

**Phil 4352: Philosophy of Biology**  
Spring 2019, University of Texas, El Paso  
Class Meets M, W 10:30-11:50, Old Main 214

Professor Marc A. Moffett  
Phone: 915.747.5804  
Email: [mamoffett@utep.edu](mailto:mamoffett@utep.edu)

Office: Worrell 202  
Office Hrs: M 9:00–10:00 a.m.,  
T, F 1:00–2:00 p.m.,  
& by appointment.

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*Free and open discussion is the life-blood of philosophy. Consequently, no student shall be discriminated against on the basis of race, gender, disability, place of national origin, sexual orientation, religious affiliation, political affiliation or any other similar factor. I expect all members of the class to be equally tolerant of differing perspectives and ideologies. Critique, evaluate and analyze the ideas put forward by me and others; do not demean or belittle them.*

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Theodosius Dobzhansky claimed that “nothing in biology makes sense except in the light of evolution.” Presumably, Dobzhansky meant that evolution—specifically, the theory of evolution by means of natural selection—was the (or, at least, a) main organizing theory in the biological sciences. At the same time, there are a great many issues in evolutionary theory that are still greatly in need of conceptual clarification (e.g., fitness and function). But then, so long as these conceptual mud puddles remain, our whole understanding of the biological sciences will be diminished.

One of the main benefits of philosophy is that it is adept at providing conceptual clarification. This is so whether we are talking about the concept of knowledge or the concept of fitness. So philosophy can offer the biological sciences the groundwork for increased conceptual clarity. At the same time, evolutionary biology is significantly different from a methodological perspective than, say, quantum physics. Consequently, a careful study of things like biological explanation can help us to better understand such things as scientific explanation and human rationality.

**Course Objectives:**

- To develop a critical understanding of the fundamental conceptual issues involved in evolutionary biology.
- To develop an ability to clearly express and defend not only your own opinions on these matters, as well as the views and arguments of those with whom you disagree.

**Materials:**

Required

- The texts for this course are:
  - Sober, Elliott (Ed.), *Conceptual Issues in Evolutionary Biology* (2<sup>nd</sup> ed.). Cambridge, MA: MIT Press. 1994.
  - Sober, Elliott, *Philosophy of Biology* (2<sup>nd</sup> ed.). Boulder, CO: Westview Press. 2000.

Optional

- **A good stiff cup of Joe (or two, or three, ...)!**

## Requirements and Expectations

This course is an upper division philosophy course. Students will be expected to have academic skills commensurate with its level including: the ability to read complex primary source material, the ability to write clear, well-constructed essays, and the ability to engage in articulate and respectful discourse. In addition, I expect all students to be prepared and attentive in class. This means coming to class having done reading assignments and having thought about their significance, and while in class being an active listener and contributor. Although I will not take attendance, I do expect you attend every class meeting. You are responsible for all material and announcements made in class, whether you are present or not. No late assignments will be allowed without a University excuse.

PLEASE NOTE: If you have or suspect you have a physical, learning, or psychological disability and require accommodations, please contact the Center for Accommodations and Support Services located in the Union Bldg East, room 106 (747-5148).

### **Evaluation:**

- **Weekly E-journal (25% of total grade):** You are to write a short (< 1 page) exploratory/critical response to the week's material. *Every entry must include: (1) An explanation/exposition of some point made in the readings and (2) a reflective, critical response to that point.* The journal is designed to get the student to engage the course material on a regular basis. This material need not be highly polished. Instead, you will be graded on a five-point scale with your score reflecting both your grasp of the material and effort/insight.
- **Short essay (15% of total grade):** Very short (3–4 p.) critical essay. This essay will ask you to *state and criticize some position you favor concerning the mind-body problem.* Further details will be handed out in class.
- **Essay prospectus (10% of total grade):** The essay prospectus is a short overview of your research essay. It will state as clearly as possible the problem you will address and your overall line of argumentation in the paper.
- **Research essay (25% of total grade):** A substantial, focused critical discussion that develops the ideas in your prospectus. You may write on any topic relevant to the course, but the more narrowly you focus your discussion the better the paper will be. (For example, "I am going to argue that such-and-such specific claim made by Dualists is problematic" is much better than "I am going to argue that Dualism is false.").
- **Midterm Exam (25% of total grade):** In class exam.

The grading scale for this class is given below:

A	B	C	D	F
>89.5%	>79.5%	>69.5%	>59.5%	≤59.5%

**Class Schedule:** The following is a detailed schedule of classes. The schedule, however, is flexible. I will freely amend it as time, interest and comprehension dictate.

