



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Ionic Equilibria							
Course Code		KİM516		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	149 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Chemical equilibrium is the most important factor for the industry , as well as analysis and syntheses. Especially the Ionic balance is important. Suitable subjects were selected to develop students' basic knowledge on this subject, and to make them more efficient in their profession applications.							
Course Content		Identification the law of mass action for homogeneous and heterogeneous reactions; the balance of the general examination of dissociation; acid-base equilibria with the help of the logarithmic type of approach to distribution diagrams; precipitation reactions, and the resolution of the general theory of the balance of disclosure; redox reactions in aqueous solutions and explanation of the theory; the complex formation and precipitation events, such as walking with the examination of the redox equilibria.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Project Based Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Seminar	3	20

Recommended or Required Reading

1	Analytical Chemistry, 4th Edition, Gary D. Christian, John Wiley and Sons, Inc., 1986.
2	Fundemental of Analytical Chemistry, Douglas A. Skoog and Donald M. West, Sounders College Publishing, 1982
3	Chemical Analysis, Herbert A. Laitinen and Walter E. Harris, Mc Graw- Hill Series in Advanced Chemistry, 1975
4	Analytical Chemistry, Basic Charts, and Huriye Afsar Husain Meets, Scion Publishing, 1994

Week	Weekly Detailed Course Contents	
1	Theoretical	Ionization equilibrium and percent of ionization
3	Theoretical	Factors that affect ionization equilibrium of salt;common –ion effect, salt effect, pH effect,formation of complex ions
4	Theoretical	Factors that affect ionization equilibrium of salt;common –ion effect, salt effect, pH effect,formation of complex ions
5	Theoretical	Electro nötrralite; Proton condition;ionization equilibrium of mono and polyfunctional acids
6	Theoretical	Ionization equilibrium of Lewis acids and bases
7	Theoretical	Calculating dissociation equilibria of polyfunctional acids
8	Intermediate Exam	Midterm Exam
9	Theoretical	Calculating dissociation equilibria of polyfunctional acids
10	Theoretical	Calculating redox equilibrium constants
11	Theoretical	Choosing solvent to neutralization titrations
12	Theoretical	Obtaining to dissociation constant of coordination compounds
13	Theoretical	Obtaining to dissociation constant of coordination compounds
14	Theoretical	Student Presentations
15	Theoretical	Student Presentations
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	3	42
Seminar	3	25	1	78
Midterm Examination	1	10	2	12



Final Examination	1	15	2	17
Total Workload (Hours)				149
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	An ability to apply knowledge of mathematics, science and engineering in the field of chemistry and chemical engineering
2	Process design skills
3	Ability to examine and improve the system
4	Ability to comprehend balance systems
5	Ability to solve balance problems

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	5	5	4	5
P2	4	5	5	5	5
P3	4	5	5	4	4
P4	4	5	5	4	4
P5	4	5	5	4	4

