PHIL 464 Philosophy of Biology Winter Term 2 2023-2024 Syllabus

Class meetings: Thursdays: 2 – 4:45 p.m. in Buchanan B307
Instructor: Chris Stephens **Office:** Buchanan E356
Office Hours: Mondays 11 a.m. to 1 p.m., but I'm available at other times. Email: chris.stephens@ubc.ca

Acknowledgment: UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

Course Description
Although philosophical issues arise in a number of areas of biology, this course focuses primarily on evolutionary theory. We will begin with the debate between creationism and evolutionism both in its historical and contemporary context. The central philosophical questions in this part of the course will be: what makes a theory or hypothesis scientific? How does evidence confirm or disconfirm a scientific theory? How did Darwin and Wallace argue for their theory? Is there a way of demarcating science from pseudo-science?

In the second part of the course, we'll look at a number of conceptual and methodological debates within contemporary evolutionary theory. Biologists have been engaged in sometimes heated debates over questions such as: what is a species? How powerful a force is natural selection? At what level (or levels) – gene, individual or group – does natural selection act? We will read essays by both biologists and philosophers who attempt to shed light on these questions.

In the third part of the course, we'll examine attempts to apply evolutionary theory to psychology and to thinking about human kinds. What the implications of evolutionary theory for understanding human nature and morality?

Note: This is *not* a course in bio-medical ethics, environmental ethics or ethics in science more generally. For those interested in such a course, PHIL 332, PHIL 333 or PHIL 337 would be more appropriate.

Prerequisites: The course is designed to be approachable to both biology and philosophy students. As such, it does not presuppose extensive familiarity with either evolutionary theory or philosophy of science, though of course background in either of these areas will be useful. Students without much prior exposure to evolutionary biology, philosophy of science or probability and statistics will find the course more difficult than those with such background, but I will only assume a willingness to learn the relevant material. If you have any questions or concerns about this, please ask.

Texts –Course readings will be available on line (via Canvas)

Course Requirements
(1) 9 weekly short reaction papers (2% each; 18% total)
(2) Participation in class discussion (12%)
(3) Presentation and Presentation Paper (15%)
(4) Term Paper: A 3,500 - 4,000-word term paper (55%)

Each of these requirements is explained in more detail below.

Short Reaction Papers
Each class meeting – except for week 1, week 12 and the week you are giving your presentation paper – you should submit a short reaction paper (max 500 words). These papers should raise an objection to some claim or argument in one of the readings for that day *that we have not yet discussed in class*. Ultimately, you do not have to disagree with the author's conclusions; however, your paper should exhibit the *critical spirit*. These will be graded on a "pass-fail basis" – you can get an "A" on this portion of your total mark by doing all the weekly reaction papers. Short reaction papers are due by midnight before the relevant class meeting (so Wed night), and should be submitted via Canvas.

Class Discussion
Attendance is expected. You should regularly ask and answer questions in class. You should come prepared having done the readings for any given day, and you are encouraged to ask questions about the other students' presentations. Given the interdisciplinary nature of our topic and readings, you should have questions about all of the readings. Nothing would please me more than to come into class each day and discover that each one of you has several questions to ask.

Presentation and Presentation Paper
Each student in the course is required to give one 10 to 15-minute presentation about some part of one of the readings. The paper and presentation should *not* be purely expository; it should also develop an objection or criticism (though you may argue that the objection can be met by the author you're discussing). You should also raise one or more questions for the class about one of the readings for that week. The

presentation should be accompanied by an approximately 1,200- to 1,500-word paper that is due the day of your presentation (submit the written paper via Canvas). At the same time, you should not simply read your presentation paper – you should "talk through" the paper, using a handout , the board, or slides. I will pass around a sign-up sheet for the presentations on the first day.

Term Paper
Students should submit an approximately 3,500-4,000 word essay that is due on or before **Monday April 22nd** (submitted to Canvas). I will pass around some suggested topics. The paper may be a development of one of your short papers or of your presentation paper. In any event, you should check with me to get final approval for your topic by **Thursday March 21st**. This involves emailing me with a paragraph explaining your paper idea, mentioning at least two articles/books that you'll likely use. Students will present a 10-minute version of their term papers on our last regular class meeting – April 11th.

If you are not familiar with philosophy papers, you might find James Pryor's Guidelines on how to write one helpful:
http://www.jimpryor.net/teaching/guidelines/writing.html

Note: The Centre for Accessibility (https://students.ubc.ca/about-student-services/centre-for-accessibility) provides resources for students who need academic accommodation. Please contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and to facilitate your educational opportunities.

