BOSNIA AND HERZEGOVINA
UNIVERSITY COLLEGE "CEPS-CENTER FOR BUSSINES STUDIES" KISELJAK

Approved by

by the President of the Senat

Samir Ščetić

Course Program

Course: Sustainable Development, Circular Economy, and Societal Resilience

Developed in the framework of the Erasmus+ 1FUTURE Project 101082815

Academic Year: 2025-2026
Semester *I*

September 2025

Content

1. SUMMARY AND LEARNING OUTCOMES

This course explores the intersection of sustainable development, circular economy principles, and societal resilience. Participants will gain a comprehensive understanding of how climate change, resource use, and socio-economic systems interact to shape environmental outcomes in urban and rural contexts. A significant portion of the course will be dedicated to understanding the circular economy as a transformative approach for reducing resource dependency, promoting regenerative design, and minimizing waste in the built environment. The role of technology is also highlighted in the process. Participantswill also explore frameworks for building societal resilience—both physical and social—in response to external stresses. Practical skills in risk assessment, systems thinking, and sustainable planning will be developed alongside a theoretical grounding.

2. LEARNING OBJECTIVES

Participants will be able to:

- Assess circular economy impacts across key sectors and perform basic life-cycle and cost-benefit analyses.
- Understand drivers of risk, resilience, and sustainability in urban and construction systems.
- Evaluate trade-offs between environmental, social, and economic priorities in planning and crisis management.
- Apply risk assessment frameworks to land use, mobility, and climate adaptation.
- Recognize the role of AI and technology in advancing sustainable and ethical solutions.

3. ABOUT THE PROGRAM AND DURATION

Course Title: Sustainable Development, Circular Economy, and Societal Resilience

The program was developed in the framework of the Erasmus+ **1FUTURE Project 101082815**.
Semester: Winter Semester
Type of course: Lifelong Learning Program / Course

Code of Ethics: This course will be developed in accordance with the Code of Ethics.
Duration: 20 teaching hours, divided into 5 sessions; 20 hours of independent work;
ECTS (European Credit Transfer and Accumulation System) credits: 2
Format: Hybrid (in person and online)

4. OPERATIONAL AND IMPLEMENTATION PLAN OF THE PROGRAM

<table>
<tr><td colspan="3" align="center">TITLE OF THE LIFELONG LEARNING PROGRAM / COURSE:
„SUSTAINABLE DEVELOPMENT, CIRCULAR ECONOMY, AND SOCIETAL RESILIENCE“</td></tr>
<tr><td align="center">Provider of the Lifelong Learning Program / Course:</td><td align="center">Predavanje + vježbe</td><td align="center">Total</td></tr>
<tr><td align="center">University College “CEPS – Centre for Business Studies”</td><td align="center">4 + 0</td><td align="center">20</td></tr>
<tr><td colspan="3">MODULE PROVIDERS</td></tr>
<tr><td colspan="3">Teaching staff from the University College “CEPS-Center for Bussines Studies” Kiseljak + Guest lecturers</td></tr>
<tr><td colspan="3">Goal of the program:
The goal of the program is to equip participants with the knowledge and skills to apply sustainability, circular economy, and resilience principles in addressing climate and urban development challenges.</td></tr>
<tr><td colspan="3">Topics:
Session I – Foundations of Sustainability and Circular Economy (4 hours): Circular Economy and Millennium Goals; Urban Metabolism and Circular Economy in the Context of Mobility and Energy; Climate Change & Impacts on Tourism, Agriculture, Transport, and Energy; Education for sustainable development. Session II – Integrated Risk Framework (4 hours): Risk Assessment –Vulnerability & Risk Estimation; Risk Assessment –Present, Evaluate, and Treat Risk; Social Resilience: Role of Insurance and Disaster Risk Management; Crisis Management in relevant sectors; Fire Protection Systems and Prevention Strategies; Managing Occupational Health and Safety Risks. Session III – Energy Efficiency, Safety and Resilience in Construction (4 hours): Design of Buildings with Passive House Standard; Improving the Energy Efficiency of Existing Buildings; Hazard Mapping and Risk Assessment. Session IV – Urban Planning and Risk Assessment (4 hours): Strategy for Sustainable</td></tr>
</table>

Urban Development; Risk Assessment for Land Use Planning; Sustainable Urban Mobility.

