
Environmental impacts and their classification

Professor: Alba Bala Gala

Office hours: by appointment

Course Type: Compulsory

Credits: 3 ECTS

Course Description

The objective of this course is to provide basic information on how planet's ecosystems function and the environmental impacts associated with human activity that may emerge. Key concepts will also be addressed to understand how these environmental impacts can be analysed and quantified (such as the cause-effect chain, the difference between mid-point or end-point indicators, different evaluation methods and characterization factors). These contents will be key to understand different methodologies for the environmental impact assessment of products and services, especially the Life Cycle Assessment (LCA), which will be developed in other subjects of the Master.

Objectives and competences

At the end of the course, students should:

- Understand how environmental ecosystems work and learn some basic concepts (natural equilibrium, difference between ecology and environment, components of the ecosystems, main flows of materials)
- Understand the concept of cause-effect chain in relation to environmental impacts.
- Understand the difference between midpoint and endpoint environmental indicators.
- Understand what characterization factors are and how they work to provide environmental indicators.
- Know the basic environmental impact categories and how they can be assessed through the application of different impact assessment methods.

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Methodology

The course comprises 6 hours of theoretical contents that will be divided in 2 live-sessions of 3 hours. The rest of the course involves work outside the classroom, combining readings and videos that will help them to gain a deeper understanding of the material covered in the class.

Evaluation criteria

- **Final assessment:** a final multiple-choice test covering all the topics of the subject.

Contents

- Environmental impacts
 - Ecosystems and Ecology
 - Cause-effect chain
 - Midpoint indicators
 - Endpoint indicators
 - Characterization factors
 - Impact categories
 - Impact assessment methods

Bio of Professor

Dra. Alba Bala graduated in Environmental Science in 2000 at Universitat Autònoma de Barcelona (UAB). She holds a Master in Environmental Sciences and obtained her PhD from UAB in 2015.

She is currently researcher and responsible for the line on packaging and waste at the UNESCO Chair in Life Cycle and Climate Change, and lecturer at ESCI-UPF. She worked as a teacher in Ecodesign and Environmental Analysis of products at the School of Industrial Design (ESDI, Ramón Llull University) and at Elisava Design School. She was researcher at the Institute of Environmental Science and Technology (UAB). She has developed more than 30 national and international projects on LCA, green procurement and eco-design. Member of the Spanish LCA Network.

Awards. Finalist of the international awards "Europe Innova Awards", 2008 edition, awarded by the European Commission, DG Enterprise and Industry. Winning of the

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“Design for Recycling (2000)” awarded by the Catalan Government.

Reading Materials/ Bibliography/Resources

No textbook is required for this course. All the required materials will be provided. Any readings, notes, handouts, datasets, or additional course material will be available through the course website.