SUBJECT INFORMATION SHEET

University: University of Ss. Cyril and Methodius in Trnava / University of the Peloponnese	
Faculty/institute:	
Subject code:	**Subject name:** Introduction to Circular Economy
Type, scope, and method of educational activities: **Subject type (C, CO, O):** **Recommended scope of teaching (in hours):** **Study method:** **Study form:**	
Number of credits: 5 ECTS	
Recommended semester/trimester of study: 5	
Level of study: Bachelor	
Prerequisite subjects: -	
Conditions for completing the subject: To successfully complete the "Introduction to Circular Economy" course, students must fulfill the following requirements: **Active Participation** – Students are expected to engage in class discussions, group activities, and interactive sessions. Attendance of at least 75% of classes is required. **Completion of Assignments** – Students must submit all required assignments (one per week) including research reports, case studies, and reflection papers, demonstrating their understanding of key circular economy concepts. **Group Project & Presentation** – Students will collaborate in teams to develop a circular economy solution for a real-world challenge and present their findings to the class.	
Educational outcomes: Upon successful completion of the course, students will: 1. **Understand Circular Economy Main Principles** – Demonstrate knowledge of the fundamental principles, concepts, and frameworks of the circular economy, distinguishing it from the traditional linear economy. 2. **Analyze Global and Local Environmental Challenges** – Evaluate environmental, economic, and social challenges that necessitate a transition to a circular economy. 3. **Interpret Policies and Regulations** – Gain awareness of key global and regional policies, such as the EU Circular Economy Action Plan and related regulations promoting sustainability. 4. **Apply Circular Strategies** – Develop skills to implement waste management, resource efficiency, sustainable manufacturing, and circular business models in various sectors. 5. **Promote Sustainable Practices** – Understand and advocate for sustainable consumption and production patterns, including energy conservation, responsible water use, and eco-friendly transportation. 6. **Develop Critical Thinking and Problem-Solving Skills** – Work on case studies, group projects, and practical exercises to identify circular solutions and innovative business opportunities.	

7. **Prepare for Future Careers and Sustainable Living** – Gain practical skills applicable to careers in sustainability, environmental management, policymaking, and circular business development while fostering a personal commitment to sustainability.

Brief content of the subject:

12 weeks/classes

1 Introduction to the Circular Economy

Topics covered:

The Circular Economy as a concept

- Definition of the Circular Economy
- Principles of the Circular Economy

History of the Circular Economy

- Origin and Evolution of Circular Economy
- Key Milestones and Personalities
- Development of Legislation and International Initiatives

Global challenges and need to move towards Circular economy

- Pros and Cons / Opportunities and Challenges of the Circular Economy
- Ecological, Economic, Socia-political, Individual, etc.

The 5 R's hierarchy

- Reduce, Reuse, Recycle, Repair, Reject

2 Approaches to Circular Economy Concepts

Topics covered:

Circular Economy vs. Linear Economy

- What are the main differences?

Main concepts and models of the Circular Economy

- How does it work?

Main areas related to the Circular Economy

- What areas of our lives does the circular economy cover?

3 Policies and regulations/EU 2050 agenda

Topics covered:

What is the Role of EU institutions in circular economy

- EP, EC, European Council, Council of EU, General directorates,
- Member states

What is the Role of governments and international organizations in supporting the circular economy

- cooperation with third country governments
- cooperation with organizations (the nature of cooperation, agreements, areas of cooperation)

Key policies and regulations EU

- EU Circular Economy Action Plan,
- China's Circular Economy Promotion Law,
- European Green Deal,
- First circular economy action plan

- Incentives, taxes, and standards for circular practices.

