AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Sample Preparation For Analysis						
Course Code	KİM515		Couse Level	Second Cycle (Master's Degree)			
ECTS Credit	6	Workload	148 *(Hours)*	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	According to applied instrumental method, giving basic information about samples preparation for analysis such as solid, liquid, gas different physical states						
Course Content	Techniques used in sample pre-treatment. Especially solid-liquid, liquid-liquid extraction techniques. Microwave extraction and supercritical fluid extraction techniques.						
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	Mitra S. (2003), Sample preparation techniques in analytical chemistry, Wiley & Sons Publication
2	Dean J. R. (2003), Methods for environmental trace analysis, John Wiled Sons Ltd.
3	Sample preparation in chromatography, Journal of chromatography library, Volume:65

Week	Weekly Detailed Course Contents	
1	Theoretical	Extraction and basics of enrichment for sample preparation
2	Theoretical	Basics of extraction and Extraction of semi-volatile organic compounds from liquids
3	Theoretical	Liquid-liquid extraction, liquid-solid extraction
4	Theoretical	Solid-phase extraction, solid-phase microextraction
5	Theoretical	Extraction of semi-volatile organic compounds from solid matrices
6	Theoretical	Soxhlet extraction, ultrasonic extraction
7	Theoretical	Supercritical fluid extraction, microwave-assisted extraction
8	Intermediate Exam	Midterm Exam
9	Theoretical	Extraction of volatile organic compounds from solids and liquids
10	Theoretical	Preparation of samples for metal analysis
11	Theoretical	Microwave extraction for metal analysis
12	Theoretical	Organic extraction of metals, extraction with the supercritical fluid for metal analysis
13	Theoretical	Ultrasonic sample preparation, solid-phase extraction for preconcentration
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 methods of sample preparation
2	to be able to recognize the methods of sample analysis
3	Learning the preconcentration techniques.
4	Learning the extraction techniques.
5	To learn sample preparation techniques for chromatographic analysis.

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