COURSE OUTLINE

(1) GENERAL

SCHOOL	Social Sciences		
ACADEMIC UNIT	Department of Cultural Technology and Communication		
LEVEL OF STUDIES	Postgraduate Studies		
COURSE CODE	UA-MC3	SEMESTER	1
COURSE TITLE	Standardisation & EU Regulatory Compliance in Digital Circular Economy		
INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, state the weekly teaching hours and the total credits*		WEEKLY TEACHING HOURS	CREDITS
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail in section (4).		3	8
COURSE TYPE *general background, special background, specialization, general education, skills development*	General background		
PREREQUISITE COURSES	No		
LANGUAGE OF INSTRUCTION AND OF ASSESSMENT	English		
MODE OF TEACHING *in-person (%)* *synchronous distance learning (%)* *asynchronous distance learning (%)* *(In the case of synchronous distance learning, the total weekly duration of teaching is recorded)*	The course is delivered exclusively through synchronous distance learning. Each weekly lecture lasts 180 minutes.		
AVAILABILITY TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	TBA		

(2) LEARNING OUTCOMES

Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Brief Guide for drafting Learning Outcomes*

After the successful completion of the course, the student will be able to:

In terms of knowledge:

- Critically evaluate the EU policy architecture (i.e. EU Green Deal, CEAP, ESG frameworks) shaping the digital–circular transition and its implications for business strategy.
- Synthesise the regulatory requirements of key EU laws (AI Act, ESPR, CSRD, CSDDD, DPP regulations) and explain how they govern digital technologies and circular-economy practices.
- Explain the role of international and European standardisation bodies (ISO, CEN/CENELEC, ETSI) in enabling interoperability, quality assurance, and sustainability across digital circular systems.

- Analyse sustainability due diligence, corporate accountability, and environmental governance frameworks and their influence on cross-sector value chains.
- Demonstrate advanced understanding of assessment standards (ISO 59000 series, LCA, MFA, indicators) used to measure circularity performance and regulatory compliance.
- Evaluate regulatory risks, governance tensions, and ethical dilemmas in areas such as AI deployment, ecocide, due diligence, and data governance.

In terms of skills:

- Conceptualise compliance-ready strategies that integrate EU regulatory obligations with organisational sustainability goals, digital capabilities, and value-chain realities.
- Integrate relevant standards and legal requirements to support the development and governance of Digital Product Passports and traceability systems.
- Apply lifecycle-phase analysis and policy interpretation to diagnose regulatory impacts on company operations and propose adaptation strategies.
- Assess measurement and reporting frameworks to select appropriate indicators for circular performance and strategic decision-making.

In terms of responsibility and autonomy:

- Drive organisational responses to EU regulatory requirements by making strategic, ethical and evidence-based decisions that align business transformation with digital and circular policy demands.
- Exercise professional judgement in navigating complex, evolving regulatory environments, balancing compliance with innovation and competitiveness.
- Manage interdisciplinary compliance initiatives across legal, sustainability, technology, and operational teams to address circular-economy obligations.
- Take responsibility for ensuring transparent, accountable practices in AI governance, sustainability reporting, due diligence, and environmental communication.
- Orchestrate the alignment of standards, regulations, and digital technologies to support long-term organisational resilience within the EU's twin transition.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and are stated below), at which of the following does the course aim?

Search, analysis and synthesis of data and information, with the use of the necessary technology	*Project planning and management*
Adaptability to new situations	*Respect for difference and multiculturalism*
Decision-making	*Respect for the natural environment*
Working independently	*Showing social, professional and ethical responsibility and sensitivity to gender issues*
Team work	*Criticism and self-criticism*
Working in an international environment	*Production of free, creative and inductive thinking*
Working in an interdisciplinary environment	*……*
Production of new research ideas	*Other…*
	…….

The current course will enable students to acquire the following competences:

- Ethical, responsible, and sustainable decision-making in business contexts, as UA-MC3 engages with the AI Act, Ecodesign regulations, CSRD, CSDDD, ecocide debates, due diligence, sustainability reporting, and digital governance.
- Strategic and innovative thinking for managerial problem-solving, as the course requires interpreting complex regulatory environments and designing organisational strategies to comply with EU policies while maintaining competitiveness and innovation.
- Search for, analysis and synthesis of data and information, with the use of the necessary technology, as UA-MC3 involves analysing standards, regulatory requirements, lifecycle data, digital compliance structures, and evidence for sustainability reporting.
- Working in an interdisciplinary environment, as UA-MC3 blends legislation, policy, governance, environmental science, digital technologies, standardisation, ethics, and management.
- Leadership and team coordination in complex or multicultural environments, as the responsibility and autonomy LOs explicitly require leading regulatory compliance, managing cross-functional teams, coordinating value-chain actors, and orchestrating standards-policy alignment.

(3) COURSE SYLLABUS

UA-MC3: Standardisation and EU Regulatory Compliance in Digital Circular Economy covers the standards and the regulatory framework within the EU regarding digital technologies and sustainability. Students will study the EU AI Act, Digital Product Passports regulations and standards, and other key policies and directives that drive the transition towards a circular economy. The course focuses on how businesses must comply with these laws and adapt their strategies to meet regulatory requirements.

