

GIS for Public Health

Facilitator

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Description

The physical and social environment that surrounds us plays an important part in our health and wellbeing. The geography concept of 'place' thus cannot be ignored in public health. Whether investigating the level of environmental pollution, access to recreation or health services, or the patterns or spread of disease, Geographic Information Systems (GIS) provide the standard platform for exploring spatial attributes and relationships between our environment and health.

This course offers an introduction to GIS and how it is used in public health and epidemiological research, with a focus on building a GIS project workflow and exposure assessment. It will introduce students to the basics including: developing a coherent GIS database; working with and integrating spatial and non-spatial data; geographic scale and spatial precision; projections; geocoding; understanding spatial relationships and basic analyses; visualization; thematic mapping; and map design. Specific skills and tools will also be introduced in relation to methods for exposure assessment including route analysis, and for spatial linkage of exposure, contextual and confounder information for epidemiological or health risk assessment studies. Students will apply their new skills in a case study based either on their own data or on available datasets for defined topics.

This course includes plenty of practical time for hands-on data analysis in **open source GIS (specifically QGIS and R)**, interspersed with a mix of short lectures and demonstrations.

No prior knowledge of GIS is required, though completion of pre-course work is essential preparation for this intensive course.

Objectives

Students will gain knowledge in the fundamentals of GIS for spatial data handling and analysis. By the end of the course, students will

- Understand how GIS can be used to enhance public health and research

- Be able to create a GIS database (acquire, incorporate spatial data)
- Be able to utilise a GIS and perform basic spatial analyses (manipulate, analyse spatial data)
- Be able to appropriately generate and communicate results (visualize, map spatial data).

Dates

17 - 21 November 2025

Eligibility

Open to PhD students of SSPH+ public health program; other students and external participants are welcome to apply for limited spaces.

Course Structure

5-days hands on experience on GIS software, interspersed with lectures. The course includes pre-course and in-class assignments and will culminate in group presentations on practical case studies.

Assessment

Final group presentation

Credits

2 ECTS

Preparation/homework 8 h, Contact 45 h
(1 ECTS corresponds to appr. 25-30 hours workload)

Location

Basel (Swiss TPH, Kreuzstrasse 2, 4123 Allschwil), Seminar Room 6

Course Fees

| | 2 ECTS |
|---|---------------|
| SSPH+ IGC PhD and MD Students | 30 CHF |
| Postdocs from SSPH+ partner institutes | 30 CHF |
| External PhD students, external MD Students and Swiss Public Health Doctors in training | 600 CHF |
| Others | 1'600 CHF |

Registration

<https://www.conftool.com/ssph-phd-courses2025/>

Deadline for Registration

17 October 2025