Jindal School of Government and Public Policy
India's First Public Policy School

O.P. JINDAL GLOBAL
INSTITUTION OF EMINENCE DEEMED TO BE
UNIVERSITY
A Private University Promoting Public Service

Spatial Econometrics- Spring 2026
Course Code –

Instructor Information

Instructor: Tirtha Chatterjee
Email: tirtha.chatterjee@jgu.edu.in

1. Course Description and intended learning objectives

The topics covered in the course will explore the basic theoretical concepts, methods and techniques for spatial econometric analysis. The objective of the course is to provide students with the knowledge and skills necessary to incorporate spatial dependence, spillover and heterogeneity while investigating socioeconomic problems. Students will gain an in-depth understanding and hands-on experience to explore a variety of applications through a combination of lectures, discussions, presentations, and projects.

2. Prerequisites-

Knowledge of basic mathematics, econometrics and regression methods

3. Scheme of Evaluation and Grading

Evaluation is comprised of two components: **internal (50%)** and **external (50%)** assessments.

Evaluation components	Details	Weightage
Attendance and class participation		10%
Internal component	Class tests and term paper	60%
External component	End term examination (in – class)	30%

4. Academic Integrity, attendance policy

Academic Honesty, Cheating, and Plagiarism – As per University policy.

Participation/Attendance Policy – As per University policy. You are required to have a minimum of 75% attendance to be able to not obtain a "no-bar" status for this course. Only documented medical conditions (self and family) and a written excuse from the VC/Registrar/Dean/Vice-Dean's will be considered as valid reason(s) for your absence. Please provide such documents within one week from your missed class.

Use of phone/ texting/ laptop – As a courtesy to your instructor and fellow colleagues you are expected not to use mobile phone devices for any purposes, unless there is an emergency call that you need to attend. Laptops should be used only if an activity is being done in class using them.

5. Keyword Syllabus

Spatial weight matrices, spatial association, spatial spillover, spatial regression models

6. Course Material

Primary Reference:

1. Anselin, L. (2013). *Spatial econometrics: methods and models* (Vol. 4). Springer Science & Business Media.
2. Pace, R. K., & Lesage, J. (2010). Spatial econometrics. *Handbook of spatial statistics*, *1*(1), 245-260.

Additional references (tentative)

1. M. Bailey, R. Cao, T. Kuchler, J. Stroebel, and A. Wong (2018). "Social Connectedness: measurement, determinants, and effects." Journal of Economic Perspectives, 32:3, 259-280.
2. B. Sacerdote (2001). "Peer effects with random assignment: results for Dartmouth roommates." Quarterly Journal of Economics, 116:2, 681-702.
3. M. Bertrand, E.F.P. Luttmer and S. Mullainathan (2000). "Network effects and welfare cultures." Quarterly Journal of Economics, 115:3, 1019-1055.
4. A. Aizer and J. Currie (2004). "Networks or neighborhoods? Correlations in the use of publicly funded maternity care in California." Journal of Public Economics, 83, 2573-2585.
5. E.A. Hanushek, J.F. Kain, J.M. Markman, and S.G. Rifkin (2003). "Does peer ability affect student achievement?" Journal of Applied Econometrics. 18:5, 527-544.
6. J. Beugnot, B. Fortin, G. Lacroix and B.C. Villeval (2019). "Gender and peer effects on performance in social networks." European Economic Review, 113, 207-224.
7. Funashima and Y. Ohtsuka (2019). "Spatial crowding-out and crowding-in effects of government spending on the private sector in Japan." Regional Science and Urban Economics, 2019, 35-48.

7. Session Plan (Tentative)

Session (with Date)	General Topic
Week 1	Introduction: Defining neighbourhood- Spatial weight matrices
Week 2	Spatial weight matrices in STATA
Week 3	Measuring, testing and interpreting spatial association- local and global measures
Week 4	Computing spatial association in STATA
Week 5	First internal assessment
Week 6	Revising basic econometrics- using matrix methods
Week 7 and 8	Spatial regression models
Week 9	Spatial spillover
Week 10 and 11	STATA applications
Week 12	Second internal assessment
Week 13	Applications of spatial econometric methods
Week 14	Revision and in-class discussions