National Technical University of Athens

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MUNICIPALITY OF KOS

KOS2026

24-28 JUNE

KOS, GREECE

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1st Summer School: LCA for Circular Waste Management (LCA4WASTE)

22-23 JUNE

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This **Summer School** offers **PhD students** a focused and hands-on introduction to **Life Cycle Assessment (LCA)** applied to circular waste management. Participants will gain advanced methodological knowledge, explore real case studies, and perform guided LCA calculations with experts in the field.

The course combines lectures, interactive discussions, and practical exercises, providing a unique opportunity to deepen research skills, connect with international experts, and strengthen competencies relevant for academic and professional careers in sustainability and circular economy.

- **Duration**: 2 days (09:00–17:00)
- **Target group**: Professionals, researchers, and PhD students in environmental, chemical, and sustainability-related disciplines interested in gaining a foundational understanding of Life Cycle Assessment (LCA) for circular waste management.
- **Format**: Lectures, discussions, and short interactive sessions

  Students are required to complete online Module 1 of the LIFE-C course **(available at https://multi-asm.eu/mooc/my/)** prior to the Summer School and prepare Assignment 1, which consists of selecting a scientific article on LCA in Waste Management and preparing a presentation to be delivered and discussed during the Summer School.
- For details about the LIFE-C project, **please, visit https://life-c.eu/**

KOS2026

All times are in Greek Time

June 22: Circular Economy & Life Cycle Assessment

9.15-9.30	Maria Loizidou, National Technical University of Athens ***Welcome by Prof. Maria Loizidou***
09:30-11:00	Konstantinos Moustakas, National Technical University of Athens ***Sustainable Solid Waste Management & Circular Economy***
11:15-11:30	Coffee Break
11:30-12:45	Lidia Lombardi, Niccolò Cusano University (IT) ***Life Cycle Assessment in Waste Management*** *Overview of the summer school, objectives, participant introductions. The lecture introduces the role of Life Cycle Assessment (LCA) in waste management, covering its application in understanding, improving, and comparing waste management systems, as well as in technology and policy development. After the introduction, practical examples are presented to illustrate real-world uses of LCA.*
12:45-13:45	Lunch Break
13:45-15:15	***Presentations and discussion of the assignments by the participants*** Moderators: Lidia Lombardi, Mariam Abdulkareem (Lappeenranta-Lathi Technical University) *Participants will present selected scientific case studies on LCA in Waste Management. The session will include illustration of study objectives, methodological choices, and main findings, followed by moderated discussion to compare approaches, identify challenges, and share best practices. This interactive session aims to stimulate critical thinking and peer learning among participants.*
15:15-15:30	Break
15:30-17:00	***Presentations and discussion of the assignments by the participants*** Moderators: Lidia Lombardi, Mariam Abdulkareem, Malgorzata Wilk *Participants will present selected scientific case studies on LCA in Waste Management. The session will include illustration of study objectives, methodological choices, and main findings, followed by moderated discussion to compare approaches, identify challenges, and share best practices. This interactive session aims to stimulate critical thinking and peer learning among participants.*

June 23: Applying LCA for Sustainable Waste Management and Resource Recovery

9.00-10.00	Ana Arias (Imperial College London) From Waste to Value: Sustainable Pathways for Resource Recovery *This presentation will examine waste-to-resource pathways from a sustainability perspective, drawing on practical examples from waste management and resource recovery. It will discuss how Life Cycle Assessment (LCA) can help identify environmental benefits, burdens, and trade-offs across the life cycle of different options. The session will show how such analyses can support more robust decision-making in the transition towards circular and resource-efficient systems.*
10:00-10:30	Presentation of study cases for the LCA calculation Lidia Lombardi, Mariam Abdulkareem, Szymon Sobeck (Silesian University of Technology, PL), Ana Arias (Imperial College London) *The teachers will provide structured datasets, system descriptions, and input parameters for the LCA exercises.*
10:30-11:15	Hands-on LCA Exercise Session Tutors: Lidia Lombardi, Malgorzata Wilk, Mariam Abdulkareem, Szymon Sobeck, Ana Arias *Participants will use these data to perform calculations and interpret environmental impact results under guided supervision.*
11:15-11:30	Coffee Break
11:30-12:45	Hands-on LCA Exercise Session Tutors: Lidia Lombardi, Mariam Abdulkareem, Szymon Sobeck , Ana Arias *Participants will use these data to perform calculations and interpret environmental impact results under guided supervision.*
12:45-13:45	Lunch Break

June 23: Applying LCA for Sustainable Waste Management and Resource Recovery

13:45-15:00	LCA Results Presentation and Discussion Moderators: Lidia Lombardi Mariam Abdulkareem Szymon Sobeck Ana Arias *Participants will present their LCA calculations and analyses, illustrating system boundaries, inventory data, impact assessment results, and interpretation. The session will include peer-to-peer discussion and expert feedback to strengthen critical evaluation skills and methodological understanding.*
15:00-15:15	Break
15:15-16:30	LCA Results Presentation and Discussion Moderators: Lidia Lombardi Mariam Abdulkareem Szymon Sobeck Ana Arias *Participants will present their LCA calculations and analyses, illustrating system boundaries, inventory data, impact assessment results, and interpretation. The session will include peer-to-peer discussion and expert feedback to strengthen critical evaluation skills and methodological understanding.*
16:30-17:00	Wrap-up & Closing Session Lidia Lombardi Mariam Abdulkareem Ana Arias *Wrap-up session by the teachers, summarizing the key concepts and learning outcomes of the day. Final remarks and collection of participants' feedback through an evaluation questionnaire to assess satisfaction and gather suggestions for future editions.*

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