

# 5FI316 FILOSOFICKÉ PROBLÉMY KVANTIFIKACE A MĚŘENÍ

Course code	5FI316
Course title in language of instruction	Filosofické problémy kvantifikace a měření
Course title in Czech	Filosofické problémy kvantifikace a měření
Course title in English	Philosophical Problems of Quantification and Measurement
Mode of completion and number of credits	Credit (2 credits), Exam ECTS (3 credits) One ECTS credit corresponds to 26 hours of workload for an average student.
Type of course	Daily attendance: 2/0 (hours of lectures per week / hours of seminars per week)
Language of instruction	Czech
Level of course and year of study	bachelor: 3; master: 1; master continuing: 1
Semester	Sklad NF – NF
Name of lecturer	doc. PhDr. Ján Pavlík (examiner, supervisor)
Prerequisites	none

## Aims of the course

The subject is directed to the analysis of philosophical and/or methodological assumptions of and prerequisites for the mathematization of reality, and to its limits and consequences.

Its aim is to provide an insight into philosophical conceptions underlying quantifiability and mathematization of both natural and social reality in the frame of modern sciences. Highly suitable course for University of Economics students of exact disciplines.

## Learning outcomes and competences

Upon successful completion of this course, students will be able to understand philosophico-ontological presuppositions of the quantification, measurement a mathematicization of reality in modern sciences, to orient themselves in corresponding philosophical literature and to become aware of the limits of quantitative approaches.

## Course contents

1. Principal types of philosophical treatments of reality mathematization and quantification (essentialistic ontology, relational ontology, transcendentalism, irrationalism, nominalism);
2. basic conceptual instruments of reality mathematization interpretation presented in the problem context of Zenon's APORIAI, set theory and "crazy" (Bohr) theorems of quantum physics and relativity theory;
3. four development stages of motion mathematization [modern science ontological and epistemological foundations; ontological status of law construed through instruments of mathematics; mathematization limits as exposed by kantianism and neokantianism (Hayek), etc.];
4. phenomenological analysis of quantity category as given in its pre-scientific (common sense) and scientific mode of use (interpretation inspired mainly by philosophy of E.Husserl and J. Patočka);
5. interpretation of the methodology of measurement and quantification of information as well as of subjective economic attitudes and actions [money as a mode of pre-scientific (common sense) practical quantification of economic reality; Weber-Fechner's Law; Jevons' marginal utility mathematization and its critique exposed by M.Rothbard; expected utility and subjective attitudes quantification under risk and uncertainty condition problems (Allais criticismus of Neumann and Morgenstern), etc.]

## Teaching methods and student workload

Type of teaching method	Hours of workload
	daily attendance
Participation in lectures	26
Preparation of term paper	26
Preparation for final oral exam	26
<b>Total</b>	<b>78</b>

## Assessment methods

Requirement type	Weight
	daily attendance
Term paper	55 %
Final oral exam	45 %
<b>Total</b>	<b>100 %</b>
<b>Special requirements and details:</b> none	

## Recommended reading

Type*	Author	Title	Published in	Publisher	Year	ISBN
R	PAVLÍK, J.	F. A. Hayek a teorie spontánního řádu	Praha	Professional Publishing	2004	80-86419-57-6
R	BERKA, K.	Měření	Praha		1977	990000306X
R	PAVLÍK, J.	Filosofické základy metodologie ekonomických věd III	Praha	VŠE (Oeconomica)	2004	8024507986
A	BAŠTA, A.	Kvantifikace a měření ve společenských vědách			1986	
A	VOPĚNKA, P.	Druhé rozpravy s geometrií	Praha		1991	8090009379
A	HAYEK, F. A. V.	Kontrarevoluce vědy : eseje o zneužívání rozumu	Praha	Liberální institut	1995	80-85787-87-3

\* R – required reading, A – additional reading