AGÜ Graduate School of Social Sciences
Data Science for Business and Economics
Master's Program with Thesis

COURSE RECORD

Code	ECON 528
Name	Spatial Economics
Hour per week	3 (2 Theory + 1 Practice)
Credit	3
ECTS	10
Level/Year	Master's /1,2
Semester	Fall/ Spring
Type	Elective
Location	Classroom & Online
Prerequisites	-
Special Conditions	-
Coordinator(s)	
Webpage	-
Content	Spatial Economics is an introductory course on urban economics, regional economics and neighborhood analysis. The course examines the influence of contextual socio-economic affairs on economic growth and development, and on the individuals' outputs at micro-meso-macro scales. While introducing spatial econometric models, the course uses GeoDa, QGIS and Stata software for applied examples.
Objectives	This course aims to provide students with skills necessary to analyze spatial patterns in socio-economic configuration of built-environments. The course will cover basic theoretical concepts in urban and spatial economics, and tools as geographical information systems (GIS) and related software. At the end of the course, students will acquire knowledge on the geographical concepts as distance, interaction, scale of location, and neighborhood and their implications in economics
Learning Outcomes	At the end of the course, successful students will be able to, LO1. Identify and apply to spatial economic models in their areas of interest. LO2. Access to the basic knowledge about the software used in spatial economic analysis. LO3. Undertake neighborhood analysis. LO4. Identify datasets that are necessary to conduct regional studies. LO5. Grasp the distance concept such as defined in spatial econometric models and implement related operations. LO6. Produce maps by using various coordinate systems and conduct related analysis.
Books	• O'Sullivan, D, and DJ Unwin, 2010. Geographic Information Analysis. John Wiley & Sons. • O'Flaherty, Brendan, *City Economics*. Cambridge, Mass: Harvard University Press, 2005.
Reading List	Weekly papers
Ethical Rules and Course Policy	University Ethics (Academic Honesty) Rules

LEARNING ACTIVITIES

Activities	**Number**	**Weight (%)**
Lecture	13	40%
Group Works	5	30%
Presentations	2	20%
Activities	13	10%
	Total	100%

ASSESSMENT

Evaluation Criteria	**Weight** (%)
Activity Reports	15%
Weekly Assignments	10%
Group Project Assignments & Presentations	30%
Attendance/Participation	10%
Final Exam	35%
Total	100%

COURSE LOAD

Activity	**Duration** (hour)	**Quantity**	**Work Load** (hour)
In class activities	2	15	30
Group work	2	10	20
Research (Dataset)	3	15	45
Required Readings	1	15	15
Pre-work for Presentation and Discussions	5	10	50
Project	60	1	60
Preparation for Final Exam	30	1	30
		General Sum	**250**

ECTS: 10 (Work Load/25-30)

CONTRIBUTION TO PROGRAMME OUTCOMES*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10
LO1	5	5	5	5	5	4	5	2	5	5
LO2	4	3	4	4	5	4	5	1	3	4
LO3	5	5	4	3	5	4	5	1	2	4
LO4	5	5	5	3	5	4	3	0	4	5
LO5	5	1	3	4	5	3	5	2	3	5
LO6	5	0	5	3	5	3	4	3	0	3

* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

WEEKLY SCHEDULE

H	**Topic**	**Outputs**
1	Introduction to Geographic Information Systems	LO1
2	Spatial Dependencies and the role of spatial economics	LO1, LO2, LO3
	Activity : Crime Mapping example	
3	Interpretation of Spatial Econometrics	LO1, LO2, LO3
	Activity : Papers	
4	Omitted variable-spatial heterogeneity	LO1, LO2, LO4
	Activity :Papers	
5	Moran's I	LO1, LO2, LO4
	Activity :Introduction to Geoda software	
6	Spatial Weights Matrix	LO1, LO
	Activity :Geoda software-application	
7	Spatial Lag Models	LO1,
	Activity :Geoda software-Application	LO2, LO3, LO4
8	Spatial Error Models	

	Activity :Geoda software-Application	LO1, LO2, LO3, LO4
9	Resilience Models	LO1,LO2, LO3, LO4
	Activity : Unemployment example	
10	Resilience Models	LO1,LO3, LO4
	Activity : Examples	
11	Neighborhood Models	LO1, LO2, LO3, LO4
	Activity :Does neighborhood affect socioeconomic outputs?	
12	EquiPop software-introduction	LO1, LO2, LO3, LO4
	Activity :Application	
13	QGIS software-introduction	LO1, LO2, LO7
	Activity : Mapping applications	
14	Multilevel models	LO1, LO3, LO4, LO5
	Activity : Stata software-applications	
15	Project-presentations	LO5, LO6
	Activity :	

Prepared by Assistant Prof. Umut Türk
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