4 Waste Management and Recycling

Topics covered:

Introduction to waste management

- Definition of Waste (Today's reality - Plastic pollution, Illegal Waste Disposal, Dumping, Food waste, Recycling rates in EU and World)
- Explanation of what waste is, categories of waste
    - Household
    - Industrial
    - Bio-waste
    - Hazardous
- Types of recyclable waste (Plastics, Metals, Glass, Paper,Organic Materials)
- Importance of Waste management
    - proper ways of waste management - reason environmental protection and public health
- Reason why to think about the waste management as a crucial part of society (Waste volume, Climate change, Resources deprivation)
- Principles of waste management (Waste minimization - Reduce, Reuse, Recycle - Upcycle
    - Recycling Centers and Facilities - processed materials into new products

Management system

- Collection (Household - Most important for us, Commercial,Industrial)
- Sorting (Explanation of bins , What can be recycled, what cannot
- Final disposal (Landfills and their possible minimization . composting)
- Innovations in Waste management
- Best practices mentioned (Zero- waste, Composting, Upcycling, Workshops and seminars how to become more aware in this topic)
- Circular economy - its place in this topic
- New Materials (F.ex. Biodegradable materials)

Suggested activity:

Community garden

- Teach students how to start community garden
- seeds indoors and transition
- Design the layout of the garden
- Education about the importance of composting and enriching the soil
- Garden Maintenance
- Environmental Awareness

Up-cycling activities

- Creative workshop on production from old into new items

5 Energy Management and Efficiency + Water consumption reduce

Topics covered:

Energy Consumption Reduction Strategies and Integration of Renewable Energy Sources

renewable energy sources,

- intelligent energy management systems,
- waste energy utilization
- Case Studies of Energy-Efficient Projects

Sustainable Manufacturing and Industry

- correct setting of processes in companies,
- optimization of production processes,
- efforts to reduce energy consumption,
- optimization of the production process in an effort to reduce water consumption
- benefits energy management

Key areas for reducing water consumption

- Direct vs. indirect water
- Efficient equipment and technologies,
- rainwater harvesting and recycling,
- Smart irrigation systems,
- Wastewater utilization,
- Education and awareness raising

How to reduce your water footprint and Benefits of reducing water consumption

Suggested activity: Group discussion about energy management and possibilities for its improvement in the region where the students live ; discussion of what are the possibilities for saving water in the country in which the students live (examples of how they save water at home)

6 Transportation

Topics covered:

Impact of Transportation on the Environment - Worst Emitters by Sector

Transportation is a significant contributor to global greenhouse gas emissions, accounting for around 24% of total CO2 emissions. The breakdown by sector is as follows:

- Road Transport: The largest emitter, contributing 75% of transport emissions, with passenger vehicles (cars and buses) accounting for 45.1% and freight trucks 29.4%.
- Aviation: Accounts for 11.6% of transport emissions.
- Maritime: Contributes 10.6% of transport emissions.
- Rail and Other Transport: These modes emit very little, with rail travel contributing only 1% of transport emissions.

Transport Sustainability in the Context of European Legislation

The European Union has implemented several policies to promote sustainable transport:

- Fit for 55: Aims to reduce greenhouse gas emissions by 55% by 2030 compared to 1990 levels.
- European Green Deal: Seeks a 90% reduction in transport emissions by 2050. This includes boosting the uptake of clean vehicles and alternative fuels, and improving multimodal transport systems3.
- Single European Sky: An initiative to reduce aviation emissions by optimizing flight paths and reducing flight times.

Green(er) Means of Transport

Sustainable transport options include:

- Walking and Cycling: These are the most environmentally friendly options for short to medium distances. They reduce traffic congestion, emissions, and improve public health4.
- Public Transport: Buses, trains, and metros are low-carbon alternatives for longer distances. They are crucial for reducing individual car use and emissions4.
- Carpooling: Sharing rides reduces the number of vehicles on the road, leading to lower emissions and traffic congestion.

Going Electric - Lowering Local Carbon Emissions

Electrified vehicles are a key solution for reducing local carbon emissions:

- Electric Bikes and Scooters: Ideal for short urban trips, they emit no tailpipe emissions.
- Electric Cars: Produce lower emissions compared to traditional gasoline or diesel cars, especially when powered by renewable energy sources.
- Charging Infrastructure: Expanding the network of public charging stations is essential for supporting the adoption of electric vehicles.

Suggested activity:

Transportation Footprint Challenge

Objective:

Encourage students to explore the environmental impact of different modes of transportation.

Instructions:

1. Each student selects one mode of transportation they use frequently.
2. Research the carbon footprint of that transportation mode.
3. Present findings and propose alternatives to reduce the carbon footprint.
4. Create a class chart comparing different transportation modes and their environmental impacts.

Sustainable Transportation Pledge

Objective:

Motivate students to commit to more sustainable transportation habits.

