

# PHIL 481: PHILOSOPHY OF BIOLOGY

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**Class time:** MW 10:30-12:20  
**Class location:** SAV 136  
**Office hours:** Tu 1:00-3:00

## 1. Course description

In this course, we will consider philosophical issues that arise within evolutionary theory, starting with what is commonly regarded the central causal factor in evolution: NATURAL SELECTION. We will start by considering what natural selection is and what kinds of phenomena it can explain. We will then consider a range of issues surrounding the notion of natural selection. At what levels of the biological hierarchy does evolution apply (genes, organisms, groups, species, clades, life itself...)? How does natural selection interact with other causal factors (genetic drift, developmental constraint, culture)? What does it mean to call a trait an ADAPTATION, and when is it legitimate to do so? What does it mean to say that a trait has a particular FUNCTION?

## 2. Course texts

There is one required course text: *Adaptation* by Elisabeth A. Lloyd. You can purchase a hard copy for roughly \$22, or you can (I believe) acquire a free PDF with your UW login [here](#). All other readings will be provided through the course Canvas page.

If you would like some background reading, the best introductory text for philosophy of biology is *Sex and Death* by Kim Sterelny and Paul Griffiths, though it is older (1999). More recent introductory texts include: [Godfrey-Smith](#) (2014) and [Rosenberg and McShea](#) (2007).

## 3. Grading system

**Grading system.** In this course, *you will grade yourselves*. There are two reasons why I have you do this. (1) It encourages you to actively reflect on your own learning and performance. This in fact improves that performance. (2) It requires you to actively engage with the feedback that I leave you on your assignments. This is more useful to your learning than simply receiving a numerical score.

**Mechanics.** You will complete *three* self-assessment assignments, two during the term and one at the end of the term. These will require that you answer specific questions based on my feedback, then assign yourself a grade (on the 0-4.0 scale) on that basis. The two mid-term self-assessments are meant to (a) ensure that you engage in metacognition throughout the term and (b) help you calibrate your grade to my standards. The final self-assessment will determine your overall grade. I reserve the right to override unreasonable grade assignments.

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## 4. Assignments

For all assignments, further details will be provided on Canvas.

**Discussion prep.** You are expected to come to class prepared to discuss the assigned readings. Before each class, you will complete a short, structured assignment that will ask you to *summarize* key points from the reading and *raise a question* for discussion. The assignments will be due *before class*, and discussion questions may be used in class. These assignments will be graded for *completion*. You may miss TWO of these assignments for any reason.

**10-sentence papers.** Most weeks, you will have the opportunity to choose one of the week's readings and complete a 10-sentence paper on it. These will be based on (but expand beyond) the discussion preparation assignments, and you may revise your initial answers based on our in-class discussions. You must complete *all three* of the 10SPs from unit 1; and you must complete *three out of four* 10SPs from unit 2. Thus, you must complete SIX 10SPs total.

**Papers and paper outlines.** You will write TWO short (1200-1500 words; roughly 4-5 pages with normal formatting) papers for this course, in each of which you will summarize and adjudicate one of the disputes we will have studied over the course of the term. For each paper, there will be an in-class paper workshop, for which you will prepare a paper outline (guidelines provided).

## 5. Further grading-related policies

**Disability and accommodation policy.** It is my intention that this course be made accessible to all students. This means, minimally, that I will grant any accommodations required by the Disability Resources Center. However, some of you may need accommodations not formally certified by that office. If any aspect of the class poses a hardship for you, please talk to me, and we can work together to develop a plan for you to fulfill the course requirements.

**Extension policy.** I grant all extension requests, no questions asked. There are no late penalties in this course. You do not have to tell me why assignments are being turned in late, though you may if you wish.

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## 7. Reading Schedule

Date	Topic	Required Readings <i>due on date listed</i>	Assignments <i>due dates variable</i>	Optional Readings
Week 1 March 27	Introduction	<i>No reading</i>	<i>No assignments</i>	<i>No readings</i>
Week 1 March 29	Evolutionary theory: past and present	Lloyd, <i>Adaptation</i> ch. 2	<b>Discussion prep</b>	Bowler, <i>Evolution: The History of an Idea</i> Darwin, <i>On the Origin of Species...</i> , ch. XIV
<b>UNIT 1: ADAPTATIONS AND ADAPTATIONISM</b>				
Week 2 April 03	Adaptations and adaptationism: overview	Lloyd, <i>Adaptation</i> ch. 1 Williams, <i>Adaptation and Natural Selection</i> ch. 1	<b>Discussion prep</b>	Brandon, "Adaptation and Evolutionary Theory"  Gould and Vrba, "Exaptation..."
Week 2 April 05		Godfrey-Smith, "Three Kinds of Adaptationism"	<b>Discussion prep</b> <b>10SP1 (required)</b>	Lewens, "Seven Types of Adaptationism"  Linde-Medina, "A taxonomy of non-fitness"
Week 3 April 10	Methodological adaptationism	Gould and Lewontin, "The Spandrels of San Marco"	<b>Discussion prep</b>	Beatty and Desjardins, "Natural Selection and..."  Forber, "Spandrels and a pervasive problem..."
Week 3 April 12		Mayr, "How to Carry Out the Adaptationist Program"	<b>Discussion prep</b> <b>10SP2 (required)</b>	Lloyd, "Adaptationism and the Logic of Research..."  Nielsen, "Adaptationism—30 years after Gould..."
Week 4 April 17		Lloyd, <i>Adaptation</i> chs. 3-4	<b>Discussion prep</b> <b>Self-assessment #1</b>	Pigliucci and Kaplan, "The fall and rise of Dr Pangloss"  Potochnik, "Optimality modeling in a..."
Week 4 April 19	Empirical and explanatory adaptationism	Zhang, "Empirical Adaptationism Revisited"	<b>Discussion prep</b> <b>10SP3 (required)</b>	Hendry & Gonzalez, "Whither adaptation?"  McLoone, "Natural selection's explanatory..."
Week 5 April 24		Boucher, "Structuralism and functionalism as philosophical stances"	<b>Discussion prep</b>	Boucher, "What is a philosophical stance?"  Brown, "Structuralism and adaptationism..."
Week 5 April 26	Writing workshop	<i>No reading</i>	<b>Paper outline</b> <b>Paper #1</b>	<i>No reading</i>

