



**AYDIN ADNAN MENDERES UNIVERSITY**  
**GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES**  
**MATHEMATICS AND SCIENCE EDUCATION**  
**SCIENCE EDUCATION**  
**SCIENCE EDUCATION MASTER**  
**COURSE INFORMATION FORM**

Course Title	Argumantation in Science Education								
Course Code	İFB525			Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	201 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Providing students a general viewpoint to learning and teaching models, introducing to students the position of argumentation in science education and varieties of it								
Course Content	What is the argumentation?, What is the important argumentation in science classroom?, Scientific Reasoning and Argumentation								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Case Study, Project Based Study, Individual Study, Problem Solving								
Name of Lecturer(s)	Prof. Hilal AKTAMIŞ								

#### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

#### Recommended or Required Reading

1	The Uses of Argument, S.E. Toulmin, Cambridge University Press, 2003, New York.
2	From Critical Thinking to Argument: A Portable Guide, s. Barnet, H. Bedau. White,-Falmer Press, 1995, London.
3	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA

Week	Weekly Detailed Course Contents	
1	Theoretical	What is the argumentation?
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
2	Theoretical	What is the important argumentation in science classroom?
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
3	Theoretical	Scientific Reasoning and Argumentation
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
4	Theoretical	Scientific Reasoning and Argumentation
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
5	Theoretical	Models of argumantation
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
6	Theoretical	Models of argumentation
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
7	Theoretical	Applied argumentation in science education
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
8	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
	Intermediate Exam	MIDTERM EXAM
9	Theoretical	Applied argumentation in science education
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
10	Theoretical	Applied argumentation in science education and scientific argumentation



10	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
11	Theoretical	The assessment of written argumentation in classroom
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
12	Theoretical	The assessment of oral argumentation in classroom
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
13	Theoretical	Sample activities about argumentation skills
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
14	Theoretical	Sample activities about argumentation skills
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
15	Theoretical	Sample activities about argumentation skills
	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
16	Preparation Work	Perspective on Scientific Argumentation: Theory, Practice and Research, M. S. Khine, Springer, 2012, USA
	Final Exam	TERM

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	3	3	84
Project	2	20	3	46
Reading	10	4	0	40
Midterm Examination	1	10	3	13
Final Examination	1	15	3	18
Total Workload (Hours)				201
[Total Workload (Hours) / 25*] = ECTS				8

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	To be able to understand the meaning of argumentation.
2	To be able to use argumentation in science education.
3	To be able to understand the importance of argumentation in science education.
4	To be able to present examples of argumentation techniques.
5	To be able to evaluate argumentation skills.

### Programme Outcomes (Science Education Master)

1	To be able to have an expert theoretical knowledge within the field of science education.
2	To be able to transfer expert knowledge gained in science education into various instructional environment.
3	To be able to integrate science education knowledge with the other disciplines and product functional knowledge
4	To be able to use information and communication technologies efficiently in conceptual learning
5	To be able to find scientific solutions to the problems in the field of science education
6	To be able to evaluate the knowledge critically in the field
7	To be able to participate in team projects in the science education field
8	To be able to adopt lifelong learning strategies to his/her studies
9	To be able to use at least one foreign language efficiently in oral and verbal communication
10	To be able to share national and international data in the field of science education
11	To be able to comprehend and evaluate science-technology-society and environment interactions
12	To be able to comprehends science under the ethical values and take account of ethical considerations
13	To be able to use scientific information in the other domains that is gained in the masters field and have the transfer skills
14	To be able to follow the current development in the science education field
15	To be able to develop strategical plans and evaluate them in the context of quality processes

**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	5		5	4	4
P2		5		4	5
P3		2	3	3	2
P6	2		3		
P8	2	2			
P13			3	2	2
P14	4	4	4	4	
P15		4			2

