



UNIwersYTET  
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W POZNANIU

## Theory of Science

### Educational subject description sheet

#### Basic information

<b>Study programme</b> Liberal Arts and Sciences (English programme)		<b>Didactic cycle</b> 2023/24	
<b>Speciality</b> -		<b>Subject code</b> 18LENS.12P.02956.23	
<b>Organizational unit</b> Faculty of History		<b>Lecture languages</b> English	
<b>Study level</b> First-cycle programme		<b>Course type</b> Obligatory	
<b>Study form</b> Full-time		<b>Block</b> Basic subjects	
<b>Education profile</b> General academic			
<b>Subject coordinator</b>	Rafał Wierzchośławski		
<b>Lecturer</b>	Rafał Wierzchośławski		
<b>Period</b> Semester 2	<b>Activities and hours</b> • Lecture: 30, Exam	<b>Number of ECTS points</b> 4	

## Goals

Code	Goal
C1	to present basic information on the phenomenon of science (scientific language, exploratory cognition and its products, including practical and technological applications of "pure" science, scientific knowledge as a base for education; scientific and research institutions)
C2	to indicate elements which are common to all sciences (forms of knowledge, scientific language)
C3	to point to the distinctive characteristics of different types of sciences, as well as sciences of science (meta-science)
C4	to present the concept of scientific method (unity of science and methodological pluralism)
C5	to describe stages of scientific research (from posing a knowledge-generating question, through observation, to the construction of theory and its verification)
C6	to describe structure [nature of science] and dynamics of scientific theory (the problem of revolutionary changes - cumulative and anti-cumulative views, the social dimension of science - a community of scientists and paradigms)

## Entry requirements

There are no prerequisites.

## Subject learning outcomes

Code	Outcomes in terms of	Learning outcomes	Examination methods
<b>Knowledge - Student:</b>			
W1	knows basic aspects of scientific language, subject, aim and scientific method	LEN_K1_W01, LEN_K1_W02, LEN_K1_W04, LEN_K1_W06, LEN_K1_W08, LEN_K1_W09, LEN_K1_W10	Written exam, Oral exam
W2	knows the different stages of scientific inquiry and types of scientific methods	LEN_K1_W01, LEN_K1_W02, LEN_K1_W04, LEN_K1_W06, LEN_K1_W08, LEN_K1_W09, LEN_K1_W10	Written exam, Oral exam
W3	knows nature of science as well as structure and dynamics of scientific theories	LEN_K1_W01, LEN_K1_W02, LEN_K1_W04, LEN_K1_W06, LEN_K1_W08, LEN_K1_W09, LEN_K1_W10	Written exam, Oral exam
W4	knows ongoing debates about relevant methodological problems	LEN_K1_W01, LEN_K1_W02, LEN_K1_W04, LEN_K1_W06, LEN_K1_W08, LEN_K1_W09, LEN_K1_W10	Written exam, Oral exam

## Study content

No.	Course content	Subject learning outcomes	Activities
1.	Scientific language, aim, subject and methods of science.	W1	Lecture
2.	Different scientific methods in the context of stages of scientific inquiry and methodological pluralism.	W1, W2	Lecture
3.	Nature of science and the diversity of sciences and their applications.	W2	Lecture
4.	Structure and dynamics of scientific theories.	W2, W3	Lecture
5.	Methodological debates as an example of diversity of theoretical and practical solutions in science.	W1, W4	Lecture

## Additional information

Activities	Teaching and learning methods and activities
Lecture	Conversation lecture, Discussion, Work with text, Case study

Activities	Credit conditions
Lecture	<p>The form of course credit (oral or written) is to be selected according to students' preferences .</p> <p>Grade scale:</p> <p>very good (bdb; 5.0): achievement by the student of at least 90% of the expected learning outcomes</p> <p>good plus (+db; 4.5): achievement by the student of at least 80% of the expected learning outcomes</p> <p>good (db; 4.0): achievement by the student of at least 70% of the expected learning outcomes</p> <p>Sufficient plus (+dst; 3.5): Achievement of expected learning outcomes by the student at a minimum of 60%.</p> <p>Sufficient (dst; 3.0): Achievement of at least 50% of the expected learning outcomes.</p> <p>unsatisfactory (ndst; 2.0): the student does not achieve the expected learning outcomes.</p>

## Literature

### Obligatory

1. Baggini J., Fosl P.S., *The Philosopher's Toolkit: A Compendium of Philosophical Concepts and Methods*, Second Edition, Blackwell Publishing, 2010.
2. Rosenberg A., McIntyre L., *Philosophy of Science: A Contemporary Introduction*, Fourth Edition, Routledge, 2020.

### Optional

1. Cartwright N., *A Philosopher Looks at Science*, Cambridge University Press, 2022.
2. Cartwright N., Hardie J., Montuschi E., Soleiman M., Thresher A.C., *The Tangle of Science Reliability Beyond Method, Rigour, and Objectivity*, Oxford University Press, 2022.
3. Mantzavinos C., *Explanatory Pluralism*, Cambridge University Press, Cambridge 2018.
4. Nowak L., *The Structure of Idealisation, Towards A Systematic Interpretation Of The Marxian Idea Of Science*, D. Reidel Publishing Company, 1980.
5. Udehn L., *Methodological individualism: Background, history and meaning*, Routledge, London 2001.
6. *Value-Free Science ? Ideals and Illusions*, ed. H. Kincaid., J. Dupre, A. Wylie, Oxford University Press, Oxford 2007.

## Calculation of ECTS points

<b>Activities</b>	<b>Activity hours*</b>
Lecture	30
Preparation for classes	30
Reading the indicated literature	30
Preparation for the exam	30
<b>Student workload</b>	<b>Hours</b> 120
<b>Number of ECTS points</b>	<b>ECTS</b> 4

\* academic hour = 45 minutes

## Efekty uczenia się dla kierunku

Kod	Treść
LEN_K1_W01	The graduate knows and understands philosophical approaches defining the role, and goals of science and its place in European civilization over the centuries
LEN_K1_W02	The graduate knows and understands selected aspects of the history of the Artes Liberales tradition and its interrelationships with contemporary scientific and didactic concepts
LEN_K1_W04	The graduate knows and understands the key terminology of the main disciplines in the humanities, social sciences, sciences and natural sciences
LEN_K1_W06	The graduate knows and understands principles and methods of research within the humanities and sciences
LEN_K1_W08	The graduate knows and understands the processes of development of the sciences and selected issues of contemporary research
LEN_K1_W09	The graduate knows and understands the processes of development of social sciences and selected issues of contemporary research
LEN_K1_W10	The graduate knows and understands the processes of development of experimental sciences and selected issues of contemporary research