

The name of the module: Environmental labelling in circular economy

The position in the studies teaching programme: sem. 1 / L12 / E10 / 2 ECTS

The aim of studying and bibliography

The main aim of study: Education of knowledge and skills related to the application of environmental labelling in conditions of circular economy

The general information about the module: The role of environmental labelling programs is large and growing globally. The open availability of new educational tools and teacher capacity in environmental labelling should increase the awareness of consumers who create a demand for ecolabelled goods and are the major determinant of ecolabels diffusion in the EU. The student who completed the module will be able to identify an environmentally suitable product and understand the essence of environmental labelling in circular economy systems.

Bibliography required to complete the module

Bibliography used during classes/laboratories/others

1. Innovations in circular economy – environmental labels and declarations, B. Ziółkowski, B. Agarski and J. Šebo (Eds.), Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2021
2. Gospodarka o obiegu zamkniętym (EN: Circular economy), D. Wyrwa, M. Hajduk-Stelmachowicz, B. Ziółkowski, M. Jankowska-Mihułowicz (eds.), Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2021
3. Etykiety i deklaracje środowiskowe – aspekty biznesowe i społeczne (EN: Environmental labels and declarations – business and social aspects), M. Jankowska-Mihułowicz, M. Ilić Mićunović, M. Hajduk-Stelmachowicz, B. Agarski (eds.), Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2021
4. Etykiety i deklaracje środowiskowe – aspekty normatywne (EN: Environmental labels and declarations – normative aspects), B. Ziółkowski, M. Jankowska-Mihułowicz, M. Moravec i D. Wyrwa (eds.), Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2021
5. Book of abstracts for Scientific Conference with International Participation CIRCULAR ECONOMY AND ENVIRONMENTAL LABELLING [CEEL 2021], Agarski B., Mićunović M.I., Ziółkowski B., Budak I., (eds), Novi Sad, 29.01.2021, University of Novi Sad, Novi Sad, 2021.
6. ISO 14020:2000, Environmental labels and declarations – General principles.
7. ISO 14021:2016, Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling).
8. ISO 14024:1999, Environmental labels and declarations – Type I environmental labelling Principles and procedures.
9. ISO 14025:2006, Environmental Labels and Declarations – Type III Environmental Declarations – Principles and procedures.
10. ISO 14040:2006, Environmental Management – Life Cycle Assessment – principles and framework.
11. ISO 14044:2006, Environmental Management – Life Cycle Assessment – requirements and guidelines.

Bibliography to self-study

1. M. Niero, et al., Combining eco-efficiency and eco-effectiveness for continuous loop beverage packaging systems: lessons from the Carlsberg circular community, *J. Ind. Ecol.*, 21 (3) (2017), pp. 742-753.
2. Potting J., Hekkert M., Worrell E., Hanemaaijer A., *Circular Economy: Measuring Innovation in the Product Chain - Policy Report*, PBL Netherlands
3. Clune S., Sustainability Literacy for Industrial Designers through Action Research, presented at the International Conference on Engineering and Product Design Education Newcastle Upon Tyne 2007.
4. Lofthouse V., Preparing the way for mainstream sustainable product design, „Form Akademisk - forskningstidsskrift for design og designdidaktikk”, 2017, t.10.
5. Doorley S., Holcomb S., Klebahn P., Segovia K., Utley J., *Design Thinking Bootleg*, d.School at Stanford University, 2018.
6. Babout L., Graul C., Fernandez Iglesias M.J., Utne A., *Good practice in teaching and learning using Design Thinking methodology- a handbook*, DiamondDT consortium, 2017.
7. Vianna M., Vianna Y., Adler I. K., Lucena B., Russo B., *Design thinking: business innovation*, MJV Press, Rio de Janeiro, 2012.

Extra bibliography

1. Materials developed for ECOLABELLING 2020 Conference
<https://ecolabelling.prz.edu.pl/en/results>
2. Documentation regarding the selected ecolabelling schemes

Basic requirements in category knowledge/skills/social competences

Formal requirements: According to the regulations of studies

Basic requirements in category knowledge: Knowledge of the fundamentals of environmental science

Basic requirements in category skills: The skill of analytical thinking

Basic requirements in category social competences: The ability to independently expand knowledge

Module outcomes

Modular Learning Outcomes	The student who completed the module
01.	knows the essence of circular economy
02.	knows the essence of environmental labelling
03.	has knowledge about the conditions for joining the ecolabel scheme and technical documentation required from enterprise
04.	understands the benefits, and the award process and use of the ecolabels
05.	is able to identify an environmentally suitable product and the basic criteria for its identification
06.	is able to find relevant information about the product in order to be able to identify the energy savings of the product and its impact on the environment

The syllabus of the module

Sem.	TK	The content	realized in	Modular Learning Outcomes
1	TK01	The model of circular economy	L01, E01	MEK01 MEK02 MEK03 MEK04 MEK05 MEK06
1	TK02	Environmental labels and declarations. ISO type I and ISO type II environmental labelling. Self-declared environmental claims in the form of statements. ISO type III environmental declarations	L02, L03, E02, E03	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK03	Cradle to Cradle Certified	L04, E04	MEK02 MEK03 MEK04 MEK05 MEK06

1	TK04	ENERGY STAR®	L05, E05	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK05	Environmental Choice	L06, E06	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK06	EU Ecolabel	L07, E07	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK07	Nordic Swan	L08, E08	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK08	Blue Angel	L09	MEK02 MEK03 MEK04
1	TK08	Green Seal, FSC	L10	MEK02 MEK03 MEK04
1	TK10	LEED	L11, E09	MEK02 MEK03 MEK04 MEK05 MEK06
1	TK11	Environmental product declarations based on life cycle assessment	L12, E10	MEK02 MEK03 MEK04 MEK05 MEK06

The student's effort

The type of classes	The work before classes	The participation in classes	The work after classes
Lecture (sem. 1)	The preparation for a test: 10 hours/sem.	contact hours: 12 hours/sem.	complementing/reading through notes: 10 hours/sem.
Class (sem. 1)	The preparation for a Class: 5 The preparation for a test: ... hous/sem.	contact hours: 10 hours/sem.	Others: 5 hours/sem.
Advice (sem. X)	The preparation for Advice:	The participation in Advice:	

The way of giving the component module grades and the final grade

The type of classes	The way of giving the final grade
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Lecture	Passing the final written test.
Class	Passing the prescribed exercises.
The final grade	Based on the grades from lecture and class.