



CESPE  
ACADEMY

# SUSTAINABILITY & LIFE CYCLE ASSESSMENT

From Theory to Practical  
Applications in Pharma



## Course Programme

- Theoretical Framework of Life Cycle Assessment (Day 1)**
  - Introduction to sustainability and life cycle thinking
  - Integrating environmental, social, and economic aspects: LCSA and S-LCA
  - Principles and framework of life cycle assessment (ISO 14040 series)
  - Goal and Scope in LCA
    - Life Cycle Inventory
    - Life cycle assessment and interpretation
- Practical Case Studies (Day 2)**
  - LCA software tools
  - Introduction to specialized software: OpenLCA
  - Use and explanation of the different databases
  - Practical case studies in OpenLCA
  - Analyzing and interpreting results
- Advanced module on LCA in pharmaceutical sector (Day 3)**
  - Green Chemistry and process level assessment metrics
  - Conducting LCA in pharma sector
    - LCA tailored to pharmaceuticals
    - Challenges in data collection, methodological choices, accounting for ecotoxicity, etc.
    - Concrete case studies
  - Beyond LCA of classical drug products & environmental sustainability assessment

## Information

-  Time and Date: TBA
-  Place: **Faculty of Pharmaceutical Sciences**  
Ottergemsesteenweg 460, Ghent, Belgium
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## Course Description

The **Sustainable Systems Engineering (STEN) group** offers a comprehensive training program in Sustainability and Life Cycle Assessment (LCA), with a focus on the pharmaceutical industry.

The theoretical module covers principles of sustainability assessment and the **LCA methodology**. The practical module provides **hands-on experience** with LCA software, while the advanced module focuses on applying LCA in the **pharmaceutical sector**, including **case studies** and **modelling challenges**.

Through **lectures, case studies, and interactive sessions**, participants gain essential knowledge and skills to perform sustainability assessments, with an emphasis on practical applications and critical thinking about sustainability in the pharmaceutical field. Moreover, practical expertise in the LCA process empowers decision-makers to fully comprehend the insights derived from the analysis, enabling them to make more informed and sustainable choices.

## Target Audience

Professionals, researchers, and PhD students in pharma, as well as for environmental sciences, engineering, and related fields who wish to enhance their understanding and application of sustainability assessment methodologies