Course Title: IfS' Essentials of Environmental Life Cycle Assessment

Course ID:	Course Type:
IfS' Essentials of Environmental Life Cycle Assessment	eLearning Course
http://www.aiche.org/ela141	

Course Outline

Module 1: Overview of Life Cycle Assessment

- Why it is important to use a life cycle perspective in environmental management and achieving sustainability goals.
- The steps involved in the ISO LCA framework, from scoping to interpretation.
- How to place "life cycle thinking" in proper context with environmental strategies as they have evolved.
- Real world examples of LCA applications and how life cycle approaches are used by industry and government.

Module 2: Life Cycle Thinking

- The definition of life cycle thinking and life cycle management.
- What a life cycle approach is.
- How LCA relates to LCT.
- Not all life cycle studies are LCA.
- The role of single issue approaches, such as carbon footprint.

Module 3: Goal and Scope Definition

- How to properly define the goal of an LCA.
- Defining the system scope and boundaries.
- Examples of applications in the public and private sectors.
- Critical review requirements.
- Conducting impact assessment and interpreting the results according to the goal.

Module 4: Life Cycle Inventory

- The steps in compiling and quantifying inputs and outputs of the unit processes that make up an industrial system (as defined by in the goal and scope definition phase) to create an LCI.
- The differences in methodological approaches when creating an LCI and how these choices can affect the final results of the assessment.
- Available databases and data sources that can be used to create LCI.
- Available LCA software programs, both free and for purchase.

Module 5: Life Cycle Impact Assessment

- The steps involved in the ISO framework for the LCIA phase.
- Midpoint versus endpoint modeling.
- Common midpoint impact categories.
- How characterization factors are applied to LCI results in impact modeling.
- Internal versus external normalization.
- Calculating environmental scores.

Module 6: Interpretation and Reporting

- The steps defined by ISO that are involved in the interpretation phase.
- Uncertainty, sensitivity and contribution analysis.
- The basic requirements of a final LCA report.
- Alternative ways to present results.
- When and how to conduct peer review.
- What an Environmental Product Declaration is.

Module 7: Global Application of Life Cycle Assessment

- The use of LCA as a tool for achieving sustainability is steadily increasing.
- Carbon Footprint as it relates to LCA.
- Key international activities related to LCA methodology development and application.
- Organizational LCA
- LCA of Buildings
- Global Guidance for LCI data
- LCA Networks
- Life Cycle Management

Module 8: Life Cycle Sustainability Assessment

- The evolution of environmental management strategies from end-of-pipe control to life-cycle based sustainability.
- Life Cycle Sustainability Assessment integrates the information from LCA, life cycle costing and social life cycle assessment in the decision making process.