Geospatial Humanities and Mapping Technologies

Credits　　　2
Instructor　　Viktor Lagutov
Software　　　GoogleEarthPro, qGIS, online mapping tools
Moodle site:　http://ceulearning.ceu.edu/course/view.php?id=7011

Course Description

Growing recognition of cross-disciplinary applicability and importance made Geographic Information Systems (GIS) a popular approach in the Humanities. Until lately maps development and spatial analysis had been a prerogative of cartographers and, later, experts in specialized computer software (early GIS packages). However, latest advances in computer hardware and software have opened this area to other disciplines and allowed researchers to enhance their traditional research methods and ways to present findings. The course reviews a diverse range of spatial software, both desktop and web-based, including GIS and their application in the Humanities. The primary focus is at geospatial data visualization including internet data mining, datasets processing and maps development using different approaches and software packages.

The course consists of

- Introductory theoretical sessions focused on principles of geospatial data visualization, cartography and GIS basics;
- Practical sessions on learning practical GIS skills. Special attention is paid to mapping skills using free open source packages;
- Supervised students' research on individual term projects. Topics for projects can be linked to research interests and theses needs.

Learning outcomes

By the end of the course students should be able to

- understand principles and value of mapping and spatial analysis;
- acquire geospatial and other related datasets useful for mapping;
- develop own datasets based on different data sources;
- create simple maps using several mapping packages (e.g. qGIS and GEPro).

Key topics

Intro to cartography and geodata visualization	mapping basics, Map design and components Projections
Intro to GIS	Mapping software (GIS) basics, Data formats; Vector Raster data representation
Using GoolgeEarth/Pro	GoogleEarth basics, Retrieving sites location; maps development with GoogleEarth, maps overlay, etc
Data sources for mapping	Existing data sources and Internet data search; Online databases; Development of own datasets
Practical mapping skills	Map creation using qGIS and GEPro
Various mapping techniques	e.g. georegerencing historical maps, digitizing, data manipulation, querying
GPS basics	Application of GPS technologies for field work
Intro to Spatial analysis	Operations with datasets and satellite imagery

Educational activities, assessment and estimated workload

Topics	Educational Activities	Assessment	Estimated workload (h)
Intro to GIS, cartography and data visualization	Lectures, reading	Class participation	6
Online mapping tools	Computer-based practicals	Submitted exercises	2
Practical exercises on data visualization and sharing with GEPro	Computer-based practicals	Submitted exercises	2
Practical exercises on map creation with qGIS	Computer-based seminars	Submitted exercises	4
Datasets development (digitizing, geo-referencing)	Computer-based seminars	Submitted exercises	4
Basics of Spatial analysis and remote sensing	Computer-based seminars, reading	Class participation	4
GPS functioning and application	Field trip followed by class seminar	Submitted exercises	4
Supervised work on term project	Computer-based Individual work, reading, consultations	Final assignment	18
Presentation of completed GIS projects	Individual work, Consultations	Class presentations	4
		Total	**48**

The assessment is based upon student's performance using the following categories:
- 10% class participation: active students participation in class discussions is expected and encouraged.
- 20% practical sessions: several in-class exercises have to be completed;
- 70% graded individual project: mapping project should be developed and presented at the end of the course by every course participant (both audit and grade). The project can be a part of thesis research.

Readings and reference literature

Gregory, I. and Ell, P. 2007. Historical GIS: Technologies, Methodologies and Scholarship, New York: Cambridge University Press

Parker, R. and Asencio, E. 2008. GIS and spatial analysis for the social sciences: coding, mapping and modeling. New York: Routledge

Peterson, G. N. 2009. GIS Cartography: A Guide to Effective Map Design. Seattle: CRC Press