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200-07 Philosophical Perspectives: Philosophy of Science

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Required Texts:

Aristotle *Physics*, trans. Robin Waterfield (Oxford: Oxford University Press, 2008). ISBN: 978-0-19-954028-0

Descartes, Rene *Discourse on Method and Meditations on First Philosophy*, fourth edition, trans. Donald Cress (Indianapolis: Hackett Publishers, 1998). ISBN: 0-87220-420-0

Humboldt, Alexander von Humboldt *Views of Nature*, ed. Stephen T. Jackson and Laura Dassow Walls (Chicago: University of Chicago Press, 2014). ISBN: 978-0-226-42247-3

Real, Leslie A. and James H. Brown (eds.) *Foundations of Ecology: Classic Papers With Commentaries* (Chicago: University of Chicago Press, 1991). ISBN: 0-226-70594-3

Additional readings will be posted of the canvas site for this course and can be accessed through this link: [http:// https://canvas.xavier.edu](http://https://canvas.xavier.edu). Your student ID and password are required to access canvas.

Course Goals and Student Learning Outcomes:

This course is part of the Xavier Core Curriculum, which aims to develop people of learning and reflection, integrity and achievement, in solidarity for and with others. It addresses the following core learning objective at the intermediate level:

Course Specific Goals	Student Learning Objectives	Assessment
1) Critically interpret and reflect on the conception of nature in ancient and modern philosophy.	Objective 1a: Students recognize and cogently discuss significant questions in the humanities, arts, and natural and social sciences.	- Discussion Posts - Papers
2) Analyze central ways of knowing and explanatory principles in the history of science.	Objective 1b: Students apply the approaches of multiple disciplines to a significant issue.	- Discussion Posts - Papers - Final Project
3) Apply a plurality of approaches in environmental value theory to case studies.	Objective 5b: Students examine the interconnections between humans and the natural environment.	- Discussion Posts

Teaching Methodology:

This course primarily utilizes facilitated classroom discussion, lectures, and Canvas discussion posts in its pedagogical approach. Regular readings and writing assignments will be involved in class preparation.

Course Requirements:

COVID-19:

- This course will follow the policies and procedures developed by the university.
- Please refer to the University [Testing, Treatment, and Tracing guidelines](#) on procedures to take if you have reason to believe that you have been exposed to COVID-19.
- Students and faculty should not consume food in class, unless a documented accommodation exists. The consuming of sealed beverages in class is permitted.

Attendance:

- You are expected to have *punctual* attendance to every class meeting.
- Xavier University is committed to the health, safety, and care of all individuals within our community. As part of our Ignatian values and in the spirit of *cura personalis*, Xavier University wishes to disincentivize class attendance when students may be sick. For the duration of the pandemic, students who are ill will be excused from classes. We recommend the following procedures: Students must adhere to University health and wellness procedures for self-evaluation, follow-up, and quarantine as necessary. Students who are in quarantine due to close contact with a person who has tested positive for COVID-19, but who are not themselves symptomatic, are expected to attend class remotely and complete course assignments. Untruthful student claims about illness may be regarded as a violation of the Student Handbook.
- If you miss a class, it is your responsibility to get the notes/information that you missed from another student. You are also welcome during office hours to discuss the material.

Participation:

- This is hybrid style course is primarily comprised of lecture and classroom/zoom discussions.
- University Disability Policy: Students with documented disabilities are encouraged to speak to course faculty at the beginning of the semester. In compliance with Section 504 of the Rehabilitation Act of 1973, Xavier University affords academic adjustments and auxiliary aids for students with physical or mental impairments that substantially limit or restrict one or more of such major life activities as walking, seeing, hearing, or learning. Students with disabilities should contact the Student Disability Services Center: <http://www.xavier.edu/lac/student-disability-services.cfm>.

Quizzes:

- During the course of the semester there will be several quizzes on the reading assignments that will be conducted on canvas. These are primarily designed to help your attentiveness to the reading assignments and for you to demonstrate that you have done the reading. The quiz questions will only cover the reading for the particular day of the assignment. The lowest quiz score will be dropped.

Papers:

- There are two 3-4 page papers assigned for this semester. Specific guidelines for the papers will be available at least one week in advance of the paper due date that will specify the criteria of evaluation.
- Writing Center – The James A. Glenn Writing Center is located in Room 400 of the Conaton Learning Commons and relevant information can be found on the center website: www.xavier.edu/writing_center. Students are strongly encouraged to take advantage of this valuable resource.

Discussion Posts:

- Over the course of the semester, there will be several required discussion posts on Canvas that will be an extension of classroom group discussions. Specific questions and guidelines will be available in advance.

Final Projects:

- This course culminates in final project that is inclusive of course content introduced throughout the semester. Specific guidelines will be available in advance.

Class Presentation (Final Project):

- Part of your overall grade for this course will be determined by the class presentation of your final project during the end of the semester. Specific guidelines will be available in advance.

