INSTRUCTOR: James H. Matis  
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OFFICE HOURS: Daily 8:00 a.m.-9:00 a.m.; often available 4:00 p.m.-5:00 p.m., or by appointment.

TEXTS  
1) *Statistical Distributions in Ecological Work*, edited by J. K. Ord, C. P. Patil, C. Tallie. This is now out-of-print. A Xerox copy of the pre-copyrighted edition is available for $5, or you may make your own copy.  
2) This will be supplemented by class notes prepared by Professor Matis. The notes will first follow the volume by Ord et. al, and then develop stochastic models of ecological systems.

REFERENCES:  

SYLLABUS:  
1. Statistical Distributions in Ecological Work (25 lectures)  
   1.1 Introduction to Model Building  
   1.2 Sampling Models - Binomial, Hypergeometric, Inverse Sampling, Poisson  
   1.3 Birth and Birth-Death Processes  
   1.4 Continuous Distributions for Time Intervals between Events - Exponential, Gamma, Others  
   1.5 Normal and Lognormal Distributions as Size Models  
   1.6 Mixtures of Distributions, Models for Clustering and Heterogeneous Populations  
   1.7 Discrete Models from Methods of Ascertainment - Nonobservability, Partial Damage, Sampling with Unequal Probabilities

2. Stochastic Models of Ecological Systems (13 lectures)  
   2.1 Stochastic Models of Single Populations – Linear Birth-Death-Immigration, Estimation, Logistic  
   2.2 Stochastic Models of Multiple Populations – General Linear Systems Theory, Stochastic Migration Models, Density-Dependent Population Models
3. Special Topics (selected as time permits)
   3.1 Species Abundance, Ecological Diversity, Spatial Patterns

**GRADING:**
We will have two exams. The first will cover part 1 of the course, and will constitute 1/2 of the grade. The second is the final exam, and will focus on the remainder of the course. It will also determine 1/2 of the grade. A course project described below is optional. The grade on this project may be substituted for an exam.

**PROJECT:**
1) Find own data set or data from any referenced paper in statistical ecology.
2) Analyze data.
3) Write brief report (4-5 pages) outlining problem, results and your conclusions. Data and output could go in appendices.

**CLASS TIME:**
MWF 11:30 a.m.-12:20 p.m. We'll try to arrange a make-up time also.

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