Faculty of Health, Science and Technology
Environmental Science

Syllabus

Environmental impact assessment of energy systems

Course Code:	MVAT12
Course Title:	Environmental impact assessment of energy systems *Miljökonsekvensbeskrivning för energisystem*
Credits:	15
Degree Level:	Master's level
Progressive Specialisation:	Second cycle, has only first-cycle course/s as entry requirements (A1N)

Major Field of Study:
MEI (Environmental and Energy Systems)
MXA (Environmental Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2016-03-09, and is valid from the Autumn semester 2016 at Karlstad University.

Prerequisites
Completed courses totalling at least 60 ECTS cr including at least 15 ECTS cr in energy engineering, environmental science or spatial and social planning, or at least one year relevant work experience, or equivalent.

Learning Outcomes
The aim of the course is that students develop knowledge and skills in environmental impact assessment (EIA) and a critical approach to it. The focus is on the EIA process, its procedures and methods.

(The concept EIA refers to the environmental impact assessment of independent projects as well as of plans/programmes.)

Upon completion of the course, students should be able to:
- explain the purpose of EIA and its usefulness for environmental politics,
- describe the Swedish and European legislation regulating the use of EIA,
- describe the stages in the EIA process and discuss the problems and possibilities of the various methods used in different phases,
- identify, reflect on and discuss problems and possibilities related to the roles of different actors in the EIA process,
- perform analysis, synthesis or evaluation related to chosen problem in the specialisation component (see Content),
- identify the needs of an environmental impact assessment for plan or project purposes,

- plan and argue for an environmental impact assessment for an energy system,
- perform selected parts of en environmental impact assessment of an (preferably district heating and/or biofuel-based) energy system, including drawing up the corresponding parts of an environmental impact assessment.

Content
The course comprises two modules:
Module 1 covers:
- presentation of the purpose and role of EIA in environmental politics,
- presentation of Swedish and European legislation regulating the use of EIA,
- prsentation and problematisation of the components in the EIA-process (screening, scoping, choosing an option, investigating consequences and mitigating circumstances, assessment),
- presentation of the participatory aspect of the EIA-process,
- a specialisation assignment in an area chosen by the student in consultation with the supervisor. The topic of the assignment must be related to the content described above.

Module 2 covers:
- drawing up a plan for the components of an EIA process for a specific energy system (preferably district heating and/or biofuel-based), chosen by the student and teacher in conjunction,
- a specialisation assignment in which parts of the developed plan are carried out and documented in an EIA report.

Examination of the modules involves computer-mediated communication and electronic submission of the written hand-in assignments and a concluding oral presentation of the individual specialisation assignment. The oral presentations are normally carried out from a distance.

Reading List
See separate document.

Examination
All assessment is individual and each component is examined separately.
Module 1 is assessed on the basis of three hand-in assignments and on a written report on the specialisation task

Module 2 is assessed on the basis of a written hand-in assignment for an EIA-process plan and a written report on the EIA of the specialisation task.

Both specialisation assignments are also presented orally.

Grades are awarded for all the six assignments and the final course grade is awarded on the basis of the weight (in terms of expected workload) of the components in the course. Module 1 hand-in assignments have the weight factor 1 and the specialisation assignment factor 2. The Module 2 hand-in assignment has the weight factor 3,5 and the specialisation assignment factor 4.

Grades
One of the grades Fail (U), Pass (G), and Pass with Distinction (VG) is awarded in the examination of the course.

Quality Assurance
Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate
A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.

Distance education course without on-campus meetings