

COURSE DESCRIPTION

1. GENERAL

SCHOOL	ENVIRONMENT, GEOGRAPHY AND APPLIED ECONOMICS		
DEPARTMENT	GEOGRAPHY		
LEVEL OF COURSE	Undergraduate		
COURSE CODE	ΓΦ0522	SEMESTER	8 TH
COURSE TITLE	SPECIAL TOPICS IN SPATIAL ANALYSIS		
STRUCTURE OF TEACHING ACTIVITIES		TEACHING HOURS PER WEEK	NUMBER OF CREDITS ALLOCATED (ECTS)
Lectures and Laboratory Classes		3	5
TYPE OF COURSE	Optional		
PREREQUISITES	-		
LANGUAGE OF INSTRUCTION	GREEK		
COURSE OFFERED TO ERASMUS STUDENTS	YES (in English if required)		
(URL)			

2. EXPECTED LEARNING OUTCOMES

Learning outcomes

Describe the objectives of the course as well as the expected learning outcomes

The main objective of this module is to introduce students to concepts of human spatial behavior. For the purpose of this objective this module is concerned with theories in the science of geography that can be applied to real data with spatial analysis methods. The main theory refers to the Spatial Interaction Models. Examples are given, such as internal migration, trade and home-to-workplace commuting.

3. COURSE CONTENTS

- Gravity Theory in Geography
- Spatial Interaction Models (SIM)
- SIMs in retail shopping
- Generalised Linear Models: the Poisson Model
- Mapping and Poisson Models for flow data
- Geographically Weighted Regression
- Internal Migration and its determinants

4. TEACHING AND ASSESSMENT METHODS

TYPE OF LECTURES	In class lectures Laboratory Lectures and Practice	
ICT USE	Internet use and e-class, use of software (R, Rstudio, QGIS, ArcGIS)	
TEACHING STRUCTURE	Activity	Hours per semester
	Lectures	30
	Laboratory	9
	Project	30
	Studying	60
	TOTAL	129
ASSESSMENT METHODS	Assessment Language: Greek Assessment Methods Essay at a form of a scientific paper (100%)	

5. RECOMMENDED READING

Suggested Reading:

- Kalogirou, S., 2015, *SPATIAL ANALYSIS: METHODOLOGY AND APPLICATIONS WITH R*. <https://repository.kallipos.gr/handle/11419/5029>
- Fotheringham, A.S., Brunsdon, C., and Charlton, M.E, 2000, *Quantitative Geography*, London: Sage Publications.
- Fotheringham, A.S., Brunsdon, C., and Charlton, M., 2002, *Geographically Weighted Regression: the analysis of spatially varying relationships*, Chichester: John Wiley and Sons.
- Kalogirou, S., 2016, [Destination Choice of Athenians: an application of geographically weighted versions of standard and zero inflated Poisson spatial interaction models](#), *Geographical Analysis*, 48,2, pp. 191–230. DOI: 10.1111/gean.12092
- Kalogirou, S., 2003, *The Statistical Analysis and Modelling Of Internal Migration Flows Within England And Wales*, PhD Thesis, School of Geography, Politics and Sociology, University of Newcastle upon Tyne, UK.

Scientific Journals:

- Journal of Maps, Spatial Economic Analysis, Environment and Planning A, Geographical Analysis, Applied Spatial Analysis and Policy