ANALYTICAL CHEMISTRY

1	Course Title:	ANALYTICAL CHEMISTRY	
2	Course Code:	GMD2219	
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. BELGIN İZGİ	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Doç. Dr. Elif TÜMAY ÖZER (U.Ü. Fen-Edebiyat Fakültesi, Kimya Böl. Öğr. Üyesi) 29 42 866 etumay@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:		
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:		

Course Content:

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.). and problem solving.	
3	Definition of chemical equilibrium, acid base definitions and examination of the acid base equilibrium constants	
4	general questions and solutions for the first three weeks of the concept of pH and calculations	
5	To emphasize what is the purpose the usage of pH combining the concept of buffer solutions, ionic strength, and activity information	
6	Removal of rules and formulas of the basic electrochemistry	
7	Electrochemical reaction completion and usage of the Nernst equation	
8	midterm exam, problem solving related with Nernst equation	
9	Acid base titrations and problem solving based on	
10	Precipitation titrations and solving problems based on	
11	Complex formation titrations and solving	

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	2.00	28.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	2.00	2.00
Others	0	0.00	0.00
Final Exams	1	2.00	2.00
Total Work Load			86.00
Total work load/ 30 hr			2.87
ECTS Credit of the Course			3.00

13	Gravimetric analysis and problem solving
14	

Hill Companies, ISBN 0-07-023795-6 (242 pages)
Saunders College Publishing, ISBN 0-03-005830-0,
Daniel C. Harris, 1982, Quantitative Chemical Analysis, W. H. Freeman and Company, 4th edition, ISBN 0-7167-2508-
Prof.Dr. Turgut Gündüz, 2004, Kantitatif Analiz Ders Kitabı, Gazi Kitabevi, (1223 sayfa)

23	Assesment

TERM LEARNING ACTIVITIES	**NUMBER**	**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	

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**				