UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Current Certification Mechanisms and Guidelines

2627-1-F7603Q026-F7603Q02602

Aims

Knowledge and understanding
The teaching of this module is aimed at providing the students with theoretical knowledge and practical skills in environmental and sustainability labelling, including those based on Life Cycle Assessment (LCA) standards. The laboratory will focus on the approaches developed over time for measuring, managing, and communicating the environmental impacts of products and services. Environmental and social dimensions will be primarily addressed, and global standards presented, such as the global standards for sustainability impacts, which enable any organization – large or small, private or public – to understand and report on impacts on the economy, environment and people in a comparable and credible way. Certifications schemes will entail those for investors, policymakers, capital markets, and consumers.

Applying knowledge and understanding, Making judgements
The course combines foundational concepts with hands-on experience. Students will learn to conduct LCA studies, interpret results, and understand how environmental and sustainability performance can be effectively communicated through labelling schemes.

Communication skills
Scientific communication skills in English at B2 level, both oral and written, in technical-scientific contexts.

Learning skills
Being able to apply the acquired knowledge to contexts different from those presented during the course, and to understand the topics covered in the scientific literature concerning Life Cycle Assessment and environmental and sustainability labelling.

Students are invited to consult the syllabus of the entire course for details regarding learning- and skill-related objectives.

Contents

- Sustainability reporting and its evolution over time.
- Life cycle thinking and its application to environmental management.
- Life cycle assessment framework according to ISO 14040/14044 standards.
- The landscape of environmental labelling programs, their criteria, and verification processes.

Detailed program

- Sustainability reporting frameworks.
- Historical development of life cycle approaches.
- Environmental impacts across product life cycles.
- The role of life cycle assessment in sustainable development.
- Introduction to life cycle assessment: Goal and scope in relation to intended application, Setting system boundaries, Functional unit definition, Allocation procedures, Data quality requirements, Impact categories and characterization models, Midpoint vs. endpoint approaches.
- Life cycle assessment critical review requirements and procedures.
- Social LCA and Life Cycle Sustainability Assessment.
- Streamlined LCA approaches.
- Product Environmental Footprint (PEF).
- Organizational LCA.
- Introduction to Environmental Labelling: Types of environmental labels (ISO 14020 series), Evolution of environmental claims.
- Environmental Labels Type I: Ecolabel criteria development processes, Key international ecolabelling programs (EU Ecolabel, Nordic Swan, Blue Angel), Sector-specific certification schemes, Application procedures and verification.
- Self-declared environmental claims (Type II): Carbon footprint labels, Single-issue environmental labels, claims on other dimensions.
- Environmental Product Declarations Type III: EPD program requirements, Product Category Rules (PCR), Verification procedures, Communication strategies for EPDs.
- Digital tools for environmental communication.

Prerequisites

- Basic understanding of environmental science.
- Basic understanding of sustainability concepts.

Teaching form

3 CFUs of mixed theoretical and interactive lessons in the classroom (30 hours):
• 10 two-hour lectures, in person, Delivered Didactics;
• 5 two-hour lectures, in person, with exercises and debates, and case studies, Interactive Didactics.

Attendance to lectures and interactive exercises is highly recommended.

Textbook and teaching resource

- Hauschild, M. Z., Rosenbaum, R. K., Olsen, S. I. (2018) "Life cycle assessment - Theory and practice" Springer International Publishing.
- Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and through better information.
- Slides.
- Notes shown during lectures and additional material on selected topics, e.g. scientific articles, made available on the e-learning website of the course.

Semester

second semester (March-June)

Assessment method

The final exam consists of a single oral exam at the end of the course which comprises the discussion of a case study developed by the students.
The final score will be between 18/30 and 30/30 cum laude, based on the overall assessment considering the following criteria:
(1) knowledge and understanding;
(2) ability to connect different concepts;
(3) autonomy of analysis and judgment;
(4) ability to correctly use scientific language.

Office hours

By appointment to be made by e-mail (elena.collina@unimib.it)

Sustainable Development Goals

QUALITY EDUCATION | INDUSTRY, INNOVATION AND INFRASTRUCTURE | RESPONSIBLE CONSUMPTION AND PRODUCTION