THEORETICAL FOUNDATIONS AND APPLICATIONS OF STEAM EDUCATION IN PRE-SCHOOL PERIOD

1	Course Title:	THEORETICAL FOUNDATIONS AND APPLICATIONS OF STEAM EDUCATION IN PRE-SCHOOL PERIOD						
2	Course Code:	OKU6122						
3	Type of Course:	Optional						
4	Level of Course:	Third Cy	cle					
5	Year of Study:	1						
6	Semester:	2						
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:							
12	Language:	Turkish						
13	Mode of Delivery:	Face to face						
14	Course Coordinator:	Dr. Ögr. Üyesi SEMA NUR GÜNGÖR						
15	Course Lecturers:							
16	Contact information of the Course Coordinator:	Dr. Öğr. Üyesi Sema Nur GÜNGÖR sgungor@uludag.edu.tr Bursa Uludağ Üniversitesi, Eğitim Fak. Temel Eğitim Bölümü, Okul Öncesi Öğretmenliği Anabilim Dalı, A Blok Görükle / BURSA İs Tel: 0 224 2955058						
17	Website:							
18	Objective of the Course:	It is to teach pre-school teachers the STEM practices that will provide them with the knowledge and skills they have learned in the fields of science, technology, engineering and mathematics to help them gain 21st century skills such as critical thinking, creativity, innovation, problem solving, productivity and taking responsibility.						
19	Contribution of the Course to Professional Development:	Teachers will gain knowledge and skills related to STEM, STEAM and E-STEM education, which have an important place in the field of pre-school education.						
20	Learning Outcomes:							
		1	It uses a variety of idea generation techniques. (Brainstorming, question-answer, discussion, etc.)					
		2	It uses various technologies to design components.					
		3	Evaluates the benefits and risks of a design.					
		4	It explains the basic processes needed for a project.					
		5	Clarifying different perspectives and leading to better solutions identifies important problems.					
		6	Demonstrates the ability to select, use and troubleshoot available technologies.					
		7	Ideas and theories by actively exploring real-world problems develops.					
		8	It explains the basic processes needed for a project. (design and prototype development)					
		9	Applies design concepts related to physical and mechanical system problems.					

		10	Uses various types of reasoning (induction, deduction, etc.) appropriate to a situation.							
21	Course Content:									
	Course Content:									
Week	Theoretical		Practice							
1	Theoretical Foundations of STEAM E	ducation								
2	STEAM Education and 21st Century	Skills								
3	Reviewing STEM Education Reports									
4	Entrepreneurship and STEAM Trainir	ng								
5	Engineering Applications in STEAM Education									
6	Technology in STEAM Education									
7	Science Centers and STEAM Educat	ion								
8	Preschool STEAM Education									
9	STEAM Learning Models									
10	Designing and Implementing a STEA Based Preschool Activity	M-								
11	Designing and Implementing a STEA Based Preschool Activity	M-								
12	Designing and Implementing a STEA Based Preschool Activity	M-								
13	Measurement and Evaluation in STE	AM								
Activit	es		Number	Total Work Load (hour)						
Th 22 re	Teatbooks, References and/or Other		Çelpini, S. (2018). STEM	Education from Th	228,000					
Practica	als/Labs		0	0.00	0.00					
Self stu	dy and preperation		Ylldırım, B. (2021). STE	M. Education from	hears to					
Homew	vorks		1	20.00	20.00					
Project	6			0.00 2022) STEM Educ	0.00					
Field S	tudies		0	0.00	0.00					
Mi 2i3 ern	nAssansa ent		0	1.00	0.00					
Others			0	0.00	0.00					
Final E	xams n Exam	0	1	1.00	1.00					
Total W	/ork Load				119.00					
Total w	ork load/ 30 hr	0			4.00					
ECTS (Credit of the Course				4.00					
Total		1	100.00							
Contrib	ution of Term (Year) Learning Activitie	es to	0.00							
Succes	s Grade									
Contrib	ution of Final Exam to Success Grade	•	100.00							
Total			100.00							
Measur Course	rement and Evaluation Techniques Us	ed in the	Final examination							
24	ECTS / WORK LOAD TABLE									

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	2	0	4	0	0	0	0	0	4	0	0	0	0	4	0	0
ÖK2	0	0	0	4	0	0	0	4	0	0	0	5	0	0	0	0
ÖK3	3	0	0	0	0	4	0	0	0	0	0	0	2	0	0	3
ÖK4	0	3	2	0	0	0	3	0	0	0	0	4	0	0	2	0
ÖK5	2	0	3	0	0	0	0	0	0	0	5	0	0	2	0	0
ÖK6	0	2	0	0	0	0	0	5	0	0	0	0	0	0	0	0
ÖK7	4	0	0	5	0	0	0	0	0	4	0	0	0	0	0	0
ÖK8	0	3	0	0	3	0	0	4	0	0	0	0	0	5	0	0
ÖK9	4	0	0	0	1	0	0	0	3	0	0	0	4	0	0	0
ÖK10	0	0	4	0	0	0	3	0	0	0	0	5	0	3	0	4
LO: Learning Objectives PQ: Program Qualifications																
Contrib 1 very low ution Level:			2 low		3	3 Medium		4 High			5 Very High					