AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Material Design in Science Education								
Course Code	FBÖ259		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	4	Workload	100 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	The aim of this course is to develop the knowledge and skills of prospective science teachers about the theoretical foundations of developing materials that aim to use information and communication technologies actively in science education. The aim of this course is to examine the examples of how to include the materials appropriate for the content of the course plan.								
Course Content	The place and use of instructional technologies in teaching process, making and conducting appropriate technology planning, selection of teaching material, principles of design and development of materials, design elements, development of course material, development of two and three dimensional materials through instructional technologies; technological pedagogical field knowledge, technological tools and materials specific to the field (simulations, animations, virtual classroom and laboratory environments, concept cartoons, scientific measurement tools, worksheets, slides, visual media tools etc.) and other information technologies that can be used in science education. (web 2.0 tools, mobile applications, student response systems, learning management systems, augmented reality applications, measurement and assessment tools, etc.); classroom environments with integrated technology, interactive board and educational portals; use and development of field-specific information technologies in science teaching.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)	Assoc. Prof. Ali Derya ATİK								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading	
1	Şahin, S. (Editör) ve Uluyol, Ç. (Editör), Eğitimde Bilişim Teknolojileri (Pegem-a Yayınları)

Week	Weekly Detailed Course Contents	
1	Theoretical	Introducing students about the general content of the course
2	Theoretical	The place and use of instructional technologies in teaching process
3	Theoretical	Selection and design and development principles of instructional material
4	Theoretical	Design elements, course material development, development of two and three-dimensional materials through instructional technologies
5	Theoretical	Technological pedagogical content knowledge
6	Theoretical	Technological equipment and materials specific to the field (simulations, animations)
7	Theoretical	Virtual classroom and laboratory environments, concept cartoons, scientific measurement tools, worksheets, slides, visual media equipment etc.
8	Intermediate Exam	Midterm
9	Theoretical	Web 2.0 tools, mobile applications, student answering systems
10	Theoretical	Learning management systems, augmented reality applications, measurement and evaluation tools
11	Theoretical	Classroom environments enriched with technology
12	Theoretical	Slow Motion Animations (Slowmations)
13	Theoretical	Interactive white boards and educational portals
14	Theoretical	Using and developing field-specific information technologies in science teaching
15	Theoretical	General evaluation of the course
16	Final Exam	Final

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	1	2	42
Assignment	14	1	1	28

Individual Work	12	0	1	12
Midterm Examination	1	6	1	7
Final Examination	1	10	1	11
			Total Workload (Hours)	100
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Understands the importance of information technologies for education.
2	Have the necessary professional and technological competence for the integration of Information Technologies in education.
3	Be aware of all the components necessary to make and implement a technology integration plan.
4	Produces information technology based teaching materials
5	Provides guidance to colleagues in using Information Technologies
6	Selects and uses Information Technology resources to enrich their personal and professional effectiveness
7	To have the technical competence to use information technologies

Programme Outcomes *(Science Teacher Education)*	
1	To be able to gain subject knowledge of profession in theory and practice in the learning process.
2	To be able to gain the competence of using the appropriate approach, strategy, method and technique for the instructional plans to be prepared in the learning process.
3	To be able to gain the skills of the teaching profession in the learning process.
4	To be able to implement teaching profession knowledge, skills, attitudes and habits related to the subject-matter in a real teaching and learning environment in the learning process.
5	To be able to comprehend contemporary approaches of education and the philosophy they are based on.
6	To be able to gain the basic skills such as comprehending, expressing, commenting, evaluating, being aware and enterprising, communicating, acknowledging the individual related to the subject-matter.
7	To be able to become individuals faithful to the Principles and Revolutions of Ataturk, be modern democratic, secular, protecting and deveoping one's country, being alive to the nation, respecting human rights, preserving the nature, not being discriminatory, giving importance to the traditions and customs, protecting the values
8	To be able to improve oneself in terms of sport, art and culture.
9	To be able to become individuals believing in lifelong learning.
10	To be able to gain the vision of being individuals who keep up with developments in social, economic, technological and scientific areas, who investigate the main reasons of World problems and try to contribute to the solutions of these problems.

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	L7
P1	5	5	5	5	5	5	5
P2	5	5	5	5	4	4	4
P3	5	4	5	5	5	5	5
P4	5	5	4	5	4	4	4
P5	5	4	5	4	5	5	5
P6	5	5	4	5	4	4	4
P7	5	4	5	4	5	5	5
P8	4	4	4	5	4	4	5
P9	5	4	5	4	5	5	4
P10	4	4	4	5	4	4	5