

Geographic Information Systems

Programme course

6 credits

Geografiska informationssystem

TNK046

Valid from: 2017 Spring semester

Determined by
Board of Studies for Industrial
Engineering and Logistics

Date determined
2017-01-25

Main field of study

Transportation Systems Engineering

Course level

First cycle

Advancement level

G1X

Course offered for

- Communications, Transport and Infrastructure, M Sc in Engineering
- Civic Logistics, Bachelor´s Programme
- Civil Engineering, B 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.

Intended learning outcomes

The main purpose is to give basic theoretical and practical knowledge in geographic information systems (GIS). The course shall also give an introduction to database technology. After the course the student should

- understand the relational model and the query language SQL
- be familiar with the basic theory within geographic information science
- be familiar with several methods used for GIS-analyses
- be able to choose the right method to use for analysing different problems
- be able to work independently with GIS-software and to present results from GIS-analysis in a clear and well structured report

Course content

Data structures and modelling. Relational databases and query languages, especially SQL. Spatial data bases. Cartography. Data collection for GIS's. Spatial analysis. Applications related to traffic and transportation.

Teaching and working methods

Lectures, lessons and laboratory work. The laboratory work is mandatory.

Examination

LAB1	Laboratory work	3 credits	U, G
TEN1	Written Examination	3 credits	U, 3, 4, 5

Grades

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

Other information

Supplementary courses:

Positioning Systems

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Erik Bergfeldt

Examiner

Carl Henrik Häll

Course website and other links

<http://www.itn.liu.se/~carha/tnko46>

Education components

Preliminary scheduled hours: 52 h

Recommended self-study hours: 108 h

Course literature

Additional literature

Books

Harrie, Lars, (2013) *Geografisk informationsbehandling : teori, metoder och tillämpningar*

ISBN: 9789144088778

Lund : Studentlitteratur, 2013

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://stydokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.