

LIFE CYCLE ASSESSMENT

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Exam

Life cycle assessment is a tool that allows you to assess an object's contribution to the environmental impact of a particular object throughout its life from cradle to grave. And, it helps to compare these impacts. The course at this stage is unique in Russia. There is no other course that covers the topic of life cycle assessment and environmental design in such a full and detailed way. Today, LCA is widely applied and used as a tool to support results-based policy and regulation, especially in relation to bioenergy. Over the past decade, LCA has expanded to include Life Cycle Costing (LCC) and Social LCA (SLCA or SOCA), building on a three-pronged sustainability or “triple outcome” model. These developments have expanded the LCA from a simple environmental assessment to a more comprehensive Life Cycle Sustainability Assessment (LCSA). The LCSA has attracted increasing attention in recent years, although at the same time its meaning and content is not always clear enough.

Course structure:

1. INTRODUCTION TO LIFE CYCLE ASSESSMENT OF PRODUCT/SERVICE. PHASE I AND II OF LCA
 - 1.1. The concept of “ecological life cycle of products”.
 - 1.2. The history of emergence and development of LCA.
 - 1.3. LCA as one of the environmental management tools.
 - 1.4. Main guiding documents in the field of LCA.
 - 1.5. Phase I of LCA – Goal and scope definition of LCA.
 - 1.6. Phase II of LCA – inventory analysis (LCI).
 - 1.7. Basic principles for compiling material and energy balances.
2. PHASE III OF LCA
 - 2.1. Phase III of LCA – Impact assessment (LCIA).
 - 2.2. Structure, features and limitations of LCIA.
 - 2.3. Relationships of LCIA to other phases of an LCA.
 - 2.4. Mandatory elements of LCIA.
 - 2.5. Types of impact categories, category indicators and characterization models.
 - 2.6. Methods for calculating category indicators.

3. PHASE IV OF LCA

3.1. Phase IV of LCA Interpretation of the life cycle (ILCA).

3.2. Elements of ILCA.

3.3. Identification of important environmental issues.

3.4. Relationships of ILCA to other phases of LCA.

3.5. ILCA examples.

4. PRACTICE USING OF LCA

4.1. Examples of studies on LCA products and services.

4.2. The main leaders in the field of LCA.

4.3. Practical application of LCA for environmental management purposes.