AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Philosophy and Symbolic Logic of Mathematics								
Course Code	MTE526		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Needed to conduct a research in mathematics education to ensure the creation of philosophical and theoretical foundations								
Course Content	Ontology and epistemology of mathematics, numbers, sets, functions, etc. meanings of mathematical concepts and propositions, and mathematical expressions. The foundations of mathematics, methods, and philosophical problems about the nature of mathematics. Objectivity in mathematics and real-world applicability. Frege, Russell, Hilbert, Brouwer and Gödel´s philosophy of mathematics, such as the work of the pioneers. Principles and theories of the philosophy of mathematics: Mantıkçılık (Logisicm), Formalism (Formalism), Structuralism (structuralism), and Intuitionism (Intuitionism)								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading	
1	Stephan F. Barker; Matematik Felsefesi, İmge Kitapevi, 2003

Week	Weekly Detailed Course Contents	
1	Theoretical	What is Mathematics?
2	Theoretical	The nature of mathematics
3	Theoretical	Ontology of mathematics
4	Theoretical	Epistemology of mathematics
5	Theoretical	Meanings of mathematical expressions
6	Theoretical	Basic Theories in Philosophy of Mathematics
7	Theoretical	The historical development of mathematics as a discipline and its educational implications
8	Intermediate Exam	Midterm Exam
9	Theoretical	Philosophy and logic
10	Theoretical	Propositions and its basic features
11	Theoretical	Conjunctions and accuracy tables
12	Theoretical	Quantifiers, mathematical proof and methods of proof
13	Theoretical	Set Theory, binary operations
14	Theoretical	Set operations
15	Theoretical	Multiplication sets
16	Final Exam	Final Exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	5	3	112
Midterm Examination	1	38	2	40
Final Examination	1	46	2	48
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Explain the importance of philosophical, mathematical logic
2	Refers to the meaning of mathematical expressions
3	Explain the relationship between philosophy and the philosophy of mathematics education
4	Explain the basic theories of the philosophy of mathematics
5	Explain the symbolic logic and applications on symbolic logic
6	Express concept of set and solve related operations

Programme Outcomes *(Mathematics Education Master)*	
1	Learns sufficient theoretical knowledge in the field of mathematics education
2	Uses theoretical knowledge in educational settings
3	Integrates mathematics education knowledge with the other disciplines and products functional knowledge
4	Uses information and communication technologies efficiently in conceptual learning
5	Finds scientific solutions to the problems in the field of mathematics education
6	Evaluates the knowledge critically in the field
7	Participates team projects in the mathematics education field
8	Shares national and international data in the field of mathematics education
9	Comprehends and evaluates science-technology-society and mathematics interactions
10	Comprehends mathematics under the ethical values and takes account of ethical considerations
11	Follows the current development in the mathematics education field
12	Develops strategical plans and evaluates them in the context of quality processes
13	Adopts lifelong learning strategies to his/her studies

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5	L6
P1	3	3	3	3	3	3
P2	2	2	2	2	2	2
P3	1	1	1	1	1	1
P5	2	2	2	2	2	2
P6	1	1	1	1	1	1
P8	2	2	2	2	2	2
P9	1	1	1	1	1	1
P10	3	3	3	3	2	2
P13	5	5	5	5	5	5