

Ecology (EEB 122)

Fall quarter 2008

Instructor: Dr. Priyanga Amarasekare

Teaching Assistant: Alina Corcoran

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

Venue: Botany 325

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 - 4.30 p.m. in Botany 320

Teaching Assistant (Ms. Corcoran) — Mondays 12.30 - 1.30 p.m. and Thursdays 4-5 p.m. in Botany 406

Exams

Midterm — Wednesday 10/29/08, 1.30 - 2.50 p.m.

Final — Thursday 12/11/08, 8.00 - 11.00 a.m.

Grading criteria

The grade will be based on the midterm (30%) and final (60%) plus a professionalism score (10%) based on attendance and participation in lectures and discussions. Please note that the weighting of the midterm and final (30% vs. 60%) is subject to change at the instructor's discretion. The final grade will be assigned based on a normal distribution curve.

Textbook

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

Course website

url: <http://www.lsic.ucla.edu/classes/fall08/>

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.