AH2306 Geografiska informationssystem i transportanalys 7,5 hp

Geographic Information Systems in Transport Analysis

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

Fastställande

Kursplan för AH2306 gäller från och med HT08

Betygsskala

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

Utbildningsnivå

Avancerad nivå

Huvudområden

Särskild behörighet

A bachelor's degree in engineering, science, economics, or planning or at least 60 credits in math, physics, statistics, or computer science; course AH2172, Transport Data Collection and Analysis, or an equivalent at another university is recommended.

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

After the course, students will be able to:

* Recognize "spatial questions" in the context of transport planning and analysis

* Describe data needs for developing a geospatial database for transport analysis

* Distinguish between vector-based and raster-based geographic analysis methods and the occasions where they are appropriately used

* Choose appropriately a geographic data model for use in a typical transport problem context

* Identify potential sources of spatial data quality problems and characterize how they may affect the quality and character of analysis results

* Recognize and critique spatial analysis methods that are employed behind commonly available transport analysis results

* Design visualizations of geospatial data that minimize distortions and misperceptions

* Anticipate the likely benefits and drawbacks of using GIS for communicating transport data, plans, and analysis results to the public

Kursinnehåll

This course consists of three parts:

1. In the first part of the course, students will learn foundations and principles of GIS, including data models and basic spatial analysis, as well as gaining sufficient familiarity with GIS software to be able to apply it to a variety of applied contexts. This part consist of lecture and lab sessions.

2. The second part of the course consists of integrated lecture-and-lab sessions, each of which focuses on a different application of GIS in the context of transport planning and analysis.

3. The final part of the course is an examination, which will assess students' understanding of the material.

Kurslitteratur

Required text: Longley P.A., Goodchild M.F., Maguire D.J. and Rhind D.W., 2005, Geographic Information Systems and Science, 2nd Edition, John Wiley and Sons, Ltd., New York.

Examination

- LAB1 - Laboration, 1,5 hp, betygsskala: P, F
- LAB2 - Laboration, 3,0 hp, betygsskala: A, B, C, D, E, FX, F
- TEN1 - Tentamen, 3,0 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.

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.