AH2171 Traffic Engineering and Management 7,5 hp

Traffic Engineering and Management

Fastställande

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Samhällsbyggnad

Särskild behörighet

Bachelor's degree in engineering, science, economics, planning or a similar degree, with at least 60 cr (ECTS) in mathematics, physics, statistics and/or computer science, as defined in the admission requirements for the Master's programme in Transport Systems.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

The overall aim of the course is to provide fundamental knowledge of traffic flow theory and its application methods for capacity analysis, design, management, operation and selection of control method for road traffic facilities with regard to traffic performance and safety. After the course you should be able to:

- Understand the fundamental traffic flow theories and identify basic traffic variables and their relationships including speed, density and flow.
- Analyze a variety of traffic facilities and evaluate capacity and level of service (LOS).
- Design signalized intersections including isolated, coordinated and roundabouts.
- Assess, evaluate and justify methods of traffic management and control.
- Understand the use of advanced simulation methods for the analysis of traffic systems and software tools for the design of traffic control strategies.
- Evaluate traffic impacts on the environment and safety.
- Calculate and apply methods for reducing traffic impacts on communities such as traffic calming strategies, accident reductions and parking management.
- Understand the role of ITS in Dynamic Traffic Management.

Kursinnehåll

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- Understand the role of ITS in Dynamic Traffic Management.

Kurslitteratur

- May, A. Traffic Flow Fundamentals (1990), selected sections.
- R.Roess, E.Prassas, W.Mc Shane (2004), Traffic Engineering 3rd Edition. Prentice Hall
- O'Flaherty (ed.) (1997) Transport Planning and Traffic Engineering, part III, chapters 16-18, 20 and 22 – Part IV, chapters 24-28, Arnold, London, together with a selection of research articles.
- Al-Mudhaffar, 2006 Impacts of traffic signals control strategies, part 1.
- Manual for TRANSYT.

- HCM 2000 (selected chapters)
- Freeway Management and Operations Handbook http://ops.fhwa.dot.gov/freeway-magmt/publications/...

Examination

- PRO1 - Project, 2,5 hp, betygsskala: P, F
- TEN1 - Examination, 5,0 hp, betygsskala: A, B, C, D, E, FX, F

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.

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

Övriga krav för slutbetyg

A mandatory written examination equivalent to 5 cr with grading scale A-F and a mandatory project assignment equivalent to 2.5 cr with A-F . The course grade will be determined by the grade on the written examination and project.

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.