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<b>UNIT 2: UNITS AND LEVELS OF SELECTION</b>				
Week 6 May 01	The units of evolution I: philosophical background	Okasha, "The levels of selection debate"	<b>Discussion prep</b>	Clarke, "The multiple realizability of biological individuals"  Godfrey-Smith, "The Replicator in Retrospect"
Week 6 May 03		Hull, "Individuality and selection"	<b>Discussion prep</b> <b>10SP4 (optional)</b>	Lewontin, "The Units of Selection"
Week 7 May 08	The units of evolution II: genes	Dawkins, "Immortal Coils"	<b>Discussion prep</b> <b>Self-assessment # 2</b>	Sterelny and Kitcher, "The Return of the Gene"  Lloyd, "Why the Gene Will Not Return"
Week 7 May 09		Sober and Lewontin, "Artifact, Cause, and Genic Selection"	<b>Discussion prep</b> <b>10SP5 (optional)</b>	Okasha, "The Gene's-Eye View and its Discontents"
Week 8 May 15	The units of evolution III: lineages	Jablonski, "Species selection"	<b>Discussion prep</b>	Bouchard, "Causal Processes, Fitness, and the Differential Persistence..."  Okasha, "Does the concept of clade selection make sense?"
Week 8 May 17		Doolittle, "Making the most of clade selection"	<b>Discussion prep</b> <b>10SP6 (optional)</b>	Vrba, "What is species selection?"
Week 9 May 22	The units of evolution IV: holobionts	Roughgarden et al., "Holobionts as units of selection..."	<b>Discussion prep</b>	Booth, "Symbiosis, Selection, and..."  Gould and Lloyd, "Individuality and adaptation across levels of selection..."
Week 9 May 24		Doolittle and Inkpen, "Processes and patterns of interaction as units..."	<b>Discussion prep</b> <b>10SP7 (optional)</b>	Skillings, "Holobionts and the ecology of organisms"
Week 10 May 29	<b>NO CLASS – UNIVERSITY HOLIDAY</b>			
Week 10 May 31	Wrap-up and writing workshop	<i>No reading</i>	<b>Paper outline</b> <b>Paper # 2</b>	<i>No reading</i>
Week 11 EXAMS	<b>SELF-ASSESSMENT # 3 DUE FRIDAY, JUNE 09 (END OF DAY)</b>			

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## 8. Further course policies

**In-class etiquette.** Philosophy is a social endeavor. People engaged in philosophy do not simply think in solitude, but rather engage in discussion with others. That will be true in this class as well: you will be encouraged to discuss the topics we cover with your fellow students. You are even encouraged to disagree with them. It is therefore imperative that you understand how to do so respectfully. We will discuss this early on in the semester and collectively agree on standards for discussion to which we will hold ourselves. Here are some ground rules:

- Think of those with whom you disagree not as opponents but as fellow seekers of the truth. Even if you disagree, you are *collaborating*.
- Acknowledge the person you are responding to, by name if possible.
- Address your comments to the arguments that have been offered. Never attack the intelligence or character of the person who argued for them.
- On some issues, you may have strongly held opinions. That is ok, but it is important to recognize that people who disagree with you are doing so in *good faith*. Before getting angry with or dismissive of another person, try to understand why they think the way they do.

**Group work.** Group work is permitted for all assignments in this course, so long as *the final product you turn in is your own work*. In other words, you may discuss assignments with your peers, you may compare your work and give each other feedback, and so forth. However, you must write up the final assignment yourself; failure to do so is one form of plagiarism.

**Plagiarism.** In this course, you are expected to turn in work reflective of your own effort. I encourage you to discuss assignments with other students, but what you turn in must ultimately be your own work. You must also cite any sources that inform your work. We will talk more about expectations for this in class, and I will work with students to correct minor violations. Major violations (such as purchasing essays online) will be reported to the school's university office.

**Religious accommodation.** Students are entitled to reasonable accommodation for religious holidays. Accommodation requests must be made through the Office of the University Registrar Religious Accommodations [request process](#) within the *first two weeks* of the term.