



Department of Geography

Geog 210C: Analytical Methods in Geography III

Spring 2009

Phaedon Kyriakidis

Lectures: Monday & Wednesday 3:30pm - 5:00pm; Ellison 3620

Lab: Friday 10:00am - 11:50am; Ellison 3620

- **Audience:** Graduate students in Geography, Ecology, Environmental Science, Earth Science, Marine Science, Sociology and Statistics, interested in:
Spatial Statistics & Spatial Data Analysis
- **Prerequisites:** Geog 210B, or equivalent applied statistics course & consent of instructor
- **Textbooks:** Bailey, T.C. and Gatrell, A.C. (1995): *Interactive Spatial Data Analysis*, Prentice Hall (Required) – Martinez, W.L. and Martinez, A.R. (2008): *Computational Statistics Handbook with MATLAB*, 2nd Edition, Chapman & Hall/CRC (Optional)
- **Logistics:** 4-unit class. Weekly MATLAB-based lab assignments (80% of final grade), class participation (20% of final grade); no midterm, no final. Students work in teams of two people during lab sessions, but each team turns in two distinct lab reports each week
- **Reader:** Gargi Chaudhuri, Trailer 942, Room 1003; gargi@geog.ucsb.edu
- **Class URL:** www.geog.ucsb.edu/~phaedon/classes

Tentative Schedule

| Wk | Dates | Topic | B&G |
|----|--------------------------|--|----------|
| 1 | 03/30 - 04/01 | Introduction / Statistics Review | Ch. 1,2 |
| 2 | 04/06 - 04/08 | Exploratory Analysis of Spatial Point Patterns | Ch. 3 |
| 3 | 04/13 - 04/15 | Models for Spatial Point Processes | Ch. 3 |
| 4 | 04/20 - 04/22 | Quantifying Spatial Association in Spatial Data | Ch. 5,7 |
| 5 | 04/27 - 04/29 | Spatial Association Models for Fields & Lattice Data | Ch. 5 |
| 6 | 05/04 - 05/06 | Elements of Multiple Linear Regression | Ch. 5,7 |
| 7 | 05/11 - 05/13 | Fitting Spatial Association Models to Spatial Data | Ch. 5,7 |
| 8 | 05/18 - 05/20 | Deterministic & Geostatistical Spatial Interpolation | Ch. 5 |
| 9 | 05/25 - 05/27 | Spatial Simulation for Uncertainty Propagation | Handouts |
| 10 | 06/01 - 06/03 | Spatial Regression Models | Ch. 5,7 |