AH2307 Urban Modeling and Decision Support 7.5 credits

Urban modellering och beslutsstöd

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 AH2307 valid from Autumn 2014

Grading scale

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

Education cycle

Second cycle

Main field of study

Built Environment

Specific prerequisites

For admitted students to the Master of Science in Civil Engineering and Urban Management (CSAMH) or the Master of Science in Transport and Geoinformation Technology (TTGTM), there are no additional requirements.

For other students:

- A completed bachelor's degree in civil engineering, urban planning, geomatics, geography, engineering physics, computer science, statistics, economics, and/or mathematics, including at least 6 university credits (hp) in each of the following or their equivalents: Programming, Linear Algebra, Calculus in One Variable, and Probability & Statistics; and
- English language proficiency equivalent to (the Swedish upper secondary school) English course B/6.

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:

- Describe and critique the application of rational models in decision-making processes
- Apply urban theories to building a simple forecasting system
- Analyze policy changes in the urban system and produce decision support for decision-makers
- Write a report of a simple transport planning study

Course contents

The main contents are discrete choice theory, the multinomial and nested logit model, network equilibrium and assignment theory for car and public transport, and the development and application of a simple forecast and analysis system.

The contents are presented in lectures and developed into practical skills through computer aided exercises. The project task is undertaken as a laboratory exercise where the student will build a forecasting system using the methods taught in the lectures. The student applies the system to a range of policy issues and writes an individual report of the work.

Course literature

Ortuzar & Willumsen (2001). Modelling Transport. John Wiley & Sons.

Examination

- PRO1 - Project, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 3.0 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.

Written exam equivalent to 3 credits with grading scale A-F.

Project assignment equivalent to 4,5 credits with grading scale A-F.

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.