

## *Philosophy 523 -- Philosophy of Biology -- Spring 2000*

*Elliott Sober*

In this course, we will examine a range of philosophical questions concerning the theory of evolution. We'll begin with the debate between evolutionism and creationism. Then we'll discuss questions concerning fitness, adaptationism, the units of selection, systematics, sociobiology, and evolutionary ethics. We'll also consider such questions as the following -- Are there laws in biology? Is biology reducible to physics? How are probability concepts to be understood in evolutionary theory?

### **Books available at University Bookstore:**

David Hume, *Dialogues Concerning Natural Religion*, Penguin.  
Elliott Sober, *Philosophy of Biology*, Westview Press, 2nd edition (=PB).  
Elliott Sober (ed.), *Conceptual Issues in Evolutionary Biology*, MIT Press, 2nd edition. (=CI)

### **The following are in a photocopy packet available at the Copy Center in 1650 Humanities:**

William Paley, excerpts from *Natural Theology*, Rivington 1805.  
Dwayne Gish, excerpts from *Evolution? The Fossils say No!*, Creation-Life Publishers, 1979.  
Elliott Sober, "Introduction to Bayesian Epistemology," unpublished.  
Elliott Sober, "Testability," *Proceedings of the American Philosophical Association*, 1999.  
John Beatty, "The Evolutionary Contingency Thesis." In G. Wolters and J. Lennox (eds.), *Concepts, Theories, and Rationality in the Biological Sciences*, 1995, 45-81.  
Jerry Fodor, "Special Sciences," *The Language of Thought*. Thomas Crowell, 1975.  
Elliott Sober, "The Multiple Realizability Argument against Reductionism," *Philosophy of Science*, 1999.  
Richard Lewontin, "The Units of Selection." *Annual Review of Ecology and Systematics*, 1970, 1: 1-18.  
Stephen Jay Gould, "Caring Groups and Selfish Genes," In *The Panda's Thumb*. Norton, 1980.  
Richard Lewontin, "The Analysis of Variance and the Analysis of Causes." *American Journal of Human Genetics*. 1974, 26: 400-411.

### **Schedule of Readings and Assignments**

Evolution versus Intelligent Design

Week 1-2 -- Hume; Paley

Week 3 -- Sober, PB, ch 2; Sober, "Testability;" Sober, "Intro to Bayesian Epistemology, Sober, PB, ch 1.

Writing Assignment -- essay on Gish

Fitness

Week 4 -- Mills and Beatty (CI); Sober, PB, Ch. 3.

Reductionism and Laws

Week 5-6 -- Fodor; Kitcher (CI); Sober, "The Multiple Realizability Argument against Reductionism," Beatty.

Midterm

Units of Selection

Week 7-8 -- Lewontin, Williams (CI); David S. Wilson (CI); Sober, PB, ch 4

Writing Assignment -- Essay on Gould

Adaptationism

Week 9 -- Gold and Lewontin (CI); Maynard Smith (CI); Sober, PB, ch. 5.

Systematics

Week 10-11 -- Sober (PB), ch. 6

Biological Explanations of Human Behavior

Week 12-13 -- Lewontin; Sober PB, ch 7.

Evolutionary Ethics

Week 14 -- Ruse and Wilson (CI); Kitcher (CI).

Review Session

Final