

Syllabus for Biology 108H
Honors Freshman Biology Seminar
Spring 2013

Instructor

Dr. Christopher Hardy office: Roddy 271 office hrs: M & F 9-10:50, R 10-10:50
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Meetings

Fridays, 12:00-12:50 PM, Roddy Hall 258

Abstract

Even if you never take another biology course in your life, an introductory course in biology should equip you with the knowledge base and skill set to better see, interpret, and learn about the biology that is part of your culture and has an impact in our lives. This semester, we will explore the biology and ethnobiology of the flora and fauna that are essential components of your holiday culinary heritage.

Grading

A point system is employed. Final letter grades are earned on basis of percentage of total points available that you earn as follows:

A	93-100%	B-	80-82%	D+	67-69%
A-	90-92%	C+	77-79%	D	63-66%
B+	87-89%	C	73-76%	D-	60-62
B	83-86%	C-	70-72%	F	<60%

<u>Graded Item</u>	<u>Unit Value</u>	<u>Summed Value</u>
5 Article Summaries	20 pts	100 pts
Oral Power Point Presentation	50 pts	50 pts
Exam	50 pts	50 pts
Participation	NA	30 pts
		<hr/> 230 pts

Appendix 1. Article Summary Format

You must select five weeks when you are not presenting to find and review a scientific article on the week's subject and generate a typed, double spaced, 250-350 word summary of the article. You must staple a copy of the article to your article document and hand it in at the beginning of class on that day. There is a 20% per day point deduction sequence that starts if it is not handed in at the beginning of class. Your summary should refer to figures and tables of the article that support the conclusions your report. It must indicate to me that you indeed read the entire article, and not just the abstract. You will be graded on both the content and quality of presentation. Presentation quality includes grammar, spelling, sentence and paragraph construction and logical flow of ideas, etc. Your audience is someone like yourself, a person with an interest in but not yet much experience in biology. Below is a sample of the precise format that you must follow. Each of the 5 summaries is worth 20 pts for 100 pts total.

Jane Smith

February 11, 2013

Summary of Axelrod (2008)

Axelrod JM. 2008. Evolutionary ecology of plumage coloration in wild and domesticated varieties of pheasant (*Genus specifcepithet*). *Journal Animal Behavior* 16: 201-220.

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Literature Cited

Pardot HP. 2003. Morphology of *Genus specifcepithet*. *Taxon* 20: 16-23.

Appendix 2. Oral Presentation Format

The oral presentation is a 12-15 minute PowerPoint presentation that begins at the start of class on the assigned day, and must be accompanied by printed copies of an outline of your talk for me and your fellow students. The talk is on a species of plant or animal that is eaten in some way or used to make something that is eaten. The outline should naturally include your name, the date, and the title of your presentation at the top. You must also hand in one stapled copy of your PowerPoint presentation to me at the beginning of class on your presentation date. You will be graded on the quality of your slides, your printed materials, your speaking and presentation, and content and logical flow.

As an example, I will give an oral presentation on a subject in the second week, from which you will get an idea of how the presentation is to be carried out.

<u>Week and Topic</u>	<u>Presenter</u>
Week of Jan 28: Introduction & Assignments of Subjects	Dr. Hardy
Week of Feb 04: Pumpkin	Dr. Hardy
Week of Feb 11: Cocoa	Emma Goliash
Week of Feb 18: Potato	Brittany Tomes
Week of Feb 25: Grape	Erin Runyon
Week of Mar 04: Yeast and Coffee	Jordan Card and Jessi Stead
Week of Mar 11: Sugar and Corn	Rachel Kunicki and Thi Nguyen
Week of Mar 18: Spring Break	
Week of Mar 25: Orange or Clementine and Cabbage	Laura Cray and Molly Carl
Week of Apr 01: Sweet Potato	Ashley Wells
Week of Apr 08: Ham and Soy	Phil Radomski and Lindsay Harrison
Week of Apr 15: Wheat and Rice	Paul Clemmer and Johana Reynoso
Week of Apr 22: Goose and Apple	Andrew Roth and Kelsey Miller
Week of Apr 29: Walnut and Egg	Shannon Sundeen and Cassi Werth
Week of May 06: Exam	

Appendix 3. Taxonomic Hierarchy Tutorial Using Selected Plants as an Example

a. Introduction. Plants belong to the plant or vegetable kingdom, Plantae. This kingdom is the largest (most inclusive) taxon containing plants. Within the kingdom there are successively smaller (less inclusive) taxa. Study Table 1.1 and then answer questions that follow.

Table 1.1. The taxonomic hierarchy, exemplified for two species of angiosperms: *Phaseolus vulgaris* (common bean) and *Zea mays* (corn). Taxonomy consistent with your Raven Biology of Plants (Evert & Eichhorn 2013).

Rank	Example Classification of <i>Phaseolus vulgaris</i> (common name, included species)	Example Classification of <i>Zea mays</i> (common name, included species)
Kingdom	Plantae (plants; 336,750)	Plantae (plants; 336,750)
Phylum	Anthophyta (angiosperms; 300,000)	Anthophyta (angiosperms; 300,000)
Class	Eudicotyledonae (eudicots; 200,000)	Monocotyledonae (monocots; 90,000)
Order	Fabales (legumes and allied families; 2,929)	Poales (grasses and allied families; 22,000)
Family	Fabaceae (bean or legume family; 220)	Poaceae (grass family; 10,000)
Genus	<i>Phaseolus</i> (beans; 128)	<i>Zea</i> (teosintes; 5)
Species	<i>Phaseolus vulgaris</i> (common bean; 1)	<i>Zea mays</i> (corn; 1)

b. Questions (Using Table 1.1 and the internet).

1.) With common bean as an example, notice how a species name consists of two parts, the genus name "*Phaseolus*", and the specific epithet "*vulgaris*". Whereas other species may share the genus name, and yet other species in other genera may share the same specific epithet ("*vulgaris*" merely means "common" in Latin), the two parts together comprise a unique species name.

Thus, the scientific names of species are said to be which of the following?

- a. uninomials b. binomials c. trinomials d. polynomials

For fun: Which of the above "–nomial" terms above applies best to our system of naming persons in the United States and most Western cultures? Hint: start by thinking of your own full name.

2.) What is the common name in Table 1.1 for *Phaseolus vulgaris* and *Zea mays*? Use the scientific name of each species and Wikipedia to determine if there are other common names for each species and, if so, write what these are.

3.) Type “corn (disambiguation)” into Google and read the Wikipedia article to see if the word “corn” always refers to plants of the species *Zea mays*. Alternatively, do so in a dictionary. Does corn always refer to just one plant species? Explain.

4.) A genus (plural *genera*) is a group of relatively closely related, similar species typically easily distinguished from other such groups (i.e., from other genera). How many other species are in the genus *Phaseolus*? How many in *Zea*? Use the internet to name at least one other species in each genus.

5.) Note that some taxa in Table 1.1 are italicized, whereas others are not. Taxa at which ranks in Table 1.1 are italicized? Answer this and you have the general rule: taxa at these ranks and only these ranks are italicized or underlined when written (e.g., in reports, etc.). You should follow this rule.

6.) Notice how the specific epithet is not capitalized, whereas the other taxon words are. This is a good rule to follow when you write species names. Now that you know the rules, go back to Question 4 and be sure you’ve written species names correctly.

7.) How many plant species are in the plant kingdom, according to Table 1.1?

8.) Order the taxonomic ranks (left-most column in Table 1.1) from least to most inclusive, from left to right below.