The course consists of 13 lectures, as presented below:

1. **EU policy architecture for the circular and digital transition (Instructor: UAEGEAN).** This lecture introduces the EU frameworks guiding sustainability and digitalization, including the Green Deal and the Circular Economy Action Plan. It highlights how policy coherence drives innovation, compliance, and progress toward Europe's twin transition.
2. **Navigating EU regulatory landscape for strategic circular and digital business transformation (Instructor: EPBS).** This lecture develops the analytical and strategic capabilities needed to navigate EU regulatory complexity shaped by the twin transition. Students learn to interpret sustainability challenges through ethical and circular business management.
3. **Introduction to Standardization and Digital Circular Economy (Instructor: CYS).** This lecture introduces the history, purpose, and added value of standardization in global trade and technological advancement. It examines international, regional, and industry standards and their role in interoperability, market trust, and twin transition enablement.
4. **Sustainability Due Diligence and standardization in the EU Circular Economy: From Policy to Business Practice (Instructor: UMA).** This lecture examines how EU sustainability objectives translate into due diligence and standardization requirements for businesses. It analyses regulatory instruments such as CSDDD, CSRD, and Ecodesign, and their impact on corporate compliance and value-chain practices.
5. **Global Governance and Climate Law (Instructor: TUDO).** This lecture explores the evolution of international environmental law and governance and the political, economic, and ethical forces shaping it. Students analyze the tensions, power relations, and institutional dynamics influencing global climate decision-making.
6. **Ecocide and Corporate Accountability (Instructor: TUDO).** This lecture investigates emerging debates on ecocide as an international crime and the rise of corporate due-diligence obligations. It examines how legal mechanisms translate ecological harm into accountability across global supply chains.
7. **Digital Product Passport (DPP) implementation and strategic policy integration (Instructor: CEF).** This lecture analyses the strategic role of DPPs in traceability, compliance, and value creation in the digital circular economy. It examines EU regulatory alignment with ESPR, CSRD, and CEAP, and explores governance, implementation pathways, and industry roles.
8. Case Studies: linking policies to life cycle phases and corporate strategies **(Instructor: SmartUse).** This lecture connects EU policies to different life-cycle phases using real corporate case studies. Students explore how companies translate regulatory expectations into actionable circular strategies.
9. **Digital Circular Economy concepts in International and European Standards (Instructor: CYS).** This lecture analyses circular economy principles embedded in existing and emerging standards, including those related to IoT, AI, blockchain, and Digital Twins. It emphasizes DPPs as enablers of transparency and data exchange and teaches how to select relevant standards for circular innovation.
10. **Measuring Impact: Standards for Circular Economy Assessment and Reporting (Instructor: CYS).** This lecture explores standards such as the ISO 59000 series and methods like MFA, LCA, and circularity indicators for assessing circular-economy performance. Students learn to select, apply, and critically evaluate assessment standards and reporting practices.
11. **Future directions and policy implications (Instructor: CYS).** This lecture examines how standardization supports EU and global initiatives, including the Green Deal and ESPR,

and how new technologies shape future standards. It prepares students to engage in standardization processes and anticipate policy-driven innovation.

12. **Navigating a shifting regulatory landscape for circularity (Instructor: Circularise).** This lecture traces the evolution of traceability regulations and the digital tools that support them, from spreadsheets to DPPs. It also explains how regulatory negotiations occur and how industry actors can participate through consultations and collective platforms.
13. **Understanding EU AI Act (Instructor: DBL).** This lecture provides a practical overview of the EU AI Act and its implications for sectors such as manufacturing and aviation. It focuses on identifying risks, ensuring compliance, and designing responsible AI systems that protect workers and stakeholders.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

MODE OF TEACHING *Face-to-face, distance learning, etc.*	Distance Learning
MODE AND FREQUENCY OF COMMUNICATION WITH THE STUDENTS	Synchronous distance communication on a weekly basis, asynchronous on a daily basis through LMS platform
ENSURING THE MODE OF COMMUNICATION AMONG STUDENTS *Team assignments and discussions, collaborative learning platforms with the use of AI, video conference, QA sessions, κ.α.*	Weekly assignments, discussions through dedicated discussion forum, dedicated space per module on the learning platform, schedule video conference meetings through MS Teams, dedicated QA sessions per module
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, in laboratory training, in the communication with students*	Use of ICT in Teaching, Communication with students Online Platforms will be used for teaching, tutorials, students' guidance, students' self-assessment and support on group projects
TECHNOLOGICAL EQUIPMENT REQUIREMENTS	PC /laptop for video conference meeting
PLAGIARISM POLICY/ PLAGIARISM DETECTION TOOLS	Gradescope, Turnitin
ARTIFICIAL INTELLIGENCE POLICY *(1) The use of Artificial Intelligence is prohibited in all circumstances* *(2) The use of Artificial Intelligence is allowed only with the permission of the instructor* *(3) The use of Artificial Intelligence is allowed only with an explicit reference to the literature* *(4) Students are free to use Artificial Intelligence*	The use of Artificial Intelligence is allowed only with an explicit reference to the literature. Additionally, students are free to use AI provided by the master programmes for contacting stimulations, practicing purposes, etc.
ORGANISATION OF TEACHING *The mode and methods of teaching are described in detail.* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, work placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artworks, etc.* *The student's study hours for each learning activity are stated, as well as the hours of independent study, according to the principles of the ECTS.*	

Activity	*Semester workload*
Lectures	39
Participation in forum discussions	20
Study, analysis of bibliography and supplementary consolidation activities	111
Self-Assessment Evaluations	30
Course total	**200**

STUDENT ASSESSMENT *Description of the assessment method* *Language of assessment, methods of assessment, formative or summative assessment, multiple choice questions test, short answer questions, essay questions, problem solving, written work, essay/report, oral*	Students will be evaluated following multiple-choice, short-answer, and open-ended questions. The assessment formula is the following:

examination, public presentation, laboratory assignment, clinical examination of patient, art interpretation, other *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	Self-Assessment Evaluations: 50% Final Assessment: 50%

(5) RECOMMENDED BIBLIOGRAPHY

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