












Life Cycle Assessment Course

Fundamentals & Applications



Index

 About this Course	Page 1
 Importance of Life Cycle Assessment	Page 2
 Key Takeaways	Page 3
 Course Outline	Page 4
 Course Fee	Page 7
 Completion Certificate	Page 8
 Participant's Experience	Page 9
 Meet your Instructors	Page 10
 Contacts	Page 13

About this Course

- ✚ The “*Life Cycle Assessment: fundamentals and applications*” is an online course offered by the Sustainability group of the [Aachen-Maastricht Institute for Biobased Materials \(AMIBM\)](#), Maastricht University.
- ✚ This course is designed with an introduction to the concepts and principles of LCA
- ✚ Expert’s guidance on selecting the appropriate scope for the study, defining system boundaries, identifying data sources, and interpreting the results.
- ✚ A step-by-step guidance to the participants on selected case studies in a dedicated section
- ✚ This course is designed for students, industry professionals, and people who wants to get acquainted with the LCA and overall impact assessment.



4 Weeks



2 hour/week



Online

Importance of Life Cycle Assessment

95% of the leaders of sustainable companies embed sustainability concerns into basic business decisions



- ✚ Provides a comprehensive and systematic approach to evaluate the environmental impacts of products, processes and services throughout their life cycle, from raw material extraction to end-of-life disposal or recycling.
- ✚ Enables the comparison of different alternatives, ensuring a fair and transparent assessment.
- ✚ Supports the identification and implementation of improvement opportunities along the life cycle stages.
- ✚ Contributes to the integration of environmental aspects into decision-making and strategic planning, and to the alignment of environmental goals.

Key Takeaways

At the end of the course, participants will be able to;

- ✚ Recall the fundamentals of life cycle thinking
- ✚ Describe and understand what and why LCA is an important tool for sustainability
- ✚ Explain four standardized steps of an LCA study
- ✚ Explain what a functional unit is and give an example for a product or system
- ✚ Explain what defining system boundaries means
- ✚ Classify different types of allocation systems in LCA studies
- ✚ Summarize how environmental impacts are calculated in an LCA study
- ✚ Interpret the results of an LCA study
- ✚ Compare the results of different LCA studies for similar products or systems
- ✚ Critically analyze a conducted LCA study

Course Outline

Page | 4

- ✚ This course consists of four online sessions conducted through Zoom. The participation link will be provided before the start of the course.
- ✚ The lectures will be recorded and shared with all participants. If you prefer not to have your face recorded, you can turn off your camera during the sessions
- ✚ **Session 1 – Introduction, sustainability assessment, and circularity**
Date: April 10th 14:00 – 16:00 (CEST Time Zone - Amsterdam, Berlin, Rome, Stockholm, Vienna)

Time	Content	Instructor
14:00 – 14:15	Welcome and introduction of the course	Pranav Nakhate
14:15 – 14:45	Sustainability Assessment	Yvonne van der Meer
14:45 – 14:55	Open Session: Q&A	
14:55 – 15:00	<i>Break</i>	
15:00 – 15:50	Life Cycle Thinking and Circularity	Cris Garcia Saravia
15:50 – 16:00	Open Session: Q&A	
16:00	<i>End of the session</i>	

✚ Session 2 – LCA methodology: Goal & Scope Definition and Life Cycle Inventory

Date: April 17th 14:00 – 16:00 (CEST Time Zone - Amsterdam, Berlin, Rome, Stockholm, Vienna)

Page | 5

Time	Content	Instructor
14:00 – 14:40	LCA framework (Part 1): Goal & Scope definition	Ali Ghannadzadeh
14:40 – 14:50	Open Session: Q&A	
14:50 – 15:00	<i>Break</i>	
15:00 – 15:40	LCA Framework (Part 2): Life cycle inventory	Svetlana Obydenkova
15.40 – 16:00	Open Session: Q&A	
16:00	<i>End of the session</i>	

✚ Session 3 – LCA methodology: Impact Assessment and Interpretation of Results

Date: April 24th 14:00 – 16:00 (CEST Time Zone - Amsterdam, Berlin, Rome, Stockholm, Vienna)

Time	Content	Instructor
14:00– 14:40	LCA framework (Part 3): Impact Assessment	Pranav Nakhate
14:40 – 14:50	Open Session: Q&A	
14:50 – 15:00	<i>Break</i>	
15:00 – 15:40	LCA Framework (Part 4): Interpretation	Felicitas Pellengahr
15.40 – 16:00	Open Session: Q&A	
16:00	<i>End of the session</i>	

✚ Session 4 – LCA applications: Case studies

Date: May 2nd 14:00 – 16:00 (CEST Time Zone - Amsterdam, Berlin, Rome, Stockholm, Vienna)