Session V – Sustainability and AI (4 hours): AI for Climate Action: Predictive Modeling and Environmental Monitoring; Green Data Centers and Sustainable AI: Reducing the Carbon Footprint of Machine Learning; Ethics of AI in Health & Safety, Urban Management and Planning.

General and specific competencies (knowledge and skills):

The course equips participants with interdisciplinary knowledge and practical skills in circular economy, sustainable planning, and resilience-building to address climate challenges and support low-carbon, resource-efficient development.

Learning outcomes:

Participants will be able to assess sustainability challenges, apply principles of the circular economy and risk management, enhance energy efficiency and resilience in urban systems, and utilize AI for climate action and sustainable development.

Mode of lessons:

The implementation of the lifelong learning program will include theoretical lectures with practical examples.

Type of certificate awarded upon successful completion of the lifelong learning program:

Upon completion of the course, participants will receive a certificate.

Conditions and obligations of participants:

Open to bachelor and graduate students, as well as professionals on enrollment basis.

Participants' obligations within this program/course are:

1. Mandatory attendance of lectures, and
2. Participation in group assignments.

Assessment of participant workload: Total 40 hours (2 ECTS)

20 teaching hours + 20 hours of independent work ≈ 2 ECTS

a. Required basic literature:

[1] Learning Materials Package developed in the framework of the 1FUTURE Project.

b. Recommended readings:

[1] *Asgary, A., Ghaffari, A. & Levy J. (2010). Spatial and temporal analyses of structural fire incidents and their causes: A case of Toronto, Canada. Fire Safety Journal, 45, 44-57.* *https://doi.org/10.1016/j.firesaf.2009.10.002*

[2] *Assessment of Vulnerability to Natural Hazards A European Perspective Edited by Jörn Birkmann, Stefan Kienberger, David E. Alexander, 2014 Elsevier*

[3] *Banks, E. (Ed.) 2004 "Alternative risk transfer: Integrated risk management through insurance, reinsurance and the capital markets"*
[4] *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*
[5] *Eltis platform (2019). Guidelines for Developing and Implementing a Sustainable Urban Mobility Plan, Second Edition. https://urban-mobility-observatory.transport.ec.europa.eu/system/files/2023-09/sump_guidelines_2019_second%20edition.pdf*
[6] *European Environment Agency (EU body or agency): Climate-ADAPT: How Europe is adapting to climate change: 10 case studies. 2018*
[7] *Fan, Z.; Yan, Z.; Wen, S. Deep Learning and Artificial Intelligence in Sustainability: A Review of SDGs, Renewable Energy, and Environmental Health. Sustainability 2023, 15, 13493. https://doi.org/10.3390/su151813493*
[8] *IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change,*
[9] *Malmio, I. Artificial intelligence and the social dimension of sustainable development: through a security perspective. Discov Sustain 5, 466 (2024). https://doi.org/10.1007/s43621-024-00677-6*
[10] *Sanderson, Hans et.al. (eds.): Adapting to Climate Change in Europe: Exploring Sustainable Pathways - From Local Measures to Wider Policies. Elsevier: Amsterdam*
[11] *UNECE (2020). A Handbook on Sustainable Urban Mobility and Spatial Planning - Promoting Active Mobility. https://unece.org/DAM/trans/main/wp5/publications/1922152E_WEB_light.pdf*
[12] *UN-Habitat (2020). World Cities Report 2020: The Value of Sustainable Urbanization. https://unhabitat.org/world-cities-report*
[13] *Walter Leal Filho; Goran Trbic; Dejan Filipovic (eds): Climate Change Adaptation in Eastern Europe Managing Risks and Building Resilience to Climate Change, 1st ed. 2019.*
[14] *World Bank (2013). Building Resilience: Integrating Climate and Disaster Risk into Development. https://openknowledge.worldbank.org/handle/10986/16639*