LIFE CYCLE SUSTAINABILITY ASSESSMENT

NAME OF LECTURER
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COURSE DESCRIPTION

The environmental performance of products and services is increasingly seen as a key competitive advantage, in both businesses and long-term policy making. Yet, how to quantify the environmental performance of products? Life Cycle Assessment (LCA) is amongst the leading methodologies used to this end. Very often, it is required in the studies commissioned by the European Commission, and it is used by several companies showing environmental stewardship (e.g. Novozymes, Unilever, Dupont). Thanks to its holistic perspective — taking into account all the stages from a cradle to grave approach— LCA evaluates the potential impacts related to any economic activity including raw material extraction and processing, distribution, use or consumption, re-use, recycling, and final disposal. LCA is used for a very wide range of applications (from e.g. designing car bumpers to formulating a national waste policy).

The course is mainly oriented to MSc / PhD students and professionals who want to achieve a first degree of specialization in this field, but also to other people with a specific interest in these topics and a limited amount of time.

This course presents the main concepts of LCA in a format accessible to a broad audience.

COURSE AIMS

Let the student learn the LCA concepts and use them in case-studies using the Excel and SimaPro softwares.

LEARNING OUTCOMES

On completion of this module, the learner will be able to:

- ► Demonstrate and understanding of the principles and concepts of LCA
- ► Apply LCA methodology in a personal work
- ► Assess the environmental impacts of a system
- ► Propose the best strategy to eco-design systems
- ► Analyze and criticize an LCA study already made

TEACHING METHODS

Fully interactive didactical methods used in the summer school include:

- ► Lectures given by senior researchers.
- ► Business game.
- ► Individual and group exercises in the classroom.
- ► Computer-based practical modelling classes, where the leading LCA software SimaPro will be introduced.

CLASS TOPICS

- ► Package 1: Introduction to LCA and its relation with environmental decision support.
- ► Package 2: Overview of LCA.
- ► Package 3: In-depth presentation of the main phases of an LCA.
- ► Package 4: Specialization modules for selected topics (LCA & Renewable energy).