

Syllabus: List of lecture topics	Reading
How does one tackle a subject so large as tropical biology?	Pp. 1–5
Defining a tropical forest	7–15
Where are the tropics?	
Where will you find wet tropical forests?	
Latitudinal zonation of vegetation; climate diagrams	
Elevational zonation of vegetation	
Types of tropical forests	
Lowland rain forest structure	31–38
Some generalizations	
Stratification or not	
Light gaps and succession, the mosaic	
The forest understory	
Plant features	41–51
Drip tips	
Adaptations of photosynthesis	
Adaptations of climbing plants (vines and lianas)	
Epiphytes and hemiepiphytes	
Strangler figs (<i>Ficus</i>)	53–62
Special plant groups (e.g., bamboos, palms)	
Secondary compounds	89–101
Soil, litter, and decomposition	17–29
Importance of soil	
Chemical weathering in the tropics	
Critical soil nutrients	
Nitrogen fixation and mycorrhizal symbioses	
Epiphytes and lichens	
How much litter in tropical forests?	
Decomposers and rates of decomposition	
Termites as decomposers	
The tropical forest ecosystem	
Defining ecosystems and forest types	
Unique biotas of tropical regions	
Historical aspects of tropical biotas	197–205
Issues of species richness in tropical forests	
Alpha versus beta diversity	
Creatures of the rivers	
Freshwater systems of tropical landscapes	
Lungfishes	
Important fish clades of the Neotropics	
Giants of Amazonian waters and the 7 deadly plaques	
Freshwater reptiles	
The platypus	
Anuran biology	169–183
Malaria	

Insect biology and diversity	153–167
The magnitude of the tropical insect world	
Basic adaptations of insect life	
Mantids and walkingsticks	
Orthopterans	
The sucking insects	
Beetles	
Diptera	
Butterflies and moths	
Hymenopterans	
Ants I	103–113
General intro to ants	
Eusocial societies and the Theory of Kin Selection	
<i>Cecropia</i> and <i>Azteca</i> ants	
<i>Pseudomyrmex-Acacia</i> mutualistic associations	
Myrmecophytes (ant plants)	
Weaver ants (<i>Oecophylla</i>)	
Ants II	
Leafcutting ants (<i>Atta</i>) of the Neotropics	
Neotropical army ants and African driver ants	115–123
General importance of ants to tropical systems	
Mammals specializing in ants and termites	
Poison dart frogs	
Species living with ants (trophobiosis)	
Antbirds and their army ants	
Termites	
Phylogeny of termites	
Termite feeding and digestion	
The nature of termite societies and nests	
Defensive behavior of forest arthropods	
Classification of defensive behaviors	
Types of physical defenses	
Defensive compounds	
Protective, disruptive, and deceptive coloration	125–137
Mimicry	
Insect guilds	
Biology and ecology of some tropical birds I	
Basic avian properties	
Principles of flight	
Differences in methods of avian flight	
Bird migration and the tropics	139–151
The avifauna of Costa Rica (example)	
Interesting neotropical bird families	
The concept of bird guilds and convergence	
Interesting bird families of the Old World tropics	

Biology and ecology of some tropical birds II	
Coloration of birds	
Sexual selection in birds	
Interesting mating systems of birds	
Precocial and altricial strategies	
Niche separation and bird guilds	
The biology of bats	185–195
General information on bats	
Bat wing, foot, and head factoids	
Echolocation	
Flying foxes of the tropics	
Ecologic specializations of microbats	
Principles of hang gliding	
Vertebrate gliders of the tropics (frogs, snakes, lizards, and mammals)	
Plant reproduction	65–75
Models for species packing	
Flower structure	
Pollination syndromes, esp. hummingbirds, bats, and hawkmoths	
Orchid flowering and pollination	
The puzzle of the fig	
Fruit dispersal by mammals	
Reptiles in the forest	
Energy balance of vertebrate ectotherms	
Geckos, chameleons, iguanids, etc.	
Monitor lizards and the Komodo dragon	
Studies of <i>Anolis</i> lizards on foraging and niche breadth	
Snake biology and coloration	
Special groups and examples of tropical snakes	
Turtles of the forest floor	
Mammals in the forest	
Overview of placental mammals	
General groups of tropical mammals	
Some large, ground-dwelling vegetarians	
Mammals of Nigeria's rain forest (example)	
Native mammals of the Neotropics	
Tree shrews	
Mammal groups occurring east of Wallace's Line	
The tropical primates	
Major lineages of living primates	
Tarsiers	
Lorises	
Lemurs	
New World monkeys (platyrrhines: callitrichines, pithecines, atelines)	
Old World monkeys (catarrhines: colobines, cercopithecines)	
Living apes (gibbons, orangutan, gorilla, chimpanzees)	

Forests other than typical wet forests (to be written)
Mangrove swamps (mangal)
Tropical deciduous forest
Tropical forest products and tropical agriculture (to be written)
Tropical conservation biology (to be written)

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