

INTERDISCIPLINARY SCIENCE TEACHING

1	Course Title:	INTERDISCIPLINARY SCIENCE TEACHING	
2	Course Code:	FEN4401	
3	Type of Course:	Compulsory	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	7	
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:	Prof. Dr. Salih Çepni	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	cepnisalih@uludag.edu.tr cepnisalih@yahoo.com	
17	Website:		
18	Objective of the Course:	Participants have information about interdisciplinary approaches and examples in science education; gains the competence to transfer this information to the classroom.	
19	Contribution of the Course to Professional Development:	It will be beneficial to prospective teachers in understanding the "Science, Engineering and Entrepreneurship Practices" included in Primary Education Science Education Programs and integrating them into their lessons. Within the scope of this course, teacher candidates will not only gain professional knowledge and skills required for interdisciplinary education and studies, but also contribute to their professional development in terms of attitude values such as cooperation and communication skills.	
20	Learning Outcomes:		
		1	STEM (fen-teknoloji-mühendislik-matematik), STEAM, E-STEM eğitimi hakkında bilgi sahibi olur.
		2	Have the necessary competence in the fields of science, technology, engineering, mathematics, art, information processing.
		3	Knows academic knowledge in these areas.
		4	Knows how to put the acquired knowledge into practice.
		5	Knows how these areas interact with each other.
		6	Able to put the theoretical knowledge into practice.
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	STEM Education and History		

2	What are the STEM subcomponents? What are the STEM teaching strategies?			
3	How can we integrate technology into science lessons?			
4	How can we integrate the field of Mathematics into Science lessons? How can we integrate the field of engineering into science lessons?			
5	STEM Applications in Cooperative Learning environments?			
6	What is the Differentiated STEM Teaching?			
7	What are the different STEM integrations? STEAM, How to integrate E-STEM approaches into science environments?			
8	STEM, STEAM, E-STEM application examples presentation			
9	STEM, STEAM, E-STEM application examples presentation			
10	What are the long-term benefits of STEM education and other integrations?			
11	STEM, STEAM, E-STEM applications lesson plan preparation			
12	STEM, STEAM, E-STEM applications lesson plan preparation			
13	STEM, STEAM, E-STEM applications lesson plan presentation			
Activites		Number	Duration (hour)	Total Work Load (hour)
22	Theoretical Textbooks, References and/or Other Materials:	14	2.00	28.00
Practicals/Labs		0	0.00	0.00
23	Assessment Self study and preparation	14	2.00	28.00
TERM LEARNING ACTIVITIES				
Homeworks		6	8.00	48.00
Midterm Exam	1	25.00	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exam project	1	15.00	6.00	6.00
Others		0	0.00	0.00
Final Exams	3	10.00	10.00	10.00
Total Work Load				120.00
Success Grade Total work load/ 30 hr				4.00
ECTS Credit of the Course				4.00
Total		100.00		

Measurement and Evaluation Techniques Used in the Course	Based on the Constructivist Approach, methods based on research, discussion, observation and experiments with 5E will be used in accordance with week gains. Students will explore and research the relevant topic of the week with the preliminary preparations in accordance with the 5E model, and develop knowledge and skills about STEM and Interdisciplinary Science Education concepts, themes and contents. They will make improvements by getting feedbacks on the lesson plans developed and present a desired lesson plan in the classroom environment at the end of the term. Evaluations are made by evaluating the lesson plans and activities prepared by the students with rubrics during the semester and providing feedbacks to the lesson plans; At the end of the semester, traditional (test or written exams) and alternative (concept map, meaning analysis table, structured grid) measurement and evaluation methods will be used. In accordance with Bursa Uludağ University Education Regulation, a credit system is applied within the scope of this course as a feature of the education-training programs.
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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	4	1	1	3	2	4	5	3	3	2	2	3	2	3	3	3
ÖK2	4	1	1	4	2	3	4	3	3	5	5	4	4	4	4	4
ÖK3	1	4	1	3	4	5	5	5	5	3	5	3	3	5	3	3
ÖK4	1	1	1	3	4	5	5	5	4	3	3	5	5	5	5	5
ÖK5	5	1	1	1	2	4	4	2	3	2	1	2	2	2	3	2
ÖK6	1	5	5	1	2	5	5	5	3	4	3	5	5	5	5	5
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							