

Course syllabus

Miljösystemanalys, livscykelanalys Environmental Systems Studies: Life Cycle Analysis

FMIN30, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED W

Date of Decision: 2023-02-13

General Information

Elective for: E4, F4, I4, V4-tv, W4-es, W4-ms, R4

Language of instruction: The course will be given in Swedish

Aim

The general aim of the course is that the student should acquire an understanding of environmental systems analysis and its complexity, be stimulated to discuss and reflect on the possibilities of assessing the total environmental impact of a product or a service, and be trained in critical thinking, the identification and definition of a problem, and the writing of reports.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- Be able to demonstrate a deeper knowledge of life cycle assessment, both regarding its possibilities and limitations, through critical examination of life cycle assessment (LCA) according to current ISO 14040 standards.

Competences and skills

For a passing grade the student must

- Independently search for data and information relevant to LCA contexts, and evaluate them.
- Independently identify and define a problem, and write a report analysing it from an environmental systems perspective.

- Independently perform a broad life cycle assessment and evaluate the results, including choice of subject, searching for data and information, calculations and analysis of sensitivity and uncertainties.

Contents

The methodology of LCA according to ISO 14044 is described in lectures. Various life cycle assessments are examined in exercises: how well do they comply with the demands of the ISO standard. The results of these studies are discussed in seminars.

A project includes the performance of a broad life cycle assessment. The results of the projects are presented and discussed at the final seminar.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Continuous assessment of the student's work through participation in exercises together with approved project including presentation, and written examination. Attendance at presentations is mandatory. Satisfactory assignments. For the project to be graded, the course director should have been able to follow the work process. The final grade is based 3/5 on the project and 2/5 on the exam.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0117. **Name:** Written Examination and Assignment.

Credits: 3. **Grading scale:** TH. **Assessment:** Written exam and approved assignment

Code: 0217. **Name:** Project.

Credits: 4,5. **Grading scale:** TH. **Assessment:** Project; written and oral presentation

Admission

Admission requirements:

- Minimum 120 ECTS credits. Minimum of 6 ECTS credits should be within environmental studies or sustainable development. Swedish 3

The number of participants is limited to: No

The course overlaps following course/s: FMI055

Reading list

- Walter Klöpffer & Birgit Grahl: Life Cycle Assessment (LCA): A Guide to Best Practice. Wiley-VCH, 2014. Due to quick development in this field the literature may be changed; this will be communicated at least 8 weeks before start of the course.
- Due to rapid changes in the field the list may be revised during the semester.

Contact and other information

Course coordinator: Pål Börjesson, pal.borjesson@miljo.lth.se

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