MICROMETHODSIN ANALYTICAL CHEMISTRY

1	Course Title:	MICROMETHODSIN ANALYTICAL CHEMISTRY
2	Course Code:	KIM6004
3	Type of Course:	Optional
4	Level of Course:	Third 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. BELGIN İZGİ
15	Course Lecturers:	Prof. Dr. Belgin İZGİ
16	Contact information of the Course Coordinator:	belgin@uludag.edu.tr 0 224 29 41 728
17	Website:	
18	Objective of the Course:	The aim of the course is to provide information and skills about micro methods to obtain optimum analysis conditions in graduate study. In addition; to give information about comparison of classic and micro methods, so that students may encounter in graduate study and application of these methods to be successful in their aims.
19	Contribution of the Course to Professional Development:	Gains of basic knowledge in nano level analysis
20	Learning Outcomes:	
	1	Develop the use of analytical thinking for micro-analysis methods.
	2	Enhance the ability to develop innovative approaches with selection general methods for analyte in different matrices, depending on the desired method.
	3	Gain the skill assessment on the uncertainties in the process, during the assessment of the analysis results.
	4	Develop a new methods according to the analysis of specific substances,
	5	Select appropriate methods encountering the unknown samples.
	6	Select appropriate methods of analysis in the form of mixture of substances.
	7	Use a combination of different methods in constructing the analysis
	8	
	9	
	10	
21	Course Content:	

Course Content:

Week	Theoretical	Practice

1	Basic information about the qualitative and quantitative analysis methods	
2	Existing uses of the development or problem determination methods of analysis, to improve perspective about existing devices and equipment	
3	The investigation of selectivity, cost, accuracy and operating range of the method	
4	Transition of qualitative methods of analysis used to micro analysis	
5	Modification of the regulations and practices in terms of quantitative methods of analysis at the micro level	
6	Solid phase micro-extraction method, and the examination case studies related to method applications	
7	Spot testing techniques and examples of general applications, custom application areas (criminology, biological, etc.)	
8	Application of ring-oven technique and amplification methods	
9	Midterm Exam +repetition of previous issues	
10	Direct, indirect, and accumulation reactions and technical information about amplification methods	
11	The basic knowledge and benefits of micro-system technology	
12	Examples of techniques for the chip to be	
13	Micro-total analysis systems (?-TAS) and analytical micro array systems. The presentation of students' research in the	
14		

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	1	50.00	50.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	25.00	25.00
Others	0	0.00	0.00
Final Exams	1	25.00	25.00
Total Work Load			209.00
Total work load/ 30 hr			6.13
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other	[1] Pure Appl. Chem., Vol. 71, No. 7, pp. 1331–1335, [2] Forensic Science International: Genetics 2 (2008) 349–353 [3] Chinese Journal Of Analytical Chemistry Volume 34, Issue 2, February 2006 [5] Clinical Chemistry / Spot Tests To Detect Adulterants In Urine Specimens [7] Nanotechnology, Jeremy J. Ramsden, Cranfield, ISBN: 978-0-08-096447-8, 2011 [8] www.separationsnow.com [9] www.instrumentalchemistry.com/sampleprep [10] web sources
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	25.00
Quiz	0	0.00
Home work-project	1	25.00
Final Exam	1	50.00

Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Relative evaluation is applied.

24	ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	5	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK5	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	5	0	5	0	4	0	0	0	0	0	0	0	0	0	0	0
ÖK7	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**