

Evolution BIOL 136

Fall 1998

Instructor: Dr. Craig S. Hood **Phone:** My office 865-2193
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Class mtgs: MW 3:30 - 4:45pm **E-mail:** chood@loyno.edu

Class Website: http://www.loyno.edu/~chood/biol_136.html

Books:

Peter V. Price, 1996. *Biological Evolution*. Saunders College Publishing,
Stephen J. Gould, 1993. *Eight Little Piggies*. Norton Press, New York,
Articles on Reserve in Library (Dr. Hood) About 30 pp.

Course Activities: The course will include formal lectures, group discussions, and individual and group exercises. We will explore various aspects of Evolution by considering observations in nature, by asking critical questions, and by seeking explanations through scientific inquiry.

Grading: Your participation and achievements in this course will be evaluated by **a)** exam test scores, **b)** a position paper, and **c)** participation in group discussions and exercises. Your overall grade will be based on points earned as follows:

Examinations --- 3 tests @ 100 pts ----- 300 pts
Gould position paper -----50 pts
Quizzes and activities -- group and indiv. ----- 50 pts
100 to 90 % -- A 74 to 70 % -- C
89 to 85 % -- B+ 69 to 65 % -- D+
84 to 80 % -- B 64 to 60 % -- D
79 to 75 % -- C+ below 60 % -- F

Attendance: Because this course emphasizes student participation, your attendance is obviously critical. You are responsible for any and all material presented in class.

Prerequisites: This course is classified as Common Curriculum, Natural Sciences Modern and is included in the **Environmental Studies Minor**. You need to have enthusiasm and an inquiring mind.

POST HURRICANE Schedule & Reading Assignments

1. Microevolutionary Processes: Mechanisms of Evolution

Aug 31	Science as a Way of Knowing	Paper # 1
Sept 2	Evolutionary Questions	Price Chap. 1
7	LABOR DAY HOLIDAY	
9	Darwinism: 1. Observations	Price Chap. 2, Gould Essay #2
14	Darwinism: 2. Ideas and Explanations	Price Chap. 3 (pp 38-42),
	Paper #2	
16	Producing and Transmitting Variation	Price Chap. 3 (pp 42-47)
21	Population Variation	Price pp 316-318, Gould Essay
# 28		
23	NeoDarwinism	Price Chap. 3 (pp. 47-55)
28	HURRICANE GEORGES	Paper #3,
30	HURRICANE GEORGES	
Oct. 5	A Summing-up of Microevolution (Review)	
7	EXAM # 1	

2. Macroevolutionary Patterns: Unity and Diversity of Life

12	LOYOLA DAY HOLIDAY	
14	Species Concepts	Price Chap. 4
19	Speciation – the Origin of Species	Price Chap. 5
21	Adaptive Radiation	Price Chap. 8
26	Patterns of Life's History	
28	The Role of Extinction	Price Chap. 9
Nov. 2	The Burgess Shale	Gould Essay # 24
4	Endosymbiotic origin of cells	Paper #4 (3 short ones)
9	Summing-up Macroevolution	
11	EXAM # 2	

3. Human Evolution and Biodiversity

16	Primate Adaptations & Relationships	Price Chap. 12
18	Declining Empire of the Apes	Gould Essay # 20
19	Fossil Hominids	Gould Essay # 8
23	Fossil Hominids	
25	THANKSGIVING HOLIDAY	
30	Culture, Biology, & Human Nature	Gould Essays # 18, 19
Dec. 2	Biodiversity: who, what, when, where?	
7	Biodiversity: fragility and resiliency	Price Chap. 10,
9	Integrating Human Biology & Biodiversity	Paper # 5

PAPER LIST (in Library and Web Site)

1. Loehle, C. 1990. A guide to increased creativity in research—inspiration or perspiration?
BioScience, 40: 123-129.
 2. Gould, S.J. 1994. This view of life. *Nat. Hist.*, No. 6: 6-8 (no pg. 7).
 3. Diamond, J. 1989. Blood, genes, and malaria. *Nat. Hist.*, No. 2: 8-15.
 4. Three authors. 1994. Games species play. *Nat. Hist.*, No. 6: 32-40.
 5. Diamond, J. 1992. Must we shoot deer to save nature?. *Nat. Hist.*, No. 8: 2-8
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Gould Position Paper Assignment
50 points

The Assignment (due at beginning of class, Mon. Nov. 23rd)

As outlined below, you are assigned to read and comment upon (respond to) several essays in Stephen J. Gould's *Eight Little Piggies*, book.

a) Read Essay # 9, **Darwin & Paley meet the invisible hand**.

b) Read **2 of the following** (your choice):

- # 4. **Eight Little Piggies**
- # 5. **Bent Out of Shape**
- # 6. **An Earful of Jaw**
- # 7. **Full of Hot Air**

c) I suggest that you read # 9 (on Paley) **first**, because this essay discusses the basic premise that divided Darwin and the Natural Theologians—that a natural process could generate complex anatomies in organisms.

d) Then, **write a 5-10 page**, double-spaced (typed) position paper. This paper should **not be a book report** !!! It can recount—in your own words—a few of the interesting or main points. Your goal should be to **comment upon** the Paley

article, and then to **relate the specific examples** (your choice of essays 4-7) to the Paley article.

Your paper must be **in your own words—do not excise** sentences or paragraphs from the essays !!! I am most interested in seeing that you understand the arguments and that you can synthesize your own thoughts.