

PhD course 2019
ADVANCED LCA

**CONSEQUENTIAL AND IO-BASED
LIFE CYCLE ASSESSMENT**

9 – 16 May 2019, Aalborg University,
Rendsburggade 14, 9000 Aalborg (DK)

Organizers

The course is organized by The Technical Doctoral School of IT and Design, Aalborg University and Danish Centre for Environmental Assessment (DCEA) www.DCEA.dk, in collaboration with the International Life Cycle Academy (ILCA) www.ILCA.es

Description and program

The course aims at strengthening skills in life cycle inventory analysis. The course targets the development of advanced competences in LCA by applying the problem based-learning (PBL) teaching model that focuses on learning by doing and reflection. The course activities will include intensive group work, problem defining and solving applied to real-word cases, practical exercises, and discussion sessions or workshops. The target audience of the course is academics (PhDs, postdoc, other) or professionals who already have basic experience with LCA and intend to bring their LCA competences to an advanced level. Basic experience means for example having carried out simple LCAs before or having elementary knowledge of LCA theory. The course content is organized in three modules (main teacher in parenthesis).

9 – 10 May 2019 (08:00-16:00) Module 1. Intro to advanced LCA (Massimo Pizzol) In this hands-on module students will learn how to use the software Brightway2 that is specific for LCA research. Topics covered: Computational structure of LCA. Uncertainty analysis with stochastic error propagation (Monte Carlo) and statistical testing of LCA results. LCA reproducibility and data sharing. The module includes exercises.

11 – 12 May 2019 Enjoy the weekend break

13 – 14 May 2019 (08:00-16:00) Module 2. Consequential LCA (Bo Weidema) Students will learn the fundamentals of Consequential LCA. Topics covered: Introduction to attributional and consequential models. Algorithms for performing consequential LCA in the definition of functional unit, consumption mix, and identification of determining and dependent co-products. Modelling of indirect Land Use Changes (iLUC). Communicating consequential models. The module includes exercises.

15 – 16 May 2019 (08:00-16:00) Module 3. Input output LCA (Jannick Schmidt). Students will learn the fundamentals of Input-Output modelling. Topics covered: supply-use tables, multi-regional models and trade linking. Integrating process LCA and IO-analysis via hybrid LCA, tiered and embedded. Expanding the IO-matrix to include the natural, social and economic environment. The module includes exercises.

Lecturers

Bo Weidema, Professor; Jannick Schmidt, Associate Professor; Massimo Pizzol, Associate Professor; Søren Løkke Associate Professor; Agneta Ghose, Postdoc

Prices

Attendee	Price*
PhD students affiliated to a Danish University	Free
PhD students not affiliated to a Danish University	3.000DKK (400EUR)
Academics (e.g. postdoc and professors)	6.000DKK (800EUR)
Professionals (consultancy, industry, etc.)	15.000DKK (2000EUR)

* Prices do not cover meals, accommodation, and social dinner

ECTS

Activity	Hours	ECTS*
Lectures and group work in class	48	1.7
Readings	35	1.3
Group work prior to course	20	0.7
Group work after course	35	1.3
Total	138	5.0

*One ECTS credit is equivalent to 27.5 hours of work

Activities: Attending lectures and performing exercises in class.

Readings: Approx. 100 pages of scientific articles and reports, that are provided to the students, plus python tutorials.

Group work: students work in groups (max 5 people). Each group will apply the knowledge of the course on a chosen case study.



Registration

Deadline 1 April 2019. Max. 25 participants.

Apply via email to the course coordinator Massimo Pizzol (massimo@plan.aau.dk) and provide the following information: *Full name / Profession (PhD student, postdoc, consultant...) / Institution name / Address / Phone / your research field or PhD topic / your experience with LCA.*



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