

SYLLABUS

STAT 8530: Spatial and Spatio-Temporal Statistics (3 credit hours) Spring Semester 2014

Instructor

Professor Kate Calder

Office: 429 Cockins Hall

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Office Hours: Mondays 3-4pm, Wednesdays 4-5pm, and by appointment

Course Description

Covers statistical methodology for continuously-indexed and discrete spatial and spatial-temporal data. Topics include geostatistics, likelihood methods, hierarchical models, Markov random fields, spatial autoregressive models, dynamic spatio-temporal models, and disease mapping. Intended primarily for students in the PhD program in Statistics or Biostatistics.

Prerequisites

6802 (622) and 6950 (645), or permission of instructor. Not open to students with credit for 829.

Class Meetings MWF 11:30am-12:25pm in McPherson Lab 1046

Class meetings will consist of a mix of lectures and informal student-led discussions on homework exercises. Students are expected to attend all class meetings and actively participate in discussions.

Course Materials

All course materials (syllabus, schedule, lecture notes, homework and solutions, etc.) will be available in the course Buckeye Box folder. Please contact the instructor for access.

Textbook

Gelfand, A.E, Diggle, P.J., Fuentes, M., and Guttorp, P. (2010). *Handbook of Spatial Statistics*. CRC Press. (available as a free eBook from the OSU Library)

Assignments and Assessment

Homework assignments will be given approximately every 1.5 weeks. Students are expected to complete all homework assignments prior to their due date. Instead of handing in homework, a subset of students (designated when homework is given) will be assigned to present their solutions to the class and upload hard copies of the solutions to the course Buckeye Box folder.

Students will also give individual presentations on an advanced topic in spatial and spatial-statistics during the last two weeks of class. Details on the requirements for the presentation will be given at a later date.

- **Homework** (40% of final grade) – includes oral presentations and written solutions
- **Oral Presentation** (40% of final grade)
- **Participation** (20% of final grade)

Special Accommodations

If you need any accommodations based on the impact of a documented disability, contact the instructors privately to discuss your specific needs. You should also contact the Office of Disability Services to coordinate special accommodations.

Academic Misconduct

Academic misconduct *will not be tolerated* and will be dealt with procedurally in accordance with university policy. Please see the Committee on Academic Misconducts website for details: <http://oaa.osu.edu/coam.html>