



**VIRTUAL COMPONENT**  
Feb 23rd - March 23rd



**PHYSICAL COMPONENT**  
March 23rd-27th

### FOREWORD

Green engineering, circularity and sustainable practices must be incorporated in all stages of a value chain to achieve a fully circular economy - from design to production and all the way to the consumer. To gain knowledge about sustainable engineering practices and their relevance, the students will choose an essential area of circular economy to explore. The options are the seven key areas in the achievement of a circular economy set down in the European Commission action plan:

Plastics | Textiles | e-Waste | Food, water and nutrients | Packaging | Batteries and vehicles | Buildings and construction

## OBJECTIVES OF THE VIRTUAL COMPONENT

Ahead of the physical component of this BIP, that will take place in March 17th-21th, in Portugal, the students will be asked to carry out a preliminary work. This document describes the tasks which will be proposed for this work. Their objective is to help students understand the complexities and

interdisciplinary nature of advanced sustainable engineering practices, sustainable materials and circular economy within specific sectors. The work carried out by each group throughout the virtual component will be presented on Monday 17th and further develop during the physical component.

## DESCRIPTION OF THE ACTIVITIES

### Part 1. Research Phase (Feb 23rd - Mar 8th)

#### 1 Group formation and topic selection

Students will be divided into groups and each group selects which key area of circular economy, from the ones listed above, it chooses to address.

#### 2 Research objectives

Each group should fulfill the following research objectives with respect to the selected topic:

- **Drivers:** Identify what drives sustainability and circularity in the chosen topic. Consider environmental, economic, and social factors.
- **Obstacles:** Determine the challenges that the selected topic faces in implementing sustainable engineering practices.
- **Legislation and regulations:** Investigate and identify existing laws and policies affecting the selected topic. Both EU-wide and national regulations should be included in this research.
- **Innovation needs:** Explore which innovations are required to enhance sustainable engineering. Make a list of new technologies, processes, etc.

#### 3 Report

Present the outcomes of the research phase in the form of a written report. This report must include:

- Identification of the group
- Identification of the selected topic.
- Description of each one of the items listed in the research objectives.
- References.

This report will be the basis for the work to develop in Part 2 of the virtual component.



The research objectives must be addressed using a mix of academic articles, industry reports, government publications, credible news sources, databases, etc.





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## DESCRIPTION OF THE ACTIVITIES (CONT.)

### Part 2. Analysis and Presentation Preparation (Mar 9th-22nd)

#### 1 Analysis and synthesis

- Analyze the findings from Part 1.
- Investigate case studies or examples of companies / products that embody sustainable engineering practices within the chosen topic.
- Discuss within the group how to synthesize information into a coherent narrative.

#### 2 Presentation preparation

- Structure the presentation to cover all research objectives, as well as the case studies / examples.
- Develop visual aids such as slides, charts, or diagrams to enhance and support the presentation.

#### 3 Rehearsal

- Practice delivering the presentation within the group.
- Provide feedback to each other to improve clarity and engagement.



Each group will have a shared area in Teams. All materials gathered and produced (report and presentation) should be uploaded to this area.

### Any questions?

Our coordinator [Carla Viveiros](#) is happy to help you.

## PARTNERS

**Fachhochschule  
Dortmund**  
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