ArcGIS for Applied Economists
Summer Semester 2015

Details

Time: Monday 8$^{\text{th}}$, 15$^{\text{th}}$, 22$^{\text{nd}}$ and 29$^{\text{th}}$ June 2015, 14:00 (sharp) - 18:00 (roughly)
Place: Economic History Library, Ludwigstraße 33, Room 444.

Instructor: Mark Westcott, mark.westcott@econ.lmu.de

Course Overview

Much of the data that economists deal with have a geographic component (after all, anything that happens has to happen *somewhere*). This course will introduce you to ArcGIS, the leading and most comprehensive software platform for visualising and analysing spatial data.

You will learn how to create publication-quality maps to visualise data and how to do simple economics-relevant geographic analysis. Along the way we will talk about and replicate some applied economics papers that make use of these tools. We will also cover some more theoretical topics that it's important to understand to do GIS properly: ways geographic data can be represented, coordinate systems, and projections. You will find out how to use night light data to measure economic growth from space and how to implement spatial discontinuity designs.

This is an interactive "learning by doing" type course. There will be a mixture of demonstrations and exercises. This means that participants need to bring a Windows[1] laptop with ArcGIS installed along to the course – see "Registration and obtaining ArcGIS" for details. If this poses a problem for anyone, let me know before the course and we'll try and work something out.

Course Prerequisites

This course is open to doctoral and advanced masters students and is aimed at those with no previous GIS experience. Masters students should note that they will not obtain any ECTS credits for the course; however, you will learn useful techniques that you might be able to use in your Masters' thesis and any further research.

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[1] Sadly ArcGIS runs only on Windows, but those with Mac or Linux laptops can run Windows in a virtual machine using Parallels ($) or Virtualbox (free). Students can get a free Windows licence from Microsoft Dreamspark. This can take a bit of time to get set up, so start well in advance! If you need help, let me know.

Registration and obtaining ArcGIS

ArcGIS is expensive software and the economics department currently has no site license. However, we have obtained a number of licenses which can be used by students on their own laptops/PCs (but **not** on computers owned by the university). If you would like to take part in the course, please email me (mark.westcott@econ.lmu.de) **by 15th May** to register and I will provide you with a license key and instructions as to how to install the software on your laptop. Note: places are limited and will be allocated first-come first-served. If you register for the course, please attend all sessions.

Tentative Course Schedule

Session 1 – Monday 8th June (14:00 - 18:00):
Introduction - motivation, ArcGIS interface & concepts, displaying XY data, creating choropleth maps

Session 2 – Monday 15th June (14:00 - 18:00):
Coordinate systems, projections, reprojecting data, georeferencing

Session 3 – Monday 22nd June (14:00 - 18:00):
Basic analysis tools - finding nearby features, calculating distances between features, creating distance matrices, finding intersections etc.

Session 4 – Monday 29th June (14:00 - 18:00):
Working with raster data: measuring growth from space, calculating 'least cost' distances