

Bachelor Thesis - Energy and Environment Engineering

Programme course

18 credits

Kandidatarbete energi- och miljöteknik

TKMJ41

Valid from:

Determined by

Date determined

Main field of study

Energy and Environmental Engineering

Course level

First cycle

Advancement level

G2X

Course offered for

- Energy-Environment-Management

Prerequisites

Two years of engineering studies. Knowledge in sustainable energy systems, environmental technology, environmental management industrial economics, and industrial ecology for increased resource efficiency.

Intended learning outcomes

This course aims at developing the student's abilities to analyse organizations from energy, environmental and managerial perspectives with a broad approach. Special attention is paid to integration of knowledge from these three fields in order to draw conclusions about appropriate measures to increase the organization's resources efficiency. Appropriate in this case is defined as: environmentally motivated, economically feasible and technically and organizationally possible to implement. Attention is also paid to the student's ability to appropriately document and communicate important findings to the organization. In a group identify and individually describe the group's work on an organization's

- Direct and indirect environmental aspects on the organization's activities, and individually explain the group's conclusions
 - Energy use and supply
 - Organizational prerequisites for the organization's environmental performance and energy use.
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- In a group suggest, analyse and evaluate technical and organisational solutions aimed to improve the organisation's environmental performance, perform analyses of uncertainties and individually describe the group's work and conclusions
 - Plan, perform and document an individual work at bachelor level
 - Apply and integrate knowledge acquired during previous courses in the individual work
 - In group, and individually, apply methods and knowledge within the main subject Energy and environmental technology
 - Identify relevant scientific literature and relate the individual work to that literature
 - Discuss the individual work in a scientific, societal and ethical context.
 - Critically assess and discuss a written and orally presented bachelor thesis

Course content

The course includes several parts that lead to an integrated analysis of an organisations energy use, environmental performance and organization, such as:

- Energy supply and demand
- Use of material and chemical substances
- Organisational setting

Furthermore, the course content is individually decided for reach project group and pair of thesis authors in cooperation with examiner and supervisors. More information about the course and how the course is integrated to other courses can be found in the course information.

Teaching and working methods

The course consists of two parts: project and bachelor thesis. In the project students work with an organization-oriented project. Each project has a steering-group consisting of teachers and representatives from the studied organization. Furthermore there is a pool of expert teachers supporting students in their work. The group as a whole shall report and communicate relevant results to the studied organization.

In the bachelor thesis students individually analyse a research question. Topic for the thesis is chosen in cooperation with supervisor and examiner and shall be based on empirical material from one or more projects in the course. Bachelor theses are written in pairs where the individual contribution shall be clearly stated. Each pair of authors has one supervisor and one examiner, as well as access to expert teachers, to support the work.

Examination

UPG3	Individual reflection	0.5 credits	U, G
UPG2	Joint project report	2.5 credits	U, G
UPG1	Individual written report	15 credits	U, G

Grades are given as 'Fail' or 'Pass'.

Grades

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Department

Institutionen för ekonomisk och industriell utveckling

Director of Studies or equivalent

Niclas Svensson

Examiner

Olof Hjelm

Course website and other links

www.iei.liu.se/envtech/student/kurser

Education components

Preliminary scheduled hours: 20 h

Recommended self-study hours: 460 h

Course literature

Bestäms individuellt för varje projektgrupp/ uppsatspar i samråd med examinator, ämnesexperter och handledare