



Faculty of Health, Science and Technology  
Geo-Science

## Syllabus

### GIS III, Data input to GIS

<b>Course Code:</b>	NGGB44
<b>Course Title:</b>	GIS III, Data input to GIS <i>GIS III, Indata till GIS</i>
<b>Credits:</b>	7.5
<b>Degree Level:</b>	Undergraduate level
<b>Progressive Specialisation:</b>	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

**Major Field of Study:**  
NGA (Physical Geography)

#### Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2016-02-26, and is valid from the Autumn semester 2016 at Karlstad University.

#### Prerequisites

At least 25 ECTS cr completed for the BSc programme in Surveying Technology and Geographical IT (TGLIT) and at least 25 ECTS cr completed for the Surveying and Mapping programme (TGMKT), of which 4 ECTS cr completed for the course NGGA23 GIS I, 7.5 ECTS cr, and 1.5 ECTS cr completed for the course NGGB47, GIS II, or equivalent.

#### Learning Outcomes

Competence and skills

Upon completion of the course, students should be able to:

- independently identify, formulate and handle issues in the GIS field,
- analyse and evaluate different technical solutions in an overall perspective,
- plan and carry out tasks with adequate methods within given time frames,
- systematically use and assess knowledge and model, simulate, predict and evaluate events based on relevant information,
- work in a team,
- give an account of and discuss information, problems and solutions in dialogue with different groups orally and in writing,
- design a geographic database that meets certain set requirements,
- build a relational geographic database,
- create rules and control functions in a relational geographic database,
- apply tools for data validation in a geographic database,
- create workflows for geographic data manipulation, and
- handle the design, maintenance and special adaptation of GIS

Judgement and approach

Upon completion of the course, students should be able to:

- identify their needs of further knowledge and continual updating of knowledge.

### **Content**

The course provides training in database modelling based on a requirement specification. Students work in groups. On the basis of this design, students construct a geographic database for storage of given objects. Hands-on computer sessions with specific software are included. The course includes managing data format problems, data in different coordinate systems and topology requirements for geographic objects.

The final storage environment is a database with attributive domains and subtypes created for quality control of database content. Students' various database constructions will be evaluated and discussed in an examination seminar. The course also includes some programming.

Instruction is in the form of lectures, lab work, and supervision.

### **Reading List**

See separate document.

### **Examination**

Assessment is based on an individual, written report, presented and discussed in seminar, seminar peer reviewing, and oral presentation of group project. Participation in laboratory work and supervision is mandatory.

### **Grades**

One of the grades 5 (Pass with Distinction), 4 (Pass with some Distinction), 3 (Pass), or Fail (U) is awarded in the examination of the course.

### **Quality Assurance**

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

### **Course Certificate**

A course certificate will be provided upon request.

### **Additional information**

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.

Required course for the engineering programme Surveying Technology and Geographical IT (TGLIT).