

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR 2023/2024 SEMESTER 2

<i>Course title</i>	Introduction to the Circular Economy
<i>Course Code</i>	SZB091AN
<i>Hours/Week: le/pr/lab</i>	2 hr/week
<i>Credits</i>	2
<i>Degree Programme</i>	All
<i>Study Mode</i>	Full time
<i>Requirements</i>	Mid-Term Mark
<i>Teaching Period</i>	2023/2024 2
<i>Prerequisites</i>	None
<i>Department(s)</i>	Department of Civil Engineering
<i>Course Director</i>	Marcus Juby
<i>Teaching Staff</i>	Marcus Juby

COURSE DESCRIPTION

At present, we live in a world where the linear "take-make-dispose" model is dominant. However, with decreasing resources and an increasing population, this model is not sustainable in the long term. To address this, we need to move towards a circular economy, where resources are minimized, used for as long as possible, and designed and manufactured so they can easily re-enter the resource chain. The concepts of the circular economy, which aim to reduce waste and close the loop of resources, are especially important for engineers if we want to leave resources for future generations. This course is useful for all students who are interested in learning about sustainability and the circular economy and how they can incorporate these concepts into their studies and future professional work.

Watch this video for more information about the Circular Economy: <https://youtu.be/zCRKvDyyHmI>

SYLLABUS

1. GOALS AND OBJECTIVES

Objectives:

Students will learn about different challenges and solutions for moving away from a linear economy towards a circular economy. They will learn multiple techniques for incorporating concepts of the circular economy into their lives and future work.

Generic learning outcomes:

The course will focus on:

- Sustainability and how it relates to consumption and disposal of goods.
- Ways that resources can be more wisely used.
- Different ways that businesses can adopt the circular economy.
- A hands-on approach for seeing how products can be made more compatible with the circular economy.
- Different ways that the circular economy can be incorporated into the built environment.

The course is primarily a classroom-based course although there may be the opportunity for a fieldtrip to see examples of the circular economy.

2. COURSE CONTENT

TOPICS

LECTURE

1. The existing linear economy and what is wrong with it
2. Principles of the circular economy
3. Business models
4. Building longer lasting products
5. The right to repair
6. Circular economy in the built environment
7. Urban and regional flows of materials
8. Business models for the circular economy
9. Biomimicry and design inspired by nature

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

week	Date	Topic	Compulsory reading (Unless otherwise noted, all materials will be uploaded to Moodle)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Feb 6 th	Introduction to Sustainability, Limits to Growth, the Linear Economy	Read presentation Introduction to the linear economy, limits to growth, population		
2.	Feb 13 th	Circular Economy	Presentation: Introduction to the butterfly diagram	Quiz 1 Post examples of the circular economy on Wakelet	Feb 20 th
3.	Feb 20 th	Business Models for the Circular Economy	Presentation: Business Models	Quiz 2	
4.	Feb 27 th	Longer Lasting Products	Presentation: Longer Lasting Products		
5.	Mar 5 th	The Right to Repair	Presentation: The right to Repair	Quiz 3	
6.	Mar 12 th	Repair Criteria Assignment	Repair Criteria Assignment	Repair Criteria Assignment	Mar 19 th
7.	Mar 19 th	Fieldtrip to DELKOM Waste Management Plant OR Holcim Cement Plant	Note this fieldtrip is planned only. The exact date is to be advised.	Complete assignment for fieldtrip	Mar 26 th
8.	Mar 26 th	Circular Economy in the Built Environment	Circular Economy in the Built Environment	Post examples of biobased products on Wakelet	Apr 9 th
9.	Apr 2 nd	Spring Break		-	-
10.	Apr 9 th	Lifecycle of a Building and resources	Presentation: Lifecycle of a Building and Resources Design for Deconstruction Guide		
11.	Apr 16 th	Flow of Resources in an Urban Environment	Presentation: Flow of Resources in an Urban Environment		
12.	Apr 23 rd	Biomimicry	Presentation: Biomimicry Taxonomy Explainer	Post examples of Biomimicry to Wakelet Quiz 4	May 7 th
13.	Apr 30 th	Test		Test	Apr 30 th
14.	May 7 th	Final Thoughts on the Circular Economy	Presentation: Final Thoughts		

3. ASSESSMENT AND EVALUATION

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description or does not participate effectively in groupwork.

Method for monitoring attendance

Register and in class quizzes

ASSESSMENT

Course resulting in mid-term grade (PTE TVSz 40§(3))

Mid-term assessments, performance evaluation and their ratio in the final grade.

Type	Assessment	Ratio in the final grade
<i>Class attendance, quizzes and submission of homework</i>	<i>100 points</i>	<i>20 %</i>
<i>Fieldtrip attendance and assignment</i>	<i>20 points</i>	<i>5%</i>
<i>Repairability Practical Session and Assignment</i>	<i>40 points</i>	<i>25%</i>
<i>Test</i>	<i>40 points</i>	<i>50%</i>
<i>Total</i>		<i>100%</i>

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

There will be the chance to resit the test in week 15/16. Contact the teacher **before the deadline for submission** if you would like to request an extension for late submission of assignments.

Grade calculation as a percentage

based on the aggregate performance according to the following table

Course grade	Performance in %
excellent (5)	85 % ...
good (4)	70 % ... 85 %
satisfactory (3)	55 % ... 70 %
pass (2)	40 % ... 55 %
fail (1)	below 40 %

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

COMPULSORY READING AND AVAILABILITY

[1.] Unless otherwise notified all course materials will be uploaded to MS-Teams

RECOMMENDED LITERATURE AND AVAILABILITY

[2.] Circle Economy. (2022). The Circularity Gap Report 2022 (pp. 1-64, Rep.). Amsterdam: Circle Economy

[3.] Ellen MacArthur Foundation. (n.d.). Homepage. Retrieved from <https://ellenmacarthurfoundation.org/>

[4.] T. Boake (n.d.). "Design for Deconstruction and Material Reuse in Seattle." Retrieved from https://www.tboake.com/sustain_casestudies/DfDseattle.pdf

[5.] McDonough, W., & Braungart, M. (2002). Cradle to cradle: Remaking the way we make things. New York: North Point Press.