DOCTORAL SCHOOL OF WROCŁAW UNIVERSITY OF SCIENCE AND TECHNOLOGY

SUPERVISOR DECLARING/CONDUCTING COURSE: dr hab. Szymon Żeberski, prof. uczelni

DEPARTMENT: FACULTY OF PURE AND APPLIED MATHEMATICS

SCIENTIFIC DISCIPLINE: MATHEMATICS

COURSE CARD

Course name in Polish: Teoria mnogości
Course name in English: Set Theory
Course language: polish
The course is intended for all PhD students: ~~YES~~ / NO
~~1) BASIC COURSE~~
2) SPECIALIST COURSE
~~3) SEMINAR~~
~~4) HUMANISTIC COURSE~~
~~5) LANGUAGE~~
~~6) RESEARCH SKILLS~~

Subject code: MAQ100256W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	30			
Grading	Exam			

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge in Logic, especially Propositional Calculus and elements of Model Theory
2. Basic knowledge in Set Theory

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COURSE OBJECTIVES

C1 learning axioms of ZFC theory
C2 learning tools and set-theoretical methods, in particular: transfinite induction, constructible universe, Martin Axiom

PROGRAM CONTENTS

Form of classes - lecture (Lec)		Number of hours
Lec1	Axioms of ZFC	2

Lec2	Ordinal numbers	4
Lec3	Transfinite induction	2
Lec4	Cardinal numbers, cofinality	2
Lec5	Consequences of Axiom of Choice	2
Lec6	Cardinal arithmetic	2
Lec7	Consequences of Axiom of Regularity	2
Lec8	Polish spaces, topological and measure structure	4
Lec9	Constructible universe	6
Lec10	Martin Axiom	4
	Total hours	30

TEACHING TOOLS USED
N1. Traditional lecture N2. Solving tasks and problems N3. Self-work with dedicated literature

ACHIEVED SUBJECT LEARNING OUTCOMES		
Type of learning outcome	Code of learning outcome	Assessment of learning outcome
Knowledge	P8S_WG	Knows axioms of Set Theory
Knowledge	P8S_WG	Knows theorems (tools) used in Set Theory and applications
Skills	P8S_UW	Is able to use set-theoretical tools
Skills	P8S_UW	Is able to create and conduct independent research, including outside the educational institution
Social competence	P8S_KO	Is aware of the role of cooperation, including international cooperation, in the process of research and analysis of the results obtained
Social competence	P8S_KO	Understands the importance and significance of conducting research and teaching activities

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1]   T.Jech, Set Theory, Springer, 2003
[2]   W. Just, M. Weese, Discovering Modern Set Theory II, AMS, 1995

SECONDARY LITERATURE:

[1]   A. Błaszczyk, S. Turek, Teoria Mnogości, PWN, 2007
[2]   J. Cichoń, A. Kharazishvili, B. Węglorz, Subsets of the Real Line, WUŁ, 1995

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)
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