Traffic Demand Modelling

Programme course

6 credits

Trafikprognoser

TNK096

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial Engineering and Logistics

Date determined
2016-01-25

Offered for the last time
Spring semester 2018

Replaced by
TNK118

Main field of study
Transportation Systems Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Intelligent Transport Systems and Logistics, Master's programme
- Communication and Transportation Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Planning and simulation of traffic systems

Intended learning outcomes
The purpose of the course is to give knowledge in traffic and transport modelling. Further, the course will help the student to gain knowledge in how the models can be used for making predictions, forecasts and sensitivity analysis. After finishing the course, the student shall:

- Motivate and derive basic discrete choice models
- Apply choice models for modelling of mode, demand the route in a traffic network
- Estimate parameters in basic discrete choice models of Logit type
- Formulate and use trip distribution, route choice, and demand models for evaluating price sensitivity and road charges
- Combine and analyse route choice models, demand models and choice model
- Make use of programs and tools for analysing the models stated above

Course content

- Discrete choice models
- Basic and nested logit models
- Parameter estimation for choice models
- Experiments with logit models
- Demand the OD-estimation
- Route choice models
- Combined models for demand, mode and route choice
- Application of the above models on capacity and pricing problems

Teaching and working methods

The course consists of lectures, seminars and laborations

Examination

LAB1	Laboratory work	3 credits	U, G
TEN1	Written examination	3 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Erik Bergfeldt

Examiner

Clas Rydergren

Education components

Preliminary scheduled hours: 44 h
Recommended self-study hours: 116 h

Course literature

Koppelman, F.S. och Bath. C., (2006) A self instructing course in mode choice modelling and nested logit models, tillgänglig på Internet. Webbsida med kompendiematerial

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.