Instructions:

1. Discuss various sustainable transportation options (e.g., walking, biking, public transport).
2. Each student writes a personal pledge outlining specific actions they will take to reduce their carbon footprint.
3. Students share their pledges with the class and display them on a bulletin board.
4. Check-in periodically to discuss progress and challenges.

Ride-Share Route Planning

Objective:

Teach students the benefits of ride-sharing and how to plan efficient routes.

Instructions:

1. Divide students into small groups and assign each group a mock scenario (e.g., planning a route for a group of friends to a concert).
2. Each group uses maps and schedules to plan the most efficient ride-share route, considering factors like time, cost, and environmental impact.

3. Groups present their plans and discuss the benefits and challenges of ride-sharing.

7 Food & Water consumption

Topics covered:

- water reuse and recycling of irrigation water
- recycling shower water
- precision and circular agriculture
- biofertilizer and bioenergy
- composting - reusing and recycling nutrients for agricultural productivity
    - composting case studies
- biodegradable waste
- urban gardening and urban agriculture
- green roofs as a circular economy innovation

Suggested activity: planning and designing students own community garden

8 Fashion

Topics covered:

Introducion (Principles and practices of sustainable fashion, impact of fashion and fashion industry in society)

Fashion vs. Sustainable fashion (history, definitions, Key principles)

Ethical Issues in fashion (Labour, transparency, Working conditions)

Environmental impact of fashion in society (chemicals, pollution, water and energy consumption)

Sustainable fashion today (Sustainable materials - Natural vs. Synthetic, Labour transparency, brand - how to spot them)

Circular Fashion (Second-hands, Swaps, Upcycling)

Sustainable choices (consumer behaviour - green washing, ethical branding, Sustainable fashion brand)

Initiatives (Fashion industry for sustainable initiatives)

Future of sustainable fashion

Suggested activity:

- Designing a sustainable fashion business model (economic field)
- Guest lectures (professional, activists, brand owners)
- Case studies (practices of fashion brands)
- Workshops (up-cycling, swaps)

9 Housing

Topics covered:

Impact of Housing on the Environment

Where to live: City vs. Countryside

Living in the city and the countryside both have ecological benefits and drawbacks:

- Cities: Higher population density can lead to more efficient use of resources and energy. The concept of 15-minute cities aims to create neighborhoods where everything

residents need is within a 15-minute walk or bike ride, reducing the need for cars and lowering emissions.
- Countryside: Generally has cleaner air and more green spaces, but residents often rely more on cars, leading to higher per capita emissions. Sustainable practices such as local farming and renewable energy use can mitigate this.

Cooking, Heating, and Cooling Indoors

Energy consumption in homes, particularly for cooking, heating, and cooling, significantly impacts the environment:

- Cooking: Use energy-efficient appliances, such as induction cooktops and pressure cookers. Opt for electric appliances powered by renewable energy sources if possible.
- Heating: Install efficient heating systems like heat pumps, use programmable thermostats, and ensure good home insulation to reduce heat loss.
- Cooling: Utilize natural ventilation, ceiling fans, and energy-efficient air conditioners. Plant trees or install green roofs to naturally cool the house.
- Water Conservation: Install low-flow faucets, showerheads, and toilets. Use rainwater harvesting systems and greywater recycling to reduce water usage.
- Energy independence: Install solar panels to harness renewable energy from the sun. This reduces dependence on non-renewable energy sources and lowers the household's carbon footprint.

Passive Houses, Off-Grid Solutions

Passive houses and off-grid living offer sustainable and eco-friendly living options:

- Passive Houses: Designed to maintain comfortable temperatures year-round with minimal energy use. Features include high insulation, airtight construction, and energy-efficient windows.
- Off-Grid Solutions: Independent from municipal utilities, off-grid homes use renewable energy sources like solar panels and wind turbines, and sustainable water and waste management systems. Benefits include reduced environmental impact and increased self-sufficiency.

Smart Home Technologies

Smart homes use advanced technology to automate and control household systems, making homes more efficient, convenient, and eco-friendly. These systems can include lighting, heating, cooling, security, and appliances, all interconnected and controllable via smartphones or voice assistants.

