

# Systematic Biology

BIOS 4600/5600

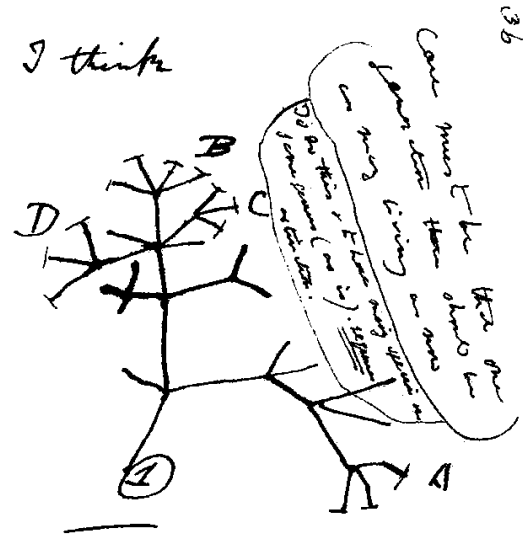
(Formerly BIOS 4570/5570 Animal Systematics)

Spring Semester, 2024

The Tree of Life is a wellspring of information for ecology, adaptation, molecular evolution, development, species formation, biogeography, & other fundamental biological processes. With advances in genomics and increases in computational power, our understanding of the Tree of Life has been revolutionized, as have the methods used for including phylogeny in studies of ecology and evolution.

Systematic Biology is not a course aimed only at budding systematists. Rather, it is a course in phylogenetic biology for everyone working on multiple species. It includes sections on phylogenetic inference (parsimony, likelihood, Bayesian analysis, species trees) and the use of phylogenetic trees for studying evolutionary processes (comparative methods). We also explore phylogenetic perspectives in ecology & conservation. In computer labs (2 per week!), we perform a multitude of systematic analyses, and we develop skills that are of broad utility—such as Bayesian inference, information criteria, the Unix terminal, programming in R (lots of it), and other topics.

The course is aimed at graduate students, but interested undergraduates are welcome (but talk with me). Feel free to contact me with any questions.



Then between A & B. various  
size of relation. C + B. The  
first predation, B & D  
rather greater distinction  
Then genus would be  
formed. - binary relation

Darwin's 1<sup>st</sup> phylogenetic tree

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