Schedule of Readings and Assignments (All readings are available on the course Canvas site.)

Week/Dates	Topic	Readings
1 Jan 11th	Introduction to Phil Bio History of Evolutionary Theory Darwin & natural selection Common Ancestry	Sober, *Philosophy of Biology*, ch. 1 Paley *Natural Theology* (excerpts ch. 1-3) Darwin's *Origin* (excerpts ch. I-IV) Darwin's *Origin* (excerpts ch. XIV) Henry Gee, Rory Howlett and Philip Campbell "15 Evolutionary Gems"
2 Jan 18th	Creationism & Intelligent Design Falsifiability & Testability	Gould "The Panda's Thumb" Behe *Darwin's Black Box* (excerpts) Sober "What's wrong with Intelligent Design?" Boudry & Leuridan "Where the Design Argument Goes Wrong"
3 Jan 25th	Probability and Fitness	Sober, *Philosophy of Biology*, ch. 3; Mills & Beatty "The Propensity Interpretation of Fitness" Sober, "Trait Fitness is not a Propensity, but Fitness Variation is"
4 Feb 1st	Laws & Contingency in Evolution	Beatty "The Evolutionary Contingency Thesis" Gould excerpts from *Wonderful Life* Losos *Improbable Destinies* excerpt Beatty "Replaying Life's Tape"
5 Feb 8th	Population Thinking Human Nature What are organisms/individuals?	Sober "Evolution, Population Thinking & Essentialism" Hull "On Human Nature" Machery "A Plea for Human Nature" Gilbert, Sapp and Tauber "A Symbiotic View of Life: we have never been individuals"
6 Feb 15th	Units of Selection/Altruism Gene-cultural group selection	Dawkins, *The Selfish Gene* (excerpts) Sober and Wilson *Unto Others*, excerpt. Boyd and Richerson "Culture and the Evolution of Human Cooperation" Nowak "Five Rules for the Evolution of Cooperation"
No class Feb 22nd (Spring Break week)		
7 Feb 29th	Adaptationism	Sober, *Philosophy of Biology*, ch. 5 Gould & Lewontin "The Spandrels of San Marco and the Panglossian Paradigm" Maynard Smith "Optimization Theory in Evolution" Mitchell and Valone "The Optimization Research Program – Studying Adaptations by their functions"
8 March 7th	Species	Baum "Individuality and the existence of species through time" Velasco "Species concepts should not conflict with evolutionary history, but

		often do"
9 March 14th	Human Genetic Diversity & Race	Barbujani & Colonna "Human genome diversity: frequently asked questions" Appiah "Why there are no races" Haslanger "A Social Constructivist Analysis of Race" Spencer "Philosophy of Race Meets Population Genetics. *Studies in History and Philosophy of Biological and Biomedical Sciences* 52: 46-55.
10 March 21st	Human and Natural Kinds **(*Term paper topic approval by March 21st*)**	Hacking "The Looping Effects of Human Kinds" Khalidi "Are Sexes Natural Kinds?" Franklin-Hall "The Animal Sexes as Historical Explanatory Kinds"
11 March 28th	Nature-Nurture Evolutionary Psychology	Sober "Separating Nature and Nurture" Buss "Sex Differences in Human Mate Preferences" Schulz "It takes two: sexual strategies and game theory
12 April 4th	Evolutionary & Morality Evolutionary Debunking Arguments	Ruse and Wilson "Moral Philosophy as Applied Science" Kitcher "Essence and Perfection" Greene "The Secret Joke of Kant's Soul" in Sinnot-Armstrong, ed. *Moral Psychology, volume 3* (2008). Kahane Guy (2011). 'Evolutionary Debunking Arguments'. Nous 45: 103–125
13 April 11th	Presentation of Term Paper Drafts No new readings!	

Final Papers due April 22nd at 11:59 p.m. – submitted to Canvas.

Finally, please note that cheating and plagiarism are serious offenses. Your work should be your own: this means that you should not use **Chat-GPT** or other AI devices to write your essay for you. (see https://academicintegrity.ubc.ca/chatgpt-faq/#:~:text=The%20use%20of%20ChatGPT%20or,use%20in%20teaching%20and%20learning.) Doing so in this course constitutes academic misconduct. If you do use Chat-GPT to aid in your paper, you should explain in your "references" section how you used it. I reserve the right to examine students orally about their essays. If you have any questions about what constitutes academic misconduct, please check with me or the University guidelines. See:
https://academicintegrity.ubc.ca/regulation-process/academic-misconduct/

Statement of UBC values and policies:
UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated, nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here: https://senate.ubc.ca/policies-resources-support-student-success/.