

Course Information

TNK055 GIS for transportation, 6 ECTS credits

Course description

The course provides knowledge in geographical information systems. The contents of the course span a wide range of concepts that form the basis for theoretical knowledge within this area, such as; basic GIS concepts, geographic databases, hardware and software, data capturing, storing, processing and presentation, cartography and GIS analysis. Practical exercises with GIS-software and programming in Matlab are the main parts of the course.

Aim

The general purpose is to give theoretical knowledge in geographic information technology as well as practical knowledge about GIS as a tool for engineers. After the course the students should

- be familiar with basic geographic information technology
- be able to work independently with GIS-software, perform analysis and to present the result in clear and well-structured reports
- be able to independently implement GIS-relevant algorithms in Matlab
- have understanding for database systems and be able to search and select information using SQL-queries

Time plan

The first half of the course focuses on exercises in ArcGIS software, and the second half focuses on exercises in Matlab.

Course literature

Fazal, S. (2008), GIS Basics.
(available free as E-book from LiU library).

Learning ArcGIS (ESRIs Virtual Campus): the theory pages in module 1-4, & 6-7.

Supplementary material will be handed out on lectures or made available on the course web page.

Course webpage

www.itn.liu.se/~carha/tnk055

Examination

The examination consists of a series of computer exercises, and hand-in assignment. Some of the exercises are only graded pass or fail (3 credits), and some of them are graded with grades; 5, 4, 3 or fail (3 credits).

The final grade of the course can be; 5, 4, 3 or U, where 5 is Pass with Distinction, 4 is Pass with Credit, 3 is Pass and U is Fail.

See the course webpage for more detailed information throughout the course.

Teaching staff

GIS-lectures and examination

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GIS-lab questions

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Matlab; lectures and lab questions

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