

PHL 507 – Foundations of Ecology

Course Information

- Instructor: Soazig Le Bihan
- Contact: (406) 243 6233, soazig.lebihan@umontana.edu, Mailbox in LA 101. I try to always respond to email messages within one business day (24-32h). Students are expected to check their university email daily.
- Office hours: Fridays 1:30-6pm in LA 153 – I recommend that you sign up for an appointment as my office hours are often full a week in advance. *Please feel free to contact me if you need to arrange an appointment outside of office hours.*
- Class meets: Tuesdays and Thursdays 2:00 – 3:20PM, LA 146
- Course website on Moodle

Course Description

In this seminar we will look at some of the key papers in philosophy of ecology (and perhaps, more broadly, environmental philosophy and general philosophy of science). Some of the topics covered will be: whether nature can be thought to be in balance, the complexity-stability debate, the role and nature of models in ecology, the existence and robustness of ecological communities and ecosystems, what “biodiversity”, “invasive species”, or other central notions in ecology mean and why we should care about them, as well as how science and values interact.

Learning goals:

- to learn about the major views of contemporary philosophers of ecology concerning the questions above;
- to develop critical thinking skills (including analyzing philosophical texts, evaluate philosophical arguments, exploring the relationships between different views);
- to articulate, convey, and argue for, your own views concerning the foundations of ecology.

To attain these goals, we will carefully read and discuss original texts by some of the most important philosophers of ecology of the 20th and the 21st centuries.

Milestones

- 10/17 Essay due in class
- 11/16,21 Presentations 1
- 11/28,30 Presentations 2
- 12/5,7 Presentations 2-3
- 12/12,19 (3:20-5:20) Presentations 3
- 12/20 Final Paper due at 12PM via email

Textbook

deLaplante, Kevin and Kent A. Peacock (2011) *Philosophy of Ecology*, Handbook of the philosophy of science, vol.11, Elsevier

Other readings will be peer-reviewed journal articles that will be posted on Moodle.

Course Requirements

The final grade will be based on:

- Attendance: 10%
- Participation: 10%
- Essay 20%
- 2 Presentations: 10 % each -- total 20%
- 1 Research Paper: 40 %, including 3 presentations (5% each, total 15%), and the paper (25%)

Attendance

Attendance is required, and necessary to succeed in the course. There will be a lot of material covered, and the material covered will be difficult. You are allowed to miss 2 classes without penalty. Following that, you will lose 2% each time you miss a class up to a maximum of 10% (that is, one letter grade). You are expected to arrive on time and stay for the duration of the class. *Three late arrivals count as one absence.* If you have to leave early, please tell me at the beginning of class and sit close to the exit to minimize the disturbance to the class. You are also expected to give your full attention to the class. Cell phones or other means of communication should be silenced for the duration of class. You will be asked to leave if you are doing anything not relevant for class, e.g. reading the newspaper, sleeping, doing work for other classes, etc. *Three offenses of this type will count as one absence.* That said, absences may be excused in cases of illness or other extreme circumstances. Relevant documentation is required in such cases. Note that you also will be expected to work through the material covered during the classes you may have missed.

Participation

Active participation is essential for learning philosophy. Our primary purpose in this class is to explore conceptual space by means of rational argumentation. I want to hear from you.

Trying to answer my questions or asking questions qualify as participation. You will not be penalized for answering incorrectly. I want to emphasize that your questions are welcome and that you should aim to leave the classroom with a good understanding of the material covered.

A range: The student is fully engaged and highly motivated. This student is well prepared, having read the assigned texts, and has thought carefully about the texts' relation to issues raised in class. This student's ideas and questions are substantive (either constructive or critical); they stimulate class discussions. This student listens and responds to the contributions of other students.

B range: The student participates consistently in discussion. This student comes to section well prepared and contributes quite regularly by sharing thoughts and questions that show insight and a familiarity with the material. This student refers to the materials discussed in class and shows interest in other students' contributions.

C range: The student meets the basic requirements of section participation. This student is usually prepared and participates once in a while but not regularly. This student's contributions relate to the texts and the lectures and offer a few insightful ideas, but do not facilitate a discussion.

Presentations

You will be required to present on two articles in class. For your presentation you will have to have an excellent command of the article you are presenting on, as you will be leading discussion. The presentations should have two parts:

1. A summary of the main problems the author(s) deal(s) with and their proposed solutions (taking not more than 1/2 hour),
2. a set of problems formulated by your group for discussion.

