BIOLOGY 215 PRINCIPLES OF ECOLOGY Jan 2007

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Course Outline

Introduction to ecology (Chap 1)
Ecological genetics – genetic variability, natural selection, polymorphism, population size & heterozygosity(Chap 2)
Behavioral ecology- optimal foraging, territoriality, sex & mating systems, group living, life histories (Chap 4&5)
Population ecology-distributions, dispersal & migration, estimating population numbers, life tables, survivorship curves, geometric & logistic population growth (Chap 6), density dependent & density independent population regulation (Chap 13), competition (Chap 8), predation (Chap 10), parasitism (Chap 12), herbivory (Chap 11)
Community ecology- succession (Chap 18), trophic structure, nutrient cycling, keystone species (Chap 20-22), Major communities- intertidal, oceans, coral reefs, lakes, tundra, taiga, temperate rainforests, temperate deciduous forests, grasslands, deserts, tropical forests (Chap 14)
Biodiversity- global patterns, latitude, evapotranspiration, spatial heterogeneity, complexity & stability (Chap 15&17)
Island biogeography – island size, distance to source, species turnover, equilibrium & tripartite theory, resistance & resilience (Chap 19)
Human impact on ecosystems-human population, deforestation, habitat loss, habitat fragmentation, greenhouse gases & global warming, ozone hole, oceanic & freshwater pollution, overharvest in aquatic & terrestrial habitats, exotic species introduction, extinctions (Chap 3, Read Applied Ecology in each Chapter; read Wilson: The Diversity of Life- Chap 12)
Conservation ecology- CITES, IUCN, categories of protection, SLOSS, minimum viable population, % global area protected in national parks & marine protected areas

Text-: P. Stiles 2002 Ecology (app. $120)(some 2nd hand copies)
Assigned readings from the primary literature
Biology 215 Ecology Lab Manual Winchester 2007
Texts In Reserve Reading Room, McPherson Library
Stiles, 2002
` Molles, 1999. Ecology: Concepts and Applications
Ricklefs, R.E. 1996. The Economy of Nature.
Smith, R.L. 1980. Ecology and Field Biology
Wilson, E.O. 1992. The Diversity of Life.
Additional readings to supplement lecture topics (E-journals or hardcopies on periodical shelves in McPherson Library, main floor): examples: New Scientist, Science, Nature, Conservation Biology, Canadian Journal of Zoology, Ecology, Evolution, Oikos, Trends in Ecology and Evolution, Scientific American
Website – pdf of all lecture ppt images and Abstracts from primary literature
Access to 215 website is limited to students with a UVic Email Account and using WebCT.

Grading*
Lectures-60%
Midterm-25% Feb 15**
Final-35%*** Date: TBA
Labs-40 %
Note:
*Students not wanting their marks posted using ID# should notify me at the beginning of the term.
**deferred midterm possible only for significant medical condition
***A supplementary exam is not permitted for those who get grade E or F in the course