GEOG 8102 – Advanced Spatial Data Analysis

Friday 10:00-12:45pm, 1116 Derby Hall

Instructor
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Office Hours: Tuesday 11:00-12:00PM, or by appointment

Course Description
This course focuses on advanced statistical methods for spatially referenced data, including spatial point patterns, geostatistical data, and lattice data. Major topics to be covered include spatial random processes, exploratory spatial data analysis, spatial point pattern analysis, spatial covariance functions, variograms, kriging, spatial autoregressive models, and geographically weighted regression. Computer exercises are designed to help students to gain hands-on experience on the topics presented in lectures. Students are required to present and discuss assigned readings and develop an individual research project that applies spatial statistical methods in geographical problem solving.

Course Website
The course schedule, announcements, lecture notes, assignments, readings, and other course information will be posted on Carmen (https://carmen.osu.edu).

Prerequisites
GEOG 5100 (4103), or consent of instructor. Students should be familiar with basic probability theory, multiple linear regression, and basic linear algebra.

Required Textbook

Reference Books


**Course Evaluation**

Final course grades will be based on the following weighting of assessment components:

- Class discussion 20%
- Homework 25%
- Midterm 15%
- Final project 40%

**Academic Misconduct**

Please help maintain an academic environment of mutual respect and fair treatment. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with university policy, which is available at http://oaa.osu.edu/coam.html. For additional information, see the Code of Student Conduct at http://studentlife.osu.edu/csc/.

**Disability Services**

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. You are also welcome to register with Student Life Disability Services to establish reasonable accommodations. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.