

	Implementation schedule/day and time	Title of the lecture	Partner University	Lecturer	Learning outcomes
Day 1 Lecture 1	Monday 19/10/2026 14.00 CET	Recyclability of disposable tableware	KU	Arturas Tadžijevas	✓ Students will learn about the PPWR Directive and the Packaging and Packaging Waste Regulation (PPWR) (Regulation (EU) 2025/40). ✓ Students will understand how to prepare the samples for the recyclability determination and be able to do by themselves in the laboratory.
Description of the course	The students will be introduced to the PPWR Directive and learn how to determine recyclability. They will be shown how to prepare the samples by cutting the packaging into strips according to the standard, soaking them in a hydro-pulper to wash out the cellulose, and leaving the packaging to disintegrate in a British disintegrator.				
Day 2 Lecture 2	Tuesday 20/10/2026 14.00 CET	Evaluating the plastic content of disposable paper-based tableware	KU	Arturas Tadžijevas	✓ Students will learn how to separate cellulose and plastic. ✓ Students will be able to evaluate whether the packaging is recyclable according to the PPWR.
	Students will be shown how to filter the resulting liquid through a mechanical filter, dry it, and weigh it to determine the amount of extracted cellulose. They will also learn how and why the remaining plastic should be dried and weighed, and how to evaluate the efficiency of the pulping process. The amount of cellulose remaining on the plastic will be assessed by soaking the plastic residues in Schweizer's reagent, which dissolves cellulose. After washing and drying the samples following cellulose dissolution, the exact amount of residual cellulose on the plastic will be determined. Finally, they will assess whether the packaging is recyclable according to the PPWR directive.				
Day 3	Wednesday 21/10/2026 Time tbc	Valorising waste products from the fisheries and aquaculture into sustainable biomaterials	SETU	Adriana Cunha Neves	✓ Identify waste products with potential to become biomaterials ✓ Identify challenges of utilising waste as a base for the generation of biomaterials ✓ Differentiate materials labelled bioplastics and their impact in the environment ✓ Describe transformation of biomass waste in biomaterials - Identify applicabilities of biomaterials arising from waste

Description	<i>This lecture explores the sustainable transformation of marine-derived waste, such as fish and shellfish by-products, and seaweed residues, into high-value biomaterials. Students will examine the chemical, biological, and engineering principles behind converting these waste streams into biopolymeric materials. Emphasis is placed on environmental impact, circular-economy strategies, testing methods and applicabilities sectors such as packaging, agriculture, construction, cosmetics, and biomedical products. The lecture will provide case studies and practical on-line activities, and the learners will gain understanding of how marine derived biomass waste can help drive innovation in sustainable materials.</i>				
Day 4	Thursday 22/10/2026 14.00-17.00 CET	Climate-Responsive Waste Management and Circular Economy	UROS	Oumaima Mathlouthi	✓ Understand the relationship between waste management systems and climate change. ✓ Identify how waste generation, treatment, and disposal contribute to greenhouse gas emissions. ✓ Recognize the role of sustainable waste management in climate mitigation strategies. <i>Explain the concept and principles of Extended Producer Responsibility (EPR). Understand how EPR supports circular economy models and sustainable production.</i> ✓ Evaluate examples of EPR implementation and their environmental and economic benefits.
Description of the course	<i>This lecture explores the link between waste management practices and climate change. It highlights how waste generation and treatment contribute to greenhouse gas emissions and discusses sustainable strategies to minimize environmental impacts. It also introduces the concept of EPR and its role in advancing the circular economy. It examines how producer responsibility and sustainable product design can reduce waste and promote resource efficiency.</i>				
Day 5	Friday 23/10/2026 10.00-13.00 CET	Advanced biofuels' production from woody biomass and application in transport system	FREDU	Charalambos Chasos	✓ List the EU initiatives and strategies for carbon emissions reduction and describe the contribution of each sector in carbon dioxide emissions. ✓ Present data of different types of wood biomass feedstock occurring widely in EU countries, including feedstock properties and composition. ✓ List the main processes for woody biomass biorefineries and the associated energy needs and emissions. ✓ Analyse the processes and the energy requirements for biorefinery systems, and evaluate the related production yield of biofuels.

					✓ Describe carbon emissions' mitigation measures for the transport system using alternative fuels and biomass derived advanced biofuels.
Description of the course	EU has renewed interest for the wider use of biomass for energy production in order to meet net-zero carbon energy production by 2050, while transport is responsible for almost one third of the carbon dioxide (CO₂) emissions of the energy sector (reference year 2018). To this end, it is required to provide methodologies and tools in order to assess the energy requirements and the associated CO₂ emissions for the biorefinery processes that utilize waste biomass for the conversion into solid fuels (ie. pellets) and/or advanced biofuels. The first objective of the course is to present the current EU environmental legislation and directives placing emphasis in biomass processing and biorefineries. Secondly, to assess the impact of biomass pretreatment and processing on the environment accounting energy input and production of CO₂ emissions in biorefineries. Finally, to provide guidelines on the adaptation of advanced biofuels in transport systems including maritime transport, for the mitigation of CO₂ emissions. The theoretical part of the course is complemented by short training in computer programing with MATLAB software, and practical use cases of a small scale woody biomass biorefinery and a two-stroke large marine internal combustion engine are investigated.				