



# Fundamentals in Circular Economy

## General data

Course code:	
ECTS credits:	6
Type of the course:	Elective course (C)
Semester:	Spring Semester 3
Course restrictions:	-
Course leader (with availabilities):	Dr. Péter MERZA, Assistant Professor <a href="mailto:merza.peter@ktk.pte.hu">merza.peter@ktk.pte.hu</a> office: B221
Further lecturer(s) (with availabilities):	-

## 1. Description and aims

The general aim of the course is to improve knowledge about the differences between linear and circular economies and eco-systems, to develop the skills related to circular business model development, to develop sustainability based decision-making. In general, the course focuses on the fundamentals of circular thinking business development based on case studies and the investigation of European and worldwide best practices.

## 2. Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, students should be able to:

- CILO 1. define the basic concepts linear-, recycling- and circular business models, their appearances in business life (PILOs 1, 4);
- CILO 2. understand and know the principles and trends of the European Green Deal and transition, namely the EU's environmental-, climate-, waste-, energy-, transportation policy and their effects on macro- and micro level economic and business planning (PILO1),
- CILO 3. learn and apply the general principles of sustainable development planning and business development (PILO2),
- CILO 4. understand why circular planning, sustainability, climate-neutral economy and zero-waste economic philosophies are the core principles of ethical macro level economic and corporate level business planning (PILO8)),

*(The remarks in brackets express each CILO's connection to the Program Intended Learning Outcomes (PILOs).)*



### 3. Content, schedule

1. Introduction: changes in the concept and components of product value in the 21st century.
2. Industrialization, globalization and post-industrialization. The 4th industrial revolution, the SDG's and their effect on businesses and on economic policy.
3. Definition of the linear, recycling and the circular economy.
4. Principles of circular economy and their implication, the cradle-to-cradle principle.
5. Introduction of the European Green Deal, thematic policies of the EU.
6. European subsidies for the circular transition. Introduction of the ETS system and the future regulations.
7. Circular business models, industrial symbiosis, case studies.
8. Circularity and energy production, case studies.
9. Circularity and transportation, case studies.
10. Circularity and waste, case studies.
11. Presentation of case studies and project work.
12. Presentation of case studies and project work

### 4. Learning and teaching strategy, methodology

*Principal teaching methodologies:*

Interactive and involving lectures delivered and moderated by module leader: Core content of the course is delivered by module leader for establishing the common understanding of circular principles and circular business models and their appearances in business planning and operations. (CILOs 1, 2, 3)

In-class professional discussion: Strongly attached to lecture topics, students are highly encouraged to pose questions, comment and start dialogue with each other and the module leader. Professional dialogue is moderated by the module leader. The professional dialogues are supported by the case studies. (CILOs 1, 2, 3, 4)

In-class presentations: After covering all topics during the semester together in class, students present their solution / project to one specific circular business model or problem. Students are expected to generate a project of professional structure, indicators and methodology, preferably related to their home-country practices, problems. (CILOs 5, 6)

### 5. Assessment

*Formative assessment elements:*

Formative assessment is an integral part of the learning process. During the whole course, students are highly encouraged to take active part in lectures via discussions and they continuously receive feedback from module leaders and from each other. Project proposals are peer reviewed, as well.



Summative assessment elements:

Individual Assessment		60%	Group Assessment		40%	
Name of the element	Weight	Type	Details	Retake opportunity	Req.*	Related CILOs
Closed book final exam	60%	individual written exam	Covers lecture topics, open (essay) questions related to the lectures	Yes	Yes	1, 2, 3, 4
Pair project work and presentations	40%	oral group work coursework	Generating and presenting a problem-solving project based on circular business models / related to a problem / an existing case, preferably related to their home country practices, problems	No	No	5, 6

\* Req.: Completion of the element is required to pass the course, irrespective of the performance in other elements.

## 6. Learning materials

- Essential
  - Lecture presentations delivered by the module leader
  - Circular Economy Action Plan: for a Cleaner and More Competitive Europe (2020) 28 p. European Commission, DG Communication, ISBN: 978-92-76-19070-7
  - UNDP: A 1.5°C World Requires a Circular and Low Carbon Economy  
[https://climatepromise.undp.org/sites/default/files/research\\_report\\_document/unpd-ndcsp-circular-economy-guicance.pdf](https://climatepromise.undp.org/sites/default/files/research_report_document/unpd-ndcsp-circular-economy-guicance.pdf)
  - The European Green Deal: <https://eur-lex.europa.eu/legal-content/HU/TXT/HTML/?uri=CELEX:52019DC0640>
  -
- Recommended
  - UNDP: Building Circularity into Nationally Determined Contributions (NDC's):  
<https://climatepromise.undp.org/research-and-reports/building-circularity-nationally-determined-contributions-ndcs-practical>
  - Next Generation EU funding and the future of Europe:  
<https://www2.deloitte.com/mt/en/pages/about-deloitte/articles/next-generation-eu-the-future-of-europe.html>

## 7. Further information

<b>International</b> aspects embedded with the course
UN and EU legislation framework. Case examples during class. UNDP best practices and examples
<b>Ethics, Responsibility &amp; Sustainability (ERS)</b> aspects embedded with the course
The overall course aims to raise awareness of students to business models and project generating practices reflecting globally accepted sustainability standards of the SDG's.



The whole course is based on the UN SDG'S, strongly related to SDG 7 (Affordable energy), SDG8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure), SDG 11 (sustainable cities and regions), SDG 12 (responsible consumption and production) and SDG 13 (climate action) .

**Connections to the world of practice** of the course

Final projects and proposals of students are solving challenging business problems and opportunities related to the circular transition.

Use of own work experience and introduction of the home country perspective is more than welcomed during the whole course.