AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title		Computational Thinking and Coding						
Course Code		MTE530		Couse Level		Second Cycle (Master's Degree)		
ECTS Credit	8	Workload	200 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of the course is to gain the computational thinking and coding skills.						
Course Content		Computational thinking, problem solving, STEM, block-based programming.						
Work Placement		N/A						
Planned Learning Activities and Teaching Methods		Explanation (Presentation), Demonstration, Discussion, Project Based Study, 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	Eğitim Teknolojileri Okumaları 2018
2	Eğitim Teknolojileri Okumaları 2017
3	Polya, G.(1985). How to Solve It. New Jersey: Princeton University Press.
4	Gülbahar, Y. (2018). Bilgi İşlemsel Düşünmeden Programlamaya. Pegem Akademi Yayıncılık.

Week	Weekly Detailed Course Contents	
1	Theoretical	21st century skills and Computational Thinking
2	Theoretical	Basic concepts and progress stages of computational thinking
3	Theoretical	Computational Thinking scenarios and STEM
4	Theoretical	Designing a computational thinking scenario
5	Theoretical	Algoritm and introduction to programming
6	Theoretical	Block based programming editor
7	Theoretical	Array and code blocks
8	Intermediate Exam	Midterm Exam
9	Theoretical	Decision control statements in block based programming
10	Theoretical	Decision control statements in block based programming
11	Theoretical	Loops in block based programming
12	Theoretical	Loops in block based programming
13	Theoretical	Desingning activity
14	Theoretical	Design activity
15	Theoretical	Design activity
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	4	2	84
Lecture - Practice	14	1	2	42
Assignment	2	10	1	22
Term Project	1	6	4	10
Individual Work	2	5	2	14
Midterm Examination	1	12	2	14

Final Examination	1	12	2	14
			Total Workload (Hours)	200
			[Total Workload (Hours) / 25*] = **ECTS**	8

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Explains computational thinking.
2	Explains problem solving
3	Explains the relation between STEM and computational thinking.
4	Solves problem using with block based programming language.
5	Prepare activities using block-based programming.

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
P2	3	3	5	5	5
P3	4	4	5	5	5
P4	4	4	5	5	5
P9	5	4	5	4	4
P11	4	4	5	5	5