



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Atomic Spectrometry							
Course Code		KİM613		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	8	Workload	201 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Teach the techniques of of modern atomic							
Course Content		Essentials and scope of atomic spectroscopy; Evaluation of analytical data in atomic spectroscopy; measurement and precision reporting analytical results; Measurement techniques in atomic spectroscopy; Background correction methods in atomic spectroscopy; Solving problems related to determinations by atomic spectrometry							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Problem Solving					
Name of Lecturer(s)									

### Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	20
Final Examination	1	60
Assignment	4	20

### Recommended or Required Reading

1	Lecturer notes (Prof.Dr. Mustafa DEMİR)
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Week	Weekly Detailed Course Contents	
1	Theoretical	Electrothermal AAS instrumentation, pyrolysis atomisation graphics, initiatives, D2 and Zeeman background correction ETAAS effective comparison
2	Theoretical	Matrix modifiers, STPF concept ETAAS determination limits areas
3	Theoretical	Plasma-type atom-ion sources ICP-OES instrumentation techniques, axial, radial designs
4	Theoretical	Sequential and simultaneous ICP-OES youth optics and detector systems designs
5	Theoretical	Strategies for multi-element determination, calibration techniques, determined the boundaries, initiatives
6	Theoretical	ICP-MS, Mass General information about detectors, quadrupole-ICP-MS, ICP-TOF-MS instrumentation, initiatives
7	Theoretical	Alternatively, the sample transfer methods, establish hydride (HO)-trapped ETAAS, ICP-OES HO-HO-ICP-MS, an alternative to plasma spectrometry sample transfers, ETV-ICP-OES, ETV-ICP-MS, advantages, application areas
8	Intermediate Exam	Midterm Exam
9	Theoretical	Slurry with solutions AAS, ICP-OES, ICP-MS studies
10	Theoretical	With the direct analysis of solid samples, preparation of standard analytical approaches ETAAS, ICP-OES, ICP-MS studies
11	Theoretical	Laser etching and plasma spectrometer, instrumentation
12	Theoretical	Chromatography-plasma techniques, speciation studies, flow injection and on-line solid phase extraction systems
13	Theoretical	Overall Rating, automated availability, the ability to multi-element, designated boundaries, the operating costs
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
Assignment	4	20	1	84
Term Project	1	25	2	27
Midterm Examination	1	20	1	21



Final Examination	1	25	2	27
Total Workload (Hours)				201
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

### Learning Outcomes

1	Learning new techniques in atomic ultra trace level atomic spectroscopy
2	Information on analytical approaches have been adopted in
3	Deney tasarlama ve sonuçları yorumlama becerisi kazanılması
4	Acquisition of process design skills
5	Gaining the ability to examine and improve the system

### Programme Outcomes (Chemistry Doctorate)

1	Depending on the master degree competences, develops, insights and innovates current and advanced knowledge and/or research in proficiency level.
2	Gains high skill levels in using research methods in the field of his/her study.
3	Comprehends the interaction between disciplines related to his/her field. Reaches to original results using his/her expertise in order to analyze, synthesize and evaluate new and complicated ideas.
4	Enlarges the boundaries of his/her field of knowledge by publishing at least one research paper in national and/or international peer-reviewed journals.
5	Defends his/her original opinions related to his/her field before authority and communicates effectively illustrating his/her competence.
6	May communicate and debate written, orally and visually in European Language Portfolio level C1.
7	Follows the developments in computer software and information and communication technologies developed for his/her research area and uses these in order to solve research problems.
8	Collaborates for scientific research with national and international research teams.
9	Contributes to the course of creation and maintenance of knowledge based society and by introducing the scientific, social and cultural developments to the society he/she is living in.

### 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	4	5
P3	4	5	5	4	5
P4	4	5	5	4	5
P5	4	5	5	4	5

