AG2801 Environmental Assessment of Buildings 7.5 credits

Environmental Assessment of Buildings

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for AG2801 valid from Spring 2009

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Specific prerequisites

Eligibility for single course students:

- Completed, documented upper secondary education inkl documented proficieny in English and
- academic studies of 180 hp in engineering, architecture/planning or natural sciences including 15 hp in environmental science or equivalent.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The overall aim of the course is to provide a general introduction to the topic environmental assessment of buildings and more specifically to help you build up a basic analyst´s competence in Life Cycle Assessment (LCA) and its use when making environmental building assessments.

After completing the course, you should be able to:

- Describe the potential environmental impacts caused by different stages in a building's life span.
- Discuss potential environmental hotspots depending on building type.
- Tell the differences between common tools for environmental assessment of buildings.
- Use an LCA-based tool for environmental assessment of buildings.
- Reflect on optimisation of different (and possibly competing) environmental qualities and impacts in a planning or operation stage of a building.
- Explain how results from different types of environmental assessments of buildings can be used in practice.

In addition you should be able to:

- Explain the overall purpose and principles of LCA.
- Discuss possible applications and limitiations of LCA.
- Describe the content and explain the purpose of the analytical steps of LCA.
- Carry out a complete LCA of a chosen product or service system, including:

1. identify and delimit the system,
2. specify and handle allocation problems,
3. identify and use relevant data from LCA databases,
4. collect and use data from other sources,
5. choose characterisation (and valuation) method based on coverage and relevance to the intended application,
6. implement and use a computer model of the system in the LCA software SimaPro,
7. analyse, explain, and interpret model results.

- Write a report of the performed LCA, applying to the reporting guidelines and terminology as defined in the ISO standard for LCA.
- Make a critical review of another LCA.

Course contents

Lectures cover:

- the impact of buildings on human health, environment and natural resources
- environmental management in the building and property sector
- LCA methodology
- Tools/methods for environmental assessment of buildings
- Application of tools for environmental assessment of buildings

Course literature

Baumann, H, and Tillman, A.-M. (2004): The Hitch Hiker´s Guide to LCA. Studentlitteratur.

Recent scientific papers will be handed out at the start of the course.

Examination

- PRO2 - Project, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Critical Review, 1.0 credits, grading scale: P, F
- TEN1 - Examination, 2.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Other requirements for final grade

Examination (TEN1; 2,5 hp), Critical review (PRO1; 1,0 hp), Project report (PRO2; 4,0 hp).

Final grade is a weighted average of the written exam and the project report. "Pass" grade on the critical review is required to receive a final grade.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.