



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Interdisciplinary Project Based Mathematics Education							
Course Code		MTE528		Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The aim of the course is to introduce the students of the graduate program of mathematics education to the science, technology, mathematics and engineering (STEM) education approach and to provide an understanding of the pedagogical foundations of Stem education. It is a project-based interdisciplinary project-based Stem event that focuses on the use of stem education in a project-based approach.							
Course Content		To give information about STEM education, Problem based learning approach, Project based education approach, 21st century skills, Interdisciplinary project-based mathematics activities, STEM education in the mathematics program and the planning of STEM education research.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Project Based Study, Individual Study					
Name of Lecturer(s)		Prof. Ersen YAZICI							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	30
Final Examination	1	70

Recommended or Required Reading

1	Çorlu, S. & Çallı, E. (2017). Stem Kuram ve Uygulamaları. Pusula Yayıncılık.
---	--

Week	Weekly Detailed Course Contents	
1	Theoretical	What is Stem education? Stem education in the context of the effects of social change on education.
2	Theoretical	Stem education in the context of 21st century skills
3	Theoretical	Learning theories that form the basis of stem education
4	Theoretical	Teaching methods and techniques used in stem education: Problem based learning
5	Theoretical	Teaching methods and techniques used in stem education: Project based learning
6	Theoretical	Stem education based mathematics education research in national and international literature
7	Theoretical	Scientific reports and projects prepared at national and international level for stem education
8	Intermediate Exam	Mid-term Exam
9	Theoretical	Interdisciplinary project-based math scenarios
10	Theoretical	Engineering Design Cycle
11	Theoretical	Design of interdisciplinary project-based mathematics activity
12	Theoretical	Design of interdisciplinary project-based mathematics activity
13	Theoretical	Interdisciplinary project examples and implementation
14	Theoretical	Evaluation of interdisciplinary projects
15	Theoretical	Scientific research design for interdisciplinary project-based mathematics education
16	Final Exam	Final

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	5	3	112
Assignment	4	2	0	8
Term Project	1	10	0	10
Individual Work	10	2	2	40
Midterm Examination	1	10	2	12



Final Examination	1	15	3	18
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To comprehend the pedagogical basis of interdisciplinary project-based Stem education approach
2	To comprehend the teaching methods and techniques used in stem education
3	To develop interdisciplinary project-based math scenarios
4	To be able to develop Stem based activities for the development of 21st century skills in learners
5	Planning a mathematics education research based on stem education

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
P1	4	4	4	4	4
P2	4	5	5	5	5
P3	5	5	5	5	5
P4	4	3	4	3	5
P5	4	4	4	4	5
P6	4	4	4	4	4
P7	4	4	4	4	4
P8	4	4	4	4	4
P9	5	5	5	5	5
P10	4	4	4	4	4
P11	5	5	5	5	5
P12	4	4	4	4	4
P13	3	3	3	3	3

