AH2303 Transport and Sustainable Development 7.5 credits

Transporter och hållbar utveckling

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

Establishment

Course syllabus for AH2303 valid from Spring 2011

Grading scale

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

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

- A completed Bachelor's degree in engineering, science, economics, planning or a similar degree, which includes at least 60 ECTS credits in mathematics, physics, statistics and/or computer science, as defined in the admission requirements for the Master's programme in Transport Systems **and**
- documented proficiency in English B or equiv(TOEFL, IELTS e g)

Language of instruction

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

Intended learning outcomes

After the course you should be able to:

- account for sustainability concepts and indicators, discuss visions of sustainable transport and compare with properties of present transport systems.
- describe alternative energy futures and their relations to climate change and explain the role of transport systems in different scenarios.
- discuss the potential for technological development in transport and infrastructure systems in relation to different energy scenarios.
- describe how scenarios and backcasting can be used to analyse sustainable transport systems
- apply scenarios and forecasting for analysis of sustainable transport options
- analyse relationships between urban development and mobility patterns and their implications for sustainability
- identify environmental impacts of transport and apply the environmental impact assessment approach on a transport project
- account for the strategic environmental assessment approach and apply it on a transport plan
- select and synthesise policies and strategies for approaching sustainable transport.

Course contents

- Sustainability concepts and indicators. Visions of sustainable transport systems and assessment of the present situation.
- Energy futures and climate change – the role of the transport system.
- The potential for technological development in transport and infrastructure systems in relation to various energy futures.
- Scenarios and backcasting as tools for analysing sustainable transport.
- Scenarios and forecasting as tools for analysing sustainable transport.
- Sustainable urban development and mobility.
- Environmental impacts of transport and methods of assessment (e.g. environmental impact assessment – EIA).
- Strategic assessment of sustainability in the transport sector (e.g. strategic environmental assessment – SEA).
- Strategies and policies for approaching sustainable transport

The content of the course is presented in lectures on methodology and applications. Further training on concrete examples is provided in tutorials in the form of case studies, exercises or study visits. In a project assignment, the student will analyse the sustainability impacts of a

plan, a policy or a project in a transport context. The resulting analysis should be summarised in a report to be presented and discussed in a seminar.

Course literature

Preliminarily, the course literature will be based on articles in scientific journals and other available Internet sources. A complete reading list will be provided at the home page of the course.

Examination

- PRO1 - Project, 2.5 credits, grading scale: P, F
- TEN1 - Examination, 5.0 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

(TEN1; 5 cr) A-F
(PROJ1; 2.5 cr) P/F.
The course grade will be determined by the grade of the written examination.

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.