AH2173 Public Transport 7.5 credits VT2023

Attractive, efficient and reliable public transport systems are fundamental in promoting sustainable growth developments in metropolitan areas. The need to integrate and operate increasingly complex, diverse and technology-oriented transit services poses challenges to both planners and operators. The course will provide knowledge on planning and operations of public transport systems and their analysis and evaluation through various measures of performance.

Learning outcomes
- Understand the four step transport planning process
- Discuss the primary stakeholders and factors influencing public transport development
- Understand and compare alternative organizational structures in the public transport sector
- Compare alternative public transport service patterns and network structures
- Calculate and interpret measures of service and network performance
- Express mode choice and route choice as a discrete choice model
- Apply methods for frequency determination, timetable design and vehicle scheduling
- Identify the sources of service uncertainty and their impact on service performance

Course main content
- Introduction to public transport systems: history, current state and trends
- Strategic planning
- Network design
- Public transport sector organization
- Service quality assessment
- Public transport performance, analysis and modeling
- Operations planning
- Service reliability and control
- Data collection methods and advanced public transport systems

Disposition
The course consists of lectures, guest lectures from industry and authorities, a workshop, exercises and a project assignment.

- The workshop is designed to highlight and discuss various current topics in public transport policy.
- The Project involves designing and carrying out an empirical analysis of a particular phenomenon related to public transport operations and is documented in a written report.

Eligibility

For admitted students to the Master of Science in Civil Engineering and Urban Management (CSAMH), the Master's Programme in Transport and Geoinformation Technology (TTGTM), or the Master's Programme in Transport, Mobility and Innovation (TTMIM) 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, with at least 60 university credits (hp) in mathematics, physics, statistics and/or computer science; and English language proficiency equivalent to (the Swedish upper secondary school) English course B/6.

Literature

Ceder (2007). Public Transit Planning and Operations – Theory, Modeling and Practice.
Vuchic (2005). Urban Transit – Operations, Planning and Economics.
Vuchic (2007). Urban Transit - Systems and Technology.
A selection of research articles.

Examination

PRO1 - Project, 4.0 credits, grade scale: A, B, C, D, E, FX, F
TEN1 - Examination, 3.5 credits, grade scale: A, B, C, D, E, FX, F

Requirements for final grade

Written examination (3,5 cr), and project (4,0 cr). Participation in workshop is required to pass the Project part.

Offered by

ABE/Div. of Transport Planning

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Examiner

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