- Smart Thermostats: Devices like the Nest or Ecobee learn your schedule and adjust temperatures accordingly, optimizing heating and cooling to reduce energy use without sacrificing comfort.
- Smart Lighting: LED smart bulbs and lighting systems can be controlled remotely and set to turn off when not needed, saving energy and extending the life of bulbs.
- Energy Monitoring: Devices that monitor household energy consumption in real-time can identify high-energy usage areas and suggest improvements.

Suggested activity:

Light Patrol

Have students note down the types of light bulbs they find (e.g., incandescent, CFL, LED). If possible, ask them to check the wattage of each bulb (usually printed on the bulb or the packaging). Calculate Energy Consumption. Provide a simple formula to calculate energy consumption.

	Energy	Energy
Step 1: Capacity	 60W (0.06kW) incandescent bulb	 5W (0.005kW) LED bulb
Step 2: Time	Let's operate the light bulb for 2,000 hours	Let's operate the light bulb for 2,000 hours.
Step 3: Consumption	0.06 kW x 2,000 hrs = **120 kWh consumed**	0.005 kW X 2,000 hrs = **10 kWh consumed**

Ask students to estimate how many hours each light is used per day and calculate the daily energy consumption for each type of bulb. Discuss which types of bulbs use the most energy and which are the most efficient. Talk about the benefits of switching to energy-efficient bulbs like LEDs.

10 Community activities

Topics covered:

Municipality-led circular economy case studies

Circular economy in cities and regions

repairing broken household items, repurposing household items and library of tools

Repair Café Network (people can repair damaged items in a café, with tools and expert volunteers on hand to help)

ColdHubs: solar-powered and cooling as a services solutions

Product as a Service Model: Printing as a Service; Cooling as a Service; Lightning as a Service; Equipment as a Service; Trucs as a Service

Lockers for renting sport equipment for free

Library for borrow books free of charge, returning or exchanging for others

Re-Use Centers & Charity Re-Use Center

Suggested activity: presentations of community activities from students local community and neighborhood

11 Digital/Electronic/Technology Innovations

Topics covered:

What is the role of digital technology: Internet of Things, Blockchain technology, Artificial Intelligence for Circular Economy and how it could be utilized?

- digital technologies as drivers of circularity
- smart solutions for monitoring the lifecycle of products and materials
- transparency, traceability and digital security of supply chains

- AI tools to provide data-driven insights, automatization and optimization of resources, materials and energy circularity

The challenges of circular manufacturing and Industry 4.0

- products with minimal waste (recycled and biodegradable materials)
- refurbishment, materials recovery from damaged products

Digital platforms enabling sharing and product-as-a-service models (PaaS)

- what is the role of collaborative consumption and resource sharing (such as Airbnb or car sharing services)?
- the benefits of leasing products instead of selling

Suggested activity:
Brainstorm how AI could optimize a circular process – students can design a digital platform to solve a specific circular economy challenge.

12 Future of circular economy
Topics covered:
Circular economy as a system of the future:

- Perspective scenario: the future belongs to circular economy: circular concepts become mainstream driven and emphasized by governments, businesses and customers
- outcomes: widespread use of renewable materials; decreased reliance on virgin raw resources; reduction in global waste and carbon footprints; investments in the transition to circular economy; regulations to promote circular models; climate awareness.

Technological advance to Circular Economy:

- Perspective scenario: digital innovations (Blockchain, IoT, AI) accelerate the benefits of circular economy
- outcomes: resource and energy efficiency, PaaS models, improved recycling rates and precise material identification, metrics to measure circularity, new business models.

Localization and Community building

- Perspective scenario: local economies, businesses and reuse centers contribute to reduce dependency on global supply management and focus on community-led recycling, sharing initiatives, local repair and refurbishing industries.
- outcomes: resilience against global disruptions (such as energy crises, pandemics, geopolitical crises)

Going circular

- towards a more sustainable environment and economic system that eliminates waste and preserves resources
- collective actions, knowledge management, policy frameworks, innovative solutions and proactive global policy-making

Suggested activity:
Circular Economy Hackathon/Ideathon - students work in teams to develop creative and innovative solutions for specific challenges of circular economy, its sustainability and present a final project to their peers and teachers.

