PCB 3043, Principles of Ecology

Objectives: This course will introduce you to the various problems that ecologists attempt to solve; the ways in which they attack these problems in order to create theories, hypotheses, and models about the functioning of ecological systems; and the ways in which they gather data to support or refute their theories, hypotheses, and models. Specific examples of ecological studies, often from Florida, will be used extensively. If you put out the effort, you will: (1) develop an appreciation of the modern scope of scientific inquiry in the field of Ecology, (2) develop an appreciation for the nature and complexity of ecological systems, (3) become familiar with the structure of populations and communities; (4) become familiar with the variety of ways in which organisms interact with both the physical and the biological environments, (5) become familiar with how ecological interactions influence patterns of distribution and abundance, (6) develop an ability to pose questions and hypotheses about ecological processes and patterns, (7) become familiar with conceptual modeling, (8) become familiar with methods of data gathering, (9) become familiar with methods of data analysis and presentation of scientific information, and (10) develop an appreciation of the unique environmental setting of Florida.

General Outline:

Week 1	How the world operates, basically
Week 2	Why life is all about limitations and adaptations
Week 3	What you need to know about models and statistics
Week 4	Populations How demography works
Week 5	Death and Birth
Week 6	Population growth
Week 7	Interactions Competition
Week 8	Parasitism Predation
Week 9	Mutualism
Week 10	Strategies Dealing with limitations
Week 11	Adaptive strategies Movements
Week 12	Invasive species
Week 13	Communities
Week 14	Richness and diversity Community connections
Week 15	Succession Communities in a shrinking world