



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Analytical Chemistry of Metals							
Course Code		KİM514		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	148 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Learning mineral ores, alloys and other industrial products, metal determinations and determination of trace metals in the environment and biological systems							
Course Content		Determination of metals (heavy metals and transition metals) individually or in matrix medium by analytical methods. Specific determination methods of trace metals.							
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	Rock and Mineral analysis, J.A.Maxwell, Interscience Publishers, Newyork, 1968
2	Methods for Environmental Trace Analysis, J.R.Dean, John Wiley and Sons, 2003
3	Photometric determinations of trace metals, E.B.Sandell, H.Onishi, John wiley and sons, 1978

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to the chemistry of metal
2	Theoretical	Sprout analysis
3	Theoretical	Zinc-copper chemistry and their alloys analysis
4	Theoretical	Antimony-aluminum chemistry and their alloys analysis
5	Theoretical	Chromium-iron chemistry and their alloys analysis
6	Theoretical	Lead-manganese-boron chemistry and their alloys analysis
7	Theoretical	Steel analysis
8	Intermediate Exam	Midterm Exam
9	Theoretical	Analysis of silica-copper-nickel in steel
10	Theoretical	Brass-bronze and tin-lead-copper analysis in solder
11	Theoretical	Brass-bronze and iron-zinc and aluminum analysis in solder
12	Theoretical	Trace metal analysis
13	Theoretical	Trace metal analysis
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	1	11
Final Examination	1	15	2	17
Total Workload (Hours)				148
[Total Workload (Hours) / 25*] = ECTS				6

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	to be able to recognize the chemistry of metal
2	to be able to recognize the analysis of metals and alloys
3	Understanding of metal analysis in analytical chemistry.
4	Especially to learn the methods of analysis of trace metals.
5	To learn the quantitative determination of metal content in alloys.

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	4	4	4	4	4
P3	4	5	4	4	4
P4	4	4	4	4	4
P5	4	4	4	4	4
P9	5	5			

