



LUNDS UNIVERSITET  
Lunds Tekniska Högskola

*Course syllabus*

## Rumslig analys Spatial Analysis

**EXTN75, 7,5 credits, A (Second Cycle)**

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED L

Date of Decision: 2023-04-20

### General Information

Elective for: L4-gi

Language of instruction: The course will be given in English

### Aim

The course aims to equip students with fundamental theoretical knowledge and practical skills in the methods of spatial analysis.

### Learning outcomes

#### *Knowledge and understanding*

For a passing grade the student must

- explain correlations (relationships) within and between geographical data sets
- interpret, discuss, and apply regression methods using geographic data
- explain and apply geostatistics
- explain scaling issues affecting spatial analysis and geographic data at depth
- generally describe analysis approaches for very large data sets (data mining)
- explain the foundations of the theory behind spatial decision support systems.

#### *Competences and skills*

For a passing grade the student must

- independently analyse and interpret the results from regression models, and
- understand and apply particular spatial analytical methods to geographic data.

#### *Judgement and approach*

For a passing grade the student must

- to be able to independently relate to both spatial and conventional statistical measures and methods,
- critically appreciate the nature of geographic data and analytical techniques
- assess the reliability of analyses conducted with different methods.

## Contents

The course consists of five modules:

- regression and other basic methods in statistical modelling
- geostatistics
- scaling issues
- analysis of very large data sets (data mining)
- spatial decision support systems.

## Examination details

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)

**Assessment:** Assessment takes the form of a written examination. Approved on all exercises and participation on all compulsory activities.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

## Admission

**Admission requirements:**

- EXTF01 Geographical Information Systems for Landscape Studies or EXTF80 Geographic Information Technology or EXTG75 GIS for Built and Natural Environments
- FMSF50 Mathematical Statistics, Basic Course
- EDAA20 Programming and Databases or EDAA65 Programming, First Course

**The number of participants is limited to:** No

**The course overlaps following course/s:** GISN01, NGEN11

## Reading list

- Scientific articles.
- Peter A. Rogerson: Statistical Methods for Geography. 2001, ISBN: Print ISBN: 9780761962885 Online ISBN: 978184920. Online access for Lund University SAGE Research Methods Online.
- Turner, M. et al.: Landscape ecology in theory and practice : pattern and process. Springer-Verlag, 2001, ISBN: 978-0-387-95122-5. Online access for Lund University via LUB.
- Clark, I.: Practical Geostatistics. Geostokos Ltd., 2001. Contact course coordinator for advise before purchase.

## Contact and other information

**Course coordinator:** Jonathan Seaquist, [jonathan.seaquist@nateko.lu.se](mailto:jonathan.seaquist@nateko.lu.se)

**Course administrator:** Karin Larsson, [karin.larsson@nateko.lu.se](mailto:karin.larsson@nateko.lu.se)

**Course homepage:** <http://www.nateko.lu.se/extn75>