



**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	Test Development And Assessment In Science Education								
Course Code	İFB503			Course Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Course objectives understand and implement test development, assessment and measurement in science education								
Course Content	Measurement in science education, Alternative measurement methods and measurement instruments, Matter analysis, Development of test, Statistical process about test.								
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. Adem ÖZDEMİR								

#### Assessment Methods and Criteria

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

#### Recommended or Required Reading

1	Eğitimde Ölçme ve Değerlendirme - Doç. Dr. Halil TEKİN
2	Test Hazırlama Kılavuzu - Durmuş Ali Özçelik
3	Measurement and Assessment in Education – C. R. Reynolds, R. B. Livingston, V. Willson

Week	Weekly Detailed Course Contents	
1	Theoretical	Measurement in science education
2	Theoretical	Important of concepts of measurement and assessment in science education
3	Theoretical	Measurement of cognitive learning, measurement of perceptual learning, measurement of kinetical learning
4	Theoretical	Process measurement concept
5	Theoretical	Type of measurement instrument, written examination, observation and interview form
6	Theoretical	Set up sample measurement instrument, determine of validity and reliability
7	Theoretical	Alternative measurement methods and measurement instruments
8	Intermediate Exam	Midterm
9	Theoretical	New measurement and assessment studies in science education
10	Theoretical	Qualities in measurement instrument. Measurement instruments- paper investigation
11	Theoretical	Test and classification of tests
12	Theoretical	Multiple-choice tests
13	Theoretical	Test plan. Aim write, question written of aim appropriate
14	Theoretical	Item analysis. Development of test. Statistical process about test
15	Theoretical	Item analysis. Development of test. Statistical process about test
16	Final Exam	Term

#### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	7	10	0	70
Reading	5	0	5	25
Midterm Examination	1	10	2	12



Final Examination	1	20	3	23
	Total Workload (Hours)			200
	[Total Workload (Hours) / 25*] = ECTS			8
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	To be able to write appropriate items for scale.
2	To be able to do the analysis of validity and reliability for scale items.
3	To be able to do item analysis.
4	To be able to prepare measurement tools for specific purposes.
5	To understand the computer assisted statistical methods

### 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	5	5	
P3	3	3	3	3	5
P5	2	2	2	2	5
P6	2			2	
P8	5	5	5	5	5
P12		2	2		5
P13	3			3	
P14	4	4	4	4	5
P15		2	2		

