



KTH Architecture and  
the Built Environment

# Spatial Data Analysis in Practice - SDAP

## 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. Mobile data and location based services, from apps, e.g., allied to Geographical Information Systems (GIS) provide the necessary setting for analysis of patterns and process over time and space. The KTH 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.

### Special feature

The course counts with two prominent scholars:

- Prof **Robert Haining**, (Emeritus) University of Cambridge, UK, author of "*Spatial Data Analysis*", Cambridge press.
- Prof **Luc Anselin**, Director, Center for Spatial Data Science, The University of Chicago, USA (<http://spatial.uchicago.edu>), responsible for software such as *Spacestat*, *Geoda* and *PySal*.

Head teacher: Vania Ceccato

### Learning outcomes

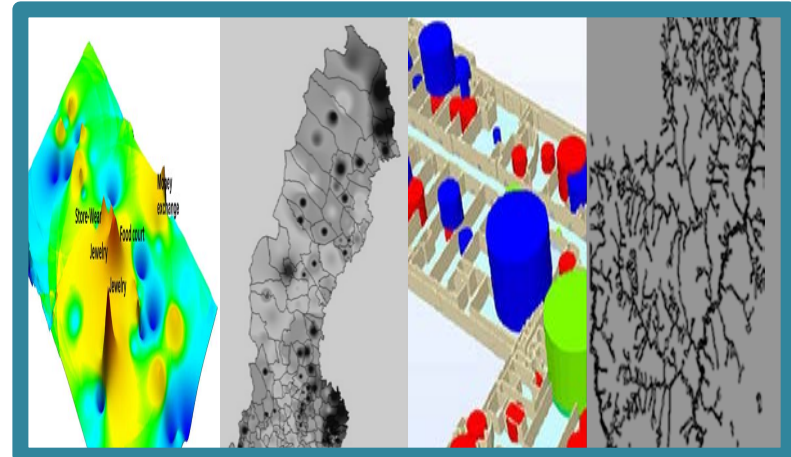
Students are trained to become users of spatial data analysis techniques. Students will gain a broad knowledge of the diversity of current approaches, which methods are at hand and examples of applications using spatial data analysis in different fields. After completing the course the students should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

1. identify the appropriate approaches/techniques in spatial data analysis.
2. 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.
3. to analyze results of practical exercises and be able to point out challenges and advantages with those tested techniques.
4. develop, interpret and critically reflect upon results of a case study using one (or more) spatial data analysis technique(s) learned during the course.
5. be able to use their new skills in spatial data techniques and communicating them to an audience (written & orally).

### Contents and structure

The course is composed of 15 lectures divided in 3 parts. In the first part, the nature of the geographical data is introduced. Then, the identification of spatial patterns is the focus together with an introduction to confirmatory spatial data analysis. The third part deals with examples of applications and development of the final project. The course is composed of lectures followed by practical exercises.

Version 18<sup>th</sup> January 2017



### Requirements

1. Anyone who is a PhD student in any relevant subject area is eligible to take this course. However, 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

April 6,7,18,19,20,24,25  
May 11,12,18,19,25,26  
June 12 (Final seminar)

### Venue

Department of Urban Planning and Environment, URS  
School of Architecture and the Built Environment (ABE)  
Royal Institute of Technology (KTH) Drottning Kristinas väg 30,  
100 44 Stockholm, Sweden

### Course fee

SEK 8000 paid by 6th April 2017

### Maximum number of students

25 students.

IMPORTANT: To receive further information about the course and to register for updates, please send an email [vania.ceccato@abe.kth.se](mailto:vania.ceccato@abe.kth.se)

WELCOME !

The course is sponsored by:  Säkraplatser nätverket &

