

MATERIAL DESIGN IN SCIENCE EDUCATION

1	Course Title:	MATERIAL DESIGN IN SCIENCE EDUCATION
2	Course Code:	FEN0004
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. DİLEK ZEREN ÖZER
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Doç.Dr.Dilek ZEREN ÖZER dzeren@uludag.edu.tr Adres: Bursa Uludağ Üniversitesi Eğitim Fakültesi A Blk Z10
17	Website:	
18	Objective of the Course:	The Place and Use of Instructional Technologies in the Teaching Process, Making and Conducting Appropriate Technology Planning. Selection of Teaching Material. Principles of Design and Development of Materials. Design Elements. Course Material Development. Development of Two and Three Dimensional Materials through Instructional Technologies: Technological Pedagogical Field Knowledge. Field-Specific Technological Tools and Materials (Simulations. Animations. Virtual Classroom and Laboratory Environments. Concept Cartoons. Scientific Measurement Tools, Worksheets. Slides. Visual Media Equipments, etc.) and Other Information Technologies Used in Science Education (Web 2.0 Tools). Mobile Applications, Student Response Systems, Learning Management Systems, Augmented Reality Applications, Measurement and Evaluation Tools, etc.): Classroom Environments where Technology is Integrated. Interactive Board and Training Portals; Using and Developing Field Specific Information Technologies in Science Teaching.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	
	1	Gives examples historical development to instructional technologies.
	2	Explain the importance and place of communication technology teaching technology.
	3	Give examples to the tools used in teaching.
	4	Develop technological tools and materials specific to the field.
	5	Knows the manufacturer of commonly used tools in teaching.
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21	Course Content:			
	Course Content:			
Week	Theoretical	Practice		
1	The place and use of instructional technologies in teaching process			
2	Appropriate technology planning and execution			
3	Selection of instructional material			
4	Principles of design and development of materials			
5	Design Elements			
6	to development Course material			
7	Developing two and three dimensional materials through instructional technologies			
8	Technological pedagogical field knowledge			
9	Midterm			
10	Technological tools and materials specific to the field (simulations, animations, virtual			
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical used in science education (web 2.0 tools, mobile applications, student response		14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study augmented reality applications, measurement and evaluation tools, etc.)		12	5.00	60.00
Homeworks		1	25.00	25.00
Projects Integrated		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm Using and Developing Field Specific		1	1.00	1.00
Others		0	0.00	0.00
Final Exams		1	1.00	1.00
Total Work Load				115.00
Total work load/ 30 hr				3.83
ECTS Credit of the Course				4.00
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Midterm Exam		1	10.00	
Quiz		0	0.00	
Home work-project		1	30.00	
Final Exam		1	60.00	
Total		3	100.00	
Contribution of Term (Year) Learning Activities to Success Grade		40.00		
Contribution of Final Exam to Success Grade		60.00		
Total		100.00		
Measurement and Evaluation Techniques Used in the Course				

24	ECTS / WORK LOAD TABLE															
25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
ÖK5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low			3 Medium			4 High			5 Very High				