SYLLABUS

Name: Environmental management
Name in Polish: Zarządzanie środowiskiem
Name in English: Environmental management

Information on course:

Course offered by department:	Faculty of Organisation and Management
Course for department:	Silesian University of Technology
Study level and form:	Bachelor's degree/ full-time studies
Term:	summer semester 2025/2026
Coordinator of course edition:	Dr inż. Agnieszka Janik

Default type of course examination report:

Credit

Language:

English

Course homepage:

https://platforma.polsl.pl/roz/

ECTS

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Short description:

The aim of the course is the acquisition of the ordered knowledge, skills and competences in the field of basic issues related to the theoretical and practical aspects of environmental management, including economic and organizational aspects as well as strategies, tools and environmental management systems

Description:

Lectures:
(1) Definitions and importance of Environmental Management
(2) The concept of sustainable development
(3) Environmental management instruments. Responsibility of the entrepreneur towards the environment
(4) Methods and tools of identifying and assessing the company's impact on the environment.
(5) Normalization in environmental management
(6) Requirements and guidelines for the implementation of the environmental management system according to ISO 14001
(7) Eco-management and audit scheme (EMAS) and selected environmental voluntary agreements systems operating in Poland.
(8) Environmental reporting and evaluation of environmental performance
(9) Sustainable production. Circular economy model.
(10) Sustainable consumption. Ecolabelling
(11) Environmental protection expenditure accounts.
(12) The value of the natural environment and methods of its valuation.
(13) The system of financing activities in the field of environmental protection.

Practical lessons:
(1) Systematics of the basic definitions and conceptions of environmental protection discussed in Ecology classes.
(2) Environmental management instruments. Responsibility of the entrepreneur towards the environment
(3) Methods of identifying and assessing the company's impact on the environment.
(4) Assessment of the environmental performance of the organization
(5) Circular economy model.
(6) Environmental protection expenditure accounts

Project:
Part 1. Characteristics of the selected company and its production process. Determining the scope of the EMS.
Part 2. Identification of input and output parameters of the selected production process. Determining environmental aspects for selected company.
Part 3. Evaluation of the environmental aspects for selected company. Creating the environmental objectives and plans to achieve them for the selected company.
Part 4. Identification of processes carried out in the enterprise that should be controlled. Identification of emergency situations that may potentially occur in the enterprise and may have a negative impact on human health and life as well as the quality of the environment.
Part 5. Identification of environmental performance indicators.
Part 6. Presentation of the project results.

Number of hours of classes with the direct participation of academic teachers or other persons teaching courses and students:
Contact hours

- Lecture: 30h
- Practical classes: 15h
- Project: 15h

Student's own work

- Preparation for the final test: 10h
- Preparation for practical classes:10h
- Preparation of a PowerPoint presentation showing the results of project tasks: 10h

Total workload: 90

Number of ECTS credits: 3, including:
Number of ECTS credits covered by the study program to be earned as part of the courses taught with the direct participation of academic teachers or other persons teaching courses and students: 2

Bibliography:

(1) Belcham A. (2015) Manual of Enviromental Management. Routledge Taylor & Francis Group, New York
(2) Heras-Saizarbitoria,I. (2018) ISO 9001, ISO 14001 and New Management Standards Measuring Operations Performance. Springer International Publishing AG.
(3) ISO 14001:2015 Environmental management systems — Requirements with guidance for use.
(4) Naeem S., Knhan A.H. (2019) ISO 14001 Step by Step. A practical guide. IT Governance Publishing Ltd.
(5) OECD, Sustainable manufacturing toolkit. Seven steps to environmental excellence www.oecd.org/innovation/green/toolkit
(6) Janik A., Szafraniec M.(2019) Circular economy performance of EMAS organizations in Poland based on an analysis of environmental statements (w:) Hąbek P. (ed.): Multidisciplinary aspects of production engineering. Monograph. Social sciences. t. 2. Sciendo, Warsaw, p. 151-162.
(7) Janik A., Ryszko A. (2019) Circular economy in companies: an analysis of selected indicators from a managerial perspective (w:) Hąbek P. (ed.): Multidisciplinary aspects of production engineering. Monograph. Social sciences. t. 2. Sciendo, Warsaw, p. 138-150.

Learning outcomes:

Knowledge
Student knows and understands:
K1A_W3: The impact of basic engineering processes and technologies occurring n the life cycle of technical equipment, objects and systems on the environment and methods of solving typical engineering tasks in the area of environmental management.
K1A_W5: Basic social, economic and environmental conditions of engineering activities.

Skills
Student is able to:
K1A _U4: Select and use analytical methods when identifying and formulating engineering tasks and solving them, recognize their environmental and social aspects and make a preliminary economic assessment of the proposed solutions and engineering actions taken.
K1A _U5: Critically analyze the functioning of existing technical and technological solutions in production systems in terms of their impact on the environment, evaluate these solutions, diagnose problems, and propose appropriate improvements to improve their impact on the environment.
K1A _U9: Select and use appropriate techniques, skills and modern tools in the area of environmental management.

Social competences
Student is ready for:
K1A_K2 - Fulfilling social obligations, co-organizing activities for the natural and the social environment, initiating activities for the public interest, thinking and acting in an entrepreneurial manner.

Assessment methods and assessment criteria:

Lecture
• Passing the lecture is based on a positive grade achieved in the written test (single choice test and open questions).
• It is possible to get additional points for the activity during the lecture.
• The condition for positive evaluation is receiving more than 50% obtainable points.
• It is possible to improve the written test twice, however, it is done orally.

Practical classes
• All exercises performed in practical classes are assessed.
• Exercises are assessed in terms of formal and content-related aspects.
• Exercises prepared incorrectly can be corrected ones.
• To pass the practical classes, it is required to pass all exercises for at least 2.5 points.

Project classes
• All project parts performed in practical classes are assessed.
• Project parts are assessed in terms of formal and content-related aspects.
• Project parts prepared incorrectly can be corrected ones.
• To pass the project classes, it is required to obtain more than 50% of the possible points.

The final grade is the arithmetic mean value of the grades for the lecture, practical classes and project classes

Practical placement: