EU-CONEXUS
Online Micro-credentials in Smart Urban Coastal Sustainability
- Catalogue

Autumn 2026/2027

version 3

The table below presents all the courses that will be offered in a synchronous teaching mode in Autumn semester of academic year 2026/2027.

Sector	Thematic area	Micro-credential title	Starting month	ECTS	Application dates	Delivery mode	Host university
Coastal	Coastal risks and protection	Spatial planning for resilient coastal areas	October 2026	1	01/09-22/09/2026	Online	Frederick University, Cyprus
	Business in coastal areas	Coastal Business Strategies and Legislation	November 2026	1	01/09-12/10/2026	Online	Technical University of Civil Engineering, Romania
	Smart ports	Cybersecurity for smart ports & shipping organizations	November 2026	1	01/09-12/10/2026	Online	Klaipeda University, Lithuania
	Water management	Environmental monitoring and indicators	November 2026	1	01/09-12/10/2026	Online	Agricultural University of Athens, Greece
European	European identity and its transformation	Visual culture	October 2026	1	01/09-22/09/2026	Online	Frederick University, Cyprus
	Blue economy	Entrepreneurship in Blue Economy	November 2026	1	01/09-12/10/2026	Online	University of Rostock, Germany
	International standarisation	Durable, Sustainable, Resilient?	December 2026	1	01/09-22/11/2026	Online	Technical University of Civil Engineering, Romania
	Equitable and inclusive civic management	Engagement, Inclusion and Social Transfer	November 2026	1	01/09-12/10/2026	Online	Catholic University of Valencia, Spain
	European funding instruments	Funding opportunities for young researchers: From idea to funding	November 2026	1	01/09-12/10/2026	Online	Agricultural University of Athens, Greece
Smart	Sustainable IT	UAS principles, data modelling and analysis	November 2026	1	01/09-12/10/2026	Online	Technical University of Civil Engineering, Romania

	Games and gamification	Games and gamification	November 2026	1	01/09-12/10/2026	Online	University of Zadar, Croatia
	Industry 4.0	Advanced technologies for sustainable industries 4.0	November 2026	1	01/09-12/10/2026	Online	Klaipeda University, Lithuania
	Digital marketing and communication	Introduction to film literacy and filmmaking	November 2026	1	01/09-01/11/2026	Online	University of Zadar, Croatia
	Digital humanities	System thinking and system dynamics modelling	November 2026	1	01/09-01/11/2026	Online	Klaipeda University, Lithuania
Sustainability	Climate change and resilience	Global energy situation	October 2026	1	01/09-22/09/2026	Online	La Rochelle Université, France
	English for sustainability	English Communication for Sustainable Development	December 2026	1	01/09-22/11/2026	Online	Catholic University of Valencia, Spain
	Sustainable management	Building Sustainable Livestock Systems	November 2026	1	01/09-01/11/2026	Online	Catholic University of Valencia, Spain
University	Research and Innovation Thinking	Research and Innovation Thinking	November 2026	1	01/09-12/10/2026	Online	University of Rostock, Germany
	Environmental and science education	Environmental literature	November 2026	1	01/09-01/11/2026	Online	University of Zadar, Croatia
	Information literacy	Information literacy	November 2026	1	01/09-12/10/2026	Online	University of Zadar, Croatia

Apply here 😊

Below you will find **Micro-credential Cards** that include descriptions of each one of them together with the **timetables**.

They are arranged according to the date of starting the classes.

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Global energy situation

(link to the website and registration platform available here)

Professor's name, university & email	Fernando Pedraza, La Rochelle University (France) fpedraza@univ-lr.fr
Sector	Sustainability
Thematic area	Climate change and resilience
EQF level	Level 6 (Bachelor)
ISCED-F field	0713 Electricity and Energy
ESCO skills & competences	S1.11.0 – skills – communication, collaboration and creativity - designing systems and products K0713 – knowledge – engineering, manufacturing and construction - Electricity and energy - renewable energy
Proposed dates of the classes	Thursdays, 01/10, 08/10, 15/10, 19/11, 26/11 (evaluation-debate), 16:30-18:30 (CET)
One hour for tutoring consultations	Thursday, 15/10/2026, 18:30-19:30 (CET)
Date of the exam/ final assessment	Monday, 16/11/2026, 18:30-19:30 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	The continuous growth of the global population, along with rising energy demand, has intensified the need to better understand patterns of energy consumption worldwide. This course provides an overview of where and how energy is consumed globally, with a particular focus on Europe. It examines the European Union's strategy to promote renewable energy sources as a response to increasing demand and environmental challenges. Through comparative examples from different countries, students will explore practical approaches to reducing CO_2 emissions and adopting more sustainable energy systems, gaining a clearer understanding of current trends and policy directions in the energy sector.
Description of the content (week by week)	Unit 1.- Demography and energy needs (2 h) Unit 2.- Resources and energy consumption. Focus on Europe (1h) Unit 3.- Strategy of the European Union to lower greenhouse emissions (1h) Unit 4.- Examples of energy strategies in different EU countries (2h)

	Unit 5.- Costs of some major renewable energies (2h) Unit 6.- Dialogue and debate (2h)
Importance for society	In the context of global warming and Europe's reliance on imported fossil fuels, understanding energy systems and policies has become essential for society. This course helps learners comprehend the role of renewable energy in addressing climate change and improving energy security. By analysing the European Union's strategies, students are better equipped to recognise the societal, environmental, and economic implications of the energy transition. This knowledge supports informed decision-making and contributes to the development of more sustainable and resilient communities.
Skills (hard and soft skills)	Hard skills: basics on global warming, basics on renewable energies. Soft skills: critical thinking, problem solving, responsibility, communication, and collaboration
Sustainable Development Goals	SDG4. Quality education SDG7. Affordable and clean energy SDG8. Decent work and economic growth SDG9. Industry, innovation and infrastructure SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG13. Climate action

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Recognize the main advantages of developing renewable energies in coastal cities	Lectures, individual work, case studies	Presentation	Group work	Supervised online with identity identification
Analyze the impact of European policies to mitigate climate change on the national legislations of the participating students	Lectures, individual work, case studies	Presentation	Group work	Supervised online with identity identification

Bibliography	**Websites:** 1. https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules/renewable-energy-targets_en 2. https://www.irena.org/ 3. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics

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Spatial planning for resilient coastal areas

(link to the website and registration platform available here)

Professor's name, university & email	Penelope Vazquez, Frederick University (Cyprus) arch.pv@frederick.ac.cy
Sector	Coastal
Thematic area	Coastal risks and protection
EQF level	Level 6 (Bachelor)
ISCED-F field	0731 Architecture and town planning
ESCO skills & competences	K0731 - knowledge - architecture and town planning - urban planning - spatial planning S4.1 - skills – management skills - developing objectives and strategies S2.7 – skills – information skills - analysing and evaluating information and data T2.1 – transversal skills and competences – thinking skills and competences - processing information, ideas and concepts
Proposed dates of the classes	01/10, 08/10, 15/10, 22/10, 29/10 18:00 – 20:00 (CET)
One hour for tutoring consultations	24/10, 18:00 – 19:00 (CET)
Date of the exam/ final assessment	29/10 18:00 – 20:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	Spatial planning has a long tradition, especially in Europe as an institutional process of manifesting and coordinating development and resources of cities and regions. The current status of overdevelopment in coastal zones, along with the emerging climate crises has turned formal planning into a decisive parameter for economic and social robustness, as well as environmental conservation. Any expert interested in working at the public or governance sector needs to be aware of the barriers and enablers spatial planning may impose to the sustainable coastal areas perspective.
Description of the content (week by week)	Unit 1. What is Spatial Planning? (2 hours) Unit 2. Planning and development challenges and risks for coastal areas (2 hours) Unit 3. Typology and content of plans for coastal areas (2 hours) Unit 4. Comprehension a coastal plan resilience/ workshop (2 hours) Unit 5. Final assessment (2 hours)

Importance for society	Societies and local governments are usually emphasizing in short term actions and remedies for every aspect of their reality. Spatial planning as a long-term scope is often neglected or undecimated. Most of the barriers that sustainable coastal development phases have to do with the absence of proactiveness and long-term planning.			
Skills (hard and soft skills)	Hard skills: Plan Assessment, Sustainability Comprehension Soft skills: Critical Thinking and Creativity, Analytical Skills			
Sustainable Development Goals	SDG3. Good health and well-being SDG8. Decent work and economic growth SDG10. Reduced inequalities SDG11. Sustainable cities and communities SDG13. Climate action SDG14. Life below water SDG15. Life on land			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements /format**	**Supervision and identity verification during assessment**
Recognise the typology and the impact of institutional spatial planning for coastal areas	Personal study Case Study Group discussion	Assignment on a case study	Individual work	Unsupervised with no identity verification
Explain how a specific spatial plan for addresses the issues of resilient coastal area in an integrated/ wholistic approach	Personal study Case Study Group discussion	Oral support of the report in the class	Presentation in front of the colleagues	Unsupervised with no identity verification
Bibliography	**Books:** 1. Hall, P. (1994) Urban & Regional Planning, 5th, edn. London: Routledge. **Publications/articles:** 1. Sørdahl, P.B., Kvalvik, I. When all you have is a hammer - integration challenges in coastal zone planning. Maritime Studies 23, 39 (2024). 2. Bonatz, H., Reimann, L. & Vafeidis, A.T. Comparing built-up area datasets to assess urban exposure to coastal hazards in Europe. Sci Data 11, 499 (2024). 3. Santamouris, M., Vasilakopoulou, K. (2024). Urban Climate and Heat Mitigation in Coastal Cities. In: Rassia, S.T. (eds) The Blue Book. Springer, Cham.			

	Websites: 1. Coastal Zone Management Plans https://iwrmactionhub.org/learn/iwrm-tools/coastal-zone-management-plans 2. European Commission – Marine Environments https://environment.ec.europa.eu/topics/marine-environment_en 3. European Enviromnental Agency – Marines and Coasts https://www.eea.europa.eu/en/topics/in-depth/seas-and-coasts 4. Department of Environment/ Cyprus – Integrated Coastal Zone Management https://www.moa.gov.cy/moa/environment/environmentnew.nsf/page11_en/page11_en?OpenDocument 5. ESPON - Comparative Analysis of Territorial Governance and Spatial Planning Systems in Europe https://archive.espon.eu/planning-systems

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Visual culture

(link to the website and registration platform available here)

Professor's name, university & email	Costas Mantzalos, Frederick University (Cyprus) c.mantzalos@frederick.ac.cy
Sector	European
Thematic area	European identity and its transformation
EQF level	Level 6 (Bachelor)
ISCED-F field	0213 Fine arts
ESCO skills & competences	S1.0 – skills - communication, collaboration and creativity - communication, collaboration and creativity S1. 12 – skills - communication, collaboration and creativity - creating artistic, visual or instructive materials S1.9 – skills - communication, collaboration and creativity - solving problems T6.4 – transversal skills and competences – life skills and competences - applying cultural skills and competences
Proposed dates of the classes	Thursdays, 08/10, 15/10, 22/10, 29/10, 05/11, 18:00-20:00 (CET)
One hour for tutoring consultations	Thursday, 29/10, 18:00-19:00 (CET)
Date of the exam/ final assessment	Thursday, 05/11, 18:00-20:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 11 h Asynchronous hours & self-directed learning: 14 h
General description	**European identity and its transformation:** Europe as a cultural community of shared values (cultural identity); Europe as a political community of shared democratic practices (political identity). EU values are such as human dignity, freedom of movement, democracy, equality, rule of law, human rights. **Intercultural communication/multilingualism:** By enhancing communication skills. and understanding other people's perspectives, this will prove to be a driver for good communication, allowing empathy and caring through diverse opinions and behaviours. **Information literacy:** This will provide opportunities and a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information

	Modernization and heritage protection: The reinvention and the updating of our heritage in the 21st century which will provide a new dimension and will deal with actions or processes that are aimed at safeguarding the character-defining elements of a cultural resource to retain its heritage value and extend its physical life.
Description of the content (week by week)	Unit 1: Defining Global Visual Culture, Visual Presentations (2 hours) Unit 2: Globalization and Hybridism (2 hours) Unit 3: Consumers / Producers in a Global Network (2 hours) Unit 4: Rethinking the Nation, again: The Nation as Brand (2 hours) Unit 5: The Local and the Global (2 hours)
Importance for society	Visual culture highlights shared values like democracy, human dignity, and cultural heritage, promoting unity and understanding in diverse European societies. It enhances intercultural communication by transcending language barriers, visual media fosters empathy, inclusivity, and appreciation for diverse perspectives. Additionally, it empowers critical media literacy by encouraging individuals to critically evaluate visual information, combating misinformation and understanding context and intent as well as it drives social and political awareness as it serves as a tool for advocacy and reflection, inspiring dialogue on human rights, equality, and societal challenges.
Skills (hard and soft skills)	Hard skills: Visual media analysis, Heritage preservation techniques Soft skills: Intercultural Communication, Critical thinking and decision making
Sustainable Development Goals	SDG1. No poverty SDG2. Zero hunger SDG3. Good health and well-being SDG4. Quality education SDG5. Gender quality SDG8. Decent work and economic growth SDG10. Reduced inequalities SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG13. Climate action SDG16. Peace, justice and strong institutions SDG17. Partnerships for the goals

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Critically examine visual media to identify	Combination of lectures, seminars,	Self-assessment quizzes, oral	In-class participation discussions, short answer quizzes,	

cultural bias or misinformation **Compare visual representations of cultural heritage across different European regions to explore commonalities and differences**	tutorials, group presentations, workshops, and written assessments.	presentations, case studies analysis, group discussions/ debates.	presentations, final exam with presentation	Supervised online or onsite with identity verification.

Bibliography

Books:

1. Shamita Sharmacharja, A manual for the 21st century Art Institution, Koenign Books, 2009
2. Nicolas Bourriaud, Relational Aesthetics, Les Presse Du Reel,Franc 1998
3. Jean-François Lyotard, The postmodern condition, University of Minesota 1984
4. Bhaba Homi, The Location of Culture, Routledge, 1994
5. John Berger, Ways of Seeing, Penguin 1977

Publications/articles:

1. Costas Mantzalos, Documenta fifteen: The 15th edition of Documenta, curated by the 'ruangrupa' collective, Kassel, Germany, 18 June–25 September 2022. International Journal of Education Through Art, Volume 19, Issue Art, Sustainability and Partnerships, Mar 2023, p. 135 – 140
2. Eliane Glaser, Bring back ideology: Fukuyama's 'end of history' 25 years on, The Guardian, Fri 21 Mar 2014

Websites:

1. https://www.vam.ac.uk/articles/art-nouveau-an-international-style
2. https://www.moma.org/interactives/exhibitions/2009/futurism/
3. https://www.metmuseum.org/toah/hd/bauh/hd_bauh.htm
4. https://www.metmuseum.org/toah/hd/dsgn3/hd_dsgn3.htm

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Entrepreneurship in Blue Economy

(link to the website and registration platform available here)

Professor's name, university & email	Sabine Brüser, University of Rostock, Germany sabine.brueser@uni-rostock.de
Sector	European
Thematic area	Blue Economy
EQF level	Level 6 (Bachelor)
ISCED-F field	0413 Entrepreneurship
ESCO skills & competences	K0413 – knowledge – business, administration and law – business and administration - management and administration S2.7.4 – skills – information skills – analysing and evaluating information and data - analysing business operations S4.1.1 – skills – management skills – developing objectives and strategies - identifying opportunities T2.4 – transversal skills and competences – thinking skills and competences - thinking creatively and innovatively
Proposed dates of the classes	Mondays, 2/11, 16/11, 23/11, 30/11, 07/12, 17:00-19:00 (CET)
One hour for tutoring consultations	To be confirmed
Date of the exam/ final assessment	Monday, 07/12, 17:00-19:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	This micro-credential addresses the field of Blue Economy entrepreneurship and provides participants with the knowledge and skills to develop sustainable business models. The Blue Economy has rapidly gained momentum as a key driver of economic growth and environmental sustainability, attracting the attention of investors, policy makers and entrepreneurs alike. This growing interest is fuelled by the increasing recognition of the oceans' enormous potential for innovation and economic development, as well as the growing awareness of the urgent need to protect marine ecosystems. Students studying this subject will be well prepared to take advantage of the emerging opportunities in this dynamic sector, drive innovation and contribute to a more sustainable future for our oceans.

Description of the content (week by week)	Unit 1. Introduction to the Blue Economy and Sustainable Entrepreneurship (2 hours) Unit 2: From an idea to a sustainable company (2 hours) Unit 3: Research and Market Analysis (2 hours) Unit 4: Sustainable Business Model Canvas (1/2) (2 hours) Unit 5: Sustainable Business Model Canvas (2/2) (2 hours)			
Importance for society	This micro-certificate enables students to develop sustainable business models in the fast-growing blue economy sector. Participants will gain the knowledge and skills to tackle pressing environmental challenges while taking advantage of the economic opportunities our oceans offer.			
Skills (hard and soft skills)	Hard skills: Business Model Canvas, Market and SWOT Analysis Soft skills: Teamwork, Communication			
Sustainable Development Goals	SDG8. Decent work and economic growth SDG9. Industry, innovation and infrastructure SDG13. Climate action SDG14. Life below water			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Recognise problems and opportunities related to the blue economy, develop creative solutions and conduct a market analysis to understand target groups and the competitive landscape.	Lectures, Discussion, Group Work, Individual Work, Presentations	Attendance, Evaluation of assignments	Group work, Individual work	Unsupervised with no identity verification
Develop creative solutions to identified problems and create a sustainable business model using the Sustainable Business Model Canvas.				

Bibliography	**Books:**

1. Borriello, Antonio, et al. "The EU blue economy report 2024." (2024).
2. Osterwalder, A., & Pigneur, Y. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. John Wiley & Sons.
3. Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). Value Proposition Design: How to Create Products and Services Customers Want. John Wiley & Sons.
4. Pauli, G. (2010). The Blue Economy: 10 years, 100 innovations, 100 million jobs. Paradigm Publications.
5. Froese, R., & Pauly, D. (Hrsg.). (2019). Blue growth: Innovation for a sustainable ocean economy. Cham: Springer.

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Funding opportunities for young researchers: From idea to funding

(link to the website and registration platform available here)

Professor's name, university & email	Thomas Bartzanas, Agricultural University of Athens (Greece) t.bartzanas@aua.gr
Sector	European
Thematic area	European funding instruments
EQF level	Level 6 (Bachelor)
ISCED-F field	0031 Personal skills
ESCO skills & competences	S1.13 – skills – communication, collaboration and creativity - writing and composting S1.8 – skills – communication, collaboration and creativity - working with others K0811 – knowledge – agriculture, forestry, fisheries and veterinary – agriculture - crop and livestock production T2.2 – transversal skills and competences – thinking skills and competences - planning and organising
Proposed dates of the classes	Wednesday, 04/11, Friday, 06/11, Wednesday, 11/11, Friday, 13/11, Wednesday, 18/11, 14.00 -16.00 (CET)
One hour for tutoring consultations	Friday, 13/11, 13:00-14:00 (CET)
Date of the exam/ final assessment	Wednesday, 18/11, 14.00-16.00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	Securing funding is essential for advancing high-quality research and innovation. However, many researchers face challenges in pursuing a research career due to limited funding opportunities and inadequate support. This course aims to empower young researchers by guiding them through each step of the funding process, from shaping their initial ideas to crafting and submitting a compelling proposal. It covers key areas such as identifying funding sources, writing effective proposals, developing realistic budgets, and maximizing funding potential. Participants will acquire practical skills to align their projects with funders' priorities, communicate their ideas clearly, and navigate common challenges in the application process.

Description of the content (week by week)	**Unit 1: Funding opportunities: Main aspects to be considered (2h)** - Overview of the research funding landscape - Identifying Suitable Funding Opportunities - Is your idea suitable for a specific call? **Unit 2: Research idea and strategy (2h)** - How to turn an idea into a research question and outline - Setting realistic goals, creating a work plan, and establishing a project timeline - Finding core partners-creating the proposal core team **Unit 3: How to write a winning proposal (2h)** - Initial concept note - Consortium building - Structuring the proposal (excellence part, how to draft work packages) - Techniques for emphasizing your research's innovation, expected outcomes, an real-world impacts **Unit 4: Budget and other considerations (2h)** - Preparing a Realistic Budget and Financial aspects - Communicate the budget to the consortium partners - Open data, gender issues, risks & contingency Plans, Ethics - Dissemination plan and exploitation of the results **Unit 5: Submitting your proposal (1h)** - Dealing with the submission platform - Organising your proposal in the submission platform - Information to be collected from the consortium partners **Unit 6: Exams (1h)**
Importance for society	The course is targeting to undergraduate students aiming to enter the research field with an interest in research funding and grantsmanship, after completing their studies. The course will assist them in enhancing their ability to secure external funding from European calls.
Skills (hard and soft skills)	Hard skills: Research proposal writing, Project management Soft skills: Communication, Networking, Critical thinking
Sustainable Development Goals	SDG4. Quality education SDG5. Gender quality SDG9. Industry, innovation and infrastructure SDG10. Reduced inequalities SDG17. Partnerships for the goals

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Align research ideas with funding priorities	Presentations, lectures, case studies	Project presentations presented by students	Group work (work in pairs, presentation in front of the colleagues)	Supervised with no identity verification
Communicate research effectively				
Bibliography	**Books:** - *Robert Trew, 2017. Get Funded: An Insider's Guide to Building An Academic Research Progra*m, ISBN:9781107068322, 1107068320, Cambridge Academic Press - *Ritsert, Jansen, 2013. Funding Your Career in Science: From Research Idea to Personal Grant*, ISBN:9781107435414, 1107435412, Cambridge Academic Press - *Gerand Crawley, 2015. Grant Writer's Handbook, The: How To Write A Research Proposal And Succeed*, ISBN:9781783267613, 1783267615, Imperial College Press **Publications/articles:** - Horizon Implementation Day: Finding opportunities & submitting a proposal in Horizon Europe (link) - How to write a Horizon Europe Proposal (link) - Proposal writing strategy: writing research grants to funding agencies (link) **Websites:** 1. https://erc.europa.eu/homepage 2. https://marie-sklodowska-curie-actions.ec.europa.eu/funding 3. https://research-and-innovation.ec.europa.eu/funding_en			

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Engagement, Inclusion, and Social Transfer: Perspectives from the Field of Entrepreneurship

(link to the website and registration platform available here)

Professor's name, university & email	Daniel Ordiñana-Bellver, Catholic University of Valencia (Spain) daniel.ordinana@ucv.es
Sector	European
Thematic area	Equitable and inclusive civic management
EQF level	Level 6 (Bachelor)
ISCED-F field	0188 Inter-disciplinary programmes and qualifications involving education
ESCO skills & competences	T4.2 – transversal skills and competences - social and communication skills and competences – supporting others (advise others; show empathy) T6.3 – transversal skills and competences – life skills and competences – applying civic skills and competences (value rights and responsibilities, respect the diversity of cultural values and norms) K018 – knowledge - education - inter-disciplinary programmes and qualifications involving education) S1.9 – skills - communication, collaboration and creativity – solving problems
Proposed dates of the classes	Wednesdays, 04/11, 11/11, 18/11, 25/11, 02/12, 15:00-17:00 (CET)
One hour for tutoring consultations	Tuesday, 01/12, 15:00-17:00 (CET)
Date of the exam/ final assessment	Wednesday, 02/12, 15:00-17:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	"Engagement, Inclusion, and Social Transfer" is a micro-credential course designed for students from diverse backgrounds and faculties. The course aims to enhance students' understanding and skills in fostering inclusive environments and facilitating social integration. Participants will explore strategies to engage effectively with diverse communities and promote equitable social change. The final product of the course will be the creation of a company with social and civic purposes, in which the background of the different creative members will be its identity mark. Its presentation, in front of the rest of the classmates, will be the evaluation test that will determine whether or not the course has been passed.

Description of the content (week by week)	Some of the contents (such as those related to social and sustainable entrepreneurship) are taught at the same time as the rest given their continuous relationship and exemplification. Unit 1. Presentation, background, disability and risk of social exclusion (2h) Unit 2. Social and sustainable entrepreneurship from a specific field (2h) Unit 3. Designing a social and sustainable group enterprise: roles, objectives and preliminary analysis (2h) Unit 4. Critical analysis of an inclusive proposal: points of interest and suggestions for improvement (2h) Unit 5. Final presentations (2h)			
Importance for society	The European Union has made considerable efforts to encourage young students to become socially and sustainable entrepreneurs. In line with the guidelines of the 2030 Agenda, entrepreneurship from this perspective provides value and progress regardless of the field in which these predispositions are materialised. Young people should at least know that entrepreneurship is possible in any field, as long as they have the appropriate training to do so.			
Skills (hard and soft skills)	Hard skills: researching Soft skills: leadership, communication, creativity			
Sustainable Development Goals	SDG3. Good health and well-being SDG4. Quality education SDG8. Decent work and economic growth SDG9. Industry, innovation and infrastructure SDG10. Reduced inequalities SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG16. Peace, justice and strong institutions SDG17. Partnerships for the goals			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Demonstrate theorical and practical knowledge about social, civic engagement and apply it in the entrepreneurship	Master class. Video. Discussion	Project	Individual/cooperative work	Supervised with no identity verification

Design a social and sustainable company	Interactive methodologies/ group methodologies (eg: Aronson's puzzle)	Group Work/ Project/ Final Presentation	Group work, Presentation in front of the colleagues	Supervised online with identity verification

Bibliography

Publications/articles:

1. van Lunenburg, M., Geuijen, K. & Meijer, A. How and Why Do Social and Sustainable Initiatives Scale? A Systematic Review of the Literature on Social Entrepreneurship and Grassroots Innovation. Voluntas 31, 1013–1024 (2020). https://doi.org/10.1007/s11266-020-00208-7
2. González-Serrano, M.H.; Añó Sanz, V.; González-García, R.J. Sustainable Sport Entrepreneurship and Innovation: A Bibliometric Analysis of This Emerging Field of Research. Sustainability 2020, 12, 5209. https://doi.org/10.3390/su12125209
3. Ordiñana-Bellver, D., Pérez-Campos, C., González-Serrano, MH., Martínez-Rico, G. Towards the development of future sustainable sports entrepreneurs: An asymmetric approach of the sports sciences sustainable entrepreneurial intentions, *Journal of Hospitality, Leisure, Sport & Tourism Education*, 31, https://doi.org/10.1016/j.jhlste.2022.100403.
4. Ordiñana-Bellver, D., Aguado-Berenguer, S., Pérez-Campos, C., González-Serrano, MH. Exploring nature-based physical activity as a catalyst for sustainable entrepreneurial intentions in sport science students, *Journal of Hospitality, Leisure, Sport & Tourism Education*, 34, 100482, https://doi.org/10.1016/j.jhlste.2024.100482.

Websites:

1. https://www.un.org/sustainabledevelopment/es/2015/09/la-asamblea-general-adopta-la-agenda-2030-para-el-desarrollo-sostenible/
2. https://joint-research-centre.ec.europa.eu/entrecomp-entrepreneurship-competence-framework_en
3. https://www.ucv.es/campus-capacitas

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Research and Innovation Thinking

(link to the website and registration platform available here)

Professor's name, university & email	Sabine Brüser, University of Rostock, Germany sabine.brueser@uni-rostock.de
Sector	University
Thematic area	Research and Innovation Thinking
EQF level	Level 6 (Bachelor)
ISCED-F field	0413 Entrepreneurship
ESCO skills & competences	S1.0 – skills - communication, collaboration and creativity – communication, collaboration and creativity S2.1 – skills - conducting studies, investigations and examinations T2.4 – transversal skills and competences – thinking skills and competences - thinking creatively and innovatively T4.1 – transversal skills and competences – social and communication skills and competences - communicating
Proposed dates of the classes	Wednesdays, 4/11, 18/11, 25/11, 02/11, 09/12, 17:00-19:00 (CET)
One hour for tutoring consultations	To be confirmed
Date of the exam/ final assessment	Monday, 07/12, 17:00-19:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	This micro-credential provides participants with essential skills in the areas of research and innovation, enabling them to manage the complexity of generating new knowledge and translating it into effective solutions. In recent years, rapid technological advances and changing societal needs have increased the demand for innovative approaches in various sectors, including the blue economy. These micro-credentials provide a foundation for understanding research methods, fostering creativity and driving innovation processes, empowering students to become agents of change in a rapidly evolving world.
Description of the content (week by week)	Unit 1. Research and innovation methods (2 hours) Unit 2: Understanding innovation: Fundamentals and principles (2 hours) Unit 3: Critical Thinking and Problem-Solving (2 hours)

	Unit 4: Creativity and Idea Generation (2 hours) Unit 5: Communication of Innovation (2 hours)			
Importance for society	This topic raises awareness and attention to critical issues related to sustainability, innovation and problem solving. By highlighting the interconnectedness of research, innovation and the blue economy, it encourages individuals to think critically about the challenges facing our oceans and to develop creative solutions for a more sustainable future.			
Skills (hard and soft skills)	Hard skills: Research methodologies, Innovation techniques Soft skills: Critical thinking, Communication			
Sustainable Development Goals	SDG8. Decent work and economic growth SDG9. Industry, innovation and infrastructure SDG13. Climate action SDG14. Life below water			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Identify different types of innovations (product, process and business model innovations), assess their relevance for the blue economy sector and communicate these findings in a structured and target group-orientated way.	Lectures, Discussion, Group Work, Individual Work, Presentations	Attendance, Evaluation of assignments	Group work, Individual work	unsupervised with no identity verification
Use creative methods such as brainstorming and SCAMPER to develop solutions to complex challenges and present them in a structured and convincing way.				

Bibliography	**Books:**

1. Flick, U. (2017). Introducing Research Methodology: A Beginner's Guide to Doing a Research Project. London: Sage Publications.
2. Elder, L., & Paul, R. (2008). The miniature guide to critical thinking: Concepts and tools. Dillon Beach, CA: Foundation for Critical Thinking.
3. Brown, T. (2009). Change by design: How design thinking transforms organizations and inspires innovation. New York: Harper Business.
4. Pauli, G. (2010). The Blue Economy: 10 years, 100 innovations, 100 million jobs. Paradigm Publications.
5. Froese, R., & Pauly, D. (Hrsg.). (2019). Blue growth: Innovation for a sustainable ocean economy. Cham: Springer.

EUCONEXUS

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Coastal Business Strategies and Legislation

(link to the website and registration platform available here)

Professor's name, university & email	Andreea Condurache, Technical University of Civil Engineering in Bucharest (Romania) andreea.condurache@utcb.ro
Sector	Coastal
Thematic area	Business in coastal areas
EQF level	Level 6 (Bachelor)
ISCED-F field	0488 Interdisciplinary programs and qualifications involving business, administration and law
ESCO skills & competences	K040 – knowledge - business, administration and law – business, administration and law not further defined K048 – knowledge – business, administration and law – interdisciplinary programs and qualifications involving business, administration and law
Proposed dates of the classes	Wednesdays, 04/11, 11/11, 18/11, 25/11, 09/12, 06/01, 18:00-20:00 (CET)
One hour for tutoring consultations	Wednesday, 16/12, 18:00-19:00 (CET)
Date of the exam/ final assessment	Wednesday, 06/01, 18:00-19:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	A course that will introduce studies in an interdisciplinary field of business, administration and law in coastal areas. The purpose of the course is the acquisition of skills in: - identifying business opportunities in coastal areas and implementing business adaptation plans to the economic and social environment adapted to the development strategies promoted at the EU level.
Description of the content (week by week)	Unit 1. Business opportunity in coastal areas (2 hours) Unit 2. International Commerce in coastal areas (2 hours) Unit 3. Economic, social and territorial cohesion (2 hours) Unit 4. Human resources in business (2 hours) Unit 5. Business strategy (2 hours)

Importance for society	Businesses are the backbone of economic growth, driving various economic activities that sustain national and global economies. Businesses in coastal areas can contribute to the prosperity of a local nation by producing and selling goods and services, leading to increased income, employment, and improved living standards.
Skills (hard and soft skills)	Hard skills: knowledge and abilities needed to do business in coastal areas Soft skills: Critical and creative thinking, collaboration
Sustainable Development Goals	SDG1. No poverty SDG2. Zero hunger SDG3. Good health and well-being SDG4. Quality education SDG8. Decent work and economic growth SDG9. Industry, innovation and infrastructure SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG14. Life below water SDG17. Partnerships for the goals

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Analyze coastal business contexts and develop sustainable business strategies to safeguard cultural heritage	Lecture, discussions, group work	Quiz	Group work	Lecture, discussions, group work
Identify business opportunities in coastal areas	Lecture, discussions, individual work	Written assessment	Individual work	Lecture, discussions, individual work

Bibliography

Books:

1. Integrated Coastal Management, Martin Le Tissier, Dik Roth, Maarten Bavinck, Leontine Visser

Publications/articles:

1. Opportunities for transforming coastal and marine tourism, coordinating lead author Eliza Northrop

	2. Coastal Development: Resilience, Restoration and Infrastructure Requirements **Websites:** 1. https://medium.com 2. https://www.coastmagazine.co.uk 3. https://www.coastalbusiness.com

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Environmental monitoring and indicators

(link to the website and registration platform available here)

Professor's name, university & email	Sofia Mavrikou, Agricultural University of Athens (Greece) sophie_mav@aua.gr Assistant Professor: Chrysi Papadimitriou, cpapadim@aua.gr
Sector	Coastal
Thematic area	Water management
EQF level	Level 6 (Bachelor)
ISCED-F field	0521 Environmental sciences
ESCO skills & competences	S1.4.2 - presenting research or technical information S2.2.1 - preparing financial documents, records, reports, or budgets T1.3 - working with digital devices and applications
Proposed dates of the classes	Thursdays, 05/11, 12/11, 19/11, 26/11, 03/12 (exams), 09:00-11:00 (CET)
One hour for tutoring consultations	Friday, 27/11, 09:00-10:00 (CET)
Date of the exam/ final assessment	Thursday, 03/12, 09:00-11:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	Training in the science of environmental monitoring and methods for identifying relevant indicators, including but not limited to the acquisition of environmental data over time to observe or detect changes in key variables. Such monitoring typically focuses on environmental management objectives and, by extension, on assessing potential harmful effects of human impacts, biodiversity and changes in ecological quality over time.
Description of the content (week by week)	Unit 1. The Water Framework Directive (1 hour) Unit 2. Standard classification of rivers (0,5 hour) Unit 3. Criteria for the selection of reference areas and definition of reference conditions (0,5 hour) Unit 4. Introduction to environmental indicators (0,5 hour) Unit 5. Characteristics for the development of indicators (0,5 hour)

	Unit 6. Main types & selection of indicators (0,5 hour) Unit 7. Indicators of the aquatic environment (0,5 hour) Unit 8. Sampling methods and design (1 hour) Unit 9. Data analysis (1 hour) Unit 10. Species-based indicators (0,5 hour) Unit 11. Indicators for river ecological status studies (0,5 hour) Unit 12. Organisms used (0,5 hour) Unit 13. Necessities, periodicity and regulations (0,5 hour) Unit 14. Exam (2 hour)
Importance for society	This micro-credential will have a significant social, economic and environmental impact and will contribute to achieving an appropriate type of environmental monitoring and further analysis to draw statistically sound conclusions. The proposed programme is fully in line with the 17 UN Sustainable Development Goals as it covers areas that include primarily social (environmental awareness, provision of education, remote and multilingual training with practical application) and environmental sustainability (maintaining ecological quality, biodiversity conservation, protection of water resources) and secondarily economic sustainability (training individuals in modern environmental monitoring methods).
Skills (hard and soft skills)	Hard skills: Promoting environmental awareness, Develop skills in environmental tools for assessing ecological quality Soft skills: Critical thinking skills, Problem-solving skills.
Sustainable Development Goals	SDG3. Good health and well-being SDG4. Quality education SDG6. Clean water and sanitation SDG10. Reduced inequalities SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG13. Climate action SDG14. Life below water SDG15. Life on land SDG17. Partnerships for the goals

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Use indicators for the assessment of environmental and ecological quality	Lecture, presentations, discussions	Exams	Presentation in front of the colleagues	Supervised online or onsite with identity verification

Design and implement an integrated environmental and ecological quality monitoring system	Lecture, presentations, discussions	Exams	Presentation in front of the colleagues	Supervised online or onsite with identity verification
Bibliography	**Book:** Günther, O., Radermacher, F.J., & Riekert, W. (1995). *Environmental monitoring: Models, methods and systems.* **Publications/articles:** 1. Anuj, K., Hiesik, K., and Gerhard, P.H. *Environmental Monitoring Systems: A Review*, 2013, IEEE SENSORS JOURNAL,13, 4. 2. Šećerov, I. , Dolinaj, D. , Pavić, D. , Milošević, D. , Savić, S. , Popov, S. and Živanov, Ž. (2019) *Environmental Monitoring Systems: Review and Future Development. Wireless Engineering and Technology*, 10, 1-18. doi: 10.4236/wet.2019.101001. 3. Puig, M., Darbra, R.M., *Innovations and insights in environmental monitoring and assessment in port areas*, 2024, Current Opinion in Environmental Sustainability, 70, 101472, doi:10.1016/j.cosust.2024.101472.			

EU CONEXUS

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UAS principles, data modelling and analysis

(link to the website and registration platform available here)

Professor's name, university & email	Ana-Cornelia Badea, Dragos Badea, Technical University of Civil Engineering Bucharest (Romania) ana.badea@utcb.ro; dragos.badea@utcb.ro
Sector	Smart
Thematic area	Sustainable IT
EQF level	Level 6 (Bachelor)
ISCED-F field	0521 Environmental sciences
ESCO skills & competences	T1.3 - transversal skills and competences – core skills and competences - working with digital devices and applications T2.2 – transversal skills and competences – thinking skills and competences - planning and organising T4.3 – transversal skills and competences – social and communication skills and competences - collaborating in teams and networks S5.5 – skills – working with computers - accessing and analysing digital data S1.4.2 - skills – communication, collaboration and creativity – presenting information – presenting research or technical information
Proposed dates of the classes	Fridays, 6/11, 13/11, 20/11, Monday, 23/11, Friday, 27/11, 15:00-17:00 (CET)
One hour for tutoring consultations	Friday, 13/11, 14:00-15:00 CET
Date of the exam/ final assessment	Friday, 27/11, 16:00-17:00 CET
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h

General description	• Concepts of UAVs, Flight Planning, Aerial imaging, LiDAR
	  ○ Classification of drones
	  ○ Photogrammetric data acquisition
	  ○ Theoretical and practical elements before flying the UAS
	• Geospatial Data Processing using Dedicated Software
	  ○ Different types of software for modeling
	  ○ Different types of problems analyzed based on UAS images
	  ○ Possibilities of 3D modeling based on UAS images

Description of the content (week by week)	Unit 1. Classification of drones (2 hours) Unit 2. Photogrammetric data acquisition (2 hours) Unit 3. Theoretical and practical elements before flying the UAS (1 hour) Unit 4. Different types of software for modelling (1 hour) Unit 5. Different types of problems analysed based on UAS images (2 hours) Unit 6. Possibilities of 3D modelling based on UAS images (2 hours)
Importance for society	UAS Principles, Data Modeling and Analysis has been used in various fields such as medicine, engineering, mapping, architecture, manufacturing, police investigation, cultural heritage, and geology. One of the most common uses of photogrammetry is creating maps out of aerial photos. It has proven to be accurate and cost-effective and accurate, allowing planning entities like architects, local governments and construction workers to make clear, informed decisions about their projects without spending months scouring the landscape
Skills (hard and soft skills)	Hard skills: Technology use, Technological literacy Soft skills: Analytical thinking, Curiosity
Sustainable Development Goals	SDG4: Quality education SDG9: Industry, Innovation and Infrastructure SDG11: Sustainable cities and communities SDG15: Life on land

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Demonstrate knowledge on flying procedures, data expectancy, UAS pre-flight requirements, identifying steps about UAS data acquisition	1-Lectures 2-Case studies & discussions (Laboratory) 3-Tutorials	1-Time-constrained online quizzes 2-Discussions 3-Evaluation of practical skills	group work	Supervised online with identity verification
Analysing and modelling data by specific tools	1-Lectures 2-Case studies & discussions (Laboratory) 3-Tutorials	1-Time-constrained online quizzes 2-Team presentation 3-Discussions	group work	Supervised online with identity verification

Bibliography	

Books:

1. McGlone, C. (2013). *Manual of Photogrammetry - Sixth Edition* ISBN 10: 1570830991 ISBN 13: 9781570830990, ASPRS
2. Wright, D., Harder, C. (2020). *GIS for Science: Applying Mapping and Spatial Analytics,* Volume 2, ISBN: 9781589485877, ESRI Press

Publications/Articles:

1. A. A. Arfakhsyad, A. N. Rahman, L. Kinanti, A. A. Awwalur Rizqi and H. N. Muhammad, "Unmanned Aerial Vehicle (UAV) Data-Driven Modeling Software with Integrated 9-Axis IMU-GPS Sensor Fusion and Data Filtering Algorithm," 2023 15th International Conference on Information Technology and Electrical Engineering (ICITEE), Chiang Mai, Thailand, 2023, pp. 167-173, doi: 10.1109/ICITEE59582.2023.10317781
2. Badea, A. C., Badea, G. - An Overview of Geoprocessing and Export Options for Creating 3D GIS Models Using Drone2Map, RevCAD 28/2020, pg. 7-14, http://revcad.uab.ro/upload/49_761_badeaa_badea.pdf
3. Badea, A. C., Badea, G. - Aspects about Spatial Information Management to optimize Spatial Planning and Sustainable Development, Workshop Joint FIG Commissions 3 and 8, 20-21 July 2021, Prato, Italy, https://www.fig.net/resources/proceedings/2021/2021_07_Comm83.asp

Websites:

1. https://www.isprs.org/
2. https://www.asprs.org/
3. https://www.esri.com/en-us/home

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Games and Gamification

(link to the website and registration platform available here)

Professor's name, university & email	Josip Ćirić, University of Zadar (Croatia) jciric@unizd.hr http://djelatnici.unizd.hr/~jciric/index_en.html
Sector	Smart
Thematic area	Games and gamification
EQF level	Level 6 (Bachelor)
ISCED-F field	018 Inter-disciplinary programmes and qualifications involving education
ESCO skills & competences	K0288 – knowledge - arts and humanities - inter-disciplinary programmes and qualifications involving arts and humanities K0211 – knowledge - arts and humanities - audio-visual techniques and media production – digital game genres S1.11.0 - skills - communication, collaboration and creativity – designing systems and products – designing systems and products - apply gaming psychology S2.1 – skills - information skills - conducting studies, investigations and examinations
Proposed dates of the classes	Tuesdays, 10/11, 17/11, 24/11, 01/12, 08/12, 16:00-18:00 (CET)
One hour for tutoring consultations	To be confirmed
Date of the exam/ final assessment	To be confirmed
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	Gaming industry is not only growing steadily, but it has also become one of the largest entertaining industries in the world, considering both production investment, and number of players. A considerable social influence deriving from the gamer culture is evident. Transforming educational activities into game-like experience has proven to be a positively perceived experience. In this course students will have the opportunity to learn some of the most frequent game mechanics in video games and how using the same principles they may transform courses. Basic principles of gamification are to be presented, understood and applied in exercises. A pilot project will be part of the course, and it will serve as a grading base also.

