznań, 2011.

5. Jakowski S., Projekt nowelizacji zasad projektowania opakowań transportowych, Centralny Ośrodek Badawczo-Rozwojowy Opakowań, Warszawa , 2003.

6. Kowalski Z., Kulczycka J., Góralczyk M., Ekologiczna ocena cyklu życia procesów wytwórczych, PWN, Warszawa 2007.

7. D. Burchart-Korol, M. Graczyk, K. Witkowski, Life Cycle Perspective for Improving Sustainable Supply Chain Management. Applied Mechanics and Materials .- 2015, Vol. 708, s. 8--12, ISSN: 1662-7482.

8. M. Graczyk. Bilans ekologiczny jako źródło informacji środowiskowej w przedsiębiorstwie. Ekonomia i Środowisko .- 2007, nr 1, s. 53--68, ISSN: 0867-8898.

9. M. . Graczyk, M. Rybaczewska-Błażejowska. Continual improvement as a pillar of environmental management. Management .- 2010, Vol. 14, no 1, s. 297--305, ISSN: 1429-9321.

Additional bibliography:

1. Górski M., Prawo ochrony środowiska, Wolters Kluwer Polska, Warszawa, 2009.

2. Kwaśnicka K., Odpowiedzialność administracyjna w prawie ochrony środowiska, Wolters Kluwer Polska, Warszawa, 2011.

3. Radecki W., Ustawa o odpadach. Komentarz. Wolters Kluwer Polska, Warszawa, 2009. 4. Ochrona środowiska przyrodniczego. Dobrzańska B., Dobrzański G., Kiełczewski D., Wydawnictwo Naukowe PWN, 2008.

4. M. Graczyk, L. Kaźmierczak-Piwko, Społeczna odpowiedzialność biznesu w kontekście realizacji strategii zasobooszczędnej i niskoemisyjnej gospodarki w UE. Humanizacja Pracy .- 2015, nr 4(282), s. 169--182, ISSN: 1643-7446.

Result of average student's workload

Activity	Time (working hours)
1. Lectures	15
2. Labs	15
3. Preparing to pass the exam from lectures	15
4. Preparing to pass the laboratories	20
5. Consultation	10

Student's workload

Source of workload	hours	ECTS
Total workload	75	3
Contact hours	40	1
Practical activities	15	1