To be clear, a problem is a reason for thinking the author's argument is defective in some way, i.e. defective premises or weak inductive argument structure. In addition, some of your questions might relate the article being discussed to previous work we have discussed.

I recommend that one of your presentations be on an article related to your research paper.

I will meet with people giving presentations on Tuesday on the Friday before class; and for those presenting on Thursday, I will meet on Monday. You are expected to have a handout completed at that time. The point of the meeting is to sort out any misunderstandings that might arise, or help you focus your presentations in a useful way.

A range: The student presents an accurate reconstruction of the problem that the author is dealing with, an accurate and charitable reconstruction of the arguments pertaining to that problem, and a careful criticism of the author's arguments via your discussion questions. The student takes an active role leading discussion of the paper by responding to student's comments. In particular, s/he will have anticipated responses to your discussion questions, especially how s/he think the author(s) might respond, and use those to draw out more elaborate comments about peers' responses or to generate further discussion.

B range: The student presents a reasonable reconstruction of the problem that the author is dealing with, a charitable reconstruction of the arguments pertaining to that problem, and some criticism of the author's arguments via your discussion questions. S/he leads discussion of the paper and respond to student's comments.

C range: The student states the topic of the paper without articulating the problem that the author intends to address. S/he provides a summary of the paper (mere chronology without isolating the main arguments). S/he provides discussion questions that are related to the text, but are not primarily geared to addressing possible weaknesses in the author's argument. S/he asks questions, but does not develop discussion.

Essay and Research Paper

A great resource: Prof. Chris Eliot's bibliography for philosophy of ecology:
http://people.hofstra.edu/christopher_h_eliot/poebib.html

Essay: You will be required to write a brief essay 800-1000 words, excluding references. The essay is due on **October 17th** in class. I will assign an essay topic. The topic will be on material we have already covered in class. I will expect you to provide an analysis much like we do in class. That is to say, you will be expected to critically evaluate arguments, address the strengths and weaknesses of a particular position, etc.

Research Paper: Original thinking is necessary for a research paper. That said, original thinking does not amount to asserting your personal opinions without taking into account any appropriate literature on your topic. For a research paper, you will define your own topic and the challenge will be to *find a topic which is not too broad and to treat it incisively*. In order to help you do this, I will require that you take on at least one primary source (from a reputable collection of papers or philosophy journals) that has not been covered in class as a starting point. Reference works, encyclopedia articles, etc. do not meet this requirement. I will be glad to assist in the selection and formulation of the topic. For most of research papers, one article is not enough: you are expected to at least partially survey the relevant literature on the topic of your choice – I can help you with this. We will be work-shopping the papers during the final weeks of class. No two papers can be on exactly the same topic. If conflicts arise, the first person to turn in the topic will have priority, else there will be a coin flip.

You will be required to present your project 3 times.

Your first presentation should contain your thesis statement, a short outline of your argument, and a significant bibliography. In your second presentation, you are expected to present the progress you have made on your project. Your last presentation should be like a conference presentation, in which you present the whole paper very concisely. The last presentations will take place during Finals Week on Tuesday, December 19, between 3:20 and 5:20.

The final version of your paper is due on December 20th, at 12PM, sent via email to Soazig.lebihan@umontana.edu.

The presentations as well as the final version of your paper count for your final grade (15% and 25% respectively). I will give you comments on your presentations. The final version of your paper will be partially graded on the basis of *how well you responded to my comments* on your presentations.

Note that your first presentation counts for 5% of your grade, that is, half a letter grade. You are expected to give a serious presentation, which means that you should start working on your research paper as early as possible in the semester. A research paper is a project for the entire semester. Do not expect to be able to get it done the week before it is due. If you need help at any stage of your research, do not hesitate to contact me.

All papers must be typewritten, double-spaced, paginated, with footnotes at the bottom of the pages; no outline or bullet points. They must contain a reference list.

A range: This paper is outstanding in form and content. The material covered in class is understood in depth: the student shows that s/he has a command on, including a critical understanding of, the material. The thesis is clear and insightful; it is original, or it expands in a new way on ideas presented in the course. The argument is unified and coherent. The evidence presented in support of the argument is carefully chosen and deftly handled. The analysis is complex and nuanced. The sources are original texts or quality scholars' literature. The student utilizes appropriate grammar/spelling/punctuation as well as a clear, precise, and concise style.