Description of the content (week by week)	Unit 1. Introduction (1 hour) Unit 2. Anthropology and psychology of gaming (3 hours) • Caillois and Huizinga • Appling psychological theories to gaming experience • Psychological principles of game design Unit 3. Game mechanics (2 hours) • Key elements of game mechanics: rules, objectives, and systems • Case studies of effective game designs Unit 4. Game-based learning experience (1 hour) • Educational games: an overview • Designing gamified learning environment Unit 5. Gamification principles (2 hours) • Gamification strategies in business and education: an overview • Point systems, badges, and leaderboards Unit 6. Implementing games in the classroom (1 hour) • How to integrate games into the course curricula • Overcoming implementational challenges			
Importance for society	Understanding both more productive and more motivational approach to education is important insight if we're to provide relevant and up-to-date educational experience. Relying on win-win approach in the game theory, students, institutions, and in the long run, society profits from motivated, informed and enthusiastic participants in the educational process.			
Skills (hard and soft skills)	Hard skills: Computer software use Soft skills: Problem solving, Creativity and innovation			
Sustainable Development Goals	SDG4. Quality education			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Identify and describe main gamification strategies	Lectures, individual activities, discussions	Written exam	Acquiring basic knowledge about gamification, reading materials available on Moodle platform	Supervised online or onsite with identity verification
List and describe the basic principles, methods and	Lectures, individual activities, discussions	Assignment evaluation	Students will perform gamification process on a lecture from a course of their own choosing; a short	Supervised online or onsite with identity verification

techniques used in a gamifying process			written report is to be provided	

Bibliography

Books:

1. Kapp, Karl M. (2014) *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. Pfeiffer, (selected chapters)
2. Farber, Matthew (2017) *Game-Based Learning in Action: How an Expert Affinity Group Teaches With Games*. Peter Lang Inc., International Academic Publishers (selected chapters)
3. Griliopoulos, Daniel; Webber, Jordan Erica (2017) *Ten Things Video Games Can Teach Us: (about life, philosophy and everything).* Little, Brown Book Group.
4. Ma, Minhua et. Al. (2011) *Serious games and edutainment applications.* Springer-Verlag London. (selected chapters)

Publications/articles:

1. Erenli, Kai (2012) *The Impact of Gamification A Recommendation of Scenarios for Education.* IEEE. DOI: 10.1109/ICL.2012.6402106
2. De Sousa Borges, S. et. al. (2014) *A Systematic Mapping on Gamification Applied to Education.* Proceedings of the 29th Annual ACM Symposium on Applied Computing DOI: 10.1145/2554850.2554956
3. Nah, F. F. H. et al. (2013) *Gamification of Education Using Computer Games.* Lecture Notes in Computer Science. DOI: 10.1007/978-3-642-39226-9_12

EUCONEXUS

Co-funded by the European Union

Cybersecurity for Smart Ports & Maritime Industries

(link to the website and registration platform available here)

Professor's name, university & email	Giovanni Di Noto, Klaipeda University (Lithuania) giovanni.di-noto@ku.lt
Sector	Coastal
Thematic area	Smart Ports
EQF level	Level 6 (Bachelor)
ISCED-F field	0688 - Inter-disciplinary programs and qualifications involving information and Communication Technologies
ESCO skills & competences	T4.5 – transversal skills and competences – social and communication skills and competences - following ethical code of conduct S5.2.2 - skills – working with computers – setting up and protecting computer systems – protecting ICT devices – implement ICT security policies K1031 - knowledge – services – security services – military and defence – cyber security
-Proposed dates of the classes	Tuesdays, 10/11, 17/11, 24/11, 01/12, 08/12, 22/12, 16:00-18:00 CET
One hour for tutoring consultation	Tuesday, 15/12, 16:00-18:00 CET
Date of the exam/ final assessment	Tuesday, 22/12, 16:00-18:00 CET
Synchronous & asynchronous hours	Synchronous contact hours: 11 h Asynchronous hours & self-directed learning: 14 h
General description	This course builds the skills and knowledge required to enhance ports' smartness with tools and methods tailored to the unique cybersecurity challenges impacting ports and maritime industries. It explores cybersecurity themes across all informational layers from their outer dimensions (CTI ecosystems, cloud infrastructure, public networks, on-ship & cargo security, port connected operational systems & IoT fleet) to inner ones (authentication, identity management, application, data, AI/ML security, future challenges with quantum computing) considering both threat & prevention/mitigation strategies and how to implement them.
Description of the content (week by week)	**Lecture 1: Introduction to cybersecurity discipline (2 hours)** • Class introductions, MC introduction, goals, structure, exam structure

- Ethical vs non-ethical hacking, red vs blue, black/white box methods
- Cybersecurity landscape, historical background & post-2021 context
- GRC (Governance, Risk & Compliance), Learning organizations
- ISO-31000, ISO-27001 & tooling overview

Self-Learning (1.5 hours): research & read about cybersecurity use cases in port & maritime industries, root causes, impact, mitigation, prevention, GRC frameworks such as ISO-27001, ISO-31000, cybersecurity legislation including port specific.

Lecture 2: Cybersecurity outer, network & endpoint layers (2 hours)

- CTI networks, protocols, ecosystems (STIX/TAXII, CVE, OWASP, NIST), cloud infrastructure LEO satellite networks, mono vs multi-vendor supply chain, CDN (Content Delivery Networks), technical & legal cyber-hunting
- Physical security, DDoS, network gateways, firewalls, DNS, metal/virtual server, SOE, encryption, certificates, DRM, drills, endpoint IoT, stolen assets
- Port & maritime assets exposure, jamming devices, trojan cargoes, other network layer mitigative strategies

Self-Learning (1.5 hours) research & use outer layers cybersecurity tools, study attack techniques over networks, servers & endpoints, and how to prevent them.

Lecture 3: Cybersecurity authentication & architectural layers (2 hours)

- Identity management, MFA users & IoT, Network level privileges & permissions, information security policies, segregation of duties, 0-Trust, audit logs, reconnaissance techniques, sniffing, social engineering, threat avoidance tools
- Software quality assurance, SBOM, findings evaluation, ranking & prioritization
- Security & Privacy By-Design software architecture & development principles

Self-Learning (1.5 hours) research & read about SOX principles, automated testing tools, secure-by-design software architecture

Lecture 4: Cybersecurity inner app & data layers (2 hours)

- Common app threat types, classification, ranking, app configuration risks, app threats & related mitigation/prevention (code reviews, 3P libraries audits, featuritis neutralization, vulnerability & penetration testing)
- Data classification, SQL injection types, AI/ML threats & other data-related attacks, data leakages & their mitigation/prevention such as with DLT
- Challenges with AI/ML, DLT, IoT/E, & Quantum Computing (data encryption)

Self-Learning (5.5 hours) practical cyber war games (red & blue teams)

Lecture 5: Cybersecurity change management & implementation (2 hours)

- Change management & cybersecurity implementation strategies, green fields/environments vs established organization
- Cybersecurity inspections/assessments, forensics/reports
- Cybersecurity radar, cybersecurity awareness and training

Self-Learning & exam preparation (5 hours) general revision & preparation for knowledge assessment exam, individual project preparation & submission.

Importance for society	This course educates and prepares students to become professionals that will advance cybersecure digitalization for sustainable smart ports and maritime industries. The maritime industry is responsible for the transportation of over 90% of global trade. It faces an increasing risk surface and has become a de facto target for cyber criminals.
Skills (hard and soft skills)	**Hard skills:** • Advanced cybersecurity ethical hacking, threat identification & classification • Preventative & mitigative techniques, incident response **Soft skills:** • Ethics, Good Governance & Risk Management • Planning, Critical Thinking, Communication & Change Management
Sustainable Development Goals	SDG9. Industry, innovation and infrastructure SDG11. Sustainable cities and communities

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Setup cyber security strategies for port & maritime operations.	Lectures, Group discussions, Individual research, Individual project work.	Online quiz Individual project	Submission for individual projects in the form of a recorded video in Pecha-Kucha format (20 slides, 20 seconds per slide) on a relevant topic, such as real-world port-related cyber-attack case analysis, or cybersecurity solution. Presentations scored on 1) Use case or proposed solution's cybersecurity strengths, 2) Visual communication skills, 3) overall clarity & articulation	electronically unsupervised online (Moodle), time-limited with login-based identity verification. Individual project: unsupervised, with identity verification (live recorded presentation)
Manage cyber threats & incidents.	Lectures, Individual research.	Online Quiz	30-questions time-limited online Quiz	electronically unsupervised online (Moodle), time-limited with login-based identity verification.

Bibliography

Books:

1. Rashid, Chivers, Danezis, Lupu, Martin,2019, "*Cyber Security Body of Knowledge*"
2. Mark E. Goldstein, 2019 "*Port Cybersecurity: Securing Critical Infrastructure*"
3. Todd E, Williamson P, 2020, "*Cybersecurity in the Maritime Domain*"

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Advanced technologies for sustainable industries 4.0

(link to the website and registration platform available here)

Professor's name, university & email	Giovanni Di Noto, Klaipeda University (Lithuania) giovanni.di-noto@ku.lt
Sector	Smart
Thematic area	Industry 4.0
EQF level	Level 6 (Bachelor)
ISCED-F field	0688 - Inter-disciplinary programs and qualifications involving information and Communication Technologies
ESCO skills & competences	T1.2 – transversal skills and competences – core skills and competences – working with numbers and measures – carry out calculations - apply statistical analysis techniques S4.1.0 – skills – management skills – developing objectives and strategies - develop strategy to solve problems K0688 - knowledge – information and communication technologies (ICTS) - inter-disciplinary programmes and qualifications involving information and communication technologies (ICTS)
-Proposed dates of the classes	Wednesdays, 11/11, 18/11, 25/11, 02/12, 09/12, 23/12, 16:00-18:00 CET
One hour for tutoring consultation	Wednesday, 16/12, 16:00-18:00 CET
Date of the exam/ final assessment	Wednesday, 23/12, 16:00-18:00 CET
Synchronous & asynchronous hours	Synchronous contact hours: 11 h Asynchronous hours & self-directed learning: 14 h
General description	This course elucidates themes related to industry 4.0. It explores production processes from a sustainability maximization perspective via smarter primary, secondary & tertiary sectors. It dives into topics such as SDG (Sustainable Development Goals), key Sustainability drivers, 3P (Planet, People, Profit), a.k.a. triple bottom-line, accounting, ESG regulations & mandatory scope 1,2,3 reporting, production assets usage & processes optimization, and related technologies (IoT, AI/ML, DLT, Quantum Computing use cases & best practices).

Description of the content (week by week)	
	Lecture 1: Introduction to Smart Industry 4.0 & 3P accounting (2 hours) • Class introductions, MC introduction, goals, structure, exam structure • Industry 4.0 overview, history (from 1.0 to 4.0) background & context • Key concepts, technologies, models, glocalization vs. globalization • Smart Industry 4.0 & ESG drivers of Sustainability • SFRD, CSRD, CSDDD, CBAM, TCFD, SASB • 3P (Planet, People, Profit) accounting *Self-Learning (1.5 hours): research & read about history & impact of industrial & agricultural revolutions, case studies on successful integrations of Industry 4.0, Industry 4.0 implementation methodologies, ESG reporting legislations & scopes, 3P accounting systems* **Lecture 2: Smart Primary Sector (2 hours)** • Permaculture, vertical farming & conventional agriculture landscapes • IoT, AI/ML, and other technologies in agriculture, fisheries & forestry • Conservation, regeneration & socially driven sustainability models • Sustainable practices overview in Mining *Self-Learning (1.5 hours) research & read about precision agriculture, vertical farming, and smart mining, emerging technologies in primary sectors.* **Lecture 3: Smart Secondary Sector (2 hours)** • Circular vs. Linear economics, impact on product design & production • Energy efficiency, waste reduction, resource & logistics optimization • IoT, AI/ML, robotics & 3/4D printing & other smart technologies • Predictive maintenance & asset lifecycle management • 3/4/5PL business models & best practices *Self-Learning (1.5 hours) research & read about manufacturing 4.0 real-world case implementations, 3/4/5PL model use cases for key sectors* **Lecture 4: Smart Tertiary Sector (2 hours)** • Digital twins, AI/ML, IoT in service sectors such as healthcare, finance, etc. • Case studies on sustainable practices in service industries *Self-Learning (1.5 hours) case studies on smart services & technology trends* **Lecture 5: Anticipating challenges with advanced techs (2 hours)** • Challenges with AI/ML, DLT, IoT/E, Quantum & Bio Computing *Self-Learning & exam preparation (9 hours) general revision & preparation for knowledge assessment exam, individual project preparation & submission.*

Importance for society	This inter-disciplinary course educates and prepares students to meaningfully contribute to society's most pressing challenges via the application of advanced technologies, across primary, secondary & tertiary industries & a variety of sectors. The course promotes innovation, sustainable economic models, environmental stewardship, social resilience, all of which aligned with critical SDGs for the future.
Skills (hard and soft skills)	**Hard skills:** • Real-world & synthetic data analysis, scrutiny & interpretation • Lifecycle & Environmental Impact Assessment in ESG scope 1,2,3 contexts **Soft skills:** • Critical Thinking & Problem Solving • Collaboration & Communication
Sustainable Development Goals	SDG9. Industry, innovation and infrastructure SDG11. Sustainable cities and communities SDG12. Responsible consumption and production

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Define industry 4.0 strategies aimed to enhance positive sustainability outcomes.	Lectures, Group discussions, Individual research, Individual project work.	Online quiz Individual project	Submission for individual projects in the form of a recorded video in Pecha-Kucha format (20 slides, 20 seconds per slide) on a relevant topic, such as analysis real-world industry 4.0 case analysis, or solution to sustainability challenge via industry 4.0 application Presentations scored on 1) Use case or proposed solution's sustainability strengths, 2) Visual communication skills, 3) overall clarity & articulation	electronically unsupervised online (Moodle), time-limited with login-based identity verification. Individual project: unsupervised, with identity verification (live recorded presentation)
Apply the acquired knowledge to fulfill ESG reporting.	Lectures, Individual research.	Online Quiz	30-questions time-limited online Quiz	electronically unsupervised online (Moodle), time-limited with login-based identity verification.

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1. Walker J, Pekmezovic A, Walker G, 2019 "*Sustainable Development Goals: Harnessing Business to Achieve the SDGs through Finance, Technology and Law Reform*"
2. Gilchrist A, 2016 "*Industry 4.0: The Industrial Internet of Things*"
3. Asthana R, 2015 "*Green and Sustainable Manufacturing of Advanced Material*"

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1. Grieves M, Vickers J, 2016 " *Origins of the Digital Twin Concept*" https://www.researchgate.net/publication/307509727_Origins_of_the_Digital_Twin_Concept
2. Kirchherr J, Reike D, Hekkert M, 2017 "*Conceptualizing the circular economy: An analysis of 114 definitions*" https://www.sciencedirect.com/science/article/pii/S0921344917302835
3. Mir SM, Naikoo NB, Kanth RH, Bahar FA, Bhat MA, Nazir A, Mahdi AS, Amin Z, Singh L, Raja W, Saad AA, Bhat TA, Palmo T, Ahngar TA, 2022 "*Vertical Farming: The future of agriculture A Review*" https://www.thepharmajournal.com/archives/2022/vol11issue2S/PartP/S-11-2-22-988.pdf

Websites:

1. United Nations Sustainable Development Goals https://sdgs.un.org/goals
2. World Economic Forum (WEF) - Industry 4.0 https://www.weforum.org/focus/fourth-industrial-revolution/
3. International Institute for Sustainable Development (IISD) https://www.iisd.org/
4. Sustainability Accounting Standards Board (SASB) https://www.sasb.org/
5. Ellen MacArthur Foundation - Circular Economy https://www.ellenmacarthurfoundation.org/

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Information literacy

(link to the website and registration platform available here)

Professor's name, university & email	Alica Kolarić, University of Zadar (Croatia) akolaric20@unizd.hr
Sector	University
Thematic area	Information literacy
EQF level	Level 6 (Bachelor)
ISCED-F field	0322 Library, information and archival studies
ESCO skills & competences	T6.3 - transversal skills and competences - life skills and competences - applying civic skills and competences critically evaluate information and its sources (evaluate and analyse information and its sources, have a critical understanding of media in democratic societies) K0322 – knowledge - social sciences, journalism and information - journalism and information - library, information and archival studies - source criticism S2.7 – skills - information skills - analysing and evaluating information and data - analysing and evaluating information and data
Proposed dates of the classes	Fridays, 13/11, 20/11, 27/11, 04/12, 11/12, 18/12, 11:00-13:00 (CET)
One hour for tutoring consultations	Friday, 11/12, 13:00-14:00 (CET)
Date of the exam/ final assessment	Friday, 18/12, 11:00-13:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 12 h Asynchronous hours & self-directed learning: 13 h
General description	The course introduces students to the basics of information literacy. It is suitable for anyone interested in the topic, regardless of prior knowledge. Information literacy has been a subject of study for the past 50 years, gaining increasing relevance due to the rapid and significant changes in the modern information environment. The issue of accessing, evaluating, and effectively and ethically using information continues to grow in importance. The development of AI technologies poses new challenges that information users should be able to handle. Information literacy is essential for developing effective information users.

Description of the content (week by week)	Unit 1. Information literacy: the concept. Information literacy in contexts: everyday life, citizenship, education, workplace, health. Orientation in the information environment. (2 h) Unit 2. Identifying information needs (2 h) Unit 3. Seeking information. Affective dimension. (2 h) Unit 4. Evaluation of information (2 h) Unit 5. Ethical use of information. Creating and sharing information. (2 h)			
Importance for society	Information literacy enables people to understand the information world around them, form informed opinions, and make informed decisions. Information-literate individuals can challenge assumptions and authorities, recognize bias and misinformation, and engage actively in democratic life. It is crucial for an informed and active citizenry in a democratic society. Special emphasis is placed on the connection between information literacy and AI literacy, and on their roles in the critical and responsible use of AI technologies in academic work.			
Skills (hard and soft skills)	Hard skills: research skills, critical evaluation Soft skills: critical thinking, ethical awareness			
Sustainable Development Goals	SDG4. Quality education			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Explain the information environment, including different information sources and formats.	Lecture, discussions, individual work, group work.	Quiz, debate, evaluation of assignments, presentations.	Individual work, group work. Work in pairs, essay.	Supervised with no identity verification.
Formulate research problem and inquiry, identify and recognize the information needs.	Lecture, discussions, individual work, group work.	Quiz, debate, evaluation of assignments, presentations.	Individual work, group work. Work in pairs, essay.	Supervised with no identity verification.
Bibliography	**Books:** 1. Horton, F. W. (2008). *Understanding information literacy: a primer; an easy-to-read, non-technical overview explaining what information literacy means, designed for busy public policy-makers, business executives, civil society administrators and practicing professionals*. **Selected chapters**.			

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1. CILIP (2018). *CILIP Definition of Information Literacy*. https://www.cilip.org.uk/resource/resmgr/cilip/information_professional_and_news/press_releases/2018_03_information_lit_definition/cilip_definition_doc_final_f.pdf
2. IFLA (2017). *How to spot fake news*. https://blogs.ifla.org/lpa/files/2017/01/How-to-Spot-Fake-News.pdf
3. Sabzalieva, E., & Valentini, A. (2023). *ChatGPT and artificial intelligence in higher education: quick start guide*. URL: https://eduq.info/xmlui/bitstream/handle/11515/38828/ChatGPT-Artificial-Intelligence-in-higher-education-Quick-Start-guide_UNESCO-2023.pdf?sequence=2&isAllowed=y

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1. UNESCO (2023). *Information Literacy*. https://www.unesco.org/en/ifap/information-literacy
2. UNESCO (2023). *Five Law of media and Information Literacy*. https://www.unesco.org/en/media-information-literacy/five-laws
3. UNESCO (2021). *7 minutes to understand AI*. https://www.youtube.com/playlist?list=PLWuYED1WVJIPHJLk84wWQbzeZcWLt5rwU
4. *Study Toolbox: Searching Online Databases*. Southern Institute of Technology (SIT) (Sep 12, 2024). https://sitacnz.libguides.com/Study_Toolbox/Searching_Databases

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Building Sustainable Livestock Systems

(link to the website and registration platform available here)

Professor's name, university & email	Joel Bueso Rodenas, Catholic University of Valencia (Spain) joel.bueso@ucv.es
Sector	Sustainability
Thematic area	Sustainable management
EQF level	Level 6 (Bachelor)
ISCED-F field	0821 Agriculture
ESCO skills & competences	T6.2 – transversal skills and competences – life skills and competences – applying environmental skills and competences – adopt ways to reduce negative impact of consumption – advise on sustainable management policies T6.2 – transversal skills and competences – life skills and competences – applying environmental skills and competences – adopt ways to reduce negative impact of consumption – assess environmental impact T4.4 – transversal skills and competences – social and communication skills and competences – leading others – oversee animal management – manage animal welfare T3.1 –transversal skills and competences – self-management skills and competences – working efficiently – manage quality – ensure food quality
Proposed dates of the classes	Thursdays, 19/11, 26/11, 03/12, 10/12, 17/12, 16:00-18:00 (CET)
One hour for tutoring consultations	Friday, 11/12, 10:00-11:00
Date of the exam/ final assessment	Thursday, 17/12, 16:00-18:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	Livestock production is facing major challenges related to environmental sustainability, climate change, animal welfare, and the increasing demand for high-quality foods of animal origin. Sustainable livestock systems require balancing productive efficiency with responsible resource use, animal health and welfare, and food quality. This micro-credential provides an evidence-based overview of the principles of animal production and explores current strategies to improve the sustainability of livestock systems through better management, environmental stewardship and precision livestock farming. Students will gain the knowledge needed to evaluate and design more

	sustainable animal production systems while maintaining animal welfare and product quality.
Description of the content (week by week)	**Unit 1. Principles of Animal Production (2 hours)** • Importance of livestock production • Global livestock production systems • Principles of animal production • Livestock productivity and efficiency • Sustainability in animal production • Current challenges for livestock production **Unit 2. Sustainable Livestock Production Systems (2 hours)** • Conventional livestock farming • Organic livestock farming • Extensive and intensive production systems • Grazing and transhumance • Animal nutrition and sustainable feeding • Sustainable management practices **Unit 3. Animal Welfare and Food Quality (2 hours)** • Animal welfare as a pillar of sustainability • Animal health and productivity • Welfare assessment • One Health approach • Milk and meat quality • Consumer expectations and food quality **Unit 4. Environmental Sustainability of Livestock Systems (2 hours)** • Climate change and livestock production • Greenhouse gas emissions • Carbon footprint • Water footprint • Biodiversity • Heat stress and environmental adaptation **Unit 5. Future Challenges in Sustainable Animal Production (2 hours)** • Circular economy in livestock production • Precision livestock farming • Artificial intelligence and digital technologies • Sustainable food production strategies • Case studies and final assessment
Importance for society	The sustainable production of foods of animal origin is essential to ensure global food security while addressing environmental challenges, climate change and increasing societal expectations regarding animal welfare and food quality. This micro-credential raises awareness of the need to balance productive efficiency, environmental sustainability and ethical livestock management, providing students with the knowledge required to contribute to more sustainable and resilient food production systems.
Skills (hard and soft skills)	**Hard skills:** Identify environmental, animal welfare, and food-quality aspects of livestock systems.

	Develop evidence-based proposals to improve sustainability in livestock and food production systems. **Soft skills:** Critical thinking and evidence-based decision making. Communication and discussion of sustainability livestock system			
Sustainable Development Goals	SDG2. Zero Hunger SDG3. Good Health and Well-being SDG4. Quality Education SDG12. Responsible Consumption and Production SDG13. Climate Action SDG15. Life on Land			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Explain the role of livestock systems in food production and sustainable development, identifying key challenges related to environmental sustainability, animal welfare, resource use and food quality	Lectures, case studies, interactive discussions	Case study	Small group analysis of a livestock production system	Supervised online with identity verification
Identify environmenta social and economic factors which have an impact on the sustainability of livestock production systems	Lectures, problem-based learning, case studies	Online quiz	Individual project proposing improvements to a livestock production system	Supervised online with identity verification
Bibliography	**Books:** 1. Fraser, D. (2008). Understanding Animal Welfare: The Science in Its Cultural Context. Wiley-Blackwell. 2. Webster, J. (2016). Animal Welfare: Freedoms, Dominions and "A Life Worth Living". Wiley-Blackwell.			

3. Steinfeld, H., Mooney, H. A., Schneider, F., & Neville, L. E. (Eds.). (2010). Livestock in a Changing Landscape. Volume 1: Drivers, Consequences and Responses. Island Press.
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Introduction to film literacy and filmmaking

(link to the website and registration platform available here)

Professor's name, university & email	Mirko Duić, University of Zadar (Croatia) miduic@unizd.hr
Sector	Smart
Thematic area	Digital marketing and communication
EQF level	Level 6 (Bachelor)
ISCED-F field	0211 Audio-visual techniques and media production
ESCO skills & competences	K0211 – Knowledge – arts and humanities – arts - audio-visual techniques and media production (film and video production) S1.12.0 – Skills – Communication, collaboration and creativity - creating artistic, visual or instructive materials T4.1 – Transversal skills and competences – social and communication skills and competences - communicating (address an audience; promote ideas, products, services)
Proposed dates of the classes	Fridays, 20/11, 27/11, 04/12, 11/12, 15/01, 22/01, 09:00-11:00 (CET)
One hour for tutoring consultations	Thursday, 10/12, 09:00-10:00 (CET)
Date of the exam/ final assessment	Friday, 22/01, 09:00-11:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 12 h Asynchronous hours & self-directed learning: 13 h
General description	Nowadays, private and public communication and digital marketing have largely been based on the creation, sharing and viewing of films. This micro-credential course, will support students in learning about elements of film literacy. It will support them in learning about basic principles, methods and technologies needed for the creation of films. When the film authors are well acquainted with the important film literacy concepts, the more creative and effective they could be in developing, using and combining those concepts to create films with a high educational level, convincing and entertaining films. The goal of this course is to support the students to acquire the foundational prerequisites necessary for making different types of films that could bring benefits to particular viewers and the whole society.

Description of the content (week by week)	Unit 1. Introduction and film aesthetics (1 hour); Film editing 1 (1 hour) Unit 2. Diversity and characteristics of film types (1 hour); Film editing 2 (1 hour) Unit 3. Finding and shaping ideas for film creation (1 hour); Film editing 3 (1 hour) Unit 4. Film shooting, camera elements & lighting (1 hour); Film editing 4 (1 hour) Unit 5. Filmmaking tools and platforms (1 hour); Exam (1 hour)			
Importance for society	The importance of all forms of communication is invaluable for the good functioning of society. Whether it is oral, written, audio-visual or some other type of communication. Nowadays, communication through different types of films - documentary, feature, animated, or films that combine these genres - is present in different ways in everyday life. We can single out just one of many examples - film tutorials on the use of computer programs, which are available on video portals like YouTube. These film tutorials are watched by millions of people around the world on a daily basis. They are a specific type of educational films that are very useful from a societal point of view because they enable people and many societies around the world to expand their knowledge, skills and competencies related to the topics that interest them.			
Skills (hard and soft skills)	Hard skills: Basic film shooting & editing skills Soft skills: Problem solving & Creativity			
Sustainable Development Goals	All 17 Sustainable Development Goals of the UN could be described and explained in detail, as well as convincingly advocated and promoted with various types of films.			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Perform shooting and editing of films at the basic level	Lectures, individual activities, discussions	Evaluation of assignments	Individual work including the creation of short film on the chosen topic Requirements: filmmaking activities	Unsupervised with no identity verification
Demonstrate an understanding of the basic principles, methods and technologies used in the filmmaking.	Lectures, individual activities, discussions	Attendance, evaluation of assignments, oral exam	Individual work Requirements: filmmaking activities, presentation in front of the colleagues	Unsupervised with no identity verification (assignments); supervised with identity verification (oral exam)
Bibliography	**Books:**			

1. Reich, John. (2017) *Exploring Movie Construction & Production: What's So Exciting about Movies?*. Open SUNY Textbooks. URL: https://ecampusontario.pressbooks.pub/movieconstruction/
2. Moss, Yelizaveta; Wilson, Candice. *Film Appreciation*. University of North Georgia, Affordable Learning Georgia. URL: https://alg.manifoldapp.org/projects/film-appreciation
3. Sharman, Russell. (2020) *Moving pictures: An introduction to cinema*. University of Arkansas. URL: https://uark.pressbooks.pub/movingpictures/

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2. Blanco, Xiomara. (2023) *Museums and YouTube: You'll never believe these 3 tips to improve your channel*. American Alliance of Museums. URL: https://www.aam-us.org/2023/05/05/museums-and-youtube-youll-never-believe-these-3-tips-to-improve-your-channel/
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System thinking and system dynamics modelling

(link to the website and registration platform available here)

Professor's name, university & email	Vitalij Denisov, Klaipeda University (Lithuania) vitalij.denisov@ku.lt
Sector	Smart
Thematic area	Digital humanities
EQF level	Level 6 (Bachelor)
ISCED-F field	0688 - Inter-disciplinary programs and qualifications involving information and Communication Technologies
ESCO skills & competences	T2.1 – transversal skills and competences – thinking skills and competences - processing information, ideas and concepts S2.7.0 – skills – information skills - analysing and evaluating information and data S5.6.0 – skills – working with computers – using digital tools for collaboration, content creation and problem solving K0688 – knowledge – information and communication technologies (ICTS) - inter-disciplinary programmes and qualifications involving information and communication technologies (ICTS)
Proposed dates of the classes	Fridays, 20/11, 27/11, 04/12, 11/12, 18/12, 15:00-17:00 (CET)
One hour for tutoring consultations	Saturday, 19/12, 16:00-17:00 (CET)
Date of the exam/ final assessment	Saturday, 19/12, 17:00-18:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 11 h Asynchronous hours & self-directed learning: 14 h
General description	This micro-credential aims to develop intuition for systems thinking and more formal skills in modeling systems dynamics. It enables students to define a problem and formulate the system under study, as well as to develop their own computer models of system dynamics for various phenomena and processes in various fields of knowledge and application areas. When applied in the humanities and social sciences, the course also aims to bridge the gap between the descriptive approach used in the social sciences and the formal approach typically used in the natural sciences. Being proposed as an approach for managing complexity, the systems thinking provides a tool to help analysts, policy and decision makers understand the cause-

	and-effect relationships among data, information, and people, i.e., the main constitutes of the modern knowledge-based society. It, therefore, improves individual and collective decision making by focusing attention on the causes of problems and potential changes needed to produce better results. Also, system dynamics approach helps linking the knowledge that students have already acquired while studying different disciplines.
Description of the content (week by week)	Unit 1. Concept of a system, systems and models (2 hours: lecture): – System approach. Definition of a system. System analysis principles. Systems thinking and system dynamics approach. – From systems to their models. Model types, mathematical and simulation models. Dynamic models. – Model development procedure and techniques. Causal loops and stock and flow diagramming methods. Unit 2. Model design in a simulation system (2 hours: lecture and practical work) – Modeling systems (simulators). – Model design in a simulation system using stock and flow diagrams. – Running created models (model simulation). Unit 3. Models of growth and decline (2 hours: lecture and practical work) – Growth laws. Formulation of assumptions of growth models. – Numerical implementation of models. Unit 4. More complex models: (2 hours: lecture and practical work). – Models of interactions. Different types of interactions: predator-prey, competition, etc. – Presentation of modelling results. Phase portrait of a system. Unit 5. Spread and diffusion models (2 hours: lecture and practical work). – Epidemic models. Innovation and product diffusion models. – Summary of the course, duscussion and model portfolio formation.
Importance for society	Rapid changes in all spheres of our lives complicate the world. As recent WEF reports highlight, megatrends such as the emergence of a global economy, rapid urbanization, technological breakthroughs, climate change, and resource scarcity are shaping a whole new set of global risks for which our society must be better prepared. Systems thinking is often referred to as the “cognitive skill of the 21st century” because it is important to learn a new way of thinking about this ever-changing, increasingly complex world and equip students with the analysis and modeling skills they need to succeed in their future lives.
Skills (hard and soft skills)	Hard skills: – System dynamics diagramming methods – Design & application of simulation models Soft skills: – Creative & critical thinking – Problem solving
Sustainable Development Goals	SDG4: Quality education SDG8: Decent work and economic growth SDG11: Sustainable cities and communities

	SDG12: Responsible consumption and production			
Learning outcomes	**Study methods**	**Assessment methods**	**Assignments. Requirements/format**	**Supervision and identity verification during assessment**
Demonstrate fresh knowledge of systems analysis principles and deep under-standing of the system dynamics approach and its application to the development of conceptual and simulation models	Lectures, discussions	Online Quiz	Time-limited quiz in the virtual learning environment Moodle: 10-questions of different type	Supervised online with login-based identity in Moodle
Prepare new & apply existing computer-based simulation models using stock and flow and causal loop diagrams in a simulation system	Presentations, diagramming, simulation of real-life situations, problem-based learning	Portfolio	Individual work. Submission of portfolio in Moodle in the form of individually developed system dynamics models in a chosen simulation system	Unsupervised online submission of portfolio in Moodle with login-based identity verification

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Environmental literature

(link to the website and registration platform available here)

