



COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Technology		
ACADEMIC UNIT	Department of Environmental Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	AY604	SEMESTER	6th
COURSE TITLE	CIRCULAR ECONOMY and SUSTAINABLE DEVELOPMENT		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS		CREDITS
Teaching Hours		4	5
COURSE TYPE	General background		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/ENV_U_124/		

(2) LEARNING OUTCOMES

Learning outcomes
<p>Circular economy is a production and consumption model that aims to increase the efficiency of raw materials by using materials for a longer period while minimizing the use of natural resources. This is in stark contrast to the commonly applied linear economic model, since the last stage in the "production-consumption-disposal" chain is replaced by "reuse". Contrary to popular belief, circular economy is not a new way of recycling waste. It is a completely different approach, a radical change in thinking and behaving. The transition to a circular economy is a systemic change. Circular economy covers the need to correct the current principles of sustainable development, which tends to focus on ecological efficiency and minimization of environmental damage, failing to address the potentiality of long-term sustainability and overlooking the fact that damage is simply minimized or negative outcomes are delayed, rather than eliminating the root causes of unsustainability.</p> <p>Upon successful completion of the course, students will have acquired the necessary knowledge, skills and competence, and will be able to:</p> <ul style="list-style-type: none">• Understand the basic concepts of circular economy developed in the course, as well as the principles on which its application is based.• Apply the knowledge acquired in the course to solve technical problems, taking into account that the environment cannot be considered an unlimited pool of resources nor a recipient of pollution.• Design solutions that prevent the creation of waste rather than produce and subsequently treat waste.• Utilize eco-innovative technical solutions to transform waste deriving from production processes into useful secondary resources.• Judge the feasibility of balancing social, economic and environmental goals, in the short, medium and long term, given that equality and human well-being are difficult to achieve.• Describe the legal and institutional framework that governs the implementation of circular economy policies in Greece and the EU.• Emphasize the differences in the implementation of circular economy policies in large, industrialized countries (USA, China, etc.) in relation to the EU.
General Competences
<ul style="list-style-type: none">• Adapting to new situations• Working in an interdisciplinary environment• Production of new research ideas• Respect for the natural environment• Criticism and self-criticism• Production of free, creative and inductive thinking

(3) SYLLABUS

<ul style="list-style-type: none"> • Introduction – Definitions. • Origin of the circular economy. • Principles and application of the circular economy worldwide. • Circular economy: A new business development model. • Sustainability in the linear and circular economy. • Transition to circularity. • Circular economy on a small scale. • Circular economy and consumption. Consumer responsibility and green public procurement. • Circular economy and waste management. Resource recovery and environmental impact minimization. • Circular economy on a medium and large scale. • Ecological cities (Eco-cities). • Collaborative consumption models. • Decoupling economic development from environmental impacts.
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(4) TEACHING and LEARNING METHODS – EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • Use of PowerPoint slides • View material in video • Visiting and using material from websites • Communication with students via e-mail • Use of asynchronous distance learning (e-class) 	
TEACHING METHODS	Activity	Semester workload
	Lectures	52
	Study and analysis of bibliography	48
	Essay writing	25
	Course total (25 hours workload per credit)	125
STUDENT PERFORMANCE EVALUATION	<p>Students' performance is evaluated in the Greek language. The final grade is determined by:</p> <ul style="list-style-type: none"> • A written examination (at the end of the semester) that contributes 70% to the final grade, applying one or more of the following evaluation methods: Multiple choice questions, short-answer questions, problem solving. • The elaboration of an individual written assignment (in the 2nd half of the semester) that contributes 30% to the final grade. The assignment may be presented by the student in class. <p>Final Grade = 70% Exam Grade + 30% Assignment Grade</p>	

(5) ATTACHED BIBLIOGRAPHY

<ul style="list-style-type: none"> • Jackson, T. (2016) <i>Prosperity without Growth: foundations for the economy of tomorrow</i>. London: Routledge. • Kirchherr, J., Reike, D., Hekkert, M. (2017) Conceptualizing the circular economy: an analysis of 114 definitions, <i>Resources, Conservation and Recycling</i> 127, 221 – 232. • Kopnina, H., Blewitt, J. (2018) <i>Sustainable Business: key issues</i>, 2nd edition. New York (NY): Routledge.
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