

# Phil 024: Philosophy of Biology

Spring 2013

Syllabus

Instructor: Alkistis Elliott-Graves

Why was Darwin's theory of evolution revolutionary? What actually evolves: genes, individuals or groups? What factors other than natural selection determine evolution and how important are they? To what extent do genes affect our behavior? Does the race have a biological basis? What is biodiversity and why should we care about it? In this course we will examine these questions from a philosophical point of view. This course will have two parts. In the first part we will examine the foundations of evolutionary theory, starting off with Darwin's own formulation. We will then look external and internal criticisms of evolutionary theory. Topics will include creationism and intelligent design, adaptationism, and the units of selection debate. In the second part of the course we will apply this knowledge to contemporary ethical issues. We will focus on biological theories of race and gender and examine their criticisms. We will also discuss the possibility of grounding ethics in evolutionary theory, the emergence of ecosystem ecology and the concept of biodiversity and its role in environmental policy. Please note that no previous knowledge of philosophy or biology is required to attend this course.

**Contact Info:** alkistis@sas.upenn.edu

**Office Hours:** Tuesday 11.30-1.30

**Texts:** *On the Origin of Species* (A Facsimile of the First Edition) Charles Darwin  
*Conceptual Issues in Evolutionary Biology, Third Edition* Elliott-Sober (CIE)  
Texts have been ordered from the Penn Bookstore  
All other readings will be made available on Blackboard.

**Evaluation:** 30% Midterm  
20% Short Paper  
40% Final Paper  
10% Participation

**Reading:** Reading should be completed *before* the class in which it will be discussed. Exams may cover issues discussed in the reading which are not presented in the lecture.

**Participation:** Is mandatory and important. Students are expected to have read and thought about the reading, and be ready to participate in class discussions.

**Academic Integrity:** All work must be your own. If you use external sources, you must cite them. Any form of cheating will be referred to the office of student conduct and may result in expulsion from the university.

## Class Schedule

Dates	Topics	Readings
Jan 10	Introduction	William Paley <i>Natural Theology</i> ch. 1 & 2 (on Blackboard)
Jan 15	Darwin	<i>On the origin of Species</i> ch. 1 & 2
Jan 17	Darwin	<i>On the origin of Species</i> ch. 3 & 4
Jan 22	Darwin	<i>On the origin of Species</i> ch. 15, Ernst Mayr “Typological versus Population Thinking” (CIE ch 16)
Jan 24	Intelligent Design	Michael Behe “Molecular Machines: Experimental Support for the Design Inference” (on Blackboard)
Jan 29	Responses to Intelligent Design	Philip Kitcher “Born-Again Creationism” (On Blackboard)
Jan 31	The Modern Synthesis	Futuyma <i>Evolutionary Biology</i> (excerpts, on Blackboard)
Feb 5	Species	Sterelny & Griffiths <i>Sex and Death</i> ch. 9 (on Blackboard)
Feb 7	Species	David Hull, “A Matter of Individuality”, (CIE ch 18)
Feb 12	Adaptationism	Gould and Lewontin “Spandrels”, (CIE ch 5)
Feb 14	Adaptationism	Maynard Smith “Optimization Theory in Evolution”, (CIE ch 6)
Feb 19	Units of Selection	Williams “Adaptation and Natural Selection” (CIE ch 3)
Feb 21	Units of Selection	Richard Dawkins, <i>The Selfish Gene</i> (excerpts)
Feb 26	Units of Selection	D.S Wilson “Levels of Selection” (CIE ch 4)
Feb 28	Midterm	N/A
Mar 5, 7	<b>Spring Break</b>	N/A
Mar 12	Evolutionary Psychology	Tooby and Cosmides “Toward Mapping the Evolved Functional Organization of Mind and Brain” (CIE ch 9)

<b>Dates</b>	<b>Topics</b>	<b>Readings</b>
Mar 14	Evolutionary Psychology	David Buller "Evolutionary Psychology: A Critique" (CIE ch 10)
Mar 19	Evolutionary Ethics	Ruse & Wilson "Moral Philosophy as Applied Science" (CIE ch 26)
Mar 21	Evolutionary Ethics	Philip Kitcher "Four ways of "Biologizing" Ethics" (CIE ch 27)
Mar 26	Biology & Race	Kwame Anthony Appiah "Why There Are No Human Races" (CIE ch 22)
Mar 28	Biology & Race	Robin O. Andreasen "A New Perspective on the Race Debate" (CIE ch 23)
Apr 2	Biology & Race	Gould <i>The mismeasure of Man</i> (excerpts, on Blackboard)
Apr 4	Biology & Race	Lewis et al. "The Mismeasure of Science: Stephen Jay Gould versus Samuel George Morton on Skulls and Bias" (on Blackboard)
Apr 9	Biology & Race	<i>Field Trip to Penn Museum (Skulls Exhibition)</i>
Apr 11	Bioethics	James Rachels "Ethical Theory and Bioethics" (on Blackboard)
Apr 16	Bioethics (Animals in Research)	Peter Singer "All Animals are Equal" (on Blackboard) R. G. Frey & Sir William Patton "Vivisection, Morals and Medicine: An Exchange (on Blackboard)
Apr 18	Ethics and the Environment (Ecosystems & Biodiversity)	(on Blackboard) Paul Sears "Ecology a Subversive Subject" Michael Soulé "What is Conservation Biology?" Jared Diamond "The Ends of the World as We Know Them"
Apr 23	Review	N/A