KTH Architecture and the Built Environment

Spatial Data Analysis in Practice – SDAP 2019

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 KTH course ***Spatial Data Analysis in Practice - SDAP*** (course code AG1167) offers examples of conceptual and applied research on spatial data analysis capturing some of the most recent developments in this area.

Special feature

The SDAP 2019 course features two prominent scholars:

- Fulbright visiting scholar Dr Ned Levine, USA, CrimeStat IV (version 4.02).
- Prof Bin Jiang, Professor at the Department of Technology and Built Environment of University of Gävle, Sweden.

Course responsible teacher: Vania Ceccato. The course will also involve teachers from other departments at KTH and/or other universities.

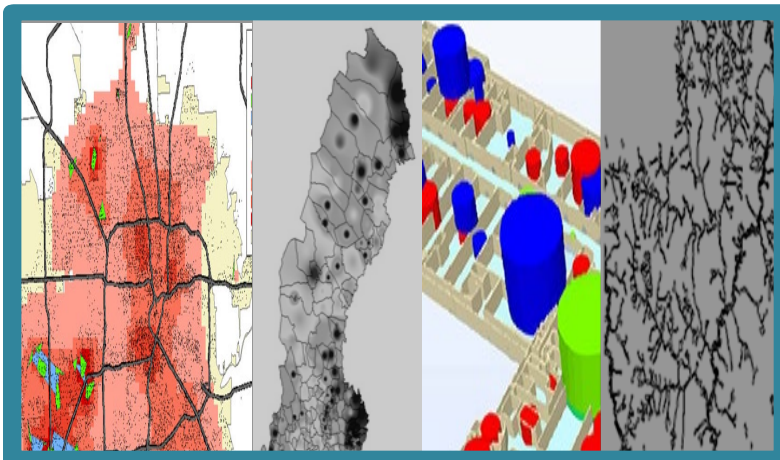
Learning outcomes

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 16 lectures divided in three parts. In the first part, the nature of the geographical data is introduced by the course responsible teacher followed by techniques of identification of spatial patterns together with confirmatory spatial data analysis in GeoDa. Then, CrimeStat is introduced by Dr Ned Levine with a set of spatial techniques. The third part is composed of new ways of thinking about spatial data analysis, including examples of applications and development of the final project. The course is composed of lectures followed by practical exercises.



Requirements

1. Doctoral students from any relevant subject area are eligible to take this course. However, having knowledge of GIS and/or basic statistics is an advantage.
2. A portable computer is needed and installation of software according instructions for execution of all lab exercises necessary.
3. All lectures require pre-reading. Attending lectures and executing lab exercises is a must.

Schedule (preliminary)

March - 18,19, 25, 26 – Vania Ceccato
April – 8,9,15,16,17, 29 – Vania Ceccato/Ned Levine
May – 13,14,27,28 – Ned Levine, Bin Jiang
June – 3,4 – Example of applications, various lecturers Project presentation: 13 June

Venue

Division of Urban and Regional studies, Department of Urban Planning and Environment, School of Architecture and the Built Environment, KTH Royal Institute of Technology, 100 44 Stockholm, Sweden.

Course fee

SEK 8000 paid by 18 March 2019

Maximum number of students

25 students.

Register your interest

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

Registration deadline

22 February 2019

WELCOME!

The course is sponsored by Säkraplatser nätverket