AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Advanced Analytical Chemistry								
Course Code	KİM511		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	9	Workload	219 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	The underlying objective of the subjects of this course is to balance the background knowledge of students intending to continue their education in M.Sc. level, especially in analytical chemistry.								
Course Content	Principles of various volumetric methods and advanced level pH calculation are treated once more. Furthermore, special emphasis is given to quantitation techniques, interference and problems of trace analysis.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Individual Study, Problem Solving								
Name of Lecturer(s)	Assoc. Prof. Gülşen GÜVEN								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	35
Assignment	3	45

Recommended or Required Reading	
1	Fundamentals of Analytical Chemistry,7. edition. D.A. Skoog, D.M. West, F.C Holler. (E. Kılıç ve F. Köseoğlu, translation editors) Bilim Publishing. Ankara
2	Principles of Analytical Chemistry. A Textbook. M. Valcarcel. Springer, 2000.
3	Analytical Chemistry. A Modern Approach to Analytical Science. Editörler: R. Kellner, J.M. Mermet, M. Otto, M. Valcarcel, H.M. Widmer. Wiley-VCH, 2004.

Week	Weekly Detailed Course Contents	
1	Theoretical	Significant figures, types of errors and error propagation
2	Theoretical	Evaluation of statistical data
3	Theoretical	Principles of chemical analysis
4	Theoretical	Titrimetry-General principles
5	Theoretical	Equilibrium calculations in complex systems. Quiz-1
6	Theoretical	Titration of polyprotic acids and bases
7	Theoretical	Factors affecting solubility
8	Theoretical	Complexımetry
9	Theoretical	Redox titrations
10	Theoretical	Quantitative techniques
11	Theoretical	Interference and its. Ouiz-2
12	Theoretical	Method choice in analyses
13	Theoretical	Special problems in trace analysis
14	Theoretical	Student presentations. Discussion
15	Theoretical	Student presentations. Discussion
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Seminar	4	30	1	124
Midterm Examination	1	20	1	21

Final Examination	1	30	2	32
			Total Workload (Hours)	219
			[Total Workload (Hours) / 25*] = **ECTS**	9
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	to be able to review statistical parameters and significance tests.
2	to be able to review the analytical chemistry lectures treated in undergraduet cources basicly.
3	to be able to comment multiple equilibrium problems in solution chemistry at an advanced level.
4	to be able to review advance quantitation technics, with special emphasis on calibration.
5	to be able to discuss the problems of trace analysis.

Programme Outcomes *(Chemistry Master)*	
1	To be able to gain proficiency in depths and analysis by statistical methods in the same or a related area depending on the undergraduate competence,.
2	To be able to use the knowledge of his/her field and the skills to solve problems and/or applications in interdisciplinary research.
3	To be able to adopt to evaluate the information and skill his/her field by critical approach.
4	To be able to evaluate the effect of important persons, case and fact on his/her field applications.
5	To be able to gain the ability to discuss write and orally present to a group of literate listener.
6	To be able to communicate orally and written in a foreign language at least at European language B2 level.
7	To be able to use computer programs related to his/her field and have skills for informatics communication.
8	To be able to be careful in protecting social, scientific and cultural ethics in collection data, application and presentation.
9	To be able to develop strategic, political and application plans in his/her field and may evaluate the outcomes in quality periods.

Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L1	L2	L3	L4	L5
P1	4	4	4	4	4
P2	3	3	3	3	3
P3				3	3
P9	3			2	2