PhD course

Consequential and IO-based Life cycle assessment

Aalborg University

Organised by DCEA, in collaboration with the International Life Cycle Academy (ILCA)
DCEA: www.DCEA.dk/english ILCA: www.ILCA.es

Organization of group work

General idea: students work in groups of max 5 people. Each group will work on a case study and apply all the knowledge of the course on the case study. Case study should be decided within the group.

EXAMPLE: group X works on LCA of product Y and does:

- prior to the course: choice of product and data mining, getting base knowledge on the product system and inventory data to sufficient to describe at least 4-5 activities in this product system (e.g. inputs and outputs for manufacturing stage, use stage, endo of life stage…).
- during the course (exercises in class): making a Brightway version of this product system, performing uncertainty and sensitivity analysis, consequential inventory with matrix format, uncertainty analysis, IO LCA inventory, etc.
- after the course: organize the material and prepare a portfolio where all the techniques and exercises done in class are presented for the case study.

At the end of the course all portfolios will be made available on Moodle. Each student will get the info on max five different cases.

For the group work, students are expected to work remotely using online tools (Zoom, Dropbox, etc) to collaborate in group. A list with the name and email address of all members of each group is provided to the students, so that they can get in contact and start the group work.

Further recommendations for the choice of case study:

The choice of case study is important. We will use this in all the exercises during the course. These exercises will be about building the product system in a software, but also about choosing a functional unit as a basis for comparisons, modelling co-products/recycling, and linking to background databases. So that their choice of case study needs to be optimized relative to these issues and relatively to the data availability. As anticipated you 'll need inventory data for 4-5 activities at least. Some groups in previous years selected a case study based on one of the group members Ph.D. work. Some have chosen a product /case that is neutral to their PhD work. Both options are fine and also any other option you might have. What is important is that the case is interesting for everybody and you can relate to that to some extent. As far as it was possible, we have put together the groups based on the PhD/research topics you suggested during the enrolment, so if you for example are in a "building" group it's because you wrote us that your PhD is about LCA of buildings. This does not necessarily mean you should choose a case on buildings, but we see that this is what students usually prefer as grouping method.

In order to support you with the selection of cases, teachers will be available for discussing case study choices and answer your questions there during the online lectures.

TASK: Group work – prior to the course

1. Contact your fellow group members (see file “Groups….xlsx” on PhD Moodle).
2. Decide together what product should be analysed in your case study. Remember that product = good or service. Feel free to get inspiration and material from your PhD project, but make sure you can share this with the others because it will be distributed to all participants in the end.
3. Collect as much data as you can on this product. It doesn’t have to be extremely complex or innovative, focus on making it operational (based on our experience you will need inventory data for 5-10 interlinked activities).
4. Organize the information, include as minimum: a) description of the product and functional unit; b) flow chart of the product system; c) inventory tables of the product system.
5. Bring the information to the course.

TASK: Group work – during the course

The exercises will be presented in class and performed in group; each group will apply the exercise on his case study.

TASK: Group work – after the course

1. Collect and organize the result of all exercises made during the course.
2. Summarize the information nicely in a portfolio where you present: a) your case study product (FU, flow chart, inventory data), b) assignment and solution of each exercise done in class; c) comments and reflections on each exercise.
3. Submit the portfolio as one single pdf file via PhD Moodle.