B range: The argument, while coherent, does not have the complexity, the insight, or the integrated structure of an A range paper. The material covered in class is well understood: the student does not make any mistake on the materials but does not show great depth in critical understanding. The paper's thesis is clear and the argument is coherent. The paper presents evidence in support of its points. The sources are original texts or quality scholars' literature. The student utilizes appropriate grammar/spelling/punctuation as well as a clear, precise, and concise style.

C range: This paper has some but not all of the basic components of an argumentative essay (i.e., thesis, evidence, coherent structure). For example: the paper features a clear misunderstanding of some of the material covered in class, or the thesis is not clear or incoherent, or the argument is not coherently

structured, or evidence in support of the thesis is lacking, or only non-scholarly sources are used. The student still utilizes appropriate grammar/spelling/punctuation as well as an appropriate argumentative writing style.

Course policies

Responsibilities

My role as an instructor is to provide you an opportunity to learn and master the material. I will do my best to explain things clearly and let you know what is expected of you. I want you to succeed in this course and I am available to help you!

Your role as a student is to be proactive and to advocate for yourself. Philosophy is hard and it is only if you engage the material that you will get something out of it. If you do not understand something or are confused, please let me know. It is your responsibility to voice your questions and concerns. We will work together to help you master the material. Be sure to advocate for yourself. In my experience, students who put in effort, attend class regularly, turn in assignments, and ask questions when they are confused can succeed in my classes.

“Show up, Pay attention, Ask for help” (Anonymous on www.ratemyprofessor.com)

Late Assignments

Late Assignment Rule: Without prior arrangements, the grade of any late assignment will be lowered by one letter grade a day.

Drop Policy

I adhere to the UM policy on dropping courses. Between the first and 45th instructional day, it is entirely your decision whether to drop the course or not. If you want to drop course between the 46th instructional day and the last instructional day prior to finals week, and you want me to recommend the drop, you will have to provide reasons that you should be allowed to drop the course. Acceptable reasons demonstrate that some (post 45th instructional day) circumstance out of your control interferes with your ability to complete the course. Simply not having done the work required of you, or belief that you do not think that you can get the grade you want, or that you need such and such grade to maintain your financial aid, are not sufficient reasons for me to recommend dropping the course after the 45th instructional day, though they might be prior to the 45th day.

Academic Misconduct

You are strictly held to the University of Montana Student Conduct Code
<http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf>.

Unless collaborative work is specifically called for, work on assignments and exams is expected to be your own. If you plagiarize, your assignment will receive a zero. You may fail the class altogether depending on the circumstances. Also, I will report the case to the Dean. I will be glad to answer questions you may have about how to document sources properly. Anytime you take a phrase or sentence from someone, you have to quote it. Anytime you take an idea from someone, you have to cite your sources.

All exams are closed-notes and closed-books: you may not consult anything but your own mind in order to answer questions on the exam. You may not use cell-phones, or any electronic devices to aid you, nor fellow students, nor fellow students' answers on exams, etc. You will receive a zero if you cheat on an exam. Your conduct will also be reported to the Dean.

Important Note

*If you encounter difficulties concerning an assignment, it is almost always possible to make arrangements before the assignment is due. No accommodation is possible once the deadline has passed as it would not be fair to the other students. **Never hesitate to come and talk to me, but do it before it is too late.***

University Resources

Writing Center

Students from all levels can take advantage of the writing center (LA 144: drop in or by appointment): “The Writing Center exists to help all UM students improve their writing skills as they pursue their academic and professional goals. We provide free writing instruction through one-on-one tutoring, in-class workshops, and the Writing Assistant program.” (quoted from the writing center website). The tutors will not write your assignment for you, but they will teach you how to write better. For more information, go the website: http://www.umt.edu/writingcenter/welcom_about.htm

Students with Disabilities

If you are a student with a disability and wish to discuss reasonable accommodations for this course, it is your responsibility to contact me and discuss the specific modifications you wish to request. Please be advised I may request that you provide a letter from Disability Services for Students verifying your right to reasonable modifications. If you have not yet contacted Disability Services, located in Lommasson Center 154, please do so in order to verify your disability and to coordinate your reasonable modifications. For more information, visit the Disability Services website at www.umt.edu/dss/.