Recommended literature:
Week 1

Ellen Macarthur Foundation. (2024). Available at: https://www.ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview#:~:text=The%20circular%20economy,of%20finite%20resources.
European Parliament. (2016). Closing the loop. New circular economy package. Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS_BRI%282016%29573899_EN.pdf.
European Parliament. (2023). Circular economy: definition, importance and benefits. Available at: https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits.
Tambovceva, T. and Titko, J. (2020). Introduction to Circular Economy. Eka University of Applied Science. Available at: https://www.augstskola.lv/upload/book_Introduction_to_Circular_Economy_2020.pdf.
Suggested activity: Find a concrete example of a circular economy in the participant's area. Then describe how it works.

Week 2
Stahel, W.R. (2019). The Circular Economy. A User's Guide. London, New York: Routledge.
Tambovceva, T. and Titko, J. (2020). Introduction to Circular Economy. Eka University of Applied Science. Available at: https://www.augstskola.lv/upload/book_Introduction_to_Circular_Economy_2020.pdf.
Suggested activity: Propose a transformation from a linear economy to a circular economy in a selected area in your neighbourhood.

Week 3
European Commission's "A New Circular Economy Action Plan."
Baert, P. 2024. Shaping choices: Behavioural taxation in the EU. In European Parliamentary Research Services. Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/762466/EPRS_BRI(2024)762466_EN.pdf
Circular Economy: definition, importance and benefits, 2023. In europarl.europa.eu. Available at: https://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits
Prasad, M. N. V., Marzena, S. Sustainable and Circular Management of Resources and Waste towards a Green Deal. Amsterdam, Netherlands: Elsevier, 2023. Available at: https://consilium-eureka.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma991858560904371&context=L&vid=32CEU_INST:32CEU_VU1&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&tab=Everything&query=any,contains,green%20deal&facet=searchcreationdate,include,2023%7C,%7C2023&offset=0
European Council, 2024. A European Green Deal: Books. Available at: https://consilium-europa.libguides.com/c.php?g=694936&p=4987959
Suggested activity: Draft a policy proposal promoting CE in a selected sector.

Week 4
Waste: Uncovering the Global Food Scandal - Tristram Stuart
https://www.goodreads.com/book/show/6594137-waste
Journal - Waste management
- https://www.sciencedirect.com/journal/waste-management
Eurostat - Waste management indicators
Waste management indicators - Statistics Explained

Week 5

Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (recast) (Text with EEA relevance). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOL_2023_231_R_0001&qid=1695186598766
Energy policy: general principles. 2024. Available at: https://www.europarl.europa.eu/factsheets/en/sheet/68/energeticka-politika-vseobecne-zasady
COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS REPowerEU Plan. 2022. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022DC0230
M.E. Tomala, 2024. Management in the Renewable Energy sector in the European Union Countries. In Politeja, 21(2(88/2)):273-288. DOI 10.12797/Politeja.20.2024.88.2.18
Wolfram, H. 2019. Energy Policy in Europe: Internal Dimensions and External Perspectives.Baden-Baden: Tectum Verlag, 2019. Available at: https://consilium-eureka.primo.exlibrisgroup.com/discovery/fulldisplay?vid=32CEU_INST:32CEU_VU1&tab=Everything&offset=0&docid=alma991701539204371&query=any,contains,Energy%20Policy%20in%20Europe%20:%20Internal%20Dimensions%20and%20External%20Perspectives&context=L&adaptor=Local%20Search%20Engine&lang=en

Week 6

https://transport.ec.europa.eu/transport-modes_en
https://www.consilium.europa.eu/sk/press/press-releases/2023/03/28/fit-for-55-council-adopts-regulation-on-co2-emissions-for-new-cars-and-vans/
https://www.consilium.europa.eu/sk/press/press-releases/2023/10/09/refueleu-aviation-initiative-council-adopts-new-law-to-decarbonise-the-aviation-sector/
https://www.consilium.europa.eu/sk/press/press-releases/2023/07/25/fueleu-maritime-initiative-council-adopts-new-law-to-decarbonise-the-maritime-sector/
https://www.green.earth/blog/green-commuting-the-environmental-benefits-of-carpooling-and-alternative-modes-of-transportation
https://eponline.com/articles/2023/01/13/environmental-impact-of-bikes-and-e-bikes.aspx

