

SYLLABUS

Name: Sustainable development and circular economy

Name in Polish: Gospodarka obiegu zamkniętego

Name in English: Sustainable development and circular economy

Information on course:

Course offered by department:	Faculty of Organisation and Management
Course for department:	Silesian University of Technology
Study level and form:	Master's degree, Full-time
Term:	winter semester 2023/2024
Coordinator of course edition:	Prof. dr hab. Grażyna Płaza, dr inż. Adam Ryszko

Default type of course examination report:

Exam/Credit

Language:

English

Course homepage:

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

ECTS

5

Short description:

The aim of the course and its program content are aimed at acquiring structured knowledge, skills and social competences in the concept of sustainable development and the functioning of the circular economy as solutions to selected environmental and social problems of the modern world.

Description:

Detailed program content

Lecture:

The origins and concept of sustainable development on a global, local and enterprise level.

Social, economic and ecological aspects of sustainable development.

Indicators, goals and areas of sustainable development.

International initiatives on sustainable development. Sustainable development strategy of the European Union and Poland.

Sustainable business management.

Sustainable business models. Sustainable value chain.

The concept of circular economy – idea and applications.

The role of the circular economy in sustainable development.

Circular economy in legal regulations and policy of the European Union.

The functioning of the circular economy as a solution to selected environmental problems of the modern world.

Monitoring the circular economy in four areas: production and consumption, waste management, secondary raw materials and competitiveness and innovation.

Exercises

Assessment of selected activities and implementations of sustainable development in Poland and in the world.

Sustainable development management in the enterprise – tools and implementation.

Measures of sustainable development of enterprises.

The paradigm of socially engaged enterprises in shaping sustainable development.

Social entrepreneurship and social economy in sustainable development.

Reporting of non-financial data.

Project

A group project based on exemplary solutions in the field of business management based on the principles of sustainable development, designing a development strategy based on the principles of sustainable development, reporting non-financial data, as well as monitoring the circular economy in four areas: production and consumption, waste management, secondary raw materials and competitiveness and innovation.

Number of hours of classes with direct participation of academic teachers or other people conducting classes

- Lecture: 30 hours

- Exercise: 15 hours

- Project: 30 hours

Student's own work

- Preparation for passing the exam/test: 15 hours.

- Preparation for exercise classes: 15 hours.

- Project preparation: 45 hours

Total number of hours: 150

Number of ECTS credits: 5

including

Number of ECTS credits obtained in classes conducted with the direct participation of academic teachers or other persons conducting classes: 2.5

Bibliography:

Ellen MacArthur Foundation, 2013, Towards the Circular Economy. Economic and Business Rationale for an Accelerated Transition, <https://www.ellenmacarthurfoundation.org>

Lacy P, Long J, Spinder. W. (2020). The Circular Economy Handbook, realizing the circular Advantage. Palgrave Macmillan. London, UK.

Pacheco, P., Min, Z.Y. (2021). E-Handbook on Sustainable Development Goals Indicators. United Nations Statistics Division.

<https://sdghelpdesk.unescap.org/sites/default/files/2019-04/SDGeHandbook-150219.pdf>

Plaža G. (2018) Green production – green industry: Bioeconomy and bio-based products. Politechnika Śląska Publishing house, Gliwice

Sauvé S., Bernard S., Sloan P., 2016, Environmental sciences, sustainable development and circular economy: Alternative concepts for trans-disciplinary research, Environmental Development, vol. 17, 48-56.

United Nations Environment Programme (2009). Design for Sustainability: A Step-by-Step Approach. <https://wedocs.unep.org/20.500.11822/8742>.

United Nations (2023). Core Indicators for Sustainability and SDG Impact Reporting: Training Manual, New York.

https://unctad.org/system/files/official-document/diae2020d2rev1_en.pdf

Janik, A.; Ryszko, A.; Szafraniec, M. (2020). Greenhouse Gases and Circular Economy Issues in Sustainability Reports from the Energy Sector in the European Union. Energies, 13, 5993.

Websites with data and publications on sustainable development and circular economy (Eurostat, OECD).

Learning outcomes:

KNOWLEDGE: knows and understands

K2A_W01: At an in-depth level - selected facts, objects and phenomena, as well as methods, theories and conditions explaining the complex relationships between them, constituting advanced general knowledge in the field of sustainable development and circular economy in the context of engineering and technical sciences and other scientific fields.

K2A_W03: Basic processes taking place in the life cycle of technical devices, facilities and systems.

K2A_W13: Fundamental dilemmas of the contemporary world, especially in relation to the development of technology.

SKILLS: is able to

K2A_U03: When identifying and formulating specifications for engineering tasks and solving them use analytical methods, and see their systemic and non-technical aspects, including ethical issues.

K2A_U04: Make a critical analysis of the functioning of existing technical solutions and evaluate them.

K2A_U08: Integrate and use advanced knowledge related to the field of study of management and production engineering when formulating and solving engineering tasks.

SOCIAL COMPETENCE: is ready for

K2A_K03: Fulfilling social obligations, inspiring and organizing activities for the social environment, initiating activities for the public interest.

Assessment methods and assessment criteria:

Discussion, analysis and interpretation of source texts, conversational lecture, case study

Lecture: multimedia presentation, analysis of examples on theoretical and practical aspects of implementing and monitoring the concept of sustainable development and circular economy - in the form of a discussion.

Exercises: group work, presentations on selected topics related to the concepts of sustainable development and circular economy - examples of implementation

Project: group project on solving a selected problem in the field of sustainable development and circular economy

Passing the course

Lecture: credit based on exam/test, activity during lecture; evaluation criterion: obtaining at least 51% of the exam/test points.

Classes: presentation on a selected topic related to the lecture, activity in classes; obligatory attendance at classes.

Project: development and presentation of a study on solving selected problems concerning sustainable development and circular economy, active participation in classes, obligatory attendance at classes

Practical placement:

Not applicable