AH2038 Railway Planning and Operations, project course 7.5 credits

Tågtrafikplanering, projektkurs

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

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

Establishment

Course syllabus for AH2038 valid from Autumn 2024

Grading scale

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

Education cycle

Second cycle

Main field of study

Built Environment

Specific prerequisites

Degree of Bachelor or 180 higher education credits including at least 60 higher education credits in mathematics, physics, statistics or computer science

English B/6

Knowledge of planning of railway systems and train operations with course(s) at university level, as AH2036 Train traffic planning (7.5 higher education credits), SD2307 Track vehicle technology (7.5 higher education credits) or an equivalent discipline.

Language of instruction

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

Intended learning outcomes

The course is intended to provide specialised knowledge about the structure of a railway system for passenger and freight transportation.

Through choices of project specialisation, the student can profile her/him against different parts of the railway system for example forecasts, traffic control, traffic analysis, economy or planning of operations.

Intended learning outcomes are also to train project work in groups.

On completion of the course, the student should have reached the four intended learning outcomes:

- Organise project work in groups
- Identify an aim and a target group and design the report as basis for a decision to this
- Choose, delimit and revise a subject appropriate for group project in planning of railway and operations, underground or light rail
- Be able to analyse and draw conclusions of the analysis that is put in their context - understanding in context.

Course contents

The course includes planning and implementation of a feasibility or planning study.

Dependent on the students' interest and in consultation with the course administration are chosen for an appropriate whole several of the following subject areas:

- Expansion of new railway and physical localisation in the planning stages feasibility study and railway plan to understand the work from demand to completed railway
- Demand calculations for individual and freight transports with rail-bound traffic and other transport modes.
- Comparisons between different forecast scenarios, the requirements of the model of input and reliability
- Economic analysis of various traffic set-ups and demand with individual- and/or freight on a future planned railway, underground or light rail and sensitivity analysis of various design of vehicle performance and schedules

- Design of the physical infrastructure, its foundation, technical works and track- and station/yard design and other technical systems as electric supply, signal and telecommunications installations
- Study of the values of travellers of their travel and their conception of various design of the range of train traffic
- Logistics setup for goods with intermodal solutions where railway transport is a part
- Schedule and capacity analysis including punctuality of efficient train traffic by studying combinations of commuter train, regional train, long-distance train, freight train with different combinations of stops including skip stop and changes and punctuality
- Environmental impacts for both railway construction and train operation
- Analysis and proposal for design of maintenance of facilities considering economy, traffic disruptions and demand effects.

Examination

- PRO1 - Project assignment, 7.5 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.

Other requirements for final grade

Compulsory attendance when planning the group task and at reporting (seminar).

Project participants who do not have contributed to the work of the group according to expectations from other group members and examiner need to be re-examined to pass.

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.