Week 7

European Comission. Waste, Recycling and Biodegradable waste. Biodegradable waste - European Commission
Food and Agriculture Organization of the United Nations. The benefits of composting, reusing and recycling nutrients. The benefits of composting | Land & Water | Food and Agriculture Organization of the United Nations | Land & Water | Food and Agriculture Organization of the United Nations
World Economic Forum. Urban Gardening & Circular Economy. Urban Gardening & Circular Economy | World Economic Forum
Green Roofs. Green Roofs: A Circular Economy Innovation Hub - Greenroofs.com
World Economic Forum. Recycling shower water. 5 ways households can join the circular economy | World Economic Forum

Week 8

Fashionopolis, The Price of Fast Fashion & the Future of Clothes - Dana Thomas
https://www.martinus.sk/1191545-fashionopolis/1136073?utm_source=google&utm_medium=cpc&utm_campaign=SK-Martinus-D-PLA-KVR-

tROAS&utm_content=&utm_term=&utm_id=20824382044&gad_source=1&gclid=Cj0KCQiAu8W6BhC-ARIsACEQoDC5LLIDPSb-yef84HpKrzHN3IzwBubuI539kxYL0piPHaGHJ2mrVeUaAqm9EALw_wcB
The Conscious Closet: The Revolutionary Guide to Looking Good While Doing Good - Elizabeth L. Cline
https://www.goodreads.com/book/show/43586638-the-conscious-closet
Sustainable Fashion - Take Action - Bundle Book + Studio Access Card
https://www.bloomsbury.com/us/sustainable-fashion-9781501385711/

Week 9
Off Grid Homes: Revolutionizing Sustainable Living
The Comprehensive Guide to Off-Grid Houses
Affordable Sustainable Housing in the EU
WHAT MAKES A WALKABLE CITY
Saving energy at home
The Pros and Cons of Living in the City vs. the Country

Week 10
Circular Economy Stakeholder Platform. Municipality-led circular economy case studies. Municipality-led circular economy case studies | European Circular Economy Stakeholder Platform
C40Cities. C40 Cities - A global network of mayors taking urgent climate action
OECD. Circular economy in cities and regions. Circular economy in cities and regions | OECD
World Economic Forum. 5 ways to join the circular economy and make your home more sustainable 5 ways households can join the circular economy | World Economic Forum
World Economic Forum. Circular economy in action. 9 examples. 9 circular economy examples that are accelerating transition | World Economic Forum
5 Product as a Service Examples: 5 Product-As-A-Service Examples & Companies Using The Model
Trnavské rádio. V kraji pribudli pri športoviskách záhadné skrinky, už vieme, na čo slúžia | Trnavské rádio
KOLO - Bratislavé centrum opätovného použitia. KOLO - Bratislavské centrum opätovného použitia – OLO
Baterkáreň. O nás – Baterkáreň Trnava

Week 11
World Economic Forum White Paper (2019). Harnessing the Fourth Industrial Revolution for the Circular Economy. Available at: https://www3.weforum.org/docs/WEF_Harnessing_4IR_Circular_Economy_report_2018.pdf
World Economic Forum (2022). How digitalization can help build a circular economy ecosystem. Available at: https://www.weforum.org/stories/2022/08/why-a-global-circular-economy-requires-a-digital-business-ecosystem/
Chauhan, Ch., Parida, V., Dhir, A. (2022). Linking circular economy and digitalisation technologies: A systematic literature review of past achievements and future promises. Technological Forecasting and Social Change, vol. 177.

Week 12
https://www.circle-economy.com/
European Circular Economy Stakeholder Platform. Available at: https://circulareconomy.europa.eu/platform/en

Circular Economy: Thought leadership, solutions and analysis on the world's biggest challenges. Available at: https://www.weforum.org/stories/circular-economy-55da24b1ff/					
Language, knowledge of which is necessary to complete the subject: Slovak, Greek, English					
Subject evaluation					
A	B	C	D	E	FX
0,00	0,00	0,00	0,00	0,00	0,00
Notes: - student time load: X hours, of which: Presence / Combined study (L, S, T): 12 * 3 hours self-study: 10 * 12 weeks other: 2 * 12 weeks (suggested activities)					
Teacher: lectures/consultations/seminars: language of lectures: Slovak, Greek, English					
Date of last change: March 2025					
Approved:					