



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	Designing And Developing Science Experiments								
Course Code	İFB505		Course Level		Second Cycle (Master's Degree)				
ECTS Credit	8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	Development of designing science experiments and experiment development skills								
Course Content	Planning experiments and conducting exemplary experiments in science and developing scientific process skills								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Discussion, Individual Study								
Name of Lecturer(s)	Prof. Nilgün YENİCE								

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Bahar, M. ve ark. (2008). Fen ve Teknoloji Laboratuar Uygulamaları
2	Özmen, H. ve Yiğit, N. (2005). Teoriden Uygulamaya Fen Bilgisi Öğretiminde Laboratuar Kullanımı
3	Şimşek, N. ve Çınar, Y.(2007). Fen ve Teknoloji Laboratuvarı ve Uygulamaları
4	Akgün, Ş., (2000). Çevre İmkanları ile Basit Ders Araçları Yapımı

Week	Weekly Detailed Course Contents	
1	Theoretical	References for the lesson
2	Theoretical	The importance of experiment in science education
3	Theoretical	Scientific process skills
4	Theoretical	Experiment method and its relation to teaching programs
5	Theoretical	Preparing experiment study sheet
6	Theoretical	Determining goals and objectives for the experiment
7	Theoretical	Determination instruments for the experiment
8	Intermediate Exam	Midterm
9	Theoretical	Making materials of cheap and waste materials
10	Theoretical	Making experiments and data gathering process
11	Theoretical	Discussing the results and coming to conclusions period
12	Theoretical	The idea of computer applied experiment design
13	Theoretical	Sample experiment designs related to biological physical and chemical sciences
14	Theoretical	Sample experiment designs related to biological physical and chemical sciences
15	Theoretical	Sample experiment designs related to biological physical and chemical sciences
16	Final Exam	Term

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	5	10	0	50
Reading	5	9	0	45
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 comprehend the importance of science experiments and learn experimental process.
2	To be able to build physics, chemistry and biology experiences.
3	Learn scientific process skills.
4	Learn to prepare experiment sheet.
5	Learn to make cheap and waste materials.

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				
P2		5	5	5	5
P3	3	4			
P4	4	4	5	5	5
P6	3	3	5	5	5
P7		3			
P8	3				
P13	2	2	5	5	5

