SYSTEMATIC ZOOLOGY
LABORATORY
Minot State University
BIOL 340, Fall 2009

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Date	Stuff for this week
25 Aug	Introduction: sorting and systematics
1 Sep	The single-celled forms and the fungi: the nearest neighbors
8 Sep	Cnidarians and ctenophores
15 Sep	other early taxa
22 Sep	**LAB PRACTICAL 1 (40 points)**
29 Sep	Annelids and molluscs
6 Oct	other lophotrochozoans
13 Oct	Arthropods
20 Oct	other ecydysozoans
27 Oct	**LAB PRACTICAL 2 (60 points)**
3 Nov	DEUTEROSTOMATES Echinoderms and hemichordates
10 Nov	Basal chordates to fishes
17 Nov	Tetrapods
24 Nov	**LAB PRACTICAL 3 (60 points)**
1 Dec	Preparation for group presentations
8 Dec	**Presentations on obscure taxa (40 points)**

WHAT WE WILL DO

This course is about (1) surveying the diversity of animal life and (2) how we observe body plans (or the german expression “bauplane”) and use them to interpret the history of life. It requires an understanding of how we infer geneological relationships (or “phylogeny”).

There is much content in this part of the course. We will do dissections of several model animals. We will also focus intensely on the taxonomy. While

strict memorization may prove successful, underlying the underlying tenet of evolution and how we reconstruct evolutionary history is an easier method (and it's much more interesting). However you approach the material, there is simply no substitute for knowing every name and taxonomic level.

When the course is complete and the years have passed, you probably will not recall all the taxonomy, but you will probably remember the innovations in bauplane that characterize the transitions from one branch of phylogeny to the next.

POINTS AND GRADING

Three laboratory exams	
Lab Practical 1	40 points
Lab Practical 2	60 points
Lab Practical 3	60 points
Presentation	40 points
TOTAL	200 points

The Presentation

You will form teams of 2-4 members. Each team will choose a minor taxon that is not covered in lecture or lab, and each team will take a standardized approach to provide a 15-25 minute lecture on that taxon covering (in this order) (1) synapomorphies, (2) bauplane, (3) life cycle, and (4) taxonomy. This standardized format will follow the one that I will use in lecture to cover the major taxa.

List of minor taxa
Chaetognatha
Phoronida
Gnathostomulida
Monoblastozoa
Cycliophora
Entoprocta
Orthonectida

OUTLINE FOR THE LABORATORY LECTURE

“How researchers arrive at their taxa varies; depending on the available data, and resources, methods vary from simple quantitative or qualitative comparisons of striking features to elaborate computer analyses of large amounts of DNA sequence data.”

from http://en.wikipedia.org/wiki/Taxonomy