

INTRODUCTION TO ATOMIC SPECTROSCOPY

1	Course Title:	INTRODUCTION TO ATOMIC SPECTROSCOPY	
2	Course Code:	KIM5010	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	none	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. ELİF TÜMAY ÖZER	
15	Course Lecturers:	Prof.Dr.Belgin İZGİ Prof.Dr. Saliha ŞAHİN	
16	Contact information of the Course Coordinator:	Prof.Dr. Elif TÜMAY ÖZER etumay@uludag.edu.tr 0 224 29 42 866	
17	Website:		
18	Objective of the Course:	Basic information about atomic spectroscopic techniques, calibration of systems, experimental designs, transferring latest developments in techniques.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Students assess spectroscopic data.
		2	To have knowledge about the theoretical bases of spectroscopic techniques.
		3	To know which method to choose in analysis.
		4	Students know the techniques to use in their research.
		5	Understand the importance of spectroscopy in analyzing unknown substances.
		6	Learn how different spectroscopic techniques complement each other.
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21	Course Content:		
		Course Content:	
Week	Theoretical	Practice	
1	Spectroscopy and spectroscopic measurements		
2	Electromagnetic waves, mirrors, prisms, interferometers		

3	Dark room structure, laser sources, signalproceases	
4	Signal-to-noise ratios, noise sources and types	
5	Introduction to atomic spectroscopy.	
6	Rotation and vibration spectra	
7	Electronic absorption spectrum of molecules	
8	Midterm + repetition of previous topics	
9	Flame atomic absorption spectrometry (FAAS)	
10	Atomic Emission Spectrometer (AES)	
11	Electrothermall atomic absorption spectrometry (ET-AAS)	
12	Coupled inductive spectrometry (ICP)	
13	Improved atomic spectroscopic techniques I; Pt-ring, atom-trapped systems	
14	Improved atomic spectroscopic techniques II; trap systems, carbon, slotted tube and so on.	

22	Textbooks, References and/or Other Materials:	1. AnalyticalChemistry, J. -M. Mermet, M. Otto, H. M. Widmer, Willey-VCH, Wenheim, 1997. 2. Symmetry and spectroscopy, Daniel C. Harris and Michael D. Bertolucci, Oxford University, New York, 1989. 3. Spectrochemical Analysis, James D. Ingle, Jr, Stanly R. Crouch, PrenticeHall,New Jersey, 1988.
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Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Midterm Exam		1	6.00	84.00
Homeworks		0	0.00	0.00
Homework-project		0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		2	20.00	20.00
Others		0	0.00	0.00
Final Exams		1	30.00	30.00
Total Work Load				176.00
Total work load/ 30 hr		100.00		5.87
ECTS Credit of the Course				6.00

24	ECTS / WORK LOAD TABLE
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			