Page | 6

Time	Content
14.00	Participants presentations
15.00	Break
15.05	Participants presentations
16.00	<i>End of the session</i>

- ✚ On a starting date of the course, a case study will be provided to the participants on a relevant topic (see, *topic ideas*); and Participants will be assigned to groups.
- ✚ The participants in each group are divided in two teams and both teams will present 5 min. pitch presentation: Team A provides arguments supporting the case study and Team B provides arguments against the case study.
- ✚ After the pitch presentations, the participants will receive feedback from the instructors.
- ✚ The aim of this session is to foster the participants' critical thinking and questioning of subconscious perceptions in the area of sustainability through discussions on a scientific level

Case Study Topics

1. Biorefineries
2. Plastics
3. Packaging
4. Textiles

Course Fee

Participant Category	Fee 2024
Industry Participant	€ 500
Non-Profits, PhDs, Academics	€ 350
Students (Limited spots)	€ 100

Completion Certificate

Participants who successfully completes the “*Life Cycle Assessment: fundamentals and applications*” online course will receive a certificate of completion which can be leveraged to advance their career and get further expert knowledge in Sustainability

Certificate of Completion

The Sustainability Group of the Aachen-Maastricht Institute for Biobased Materials,
Maastricht University, certifies that

XXXXXXXX XXXXX

has participated in the 8 hour-online course
“*Life Cycle Assessment: Fundamentals and Applications*”

May 2024



Prof. Dr. Yvonne van der Meer
Course Manager

Pranav Nakhate
Course Coordinator

 Maastricht University

Participant's Experiences

"The course was excellently designed in such a way that even a beginner like me could grasp the concepts and even went through some interesting research articles for the same."

"An excellent opportunity to improve my LCA skills "

"I liked the scope of the content covered, which can be understood by beginners and is useful for practitioners".

"I enjoyed every section of the course. The course has given me a holistic introduction to LCA and a broader perspective on sustainability assessment."

"Clear lectures, good visualization and the nice discussion during the case studies "

"I liked the general overview of LCA. The structure of the content the slides were very useful "

Meet your Instructors



Prof. Dr. Yvonne van der Meer

Professor & Scientific Co-Director, AMIBM, Maastricht University

Expertise: *Biobased Economy, Circular Economy, renewable materials, Prospective & Ex-ante technology assessment, Public-Private cooperation*

yvonne.vandermeer@maastrichtuniversity.nl

<https://nl.linkedin.com/in/yvonnevandermeer>

<https://www.maastrichtuniversity.nl/yvonne.vandermeer>



Cris García Saravia

PhD researcher, AMIBM, Maastricht University

Expertise: *Circular Economy, Value circles, Circularity indicators*

c.garciasaraviaortiz@maastrichtuniversity.nl

<https://www.linkedin.com/in/cris-garcia-saravia/>

<https://www.maastrichtuniversity.nl/c.garciasaraviaortiz>



Dr. Ali Ghannadzadeh

Assistant Professor, AMIBM, Maastricht University

Expertise: Exergy aided LCA, Waste heat recovery, Process simulation and modelling, Bioenergy

ali.ghannadzadeh@maastrichtuniversity.nl

<https://www.linkedin.com/in/ali-ghannadzadeh-24a33b18/>

<https://www.maastrichtuniversity.nl/ghannadzadeh>



Dr. Pranav Nakhate

Assistant Professor, AMIBM, Maastricht University

Expertise: Sustainability assessment, Hybrid wastewater treatment, Process intensification studies, Sustainability in Pharmaceuticals, Bioactive components

n.nakhate@maastrichtuniversity.nl

<https://www.linkedin.com/in/pranav-nakhate>

<https://www.maastrichtuniversity.nl/p70071204>



Dr. Svetlana Obydenkova

Postdoctoral researcher, AMIBM, Maastricht University

Expertise: Sustainable Fuel Economy, Environmental Engineering, Techno-economic Assessment, Feasibility analysis

svetlana.obydenkova@maastrichtuniversity.nl

<https://www.linkedin.com/in/svetlana-obydenkova-09386985/>



Felicitas Pellengahr

PhD researcher, AMIBM (Maastricht University)

Expertise: Biobased Plastic, Biodegradable Plastic, Microplastics, Thermodynamics

f.pellengahr@maastrichtuniversity.nl

<https://www.linkedin.com/in/felicitas-pellengahr-78a5451a2/>

Let's build you LCA competency

Page | 13



Last date to register for the course is 15th March 2024

For more details, please visit <http://lcatraining.nl>

or send an e-mail to:

lcatraining_amibm@maastrichtuniversity.nl



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Illustration by: Cris Garcia Saravia Ortiz de Montellano



[Register here](http://lcatraining.nl)