Submission and Plagiarism Guidelines:

- Failure to turn in the assignment by class time of the due date will result in a lowering of the grade for that paper. For every day that the assignment is late, the grade will automatically be lowered one letter grade. If the paper is more than one week late, you will automatically fail that assignment. Arrangements for exceptions to this policy must be made in person or by email before the day the assignment is due.
- Plagiarism: In accordance to university policy, papers that display evidence of plagiarism will be failed and can result in failure of the course. All such cases will be dealt with according to this policy and in coordination with the Dean's Office. Whenever you quote or paraphrase from a book, the internet, a lecture, or other source, you must cite that source and use quotes if appropriate. Please review the student handbook at <http://www.xavier.edu/student-integrity/documents/studenthandbook.pdf>. As stated in the handbook, "Penalties for violations of this [plagiarism] policy may include, but are not limited to, one or more of the following: a zero for that assignment or test, an "F" in the course, and expulsion from Xavier."

Methodology/Grading Percentages:

Quizzes:	10%
Discussion Posts:	10%
Papers:	40%
Final Project:	30%
Presentation:	10%

Letter grades are determined according to a ten-point scale:

A	95-100
A-	90-94
B+	88-89
B	83-87
B-	80-82
C+	78-79
C	73-77
C-	70-72
D	60-69
F	59 and below

- The information on this syllabus is subject to change. If a change is made, students will be clearly notified

Course Calendar:

Date:	Introduction: What is Science?	Due:
8/17	Course Introduction	
8/19	Newton-Smith – “Introduction” pp. 1-8	
8/21	Popper – “Science, Pseudo-Science, and Falsifiability” pp. 92-99 <i>Recorded Lecture</i>	Discussion Post
8/24	Kuhn – “The Structure of Scientific Revolutions” pp. 1-22	
Ancient Natural Philosophy		
8/26	Vlastos – “The Greeks Discover the Cosmos” pp. 3-22	Quiz #1
8/28	Aristotle – <i>Physics</i> (Book One) <i>Recorded Lecture</i>	Discussion Post
8/31	Aristotle – <i>Physics</i> (Book One)	
9/2	Aristotle – <i>Physics</i> (Book Two)	Quiz #2
9/4	Aristotle – <i>Physics</i> (Book Two) <i>Recorded Lecture</i>	Discussion Post
9/7	Aristotle – <i>Physics</i> (Book Two)	
9/9	Paper Discussion	Paper #1
Early Modern Philosophy		
9/11	Film: Cartesius	Discussion Post
9/14	Descartes – <i>Discourse on Method</i> (Part One and Two) pp. 1-13	
9/16	Descartes – <i>Meditations on First Philosophy</i> (Meditation One) pp. 59-63	Quiz #3
9/18	Descartes – <i>Meditations on First Philosophy</i> (Meditation Two) pp. 63-69 <i>Recorded Lecture</i>	Discussion Post
9/21	Descartes – <i>Meditations on First Philosophy</i> (Meditation Two) pp. 63-69*	
9/23	Descartes – <i>Discourse on Method</i> (Part Three) pp. 13-18	Quiz #4

9/25	Descartes – <i>Discourse on Method</i> (Part Four) pp. 18-22 <i>Recorded Lecture</i>	Discussion Post
9/28	Descartes – <i>Discourse on Method</i> (Part Five) pp. 23-33	
9/30	Newton – <i>Principia</i> pp. 1-12	Quiz #5
10/2	Newton – <i>Principia</i> pp. 13-28 <i>Recorded Lecture</i>	Discussion Post
10/5	Paper Discussion	Paper #2
19th Century Naturalism		
10/7	Humboldt – <i>Views of Nature</i> pp. 155-168	Quiz #6
10/9	Wulf – “The Invention of Nature: Alexander von Humboldt’s New World” (video)	Discussion Post
10/12	Humboldt – <i>Views of Nature</i> pp. 155-241	
10/14	Humboldt – “Essay on the Geography of Plants” pp. 64-75	Quiz #7
10/16	Thoreau – “Walking” pp. 205-248 <i>Recorded Lecture</i>	Discussion Post
10/19	Thoreau – “Walking” pp. 205-248*	
20th Century Ecology		
10/21	NO CLASS – Academic Holiday	
10/23	McIntosh – “Antecedents of Ecology” pp. 1-27 <i>Recorded Lecture</i>	Discussion Post
10/26	Warming – <i>Oecology of Plants</i> pp. 1-15, 82-95	
10/28	Warming – <i>Oecology of Plants</i> pp. 16-36	Quiz #8
10/30	Cowles – “Ecological Relations of the Vegetation on the Sand Dunes of Lake Michigan” pp. 28-58 <i>Recorded Lecture</i>	Discussion Post
11/2	Clements – “The Nature and Structure of the Climax” pp. 59-97	

11/4	Gleason – “The Individualistic Concept of the Plant Association” pp. 98-117	Quiz #9
11/6	Tansley – “The Use and Abuse of Vegetational Concepts and Terms” pp. 318-341 <i>Recorded Lecture</i>	Discussion Post
11/9	Volterra – “Fluctuations in the Abundance of a Species Considered Mathematically” pp. 283-285	
11/11	Lindeman – “The Trophic Dynamic Aspect of Ecology” pp. 157-176	Quiz #10
11/13	Odum – “The Strategy of Ecosystem Development” pp. 596-604 <i>Recorded Lecture</i>	Discussion Post
11/16	Student Presentations	
11/18	Student Presentations	
11/20	Student Presentations	
11/23	Student Presentations	Final Project
11/25	NO CLASS – Thanksgiving Holiday	
11/27	NO CLASS – Thanksgiving Holiday	
	<i>There is no final exam in this course.</i>	