Course description and Syllabus

Course description: The Department of Economics at the University of Oslo is organizing a five-day intensive course on spatial data and methods to work with such data. Spatial data is increasingly used in applied economics research, including in fields such as development, environmental and urban economics. Examples include geolocations of survey respondents, gridded weather and environmental data (such as particulate matter concentrations or air temperature), or high-resolution satellite imagery allowing the identification of phenomena such as informal settlements, periodic marketplaces or traffic. A special focus of the course will be on accessing and utilizing satellite data for economic research.

Syllabus: Effectively working with such data requires an understanding of the underlying geospatial concepts, the available data sources and appropriate processing tools. Combining theoretical and practical sessions, the course will provide participants with a solid understanding of the following, enabling them to use spatial data in their own work:

- Common formats of spatial data (vector-based or rasters) and their basic manipulation in open-source software (QGIS)
- Available spatial data products and their respective advantages for applications of interest to economists (incl. optical satellite imagery, remotely-sensed environmental data, OpenStreetMap, etc.)
- Coded, at-scale data handling in GoogleEarthEngine and integration into analytical workflows (incl. definition of, and extraction of information from, areas of interest; image manipulation; change detection; supervised/unsupervised classification of raster data)
- Recent applications of spatial data in economics research

Prerequisites: The course requires a solid understanding of common coding concepts such as variables, lists and loops. The course will mostly use QGIS and GoogleEarthEngine, but no prior experience of these specific programs is necessary.

Evaluation: Participants will be examined (pass/fail) based on a written research proposal that includes at least some of the methods taught in the course.

Participants: The course will be held in-person at the University of Oslo. Limited space is available for participants from other universities. Such students will need to make their own travel arrangements.