## John Paul II Catholic University of Lublin Faculty of Philosophy

## academic year 2012/2013

philosophy (course in English)

field of study

first-cycle studies

full-time studies

Subject catalogue Set Theory							
Туре:	lecture with classes						
Hours:*	winter semester	15+0	summer semester	15+15			
*If a subject consists of e. g. lecture and classes, the proper hours to any classes should be given.							
ECTS:	winter semester	4	summer semester	5			
Language of tuition:	English						
Method of assessment:*	winter semester	С	summer semester	E+C			
*If a subject consists of lecture and classes, the proper method of assessment to any classes should be given.							
1.	Knowledge of main concepts, theorems, problems and achievements in set theory						
2.	Knowledge of problems in foundations of mathematics and their philosophical significance						
3.	Ability to use set-theoretical concepts						
	PREREQUI	SITE (KNOWLEDGE, SKI	LLS, COMPETENCE, OTHERS)				
1.	secondary school mathematical knowledge						
2.	knowledge of formal logic equivalent to the first-cycle course						
3.	knowledge of history of ancient and medieaval philosophy equivalent to the first-cycle course						
LEARNING OUTCOMES				Correlation with programme learning outcomes			
Knowledge							
1.	Student know the characteristic features of the main approaches in the foundations of mathematics and problems of set theory			K_W03			
2.	Student knows the main definitions and theorems in ZF set theory			K_W03			

Skills							
1.	Student is at	K_U04					
2.	Student is able discu	K_U05					
3.	Student is able to recon	struct set-theoretical antinor	nies and discuss their resolutions	K_U05			
		Social Compe	tence				
1.	Student is a	ware of the cultural significa	nce of basic research	K_K05			
	TE	ACHING CONTENT (SUBJ	ECT DESCRIPTION)				
Unification and reduction of classical mathematics to arithmetics of natural numbers. Elements of philosophy of mathematics. Classical set theory. Set- theoretical antinomies and their resolutions. ZF set theory and outline of NBG theory. Reduction of arithmetics to set theory. Infinite sets. Iterative conception of set and non-standard set theories (mereology, theory of non-well-founded sets, paraconsistent set theory)							
TEACHING METHODS*							
Lecture: traditional lecture with problem solving and discussion. Classes: analysis of texts, collaborative problem solving, and discussion.							
*If a subject consists of lecture and	classes, the proper teaching metho	ods to any classes should be given.					
	METHO	DS OF LEARNING ACHIEV	/EMENTS ASSESSMENT*				
		Lecture					
1.	Exam which covers all knowledge and abilities developed during lecture and classes - with no extra lectures (90 % of assessment)						
2.	Student's activity during discussion (10 % of assessment)						
	-	Classes					
1.	6 tests on previously discussed topics, which will be anounced at least one week in advance (50 % of assessment)						
2.	knowledge of current topics (30 % of assessment)						
3.	presence and activity during classes (20 % assessment)						
GRADING SCALE*							
LEARNING OUTCOMES	2 unsatisfactory (fail)	3 satisfactory	4 good	5 very good			
Knowledge	Student does not know the main approaches in the foundations of mathematics, the main versions of set theory or the main theorems in ZF set theory.	Student knows the main approaches in the foundations of mathematics, the main versions of set theory, and the main theorems in ZF set theory.	Student' knowledge covers the whole content of the lecture but may be deficient with respect to insignificant details.	Student's knowledge is sound and organised, and covers the whole content of the lecture. He or she is able to use this knowledge in problem solving.			

Competence	Student is not able to solve, even with the tutor's help, simple problems in set theory, discuss the principles of reduction of mathematics to set theory, set-theoretical antinomies or their resolutions.	Student is able to solve, with the tutor's help, simple problems in set theory, discuss the principles of reduction of mathematics to set theory, set-theoretical antinomies or their resolutions.	While being unaided, student is able to solve simple problems in set theory, discuss the principles of reduction of mathematics to set theory, set-theoretical antinomies or their resolutions.	While being unaided, student is able to solve simple problems in set theory, discuss the principles of reduction of mathematics to set theory, set-theoretical antinomies or their resolutions, and also compare different approaches in foundations of mathematics and in set theory		
Social Competence	Student does not engage him- or herself in the educational process.	Student engags him- or herself in the educational process.	Student engages him- or herself in the educational process.	Student' engagement in the educational process is exemplary.		
Sometimes the plus symbol or decimal is used to modify the numerical grades.						
STUDENT WORKLOAD						
Activity			Average time students typically need to complete proper learning activity*			
office hours			45			
homework including individual problem solving			150			
self-study before exam			30			
TOTAL HOURS:			225			
* Workload indicates the time students typically need to complete all learning activities required to achieve the expected learning outcomes. In most cases, student workload ranges from 1,500 to 1,800 hours for an academic year, whereby one credit corresponds to 25 to 30 hours of work.						
TOTAL ECTS:			9			
REQUIRED READING LIST						
1.		H. B. Enderson, <i>Elements of Set Theory</i> , 1977, Academic Press.				
			ADING LIST			
1.	H. B. Enderson, <i>Elements of Set Theory</i> , 1977, Academic Press.					
2.	W. V. O. Ouine, Set Theory and its Logic 1963, Harvard University Press.					
3. 4	R B Stoll Set Theory and Logic San Francisco 1963 W H Freeman Press					

Lublin, 1.10.2012 r.

dr hab. Paweł Garbacz

place, date

signature