

Principles of Systematics (ENTO 8050)

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Topics

1. Philosophy and Goals of Systematics
2. Homology Assessment
3. Cladistics (Parsimony Analysis)
4. Likelihood and Bayesian Approaches to Phylogenetics
5. Outgroups, Rooting, and Taxon Sampling
6. Confidence and Support Measures
7. Data From Multiple Sources
8. Supertrees and Supermatrices
9. Phylogenomics
10. Species Concepts, Delimitation, and Diagnosis
11. Phylogenetic Taxonomy
12. Introduction to Five Software Packages Used for Phylogenetic Reconstruction

Place and time of weekly discussion section: _____

Discussion section(s) for which I am responsible: _____

Relevant Journals

Annals of the Entomological Society of America
Annual Review of Ecology, Evolution, &
Systematics
Cladistics
Evolution
Journal of Evolutionary Biology
Journal of Molecular Evolution
Journal of Natural History

Molecular Biology and Evolution
Molecular Ecology
Molecular Phylogenetics and Evolution
Systematic Biology
Systematic Entomology
Trends in Ecology and Evolution
Zoologica Scripta
Zoological Journal of the Linnean Society

Web Sites

THE TREE OF LIFE (<http://phylogeny.arizona.edu/tree/phylogeny.html>)

The Tree of Life is a project designed to contain information about the phylogenetic relationships and characteristics of organisms, to illustrate the diversity and unity of living organisms, and to link biological information available on the Internet in the form of a phylogenetic navigator.

PHYLOGENETICS SOFTWARE (UNIV. GLASGOW) (<http://taxonomy.zoology.gla.ac.uk/software.html>)

This is a list of some taxonomic and phylogenetic software, with an emphasis on tree building and molecular data. There are also links to other, more extensive collections.

PHYLOGENETIC ANALYSIS PROGRAMS (<http://phylogeny.arizona.edu/tree/programs/programs.html>)

List of programs that perform some sort of phylogenetic analysis, or which might be useful to phylogeneticists. The list is not complete, but more programs and more information about the programs will be added in the future.

TREEBASE (<http://herbaria.harvard.edu/treebase>)

Web repository of primary morphological and molecular data used to build phylogenetic trees.

BIOSIS RESOURCE GUIDE TO SYSTEMATICS, TAXONOMY AND NOMENCLATURE

(http://www.biosis.org.uk/zrdocs/zoolinfo/syst_tax.htm)

List of systematics resources available on-line, including web sites, software, databases, and other electronic media. Compiled by Biosis staff.

EDUCATION PAGE OF THE WILLI HENNIG SOCIETY (<http://www.cladistics.org/education.html>)

List of websites for phylogenetic software, book announcements, on-line systematics instructional guides, and other systematics resources available through the web.