Philosophy of Science

**Fall semester, 2020/2021**

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| --- | --- |
| Cooordinator | **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 (KKNU), 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 analysation 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 analysation 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 |
|  | Practical work 1 | 6 | 3 |
|  | Practical work 2 | 6 | 3 |
|  | Сontrol work 1 | 18 | 9 |
|  | Practical work 3 | 6 | 3 |
|  | Practical work 4 | 6 | 3 |
|  | Сontrol work 2 | 18 | 9 |
|  | 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 | Сontrol 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 |

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