Biol 471, Population Ecology
3 credits, MWF 10:20 - 11:20 (qualifies as a writing intensive course)

Instructor: Joel Schmutz, Room 418 Irving Building, 474-6688
Office hours: Tuesday & Thursday, 9:30 - 11 AM, or by appointment

Grading
Midterm exam 20%
Final exam 25%
Term paper 25%
Problem sets/Essays 30%

A=90-100, B=80-89, C=70-79, D=60-60, F=<60

Text: Ecology, 3rd edition, 1990, by Robert Ricklefs. We will focus on sections IV through VI (Chapters 15 through 31).

$5 fee for xeroxing should be paid to the Dept of Biology and Wildlife Office, Room 211 Irving

Course Outline

Jan. 19 Introduction and Definition of populations
Jan. 22 Quick introduction to exponential population growth
   " Natural selection, brief review of population genetics
Jan. 24 Describing populations (age structure, dispersion, vital statistics)
Jan. 26 Exponential growth models, stochasticity
Jan. 29 Carry capacity and models for single populations
Jan. 31 " (lab exercise)
Feb. 2 " (lab exercise)
Feb. 5 Population regulation and density dependence
Feb. 7 "
Feb. 9 Density independence vs density dependence
Feb. 12 Population cycles, biological and mathematical
Feb. 14 Matrix models: projection and sensitivity analysis
Feb. 16 Guest lecture
Feb. 19 Lab exercise: matrix models
Feb. 21 Human demography
Feb. 23 Midterm exam [Tentative date]
Feb. 26 Group selection - theory and debate
Feb. 28 "
Mar. 1 Territoriality, dispersal, resource use and limitation
Mar. 4 "
Mar. 6 Biology of predation, parasitism, herbivory
Mar. 8 "
Mar. 18 SPRING BREAK
Mar. 20 Predator-prey interactions and models
Mar. 22 "
Term paper
This paper should be a synthesis of information and ideas about a particular topic in population ecology. This information should come from the recent scientific literature (at least two-thirds of citations must be 1985 or later). I will allow a wide latitude in topics; pick a topic that intrigues you. Papers should be written in the format used in the journal *Ecology* (put your social security number on the paper in lieu of your name).

Length - Double spaced, 5 to 10 pages (not including literature cited section).

Jan. 31 Deadline for selecting topic and discussing it with instructor. See me about this topic during regular office hours anytime prior to this date, or during special office hours on this date.
Feb. 9 Deadline for short outline and list of 10 references. See me about this topic during regular office hours anytime prior to this date, or during special office hours on this date.
March 25 Deadline for term paper. Late papers not accepted. Receive peer's paper to review.
April 1 Deadline for submitting peer review.
April 17 Receive instructor's review.
April 24 Deadline for response to instructor's review (Maximum of 2 pages, double-spaced, that's including any additional literature cited).