

ANALYTICAL CHEMISTRY

1	Course Title:	ANALYTICAL CHEMISTRY
2	Course Code:	KIM2219
3	Type of Course:	Compulsory
4	Level of Course:	First Cycle
5	Year of Study:	2
6	Semester:	3
7	ECTS Credits Allocated:	3.00
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:	Prof. Dr. BELGİN İZGİ
15	Course Lecturers:	Doç. Dr. Ümran SEVEN ERDEMİR Doç. Dr. Önder AYBASTIER
16	Contact information of the Course Coordinator:	Prof. Dr. Belgin İZGİ Bursa Uludağ Üniversitesi Fen-Edebiyat Fakültesi Kimya Bölümü 16059 Bursa Tel: 0224 29 41728 e-posta: belgin@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The aim of this course is to give basic principles and concepts (concentration, dilution, precipitation, complex formation reactions, basic electrochemistry, evaluation of data, etc.) chemical reaction in solution. Investigation of technological and classical quantitative methods which are used in national and international standard analysis. Evaluation of quantitative results via accuracy and precision.
19	Contribution of the Course to Professional Development:	Students will learn the basic analytical chemistry knowledge that will be necessary in their professional life and widely used in the food industry, and have analytical thinking skills using theoretical measurement and evaluation procedures.
20	Learning Outcomes:	
	1	Knows fundamental chemical analysis methods.
	2	Dominated by the accounts of concentration in aqueous solution chemistry.
	3	Gain skills for the optimization of the method of chemical analysis.
	4	Can evaluate the results of chemical analyses via accuracy and precision.
	5	Can practice chemical analysis method in laboratory.
	6	Gain the ability of analytical thinking and problem solving.
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21	Course Content:		
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Week	Theoretical	Practice	
1	The definition of analytical chemistry, the concepts of qualitative and quantitative analysis		
2	To give concentration units; mass (percent, molality and so on.) and volumetric (molarity, normality, ppm, etc.).		
3	Problem solving related with concentration units in solutions.		
4	Definition of chemical equilibrium, acid base definitions and examination of the acid base equilibrium constants		
5	General questions and solutions for the first three weeks of the concept of pH and calculations		
6	To emphasize what is the purpose the usage of pH combining the concept of buffer solutions, ionic strength, and activity information		
7	Removal of rules and formulas of the basic electrochemistry		
8	Electrochemical reaction completion and usage of the Nernst equation		
Activites		Number	Duration (hour)
			Total Work Load (hour)
Theoretical		14	2.00
Practicals/Labs		0	0.00
Self study		14	2.00
Homeworks		0	0.00
Projects		0	0.00
Field Studies		0	0.00
Midterm exams		1	20.00
Others		0	0.00
Final Exams		1	20.00
Total Work Load			86.00
Total work load/ 30 hr			2.87
ECTS Credit of the Course			3.00
		Daniel C. Harris, 1982, Quantitative Chemical Analysis, W. H. Freeman and Company, 4th edition, ISBN 0-7167-2508 (837 pages) Prof.Dr. Turgut Gündüz, 2004, Kantitatif Analiz Ders Kitabı, Gazi Kitabevi, (1322 sayfa)	
23	Assesment		
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT
Midterm Exam		1	40.00
Quiz		0	0.00
Home work-project		0	0.00
Final Exam		1	60.00
Total		2	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	Traditional and new complementary approaches will be used together in measurement. Traditional methods (80% effective): 1. Classic written exam (2 exams, mid-term and final) Complementary methods (20% effective): 1. Observation / self-assessment according to participation with answering questions asked during the lesson The evaluation will be made according to the scores specified in Bursa Uludağ University Undergraduate Education and Training Regulations for classes with less than 20 students or by relative evaluation system for classes more than 20.

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	5	0	0	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							