Faculty of Engineering and Sustainable Development
Akademin för teknik och miljö

SYLLABUS

HÖGSKOLAN I GÄVLE

Methods Tool Course for Geospatial Information Science 5 cr

Metoder och verktyg för geospatial informationsvetenskap 5 hp

Set by Faculty of Engineering and Sustainable Development

Version	**Set at**	**Valid from**
	8/22/16	**VT2018**

Level	A1N
Education level	Second cycle
Course identifier	SBA044
Credits	5 cr
Main field of study	Geospatial Information Science, Geomatics, Geography, Surveying Technology
Subject group	Geographic Information Technology and Surveying
Disciplinary domain	Technology 100.0 %

Learning outcomes

The course trains the student in a variety of methods used in the geospatial information science area.

After completion of the course the student shall be able to
1. construct web-based questionnaires (including concidering ethical issues) and evaluate the response data (e.g. derive relevant staitistics)
2. calculate the most common forms of descriptive and inferential spatial statistics
3. explain the concept of autocorrelation and perform regression analysis and interpolation on both non-spatial and spatial data
4. explain the concept of Kriging and use it for spatial interpolation
5. derive estimates of error/accuracy/uncertainty over a modelled result.

Course content

- Quantitative and qualitative research methods
- Questionnaires/Interview techniques
- Descriptive spatial statistics (e.g. mean, mode, etc; dispersion, etc)
- Inferential spatial statistics (e.g. Nearest neighbor analysis)
- Relational statistics
- Spatial autocorrelation
- Interpolation and regression analysis

• Geostatistics (Kriging)
• Accuracy/uncertainty/errors
• Map algebra vs. Matrix algebra

Teaching Lectures, assignments, and seminars

Prerequisites Introduction to Studies on Advanced Level in Geospatial Information Science, 5 cr, or equivalent

Examination Assignments, seminars, and written examination

Grade A, B, C, D, E, Fx, F

Other regulations Degree criteria for final grade will be given by examiner or course responsible latest at the beginning of the course.

Sustainable environment A minor part of the course content deals with sustainable development.

Module

0010	Assignments	2.5 cr	Grade: UG
0020	Seminars	0.5 cr	Grade: UG
0030	Written examination	2 cr	Grade: AF