Tentative Schedule

We will try to average two to three papers a week (about 30 pages for each class). As such there will be some uncertainty regarding the date of your presentation. Prepare accordingly. Readings marked with an asterisk are in deLaplante, Kevin and Kent A. Peacock (2011) *Philosophy of Ecology*, Handbook of the philosophy of science, vol.11, Elsevier.

- 8/31: Syllabus, Introduction: Philosophy of Science and Ecology
 - Stotz, K. and Griffiths, P.E. 2008. Biohumanities: Rethinking the Relationship Between Bioscience, Philosophy and History of Science, and Society. *Quarterly Review of Biology*, 83(1): 37-45. (9p)
- 9/5,7: Ecology under Fire.
 - Van der Walk* (25p)
 - Shrader-Frechette, K.S., and E. D. McCoy. 1993. Method in ecology: strategies for conservation. Cambridge University Press. Chapter 2-3.
- 9/12,14: Existence and Robustness of Ecological Communities and Ecosystems
 - Sterelny, K. 2006 Local ecological communities. *Philosophy of Science*, 73: 215-31. (16p)
 - Collier and Cumming* (18p)
 - Eliot* (50p)
- 9/19,20: Invasive vs Natives – **Essay Prompt**
 - Larson* (19p)
 - Shrader-Frechette, Kristin S. 2001. Non-Indigenous Species and Ecological Explanation. *Biology & Philosophy* 16(4):507-519. (12p)
 - Hattin, J. 2010. Conceptual Clarity, Scientific Rigour and ‘The Stories We Are’: Engaging with Two Challenges to the Objectivity of Invasion Biology, in *Fifty Years of Invasion Ecology: The Legacy of Charles Elton* (ed D. M. Richardson), Wiley-Blackwell. (19p)
- 9/26, 28; 10/3,5: Balance of Nature, Diversity-Stability Thesis
 - Cooper, G. 2001. Must There Be a Balance of Nature? *Biology & Philosophy* 16(4):481–506. (16p)
 - Justus* (23p)
 - deLaplante and Picasso* (32p)
 - Odenbaugh, J. 2001. Ecological Stability, Model Building, and Environmental Policy: A Reply to Some of the Pessimism. *Philosophy of Science* 68(Proceedings):S493-S505. (12p)
- 10/10,12, 17,19: Ecological Models
 - **ESSAY DUE on 10/17**
 - Levins, R. 1966. The strategy of model building in population biology. *American scientist*: 421-431. (10p)
 - Orzack, S. H., and E. Sober. 1993. A critical assessment of Levins's the strategy of model building in population biology (1966). *Quarterly Review of Biology*: 533-546. (13p)
 - Odenbaugh, J. 2006. The strategy of “The strategy of model building in population biology”. *Biology and Philosophy* 21.5: 607-621. (13p)
 - Weisberg, Michael. 2006. Forty years of ‘The strategy’: Levins on model building and idealization. *Biology and Philosophy* 21.5: 623-645. (22p)
 - Parker, W. S. 2011. When Climate Models Agree: The Significance of Robust Model Predictions*. *Philosophy of Science* 78.4: 579-600. (22p)
- 10/24,26,31,11/2: Science and Values:
 - Douglas, H., 2016. Values in Science. In *Humphreys, Oxford Handbook of Philosophy of Science*. OUP.(23p)
 - Elliott, K.C. and McKaughan, D.J., 2014. Nonepistemic values and the multiple goals of science. *Philosophy of Science*, 81(1): 1-21. (21p)
 - Intemann, Kristen (2015). Distinguishing between legitimate and illegitimate values in climate modeling. *European Journal for Philosophy of Science*, 5 (2): 217-232. (15p)
 - Steel D. 2017. Qualified Epistemic Priority. *Current Controversies in Values and Science*. Routledge: 49-63. (14p)
- 11/7,9,14: Ecology Applied
 - Colyvan and Steele* (15p)
 - Callicott* (27p)
 - Sarkar* (36p)
 - Desjardins E., 2015. Historicity and ecological restoration. *Biology & Philosophy*, 30(1):77-98.
 - Norton* (37p)
- 11/16,21: PRESENTATIONS 1
- 11/28,30: PRESENTATIONS 2
- 12/5,7: PRESENTATIONS 2-3
- 12/12,19: PRESENTATIONS 3
- Week 16 (12/13): FINAL PRESENTATIONS ON 12/19 3:20PM – FINAL PAPER DUE 12/20 at 12PM via email.