Semester course: STAT 8530 --3 CREDIT HOURS

1. Transcript Abbreviation: Space–Time Stat

2. Long course title: Spatial and Spatio–Temporal Statistics

3. Course description:

geostatistics, kriging, hierarchical statistical models, Markov random fields, spatial point processes, spatio–temporal statistical models. Intended primarily for students in the PhD program in Statistics or Biostatistics.

4. Prerequisites/Co–requisites (use quarter and semester codes):

Stat 6950 (Stat 645) and Stat 6802 (Stat 622), or permission of the instructor.

5. Exclusions (use quarter and semester codes):

Stat 829

6. A list of topics that make up the course:

   1. Exploratory spatial data analysis
   2. Univariate and multivariate geostatistical analysis
   3. Kriging from a hierarchical–modeling viewpoint
   4. Markov random fields and graphical models
   5. Statistical analysis of spatial point patterns
   6. Spatio–temporal statistical models, including covariance functions and dynamical models
   7. Hierarchical statistical modeling (empirical–Bayesian and Bayesian) of spatial and spatio–temporal data

7. Does your class have a component that is not just a lecture: NO

8. If your course is not a straight conversion and adds or removes material, write a brief rationale for the change (one sentence – max 250 characters).

   This course is an expansion of the 3–quarter–credit course, “Spatial Statistics.” Substantial extra material on spatio–temporal statistics has been added.

Conversion of Stat 829