



Philosophy of Science

Fall semester, 2020/2021

Coordinator	Nadiya Maksymenko
Credits	3 ECTS (optional course), 18 in-class hours
Lecturers	Nadiya Maksymenko , (Karazin Institute of Environmental Sciences, V.N. Karazin Kharkiv National University, Ukraine) Mykola Nazaruk , Ivan Franko Lviv National University (LNU), Ukraine Jakiv Tararoev , V. N. Karazin Kharkiv National University (KGNU), Ukraine
Level	PhD students
Host institution	Karazin Institute of Environmental Sciences, V.N. Karazin Kharkiv National University, Ukraine)
Course duration	October - January

Summary

This 3 ECTS course serves as Skills course of the project INTENSE. It provides PhD students coming from natural science backgrounds with a basic understanding of philosophy of sciences. In addition, it introduces PhD students the concept of science, various ways of defining science, science and pseudo-science, philosophy and science, methodological topics like what is a concept, fact, model, hypothesis, law, theory, explanation, observation, experiment, objectivity. The course helps to develop analysis and argumentation skills.

Target student audiences

PhD students in environmental sciences, study program – Constructive Geography and Sustainable Use of Natural Resources; Earth Sciences (Code No. 103)

Prerequisites

Required courses (or equivalents):

- Philosophy.

Aims and objectives

The aim of the course is to introduce the main concepts and arguments of philosophy of science. The course addresses the following topics from the philosophy of science perspective: the concept of science, various ways of defining science, science and pseudo-science, philosophy and science, methodological topics like what is a concept, fact, model, hypothesis, law, theory, explanation, observation, experiment, objectivity. The course helps to develop analysis and argumentation skills.



General learning outcomes

By the end of the course, successful students will:

- understand the general questions of the philosophy of science;
- fluent in the terminology of the philosophy of science;
- to think critically about the applicability of science as a philosophical category of cognition;
- to think critically about the applicability of science as a philosophical category of culture.
- understand the methodology of the philosophy of science;- be able to identify key philosophical problems of natural sciences;
- be able to identify key philosophical problems of technical sciences;
- be able to identify key philosophical problems of humanities;
- be able to identify key philosophical problems of social sciences;

Overview of sessions and teaching methods

Sessions will combine interactive lecturing, moderated role-play games, and assisted work on individual exercises. The part of the course is built around group case-study assignments: a multi-part project, and an on-line web application addressing a particular issue of philosophy of different science.

Section 1. Philosophy of Science

Theme 1. Science: specificity, functions and levels

Theme 2. Positivism and its varieties. Positivism of the "first" and "second wave".

Theme 3. Positivism and its varieties. Neo-positivism as the "third wave" positivism.

Theme 4. Post-positivist concepts of science.

Section 2. Philosophy of Nature management

Theme 5. The philosophical essence of nature management

Theme 6. Philosophy of human needs and nature management

Theme 7. World outlook and philosophical understanding of the environment and nature management

Theme 8. Ethnicity and the environment

Theme 9. Ethical and aesthetic aspects of human interaction with the environment

Topics of practical works and seminars:

- Workshop 1 Science: specificity, functions and levels. Positivism and its varieties. Positivism of the first and second waves
- Workshop 2 Neo-positivism as the "third wave" positivism. Post-positivist concepts of science.
- Workshop 3 The philosophical essence of nature management
- Workshop 4 Environmental Ethics and Aesthetics



Course workload

The table below summarizes course workload distribution:

Activities	Learning outcomes	Assessment	Estimated workload (hours)
In-class activities			
Lectures	Understanding theories, concepts, methodology and tools	Class participation	8
Moderated in-class discussions	Understanding of the contexts philosophy of science and problems in philosophy of environmental science	Class participation and preparedness for discussions	10
Independent work			
Reading and discussion of assigned papers for seminars and preparation for lectures	Familiarity with and ability to critically and creatively discuss key concepts as presented in the literature	Class participation, creative and active contribution to discussion	20
Course group assignment	Ability to conceptualize and frame of the problems philosophy of science , find related literature and data, interpret data, use the concepts, tools and methods covered in the course.	Quality of developed methods and their presentation	30
Group work: - Contribution to the group case-study projects - Contribution to the preparation and delivery of individual presentation	Ability to conceptualize and frame of the problems philosophy of different science, find related literature and data, interpret data, use the concepts, tools and methods of different science	Quality of group assignments and individual presentations	22
Total			90

Grading

The following table defines the criteria for evaluating the student's work in studying the materials of the course. As a result the student is able to get a maximum score of 100 points. The minimum number of points required to score is 50 points.

In the course of studying the discipline you receive points for performing various tasks in accordance with the course of the discipline. During the semester, your points will be summed.



If you receive a low rating (below the minimum score) or did not complete the task within certain time limits, you should contact the teacher as soon as possible to find out the next steps.

№№	Educational activity	Max	Min
1.	Practical work 1	6	3
2.	Practical work 2	6	3
3.	Control work 1	18	9
4.	Practical work 3	6	3
5.	Practical work 4	6	3
6.	Control work 2	18	9
7.	Final control	40	20
	Total	100	50

At the end of the course the student will have an pass. Grading system is presented below:

Scores	Mark
50-100	Passed
1-49	Not passed

Course schedule

Dates and time will be provided later.

The overall schedule is provided below:

Day	Time	Topic	Lecturer
Day 1	1 hours	Lecture 1	J. Tararoev
Day 2	1 hours	Lecture 2	J. Tararoev
Day 3	2 hours	Practical work 1	J. Tararoev
Day 4	1 hours	Lecture 3	J. Tararoev
Day 5	1 hours	Lecture 4	J. Tararoev
Day 6	2 hours	Practical work 2	J. Tararoev
Day 7	1 hours	Control work 1	J. Tararoev
Day 8	1 hours	Lecture 5	J. Tararoev
Day 9	1 hours	Lecture 6	N. Maksymenko
Day 10	2 hours	Practical work 3– part 1	N. Maksymenko
Day 11	2 hours	Practical work 3 – part2	N. Maksymenko
Day 12	1 hours	Lecture 7, 8	N. Maksymenko
Day 13	1 hours	Lecture 9	N. Maksymenko
Day 14	2 hours	Practical work 4	N. Maksymenko
Day 15	1 hours	Final test	N. Maksymenko J. Tararoev



Structure of the Course

Names of module	Number of hours			
	full-time training			
	of all	including		
lectures		practical	independent work.	
1	2	3	4	7
Section 1. Philosophy of Science				
Theme 1. Science: specificity, functions and levels	10	1	1	8
Theme 2. Positivism and its varieties. Positivism of the "first" and "second wave".	10	1	1	8
Theme 3. Positivism and its varieties. Neo-positivism as the "third wave" positivism.	10	1	1	8
Theme 4. Post-positivist concepts of science.	10	1	1	8
Section 2. Philosophy of Nature management				
Theme 5. The philosophical essence of nature management	10	1	1	8
Theme 6. Philosophy of human needs and nature management	10	1	1	8
Theme 7. World outlook and philosophical understanding of the environment and nature management	10	1	1	8
Theme 8. Ethnicity and the environment	10	1	1	8
Theme 9. Ethical and aesthetic aspects of human interaction with the environment	10		2	8
All time	90	8	10	72

Literature

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Electronic resources

- Авенариус Рихард Человеческое понятие о мире. Электронный ресурс. Режим доступа:: <https://dlib.rsl.ru/viewer/01003755075#?page=7>
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