

PHIL263/363: Philosophy of Biology

Semester 2, 2017

Lecture (263 + 363)	Tuesdays 1pm–3pm	Room 301, Architecture West (Building 421W)
263 tutorials	Thursdays 10am–11am	Room 326, 1–11 Short Street (Building 810)
363 tutorials	Thursdays 9am–10am	Room 326, 1–11 Short Street (Building 810)

Lecturer Dr. Emily Parke
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Tutor Sidney Diamante
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Office hours Tuesdays 4:30pm–5:30pm
Office Room 304, Humanities (Building 206)

Course Description

You are probably already familiar with some philosophical issues involving biology, as they're portrayed in the media: For example, the evolution/creationism debate, or the effects of new genetic research on our understanding of humans (the human mind, human sexuality, or human nature). Philosophers of biology engage with these sorts of issues and many others, including: What exactly is natural selection, and does it act on individual organisms, genes, or groups of organisms? Does natural selection explain everything about the amazing diversity and complexity we see in the living world? If all individual organisms are fundamentally self-interested, how on earth do self-sacrificing behaviours, like sharing food, evolve? What is life, anyway, and where did it come from?

We will address these and a range of other questions about the conceptual and philosophical foundations of the life sciences. We will read and discuss literature by both philosophers of biology and biologists. Many of these issues are contentious—people have argued about them for decades or centuries, and are still arguing—so we will not just be learning what others have said, but engaging with ongoing debates.

Course Objectives

In this course you will:

- Engage with classic and contemporary debates in philosophy of biology
- Apply philosophical reasoning to conceptual debates in biology
- Draw on insights from the biological sciences to think about questions in philosophy
- Hone your critical thinking, reasoning, and writing skills, with a particular focus on writing *concisely* about complex, interdisciplinary topics

Assessment

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| 50% | Weekly Mini Essays
<i>300 words maximum</i>
<i>due in person, on paper, in Tuesday lectures</i> |
| 50% | Final Essays
<i>PHIL263: 2000 words maximum. PHIL363: 2500 words maximum</i>
<i>due electronically on Canvas at 5pm on 01 November</i> |

Weekly Mini Essays

Each week I will post some questions about the assigned reading on Canvas. Your weekly assignment (beginning in week 3) is to write a mini essay (maximum 300 words) answering one of the questions. Hard copies of mini essays are due in lecture every Tuesday. I strongly prefer that you type these on a computer and print them; submit handwritten copies at your own risk (if we can't read your handwriting, we can't give you credit for what you've written). Further details about these assignments will be explained in the first weeks of class.

Mini essays will not be accepted without attendance in class (in other words, they cannot be made up if you are late, sick, or otherwise absent). However, your final mark will be an average of your eight best mini essay marks of the ten assigned. This is to allow for the occasional missed class due to illness, enrolment delay, etc. without your overall mark suffering.

Other Details

Late policy for final essays: Final Essays will be marked down 5 points (out of 100) per 24-hour period they are submitted past the deadline. For example, if you submit your final essay on 2 November at 17:30, it will be marked down 10 points. (Note that 5 points (out of 100) corresponds to roughly 1/3 of a letter grade.) Technical issues with Canvas will not excuse lateness. In the event of last-minute technical issues, email me your essay so I have a record of you submitting it on time. Extensions will be granted only by arrangement with the lecturer in advance of the deadline.

Communication: Emails from students will be answered by the end of the following business day, unless they are asking a question which is already answered on the course FAQ page (Canvas > Pages > FAQ). Neither the lecturer nor the tutor answers emails during evenings, weekends, or holidays. Please keep this in mind and plan accordingly, especially as deadlines approach.

For more information about the course, see Canvas > Syllabus.

Provisional Schedule

All assigned readings will be available electronically on Canvas > Reading Lists.

PART 1: EVOLUTION

26 July **Week 1: No class**

01 August **Week 2: Key Concepts in Evolutionary Biology I**

Assigned reading:

– Carl Zimmer, *The Tangled Bank*, Chapters 1 and 2

Tutorials meet this week and every week for the rest of the semester.

08 August **Week 3: Key Concepts in Evolutionary Biology II**

Assigned readings:

– Ernst Mayr, “Typological Versus Population Thinking”

– Carl Zimmer, *The Tangled Bank*, Chapters 5 and 6

Mini Essay #1 due in lecture

PART 2: PHILOSOPHICAL DEBATES IN EVOLUTIONARY BIOLOGY

15 August **Week 4: Adaptationism**

Assigned readings:

- Stephen Jay Gould and Richard Lewontin, “The Spandrels of San Marco and the Panglossian Paradigm: A Critique of the Adaptationist Programme”
- Peter Godfrey-Smith, “Three Kinds of Adaptationism”

Mini Essay #2 due in lecture

22 August **Week 5: Selfish Genes, Altruism, and Levels of Selection I**

Assigned readings:

- Richard Dawkins, *The Selfish Gene*, Chapters 1–3 (through page 36; the rest is optional)
- Kim Sterelny and Paul Griffiths, *Sex and Death*, Sections 3.2–3.3

Mini Essay #3 due in lecture

29 August **Week 6: Selfish Genes, Altruism, and Levels of Selection II**

Assigned readings:

- Kim Sterelny and Paul Griffiths, *Sex and Death*, Sections 8.2–8.4
- Douglas Hofstadter, “The Prisoner’s Dilemma Computer Tournaments and the Evolution of Cooperation”

Mini Essay #4 due in lecture

----- Mid-Semester Break -----

19 September **Week 7: Evolution as Progress**

Assigned readings:

- Stephen Jay Gould, *Wonderful Life*, Chapter 1
- Kim Sterelny, *Dawkins vs. Gould: Survival of the Fittest*, Chapter 11

Mini Essay #5 due in lecture

PART 3: BEYOND EVOLUTIONARY BIOLOGY

26 September **Week 8: Biodiversity and Conservation**

Assigned readings:

- James Maclaurin and Kim Sterelny, *What is Biodiversity?*, Chapters 1 and 3

Mini Essay #6 due in lecture

03 October **Week 9: The Nature and Origin of Life**

Assigned readings:

- Carol Cleland and Christopher Chyba, “Does ‘Life’ Have a Definition?”
- A. G. Cairns-Smith, *Seven Clues to the Origin of Life*, Chapter 1

Mini Essay #7 due in lecture

PART 4: PHILOSOPHICAL QUESTIONS THROUGH THE LENS OF BIOLOGY

10 October **Week 10: Animal Cognition and Animal Minds**

Assigned readings:

– Kristin Andrews, *The Animal Mind*, Chapters 1 and 2

Mini Essay #8 due in lecture

17 October **Week 11: Race and Human Diversity**

Assigned readings:

– Sally Haslanger, “A Social Constructionist Analysis of Race”

– Quayshawn Spencer, “A Radical Solution to the Race Problem”

Mini Essay #9 due in lecture

24 October **Week 12: Objectivity, Values, and Biases**

Assigned reading:

– Stephen Jay Gould, *The Mismeasure of Man*, Introduction

– Elisabeth Lloyd, “Pre-Theoretical Assumptions in Evolutionary Explanations of Female Sexuality”

Mini Essay #10 due in lecture

01 November *** *Final Essays due at 5pm on Canvas* ***