



## HÖGSKOLAN I GÄVLE

### Life Cycle Assessment 7.5 cr

*Livscykelanalys 7,5 hp*

Set by Faculty of Engineering and Sustainable Development

**Version**

**Set at**

**Valid from**

2/20/13

**HT2013**

<b>Level</b>	G2F
<b>Education level</b>	First cycle
<b>Course identifier</b>	MIG304
<b>Credits</b>	7.5 cr
<b>Main field of study</b>	Environmental Engineering
<b>Subject group</b>	Environmental Science
<b>Disciplinary domain</b>	Technology 100.0 %

**Learning outcomes**

After completing the course, students will be able to

- 1 describe the approaches, uses and limitations of a life cycle assessment (LCA)
- 2 describe the different environmental impact categories in areas such as problem description, scope, duration, effects, etc.
- 3 describe and explain the differences between the different weighting methods for the assessment of environmental impact
- 4 conduct a life cycle analysis using a computer-based tool for a selected product
- 5 review, analyse and compare different life cycle assessments with respect to system boundaries, data selection, data uncertainty, etc.

**Course content**

In the lectures and exercises the following topics are addressed:

- Introduction to different methods of Environmental Systems Analysis
  - The methodology for LCA
  - Examples of various weighting methods
  - Introduction to various computer-based tools for LCA
  - Orientation on different application areas for LCA
- with emphasis on waste / energy systems, buildings and environmental management

A laboratory experiment consisting of a computer exercise with one or more LCA tools.

An assignment signifying a critical review of an LCA study.

A project task where a (simplified) LCA implemented.

**Teaching**

The course includes lectures, computer exercise and a project incl. tutorials and seminar.

**Prerequisites**

At least 60 credits in courses in engineering

**Examination**

0010 Written exam 2 credits (learning outcomes 1-3)

0020 Assignment 4 credits (learning outcomes 4-5)

0030 Laboratory 1,5 (U, G, VG)(learning outcomes 4-5)

**Grade**

A, B, C, D, E, Fx, F

**Sustainable environment**

The majority of the course content deals with sustainable development..

**Module**

0010 Written examination

2 cr

Grade: AF

0020 Assignments

4 cr

Grade: AF

0030 Laboratory

1.5 cr

Grade: UV