

# **Hierarchical Modeling and Analysis for Spatial and Spatiotemporal Data**

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# Course Outline

- Tuesday - Lecture I
- Basics of point-referenced data models, spatial processes, stationarity, variograms, spatial exploratory data analysis (EDA), kriging
- Wednesday - Lecture II
- Basics of areal or discrete spatial data models, EDA, Brook's Lemma, Markov random fields, CAR models
- Thursday - Lecture III
- Hierarchical modeling for univariate spatial data - spatial process models, spatial GLMs, areal data modeling, handling misaligned data
- Friday - Lecture IV
- Multivariate spatial modeling and spatiotemporal modeling