GEOG 8102 – Advanced Spatial Data Analysis

Thursday 1:45-4:30pm, 1116 Derby Hall

Instructor
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Office Hours: Tu 2:00-3:30PM, 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, 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. The Code of Student Conduct can be found at http://studentaffairs.osu.edu/csc/.

**Disability Services**

All students who feel they may need accommodations based on the impact of a disability should contact the instructor privately to discuss their specific needs. Students with documented disabilities must also contact the Office of Disability Services (ODS) in 150 Pomerene Hall (614-292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to your instructor as early in the semester as possible to be filled out and returned to you.