



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	Scientific Research Techniques In Science Education								
Course Code	İFB501	Course Level			Second Cycle (Master's Degree)				
ECTS Credit	6	Workload	150 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Understanding the basic concepts related to scientific research techniques and development of scientific process skills								
Course Content	Basic concepts about scientific research techniques, universe, sample, reliability, validity, oualitative research, quantitative research								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Project Based Study, Individual Study								
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	Karasar, N. (2003). Bilimsel araştırma Yöntemi. Nobel Yayın Dağıtım. Ankara.
2	Karasar, N. (2001). Araştırmalarda Rapor Hazırlama. Nobel Yayın Dağıtım. Ankara.
3	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.

Week	Weekly Detailed Course Contents	
1	Theoretical	Basic concepts related to scientific research techniques
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
2	Theoretical	Research problems in theses
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
3	Theoretical	Writing Quotation and reference
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
4	Theoretical	Introduction to qualitative quantitative research techniques
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
5	Theoretical	Variation ways in research
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
6	Theoretical	Sample: Choosing sample in quantitative and qualitative research techniques
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
7	Theoretical	Quantitative research techniques: (Survey, experiment)
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
8	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
	Intermediate Exam	Midterm
9	Theoretical	Survey: Scale item types and writing items: analysis of scale items
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
10	Theoretical	Experiment: the analysis of quantitative data: introduction to SPSS applied statistics
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
11	Theoretical	Qualitative research techniques: Interview method and the preparation of the interview protocol
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
12	Theoretical	Observation: Attendant observation; structured observation
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.
13	Theoretical	The analysis of qualitative data
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegema Yayıncılık. Ankara.



14	Theoretical	Educational research studies and research and publication ethics
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegem Yayınları. Ankara.
15	Theoretical	Educational research studies: Thesis and article study
	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegem Yayınları. Ankara.
16	Preparation Work	Büyüköztürk, Ş. (2004). Sosyal Bilimler İçin Veri Analizi El Kitabı. Pegem Yayınları. Ankara.
	Final Exam	Term

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	5	4	0	20
Reading	5	0	5	25
Midterm Examination	1	10	2	12
Final Examination	1	20	3	23
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to Explain the basic concepts related to scientific research.
2	To be able to define the research problem and hypothesis.
3	To be able to Explain the research methods and data collection tools.
4	To be able to analyse data.
5	To be able to explain reliability and validity concepts.
6	To be able to prepare a research report.

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	L6
P1	5	5	5	5	5	5
P2						5
P3		3	4	3	3	5
P5	3	4	5	4	4	5
P6	2	4	4	5	5	5
P8	5	5	5			5
P10					2	4
P11						3
P12				2	3	4



P13		3	4	3	3	
P14	3	4	4	4	4	3
P15		3	2	3	3	5

