



KTH Architecture and
the Built Environment

Spatial Data Analysis in Practice – SDAP 2025

7,5 credits

Motivation

Spatial statistics is a rapidly developing field, which involves the quantitative analysis of spatial data and the statistical modelling of spatial variability. This development has had a huge impact on environmental disciplines but also on socio-economic sciences, such as human geography, economics, spatial planning, epidemiology and criminology. Combined with traditional data sources, data from social media and mobile phones can now be handled in Geographical Information Systems (GIS) to provide better grounds for analysis of patterns and processes over time and space. The KTHs course **Spatial Data Analysis in Practice - SDAP** (course code FAG3170) offers examples of conceptual and applied research on spatial data analysis capturing some of the most recent developments in this area.

Learning outcomes

Students are trained to become users of spatial data analysis techniques. Students will gain a broad knowledge of the diversity of current approaches, which methods are at hand and examples of applications using spatial data analysis in different fields. After completing the course the students should be able to:

1. use relevant knowledge to solve spatial-related problems using real-life data sets and spatial statistical tools, including pattern identification, modeling (spatial regression analysis) and visualization.
2. Develop, interpret and critically reflect upon results of a case study using one (or more) spatial data analysis technique(s) learned during the course.
3. be able to use new skills in spatial data techniques and communicating them to an audience (written & orally).

Contents and structure

The course is divided in 3 parts.

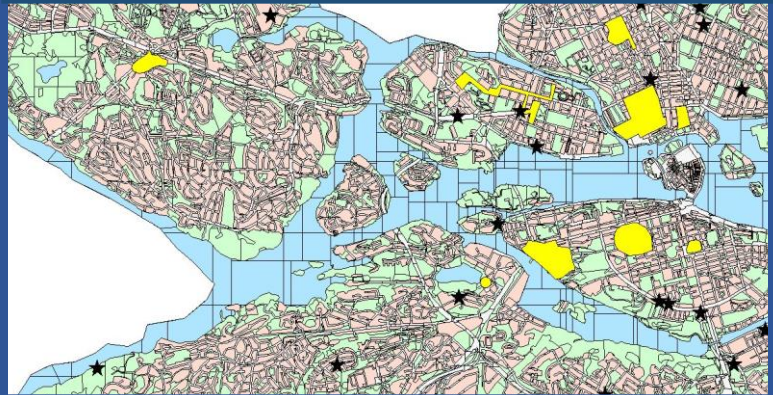
In the first part, the nature of the geographical data is introduced by the head teacher followed by techniques of identification of spatial patterns together with confirmatory spatial data analysis in GeoDa.

Then, Bayesian statistics and WinBugs are introduced by Prof Robert Haining and Dr Guangquan Li.

The third part is composed of examples of applications and development of the final project.

The course is composed of lectures followed by practical exercises.

Head teacher: Vania Ceccato



Requirements

1. Anyone who is a PhD student (in any relevant subject area is eligible to take this course) or experts with equivalent knowledge. Having knowledge in GIS and/or basic statistics is an advantage.
2. A portable computer and installation of software according instructions for execution of all lab exercises
3. All lectures require pre-reading. Attending lectures and executing lab exercises is a must.

Schedule

March – June 2025

Course fee

SEK 9500 paid by 31st March 2025

Venue

Department of Urban Planning and Environment, School of Architecture and the Built Environment, Royal Institute of Technology, 100 44 Stockholm, Teknikringen 10 B

Maximum number of students

25 students.

Registration

Contact: Ioannis Ioannidis ioannisi@kth.se

Info about the course, contact: vania.ceccato@abe.kth.se

WELCOME!