

## GISN25, GIS: Spatial Data Infrastructure, 5 credits

*GIS: Infrastruktur för rumsliga data, 5 högskolepoäng*

Second Cycle / Avancerad nivå

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### Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2013-03-21 to be valid from 2013-03-22, autumn semester 2013.

### General Information

The course is an elective course for second-cycle studies for a Degree of Master of Science (120 credits) in geographic information science.

*Language of instruction:* English

*Main field of studies*

Geographical Information Science

*Depth of study relative to the degree requirements*

A1N, Second cycle, has only first-cycle course/s as entry requirements

### Learning outcomes

The aim of the course is that students should have acquired on completion of the course the following knowledge and skills:

*Knowledge and understanding*

On completion of the course, the student should be able to:

- Describe the importance of spatial data for planning, decision making and sustainable development
- Describe the current status/the problems for spatial data in terms as availability, accessibility, applicability and usability
- Describe the general the concepts and the aims for Spatial Data Infrastructure and the importance of data exchange
- In detail, explain and understand the main components of a SDI
- Describe the factors that influence the development of a SDI and the nature of these factors

- Describe at a general level the concepts clearinghouse networks and geo-portals
- Explain in detail the different generations of clearinghouse networks, the main components of these networks, interoperability for systems, available standards to achieve interoperability and the principles of service composition
- Explain the cartographic aspects for geo-portals
- Account for concepts and technologies for modelling and evaluation of SDIs
- Describe and discuss what is meant with a society that is spatially enabled

### *Skills and abilities*

On completion of the course, the student should be able to:

- Plan for the requirements that a society sets on a SDI
- Use and develop the standards and specifications that are required for a SDI
- Use and suggest policy that are needed for a SDI
- Design inter-operable clearinghouses/geo-portals for SDI's
- Suggest solutions to create a spatial-enabled society
- Evaluate and refine a SDI

### *Judgement and approach*

On completion of the course, the student should be able to:

- Profit, assess and discuss scientific publications within the subject critically and from such material be able to summarise a given current research issue

## **Course content**

The following parts are included in the course:

- Existing status for spatial data.
- SDI components and their nature.
- Factors that influence the SDI development
- Clearinghouses of different generations.
- Inter-operability and International standards for these.
- Introduction to service composition.
- Cartographic aspects of geo-portals.
- SDI modelling and evaluation.
- The spatial activated the society ("spatial-enabled society").

## **Course design**

The teaching consists of Internet distributed lectures, seminars and exercises. Participation in seminars and exercises, and thereby integrated other teaching is compulsory, but the lectures contain information that is not included directly in textbook and other listed literature so it is recommended that all lectures are attended.

The course is a distance course and is distributed on the Internet. It is flexible designed which facilitate for the student to carry out the course on full-, half- or part-time.

## Assessment

Examination takes place in writing in the form of take-home examination and through approval of individual exercises. For students who have not passed the regular examination, additional examination in close connection to this is offered.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, Pass, Pass with distinction.

To pass the entire course, approved examination, passed exercises and participation in all compulsory parts are required. The final grade are decided through grade on examination.

## Entry requirements

For admission to the course, general entry requirements are required, English B and 90 credits completed courses including 30 credits courses in GIS. Equivalent knowledge in a different way acquired, give also admission to the course.

## Subcourses in GISN25, GIS: Spatial Data Infrastructure

Applies from V13

1301 Spatial Data Infrastructure (SDI), 5,0 hp  
Grading scale: Fail, Pass, Pass with distinction