Professor's name, university & email	Mirna Sindičić, University of Zadar (Croatia) msindici@unizd.hr
Sector	University
Thematic area	Environmental and science education
EQF level	Level 6 (Bachelor)
ISCED-F field	0232 Literature and linguistics
ESCO skills & competences	S1.3.1 – Skills – communication, collaboration and creativity – teaching and training – teaching academic or vocational subjects – teach principles of literature K0232 – Knowledge – arts and humanities – languages - literature and linguistics – literary theory K0314 – Knowledge – social sciences, journalism and information – social and behavioural sciences - sociology and cultural studies
Proposed dates of the classes	Tuesdays, 24/11, 01/12, 08/12, 15/12, 22/12, 05/01, 09:00-11:00 (CET)
One hour for tutoring consultations	To be confirmed
Date of the exam/ final assessment	Tuesday, 05/01, 09:00-11:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 12 h Asynchronous hours & self-directed learning: 13 h
General description	Environmental humanities are among the most dynamic subfields in literary and cultural studies today. This course on environmental literature, situated within the framework of environmental humanities, provides guidance in reading and analyzing climate fiction and environmental literature. Through the study of selected fictional texts, students will explore nature/society dualisms and the relationship between humans and the natural environment. Our central aims are threefold: to examine why literary fiction matters in conversations about climate change; to analyze how literary and cultural forms shape perceptions of - and relationships with - the environment; and to understand how writers articulate environmental concerns within broader societal debates. Ultimately, this course will demonstrate how fictional texts can raise consciousness about climate crisis and inspire new, transformative ways of thinking about one of the defining issues of our time.Beyond fostering personal growth and enjoyment, reading literature enriches

	vocabulary, cultivates empathy, sharpens communication skills, and strengthens analytical and critical thinking. Crucially, it also deepens awareness of global warming and climate change, underscoring the need for more sustainable ways of living.
Description of the content (week by week)	Unit 1. Course introduction. What are the Environmental humanities? Literature and Anthropocene. What are Ecocriticism and Ecopetics? (2 hours) Unit 2. Literature and the Anthropocene. Ecocriticism and Ecopoetics. Does Climate fiction make a difference? (2 hours) Unit 3. Early ecological fiction and Nature Writing. (2 hours) Unit 4. Climate change and 20th and 21st Century Literature. (2 hours) Unit 5. Imagining extinction. Concluding remarks. (2 hours)
Importance for society	• Increases awareness on environmental issues. • Humanizes climates change and provokes empathy. • Provokes ethical reflections and critical thinking about environment, ecology, climate change and sustainability. • Inspires action and change.
Skills (hard and soft skills)	Hard skills: Writing skills, Communication skills Soft skills: Analytical & Critical thinking, Active listening
Sustainable Development Goals	SDG4. Quality education SDG5. Gender quality SDG10. Reduced inequalities SDG11. Sustainable cities and communities SDG12. Responsible consumption and production SDG13. Climate action SDG17. Partnerships for the goals

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Analyse the assigned environmental literature	Lecture and discussion	Presentation prepared by student	Individual work on final essay	Supervised online
Interpret literary and cultural texts within wider debates and discourses on	Case studies	Evaluation of assignment	Attendance and class participation	Supervised online

environment and climate change				
Bibliography	**Books:** 1. Jean Giono, *The Man who Planted Trees* 2. Paolo Cognetti, *The Eight Mountains* 3. J. G. Ballard, *The Drowned World* 4. Maja Lunde, *The History of bees* 5. Henry David Thoreau, *Walden* 6. Sheila Watt-Cloutier, *The Right to be cold* **Publications/articles:** 1. Clark, Timothy (2011), *The Cambridge Introduction to Literature and the Environment*, Cambridge University Press. 2. Emmet, R. S., Nye, D. E. (2017), *The Environmental Humanities. A Critical Introduction,* The MIT Press 3. Parham, John (ed.) (2021), *The Cambridge Companion to Literature and the Anthropocene,* Cambridge University Press. **Websites:** 1. https://climateimagination.asu.edu/everything-change/ 2. https://www.dailymotion.com/video/xw69i5 3. https://www.imdb.com/title/tt14641542/			

EU CONEXUS

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Durable, Sustainable, Resilient?

(link to the website and registration platform available here)

Professor's name, university & email	Alexandru Aldea, Florin Pavel, Technical University of Civil Engineering Bucharest (Romania) alexandru.aldea@utcb.ro; florin.pavel@utcb.ro
Sector	European
Thematic area	International standardisation
EQF level	Level 6 (Bachelor)
ISCED-F field	0732 Building and Civil Engineering
ESCO skills & competences	S2.1.3 interpreting technical documentation and diagrams S4.1.4 developing policies and legislation K0732 building and civil engineering
Proposed dates of the classes	Monday, 07/12, Wednesdays, 09/12, 16/12, 06/01, 13/01, Monday, 18/01, 17:00-19:00 (CET)
One hour for tutoring consultations	Monday, 18/01, 17:00-18:00 (CET)
Date of the exam/ final assessment	Monday, 18/01, 17:00-18:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 12 h Asynchronous hours & self-directed learning: 13 h
General description	Official documents at all levels (university, working place, public administration at local, regional, and national level, EU, UN institutions, etc.) as well as media and social media are nowadays full of concepts like hazard, vulnerability, risk, durable, sustainable, resilient. Many people are misunderstanding or missing the proper use of these concepts and their meaning. Through this course, participants will understand the concepts and their correct use in different circumstances, through case studies.
Description of the content (week by week)	Unit 1. Concepts of hazard, vulnerability, risk and resilient in official documents at all levels (university, working place, public administration at local, regional, and national level, EU, UN institutions, etc.) as well as media and social media. (4 hours)

	Unit 2. Concept of durability in official documents at all levels (university, working place, public administration at local, regional, and national level, EU, UN institutions, etc.) as well as media and social media. (1 hour) Unit 3. Concept of sustainable in official documents at all levels (university, working place, public administration at local, regional, and national level, EU, UN institutions, etc.) as well as media and social media. (2 hours) Unit 4. Proper use of concepts (3 hours)
Importance for society	Appropriate use of concepts like hazard, vulnerability, risk, durable, sustainable, resilient is essential since the SDG's are more and more part of professional and social realities. A clarification of concepts is beneficial for nowadays citizens, regardless their field of study.
Skills (hard and soft skills)	Hard skills: Understanding and proper use of the concepts for elaborating documents Soft skills: Critical thinking, Communication
Sustainable Development Goals	SDG4. Quality education SDG9. Industry, innovation and infrastructure SDG11. Sustainable cities and communities SDG12. Responsible consumption and production

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements /format	Supervision and identity verification during assessment
Appropriately define, describe and use the concepts of hazard, risk, durable, sustainable, resilient.	Lecture, discussions, Individual work	Written assessment	Individual work	Supervised online with identity verification
Distinguish and explain the use of the concepts in social and institutional environment.	Lecture, discussions, group work	Quizz	Group work	Supervised online with identity verification

Bibliography	**Websites:** 1. Disaster Resilience Scorecard for Cities, https://www.unisdr.org/campaign/resilientcities/assets/toolkit/Scorecard/UNDRR_Disaster%20resilience%20%20scorecard%20for%20cities_Detailed_English.pdf

2. Sendai Framework for Disaster Risk Reduction 2015 – 2030, https://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf
3. Mitchell, A. (2013) Risk and Resilience: From Good Idea to Good Practice. https://www.oecd.org/dac/conflict-fragility-resilience/docs/FINAL%20WP%2013%20Resilience%20and%20Risk.pdf
4. Schofield, H., Twigg, J. (2019) Making Cities Sustainable and Resilient, https://www.preventionweb.net/files/66413_undrrlessonslearnedfromdevcoproject.pdf
5. Hofmann, S.H. (2021) 100 Resilient Cities program and the role of the Sendai framework and disaster risk reduction for resilient cities. Progress in Disaster Science, 11: 100189. https://www.sciencedirect.com/science/article/pii/S2590061721000491
6. UN Common Guidance on Helping Build Resilient Societies. https://unsdg.un.org/sites/default/files/2021-09/UN-Resilience-Guidance-Final-Sept.pdf
7. Building Regulation for Resilience. https://www.gfdrr.org/sites/default/files/publication/BRR%20report.pdf
8. Mapping Resilience for the Sustainable Development Goals, https://www.undrr.org/media/88718

EUCONEXUS

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English Communication for Sustainable Development

(link to the website and registration platform available here)

Professor's name, university & email	Arash Javadinejad, Catholic University of Valencia (Spain) arash.javadinejad@ucv.es
Sector	Sustainability
Thematic area	English for Sustainability
EQF level	Level 6 (Bachelor)
ISCED-F field	0231 Language acquisition
ESCO skills & competences	T1.1 - Transversal skills and competences- core skills and competences- mastering languages - academic English L1 - Language skills and knowledge – languages – English - academic English K0231 - Knowledge - Knowledge arts and humanities – languages - language acquisition - academic English
Proposed dates of the classes	Tuesdays, 15/12, 22/12, 12/01, 19/01, 26/01, 12:00-14:00 (CET)
One hour for tutoring consulations	Thursday, 21/01, 12:00-13:00 (CET)
Date of the exam/ final assessment	Tuesday, 26/01, 12:00-14:00 (CET)
Synchronous & asynchronous hours	Synchronous contact hours: 10 h Asynchronous hours & self-directed learning: 15 h
General description	English Communication for Sustainable Development is an advanced level course to improve your English skills related to the thematics of Sustainable Development Goals (United Nations, 2015). High-standard material is taught through a blend of online-autonomous lessons and activities, accompanied by a tutor for support. In this course, the student will learn and practice dealing with authentic material and topics related to Sustainability; the course will help sharpen his/her edge in terms of the receptive (reading and listening) and productive (speaking and writing) skills.
Description of the content (week by week)	Unit 1. Social Aspects of Sustainability (2 hours) Unit 2. Sustainability, Economy and Inequality (2 hours) Unit 3. Sustainability and Environment (2 hours) Unit 4. International Cooperation and Sustainability (2 hours) Unit 5. Conclusion and Evaluation (2 hours)

Importance for society	The course "English Communication for Sustainable Development " is significant for society as it integrates language learning with critical environmental issues, fostering global awareness and communication skills essential for addressing sustainability challenges. By focusing on Sustainability, the course raises awareness about the interconnectedness of environmental, social, and economic systems, emphasizing the importance of sustainable practices for the well-being of future generations. It encourages students to think critically about environmental impacts, promotes sustainable living habits, and equips them with the vocabulary and communication tools needed to engage in meaningful discussions and advocacy for sustainable development. This kind of education is vital in cultivating informed and proactive global citizens committed to preserving the planet.
Skills (hard and soft skills)	Hard skills: • Grammar and vocabulary proficiency in the area of Sustainability, • Technichal communication (written and spoken). Soft skills: • Critical Thinking: Through exploring sustainability challenges, students will develop the ability to analyze problems, evaluate solutions, and think critically about the implications of various actions on the environment and society. • Effective Communication: The course emphasizes the importance of conveying ideas clearly and persuasively, both in written and spoken forms, fostering the ability to engage diverse audiences in discussions about sustainability issues and initiatives.
Sustainable Development Goals	All 17 Sustainable Development Goals are covered during the course, so that the student is able to use specific vocabulary after the course.

Learning outcomes	Study methods	Assessment methods	Assignments. Requirements/format	Supervision and identity verification during assessment
Find necessary linguistic resources related to Sustainability	Presentations Lectures Group Work Individual Work Homework (Tasks)	Continuous assessment: Portfolio of activities, projects and tasks Evaluation of assignments Collected evidence from formal and informal learning	Group work, Individual work, and tasks Requirements: Individual work Work in pairs Presentation in front of colleagues Written tasks (essay)	supervised online or onsite with identity verification

Discuss issues related to Sustainability in written and spoken discourse		Class observation and participation Quizzes on the platform		
Bibliography	**Books:** 1. Cambridge Complete First, Cambridge University Press & Assessment 2. Cambridge Complete Advanced, Cambridge University Press & Assessment 3. Cambridge Compact First, Cambridge University Press & Assessment 4. Cambridge Compact Advanced, Cambridge University Press & Assessment **Websites:** https://sdgs.un.org/goals			