

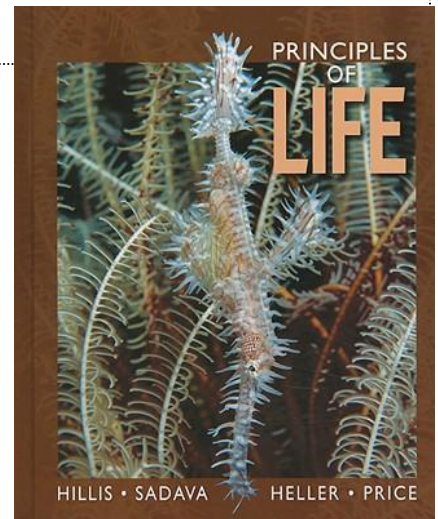
MR. GIRARD'S E.C.E. UCONN BIOLOGY 1108 CLASS SYLLABUS



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Texts Used:

Principles of Life; (2012) ISBN: 978-1-4292-9117-0; David Hillis, David Sadava, H. Craig Heller, and Mary Price.

Cliffs AP Biology; (2007) ISBN: 978-0-470-09764-9; Phillip Pack.

INTRODUCTION: The University of Connecticut's Early College Experience in Biology at Plainville High School is a course designed for students that have a strong interest in, or desire to pursue a career in the sciences. The Biology 1108 course is designed to offer students topics that are covered in a Biology course at the university level. Students accepting the challenge of this course will be required to actively participate in six lecture periods and three laboratory meetings per 8-day cycle that are conducted during the 1st semester. Lab time accounts for 50% of all instructional time and lab assessments will account for 35% of your grade. This is a laboratory course in which students are expected to identify and use patterns in collected data to solve biological problems. In addition, students will apply biological knowledge and critical thinking to environmental and social concerns. Some labs will require your attendance after school to complete investigations begun during the school day and attendance is mandatory. No student is permitted to miss more than 20% of the lab activities and still receive UConn credit.

To succeed in Biology 1108, students must be highly motivated to learn. Reading requirements for the course are rigorous and require a daily commitment in order to stay caught up in the class. Exams generally cover multiple chapters in the text and occur every 4 weeks depending on the content being covered and the number of labs that are conducted during the unit. All laboratory activities suggested by the University of Connecticut, and other supplemental labs, are conducted to give you a fair representation of a university-level Biology course. Independent research and primary journal readings are also required in addition to the lab work. A course exit exam created by University of Connecticut Professors will be cumulative for the content from this semester. A final grade of 'C' or better is required to receive UConn credit.

THE GOAL: This course is designed to:

- 1) Present an in depth, College Level Study of the Biological Sciences and apply biology to real world applications.
- 2) Help students develop college level critical thinking skills, writing skills, and study habits
- 3) Develop a love of Biology and its complexity

SUPPLIES: PLEASE BRING THE FOLLOWING ITEMS EVERY DAY:

1. Your textbook: Principles of Life. Hillis et al.
2. Three ring binder for labs and loose-leaf paper.
3. Pen and pencil
4. Wit, intellect, and positive mental attitude

GRADING:

1. Laboratory work and reports 35%
2. Exams 60%
3. Journal readings 5%

STATEMENT OF ACADEMIC HONESTY: I will make a clear distinction between work that must be your own and work that is done in groups. Make sure you also make that distinction. Cheating and Plagiarism will have severe consequences. Copying or helping another person on a test will result in a ZERO (0) on the test for ALL involved. An assignment, such as journal readings or formal lab reports, copied from another student, the Internet, or any other source will result in a ZERO (0) on that assignment.

FORMAL AP BIOLOGY LAB REPORT RUBRIC

1. Abstract: (20 pts)

This provides a summary of your report. The abstracts will consist of a sentence or two of introduction which includes the objectives of your experiment, a description of the investigation to be conducted, methods, rationale for the hypothesis you have made, and background information which needs to be cited using MLA format.

2. Problem: (5 pts.)

This should be a concise description of what you are studying and ideally should be a question that is posed.

3. Hypothesis: (10 pts.)

Statement which ties together the independent and dependent variables in the experiment or investigation. The hypothesis is what you think will happen during the investigation. It differs from a guess in that it is based upon prior knowledge or evidence. It should be supported by previously developed evidence and/or concepts. A null and alternate hypothesis will be included in your genetic research lab.

