



## HÖGSKOLAN I GÄVLE

### Spatial Multicriteria Decision Analysis 5 cr

*Spatial multikriterieanalys 5 hp*

Set by Faculty of Engineering and Sustainable Development

<b>Version</b>	<b>Set at</b>	<b>Valid from</b>
	8/22/16	HT2017

<b>Level</b>	A1F
<b>Education level</b>	Second cycle
<b>Course identifier</b>	SBA305
<b>Credits</b>	5 cr
<b>Main field of study</b>	Geospatial Information Science, Geomatics, Geography, Surveying Technology
<b>Subject group</b>	Geographic Information Technology and Surveying
<b>Disciplinary domain</b>	Technology 100.0 %

**Learning outcomes** After completion of the course the student shall be able to

1. demonstrate how multicriteria decision analysis methods can be combined with GIS for decision support in spatial context
2. demonstrate different advanced analysis methods in GIS
3. summarize and evaluate scientific literature over a specific topic
4. perform a project work reported orally and through a scientific paper and poster.

**Course content**

- Practical handling of different GIS software.
- Manipulation between and integration of different kinds of data formats.
- Digital elevation modelling and volume computation.
- Different spatial analysis methods (e.g. cost paths, distance and density surfaces, zonal analyses, viewsheds, map algebra).
- Multicriteria decision analysis theory and techniques.
- Hydrological modelling in GIS.
- Literature review and seminar.

**Teaching** Lectures, assignments, seminars, and project.

**Prerequisites** Remote Sensing, 5 credits, or equivalent

<b>Examination</b>	Assignments, Seminars, and Project		
<b>Grade</b>	A, B, C, D, E, Fx, F		
<b>Limitations</b>	The course cannot be included in a higher education degree together with the course Geographical information technology – project, 7.5 credits.		
<b>Other regulations</b>	Degree criteria for final grade will be given by examiner or course responsible latest at the beginning of the course.		
<b>Sustainable environment</b>	A minor part of the course content deals with sustainable development.		
<b>Module</b>			
	0010 Assignments	2 cr	Grade: UG
	0020 Seminars	0.5 cr	Grade: UG
	0030 Project work	2.5 cr	Grade: AF