

Training on Sustainability and Life Cycle Assessment: From Theory to Practical Application in Pharma

COURSE DESCRIPTION

The Sustainable Systems Engineering (STEN) group offers a comprehensive training on Sustainability and Life Cycle Assessment (LCA), providing a solid foundation in sustainability assessment methods and LCA applications within the pharmaceutical industry. This training consists of three modules: foundational concepts, practical skills, and industry-specific applications.

The core module covers sustainability assessment principles and the LCA methodology. The practical module offers hands-on experience with industry-standard LCA software, while the advanced module focuses on applying LCA in the pharmaceutical sector, including real case studies and modeling challenges. Through lectures, case studies, and interactive sessions, participants will gain essential knowledge and skills to conduct environmental sustainability assessments in professional contexts, with an emphasis on real-world applications and critical thinking about sustainability in the pharmaceutical field.

TARGET AUDIENCE

This training is ideal for 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

Module 1: Theoretical framework of Life Cycle Assessment (1 day)

- Introduction to Sustainability and Life Cycle Thinking
- Principles and framework of Life Cycle Assessment (ISO 14040 series)
- Goal and Scope in LCA, Life Cycle Inventory, Life Cycle Assessment, and Interpretation
- Integrating environmental, social, and economic aspects: LCSA and S-LCA

Module 2: Practical case studies (1 day)

- LCA software tools
- Introduction to specialized software: OpenLCA
- Use and explanation of the different databases
- Practical case studies in OpenLCA
- Analyzing and interpreting results

Module 3: Advanced module on LCA in pharma sector (1 day)

- Green Chemistry and process level assessment metrics
- Conducting LCA in the pharma sector
 - LCA tailored to pharmaceuticals
 - Challenges (data collection, methodological choices, accounting for ecotoxicity, etc.)
 - Concrete case studies
- Beyond LCA of classical drug products & environmental sustainability assessment