**CIEB** = *Conceptual Issues in Evolutionary Biology*.

**PofB** = Philosophy of biology.

W	Jan. 23	First Day of Classes.
M	Jan. 28	The Nature of Evolution
		• Chapter 1, §§ 1.0—1.5, <b>PofB</b> .
W	Jan. 30	Biological Explanation
		• Chapter 1, §§ 1.6—1.7, <b>PofB</b> .
M	Feb. 04	The Structure of the Design Argument
		• Chapter 2, §§ 2.0—2.2, <b>PofB</b> .
W	Feb. 06	Criticism of the Design Argument
		• Chapter 2, §§ 2.3—2.5, <b>PofB</b> .
M	Feb. 11	More on Creationism.
		• Chapter 2, §§ 2.6—2.8, <b>PofB</b> .
W	Feb. 13	Probability and Fitness
		• Chapter 3, §§ 3.0—3.2, <b>PofB</b> .
		• Mills & Beatty, The propensity interpretation of fitness, <b>CIEB</b> .
M	Feb. 18	The Epistemology of Fitness.
		• Chapter 3, §§ 3.3—3.4, <b>PofB</b> .
W	Feb. 20	The Metaphysics of Fitness.
		• Chapter 3, §§ 3.5—3.6, <b>PofB</b>
M	Feb. 25	Teleology
		• Chapter 3, §§ 3.7, <b>PofB</b> .
		• Larry Wright, Functions, <b>CIEB</b> .
		• Robert Cummins, Functional analysis, <b>CIEB</b>
W	Feb. 27	Teleology Continued.
		• Ruth Millikan, In defense of proper functions, available on Blackboard.
M	Mar. 04	Catch-up/Discussion
W	Mar. 06	Units of Selection
		• Chapter 4, §§4.0—4.4, <b>PofB</b> .
		• George C. Williams, Excerpts from <i>Adaptation and Natural Selection</i> , <b>CIEB</b> .
M	Mar. 11	Units of Selection Cont'd
		• Chapter 4, §§4.5—4.6, <b>PofB</b> .
		• David Sloan Wilson, Levels of selection: An alternative to individualism in biology and the human sciences, <b>CIEB</b> .
W	Mar. 13	Catch-up/Discussion
M	Mar. 18	SPRING BREAK
W	Mar. 20	SPRING BREAK

M Mar. 25 **Mid-term Exam (Sorry)**

### Adaptationism

W Mar. 27

- Chapter 5, §§5.0—5.3, **PofB**.
- Gould & Lewontin, The Spandrels of San Marco and the Panglossian paradigm: A critique of the adaptationist programme, **CIEB**.
- John Maynard Smith, Optimization theory in evolution, **CIEB**.

M Apr. 01

- Chapter 5, §§5.4—5.6, **PofB**.

### Systematics

W Apr. 03 Essentialism

- Chapter 6, §§6.0—6.1, **PofB**.
- Ernst Mayer, Typological versus population thinking, **CIEB**.
- Elliott Sober, Evolution, population thinking and essentialism, **CIEB**. [optional]

M Apr. 08 Species

- Chapter 6, §6.2, **PofB**.
- David Hull, A matter of individuality, **CIEB**.
- Mishler & Donoghue, Species concepts: A case for pluralism, **CIEB**.

W Apr. 10 Biological Classification

- Chapter 6, §§6.3—6.4, **PofB**.
- Read around in the available articles in **CIEB**.

M Apr. 15 Biological Classification Cont'd.

- Read around in the available articles in **CIEB**.

W Apr. 17 Phylogenetic Inference

- Chapter 6, §§6.5—6.6, **PofB**.
- James Farris, The logical basis of phylogenetic analysis, **CIEB**.

M Apr. 22 Catch-up/Discussion

### Sociobiology/Evolutionary Psychology

W Apr. 24 Sociobiology

- Chapter 7, §§7.0—7.3, **PofB**.

M Apr. 29 Ethics

- Chapter 7, §7.4, **PofB**.
- Ruse & Wilson, Moral philosophy as applied science, **CIEB**.
- Philip Kitcher, Four ways of “biologizing” ethics, **CIEB**.

W May 01 Cultural Evolution

- Chapter 7, §7.5, **PofB**.
- Elliott Sober, Models of cultural evolution, **CIEB**. [optional]

M	May 06	TBD
W	May 08	Catch-up/Discussion
<b>M</b>	<b>May 13</b>	<b>FINAL ESSAY DUE</b>