



AH2304 Avancerad transportmodellering 7,5 hp

Advanced Transport Modelling

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för AH2304 gäller från och med HT07

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Särskild behörighet

- Knowledge of mathematical models, as defined by mathematical courses mandatory within the programs for Civil Engineering and Urban Management (Traffic Engineering), Engineering Physics (Optimisation and Systems Theory), Vehicle Engineering or Mechanical Engineering (Systems Engineering) or equivalent. The course Traffic Demand Forecasting is recommended.
- Documented proficiency in English B or equivalent.

Undervisningspråk

Undervisningspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

After completing the course, the student should be able to (i) use the theory for discrete choices and stochastic utility maximization to formulate models related to transport demand, in particular travel frequencies, destination choice and mode choice (ii) program a transport forecasting model for analysing a real and current policy measure, such as congestion charges (iii) account for models and theory for route choice (iv) explain network equilibrium models and equivalent optimization formulations. Account for pros and cons with the concept of network equilibrium (v) use software for network equilibrium on a real world application to analyse traffic flows. (vi) use decision support systems to analyse realistic planning problems (vii) search relevant literature for a current application within transport demand modelling

Kursinnehåll

- Theory for discrete choices, stochastic utility maximization, econometric estimation, entropy methods and gravity model.
- Theory and algorithms for network equilibrium
- Cost benefit valuation and effect evaluations: accidents, emissions and value of time.
- Literature seminar

First, the theory is presented within lectures, which are followed up by computer assignments, normally four.

Finally, in a literature study assignment, the student will search information to find a solution to a given problem. The suggested solution will be presented as a written report and at a seminar.

Kurslitteratur

Hensher, D.A., and Button, K.J., 2000, Handbook of Transport Modelling, Pergamon Press. In particular chapters 1, 3, 5, 9, 10,13, 17, and 19.

Train, K., 2003, * Discrete choice methods with simulation*, Cambridge University Press.

Examination

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

Övriga krav för slutbetyg

Written exam (4,5 cr) and assignments (3 cr).

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.