

Ecology (EEB 200B)

Fall quarter 2007

Instructor: Dr. Priyanga Amarasekare

Teaching Assistant: Colin Rundel

Time: Mondays and Wednesdays 1.30-2.50 p.m.

Venue: PUB AFF 1234

Goals of the course

This course focuses on fundamental concepts in ecology that underlie population persistence and species coexistence, two processes that are integral to the maintenance of biodiversity. The emphasis is on a quantitative understanding of these processes, with an eye towards addressing key environmental issues such as conservation, invasive species and climate change.

Office hours

Instructor (Dr. Amarasekare) — Mondays, 3.30 - 5.00 p.m. in Botany 320
Teaching Assistant (Mr. Rundel) — Thursdays, 2-4 p.m. in Math Sciences 8209

Exams

Midterm — 10/31/07
Final — Week of 12/10, date and time TBA

Textbook

Begon, M., C. Townsend and J. Harper. 2005. Ecology: from individuals to ecosystems. Blackwell.

Course website

url: <http://www.lsic.ucla.edu/classes/fall07/>

Note: Questions about the web site should be directed to the “Login Questions?” link. For further assistance please go to the computer lab in LifeSci 2127.

Syllabus

1. *Ecology: overview* — Why is it important to have a quantitative understanding of ecological phenomena?

2. *How do populations persist: Single species population models* — Models for species with discrete vs. overlapping generations.

3. *Applications of population models: Infectious diseases* — Endemic vs. epidemic diseases, basic reproductive rate of an infection, vaccination strategies, herd immunity, aspects of host and parasite biology that prevent disease outbreaks.

4. *Population persistence in fragmented environments: Metapopulations* — Reproductive vs. dispersal ability, susceptibility to habitat loss and fragmentation, predictions about long-term abundances of species.

5. *How is biological diversity maintained: Species Interactions I: Competition and invasive species* — Intra-specific vs. inter-specific competition.

6. *Species Interactions II: Consumer-resource interactions* — Predator-prey, host-parasite, plant-herbivore interactions.

7. *Maintenance of biological diversity in the face of climate change* — Influence of temperature variation on population persistence and species coexistence.