

Phil 147: Philosophy of Biology

Instructor: Matthew Fulkerson
Email: mfulkerson@ucsd.edu
Tues/Thurs: 12:30-1:50
Office Hours: Weds 1-2 and by appt

Course Description:

This is a course in the Philosophy of Biology. This can mean several different things, but this quarter it will involve **three** distinct topics of discussion. The first third of the course will be a philosophy of science course, dedicated to the unique methodological and theoretical issues raised by biological science. These include questions about biological laws (if there are any), forms of biological explanation, use of models in biology, and biology's relation to other sciences (does it reduce to more fundamental sciences, for instance). The second third of the course will be dedicated to philosophical and theoretical issues raised by the targets of biological science: what are species and how are they defined? What are genes? How should we understand claims about natural selection and fitness? The final third of the course will use biological science as a means of addressing traditional philosophical questions: what if anything can biology tell us about the human mind? The self? Free will? Ethics?

Course Mechanics:

We will more or less discuss a single paper or article during each meeting. I will provide a general introduction to the topic, and very often bring in many more examples and arguments related to, but not directly discussed in, the main article. Discussion is encouraged. I will most often use slides to present material, though they will generally be rather sparse.

Materials: Everything is on Canvas. All handouts, slides, homework assignments, and supplementary readings (if any) will be made available through this site. It is your responsibility to check this site regularly.

Discussion: Each week (starting week 2) there will be a discussion section opened on Canvas. Each student is expected to submit a short critical response (200-250 words) to a course reading by Friday noon of each week.

Grading:

There will be two short, focused writing assignments, each focused on specific claims from that section of the course, and a more comprehensive final writing assignment. You will also be responsible for participating in the online discussion forum on Canvas.

Assignments	Value	Date Due
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Writing 1	20%	Thurs Oct 20th
Writing 2	20%	Thurs Nov 12th
Final Writing	30%	Dec 7 (2:30pm)
Discussion Participation	30%	Weekly

Course Policies:

To avoid penalties for late assignments, students must provide official documentation explaining why the assignment could not be handed in on time. Late homework without documentation will not be accepted. Late papers without documentation will receive a late penalty of 1/3 letter grade for each day a paper is late, including weekend days (no exceptions). This course adheres to all UCSD standards for academic integrity (<https://academicintegrity.ucsd.edu>).

Canvas boilerplate: Students agree that by taking this course all required papers will be subject to submission for textual similarity review to Turnitin or similar service for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.

Reading Schedule (subject to small changes):

Initial meeting (9/22): Introduction to course and course mechanics

Week 1: Biological laws?

(9/27): Laws of Biology, Laws of Nature: Problems and (Dis)Solutions

(9/29): Does Biology have Laws? The Experimental Evidence.

Week 2: Mechanistic Explanation

(10/4): Thinking again about Biological Mechanisms (Darden 2008)

(10/6): Collaborative Explanation and biological mechanisms

Week 3: Biology and Reductionism

(10/11): Two Dogmas of Biology

(10/13): Unificatory Explanation

Week 4: What are species?

(10/18): Radical pluralism, classificatory norms and the legitimacy of species T classifications

(10/20): Cats Are not Necessarily Animals

First writing assignment due

Week 5: What Are Genes?

(10/25): Gene, SEP

(10/27): Why genes are like lemons

Week 6: Fitness and biological functions

(11/1): What Fitness Can't be

(11/3): Biological functions and natural selection: a reappraisal

Week 7: Levels of Selection

(11/8): Philosophy of Selection: Units and Levels

(11/10): The Levels of Selection Debate: Philosophical issues

Levels of selection in biofilms: multispecies biofilms are not evolutionary individuals

Week 8: Life and Artificial Life

(11/15): Natural Selection and Independently Originated Life Clades

(11/17): Artificial Life and 'Nature's Purposes': The Question of Behavioral Autonomy

Second Writing Assignment Due

Week 9:

(11/22): NO CLASS

(11/24): NO CLASS

Week 10: Biology and Human Nature

(11/29): Art and Aesthetic Behaviors as Possible Expressions of our Biologically Evolved Human Nature

(12/1): Biology and Ethics

Final Written Exam Due 12/7/22 by 2:30pm.