

EXPERIMENT DESIGN AND PRACTICE IN CHEMISTRY

1	Course Title:	EXPERIMENT DESIGN AND PRACTICE IN CHEMISTRY
2	Course Code:	FEN0121
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:	Prof. Dr. ZEHRA ÖZDİLEK
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	zozdilek@uludag.edu.tr +90 224 29 42 281
17	Website:	
18	Objective of the Course:	To enable students to acquire skills in designing and implementing chemistry experiments based on various teaching methods and techniques.

19	Contribution of the Course to Professional Development:	<p>This course is related to the following MEB Teaching Profession General Competencies:</p> <ul style="list-style-type: none">•A1. Field Knowledge: Has advanced theoretical, methodological and factual knowledge in his field, including a questioning perspective.•A2. Field Education Knowledge: Has a good command of the field's curriculum and pedagogical field knowledge.•B1. Educational Planning: Plans education and training processes effectively.•B2. Creating Learning Environments: It prepares healthy and safe learning environments and appropriate teaching materials where effective learning can take place for all students.•B3. Managing the Teaching and Learning Process: Conducts the teaching and learning process effectively.•B4. Measurement and Evaluation: Uses measurement and evaluation methods, techniques and tools in accordance with its purpose.•C3. Communication and Cooperation: Establishes effective communication and cooperation with students, colleagues, families and other stakeholders of education. <p>This course is related to the following qualifications according to the Turkish Higher Education Qualifications Framework (TYYÇ):</p> <ul style="list-style-type: none">•Has knowledge about the nature of information, its source, limits, accuracy, reliability and validity evaluation.•Has knowledge of teaching programs related to the field, teaching strategies, methods and techniques, and measurement and evaluation.•Discuss methods related to the production of scientific knowledge.•Development characteristics and individual differences of students; <p>Applies the most appropriate teaching strategies, methods and techniques, taking into account the characteristics and</p>		
Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	2.00	28.00
Practicals/Labs		0	0.00	0.00
Self study and preperation		14	3.00	42.00
Homeworks		4	5.00	20.00
Projects		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		1	10.00	10.00
Others		0	0.00	0.00
Final Exams		2	20.00	20.00
Total Work Load				120.00
Total work load/ 30 hr				4.00
ECTS Credit of the Course				4.00
		5		
		6		
		7		
		8		
		9		
		10		
21	Course Content:			
	Course Content:			
Week	Theoretical	Practice		
1	The place and importance of experiment in science teaching			

2	Preparing an experiment report	
3	Experimental design based on scientific process skills	
4	Application and evaluation of chemistry experiments developed based on scientific process skills	
5	Application and evaluation of chemistry experiments developed based on scientific process skills	
6	Experimental design based on argumentation	
7	Experimental design based on argumentation	
8	Application and evaluation of chemistry experiments developed based on argumentation	
9	Application and evaluation of chemistry experiments developed based on argumentation	
10	Application and evaluation of chemistry experiments developed based on argumentation	
11	STEAM-based experiment design	
12	STEAM-based experiment design	
13	Application and evaluation of chemistry experiments developed based on STEAM	
14	Application and evaluation of chemistry experiments developed based on STEAM	
22	Textbooks, References and/or Other Materials:	<p>Kuramdan Uygulamaya Fen ve Teknoloji Öğretimi ÇEPNİ SALİH,AYVACI HAKAN ŞEVKİ,AYAS ALİPAŞA,AKDENİZ ALİ RIZA, Yayın Yeri:PegemA Yayıncılık, Editör:Salih Çepni, Basım sayısı:12,</p> <p>Güncel Yaklaşım ve Yöntemlerle Etkinlik Destekli Fen Öğretimi Yayın Yeri:Pegem Akademi, Editör:Orhan Karamustafaoğlu, Özden Tezel, Uğur Sarı, Basım sayısı:1, Sayfa sayısı:579, ISBN:978-605-241-258-9, Bölüm Sayfaları:401 -424</p>
23	Assesment	
TERM LEARNING ACTIVITIES		NUMBER
Midterm Exam		40.00
Quiz		0.00
Home work-project		0.00
Final Exam		60.00
Total		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		Within the scope of this course, students will be asked to implement performance tasks during the semester. At the end of the semester, an open-ended final exam will be held.
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	5	5	4	5	5	4	5	5	4	5	5	5	5	5	5
ÖK2	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
ÖK3	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
ÖK4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
ÖK5	4	5	5	4	5	5	4	5	5	4	5	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				