Planning of Public Transportation and Railway Traffic

Programme course

6 credits

Planering av kollektivtrafik och järnvägstrafik

TNK098

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial Engineering and Logistics

Date determined
2017-01-25

Main field of study
Logistics, Transportation Systems Engineering

Course level
Second cycle

Advancement level
A1X

Course offered for
- Intelligent Transport Systems and Logistics, Master's programme
- Air Transportation and Logistics
- Civic Logistics
- 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
Basic programming, optimization, traffic planning and simulation

Intended learning outcomes
The purpose of the course is to give insight to how the planning and operation of public transportation and railway traffic is carried out. The course is focusing on strategic aspects such as transport network planning, timetable construction, rolling stock planning and pricing, but it also includes traffic and delay management. The course is preparatory for research studies. After the course, the student shall be able to:

- describe state-of-the-art in research in planning of public transport and railway traffic.
- understand and describe relevant models and methods used to design a new transport network, evaluate this and discuss its strengths and weaknesses
- understand and discuss issues regarding the occurrence of traffic disturbances, their impact and how they are dealt with, in particular with respect to railway traffic.
- Implementing planning methods for solving numerical instances.

Course content

The course outlines how the planning of public transportation and railway traffic is carried out today. The course addresses the current prerequisites in terms of political agendas, legislation and its organisation with the different stakeholders and their functions. The course content also includes models and methods applied to facilitate the planning and operations. The course is composed of the following parts:

•Review of latest research in the area, based on a selection of journal papers.
•Strategic and operational timetable construction for railways
•Planning of demand responsive public transport.

Teaching and working methods

The course consists of lectures and seminars. Some of these will be given by external lecturers from the industry.

Examination

UPG2	Group Assignments	2 credits	U, 3, 4, 5
UPG1	Hand-in assignments	4 credits	U, 3, 4, 5

The course grade is given as a weighted sum of the graded assignments.

Grades

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

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Erik Bergfeldt

Examiner

Anders Peterson

Education components

Preliminary scheduled hours: 36 h
Recommended self-study hours: 124 h

Course literature

Artiklar, rapporter och kompendiematerial publicerats successivt på kursplatsen.

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.