** Reminder: The hypothesis should be the statement that drives your laboratory investigation ... and represents your best prediction of the results based on prior experience with the problem.

4. Materials & Procedure: (25 points):

Include a description of materials and equipment used in the labs in the steps for performing the lab. Be specific but brief. Write this section in past tense, without pronouns, and in paragraph form. Diagram and label the setup of equipment for the lab. The procedure must include an identification of the independent and dependent variables and the control(s) in the experiment.

** Reminder: A well designed experiment should have one clearly defined independent variable and at least one control.

5. Data/Results: (10 points)

Create a data table as appropriate for all observations and measurements. Show the work for any required calculations as well as appropriate units. Include a graph of data as appropriate with appropriate titles, labels, and regression analysis where appropriate. DATA TABLES & GRAPHS SHOULD BE LABELED WITH EITHER FIGURE OR TABLE (e.g. Figure 1. The fecundity of *Drosophila melanogaster*) AND CONTAIN A SUBTITLE OR HEADING.

Do not hide or eliminate suspected faulty data but present it. Later, in your CONCLUSIONS, you may explain why you have decided not to use suspected errors in your analysis. Good scientists present the data they obtain even when it is suspected to be faulty. They explain why they feel they are in error in the discussion of their results later. This is why a true experiment has many trials and much peer review occurs before results are accepted by the scientific community at large.

Include error calculations as appropriate when directed by the instructor.

Data may be qualitative (observational without numbers) or quantitative (with numbers) or both. Often qualitative data may be used to support or explain discrepancies in quantitative data in your conclusion.

6. Conclusion/Discussion: (30 points)

Summarize the important procedures and result(s) of the lab. The conclusion should clearly tie the results of the experiment to the hypothesis and a discussion of why the hypothesis should be accepted or rejected must be completed in detail.

A good conclusion/discussion not merely restates the results or the procedure ... but it should tie any errors in the procedure to deviations from the expected results. Explain any uncertainties in the observations/measurements. Identify and explain how sources of error influence the lab results.(some sources of error could include equipment/instrument error, procedural setup error, human error, etc.)

Discuss how the lab could be modified to improve the results.

***Cite all literature used in the abstract using MLA format as appropriate. FAILURE TO PROVIDE PROPER CITATION WILL RESULT IN A ZERO ON THE LAB

Use the Curriculum map below to plan your chapter readings, labs, & journal reading

Month	Content	Reading	Lab
January	Macroevolution & Speciation Microevolution Phylogeny & systematics Tree of Life & Earth History Bacteria, Archaea, & Viruses Diversification of Eukaryotes Fungi EXAM #1	Chap 17 pg 332-345 Chap 15 pg 288-313 Chap 16 pg 315-331 Chap 18 pg 347-364 Chap 19 pg 366-386 Chap 20 pg 388-405 Chap 22 pg 437-454	Population genetics lab Great clade race activity BLAST lab Evolution of Antibiotic Resistance lab
February	Plant anatomy Plant transport Plant growth & development Plant reproduction Photosynthesis Plant adaptation Plant evolution & phylogeny EXAM #2	Chap 21 pg 407-436 Chap 24 pg 506-520 Chap 25 pg 521-538 Chap 26 pg 539-555 Chap 27 pg 556-571 Chap 28 pg 572-587	Transpiration Flower dissection Monocot vs eudicot microscopy Photosynthesis Leaf Disc Assay - Open ended lab report
March	Chromosomes and cell division Mendelian genetics EXAM #3 Animal Diversity	Chap 7 pg 124-143 Chap 8 pg 144-164 Chap 23 pg 456-505	Genetics of fast plants Genetics of <i>Drosophila melanogaster</i> Platyhelminthes regeneration **Dissection: Invertebrates - porifera, mollusca, annelida, arthropoda, echinodermata **Dissection: Vertebrates - agnatha, chondrichthyes, osteichthyes, amphibia, reptilia, aves, mammalia <u>**Please note that</u> <u>DISSECTION IS COMPULSORY</u>
April	Animal behavior & interactions Population ecology Community ecology Ecosystems Energy within an Ecosystem EXAM #4	Chap 41 pg 799- 821 Chap 44 pg 859-872 Chap 43 pg 842-858 Chap 42 pg 822-841 Chap 45 pg 873-891 Chap 46 pg 892-907	Animal behavior Water quality Dissolved oxygen

