

COURSE OUTLINE
HYD 273
Introduction to Geostatistics - 2012

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Office: 242 Veihmeyer
with some/all office hours in 220 Veihmeyer
Office hours: Tuesdays 12:30-2:00pm, or by appointment
Textbook: Geostatistics for Natural Resource Evaluation (P. Goovaerts)

Grading: 30% Homework
30% Mid-term exam
40% Final project

General topics in the textbook	Chapter (apprx.)
Basic statistics	1-2
Spatial statistics	2
Random variables and random functions	3
Models of spatial variability	4
Kriging	5
Cokriging	6
Indicator methods	7
Simulation methods	8

Description:

Geostatistics are a collection of tools that are all broadly concerned with spatial correlation and quantification of uncertainty. The purpose of this class is to introduce the essential foundations of this field and develop your knowledge and abilities with those tools toward the goal of completing your final project, but my goal for you is also for you to leave with an understanding of the methods and terminology of this field. The project will require geostatistical analysis or simulation using a dataset of your choosing (hopefully related to your own research project) and we'll discuss the project further in the coming weeks. The class is lecture format but I will do my best to tailor the class to the interests and subject areas of the students if you let me know what those are. We will rapidly cover the foundations to leave ample time to cover some of the newer developments in this field, the art of practical application of these tools, and to provide hands on experience with the available computational tools. The mid-term will cover all of the material we discuss in the course and will be delayed until about week 7 so that after the exam you will be free to work exclusively on your final projects.