AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Instrumental Analysis Techniques					
Course Code	LBT211		Couse Level	Short Cycle (Associate's Degree)		
ECTS Credit	3	Workload	75 *(Hours)*	Theory	1	Practice	2	Laboratory	0
Objectives of the Course	For students studying in Laboratory Technology department, showing experiments in order to obtain quantitative and qualitative information about the composition and structure of a Matter, For this purpose, learning how to analyse various samples and obtain teoretical information about instruments Learning how to solve the instrumental problems if it occurs using different instrumental approaches, In conclusion, preparing students for marketing conditions and requirements.					
Course Content	Enstrümental methods, Spectrometric methods, UV and visibile absobtion spectroscopy, thermal analysis methods, chromatography and chromatographic methods, atomic absorbtion spekctroscopy, potentiometry, seperation methods, real time PCR and eliza devices and determination of species determination methods					
Work Placement	N/A					
Planned Learning Activities and Teaching Methods			Explanation (Presentation), Demonstration, Discussion, Individual Study			
Name of Lecturer(s)						

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	F. Rouessa, A. Rousseac, Chemical analysis modern instrumentation methods and techniques, John Wiley & Sons, 4th edition, 1998
2	INSTRUMENT ANALYSIS METHODS Types of Analysis And Basic Concepts, Asst. Assoc. Dr. Gökçe MEREY Lecture Notes
3	Instrumental Analysis Lecture Notes Prof.Dr. Mehmet Yaman
4	Instrumental Analysis Book
5	Analysis application notes (ELISA-TEK, Genetic DNA Isolation Kit from Bosphore Magrev Tissue Kit User Manual, etc. for Identification of Animal Species by Enzyme Linked Immunosorbent Assay, etc.)

Week	Weekly Detailed Course Contents	
1	Theoretical	Clasiffication of Enstrümental Methods, Method Selection
	Practice	Clasiffication of Enstrümental Methods, Method Selection
2	Theoretical	Performans property of equipment
	Practice	Performans property of equipment
3	Theoretical	Signal and noise, Introduction Spectrometrical Methods
	Practice	Signal and noise, Introduction Spectrometrical Methods
4	Theoretical	Atomic Absorbtion Spectrometry and ICP, Spectrophotometer Equipment and Use
	Practice	Atomic Absorbtion Spectrometry and ICP, Spectrophotometer Equipment and Use
5	Theoretical	Analyses (Spectrophotometrıc Investigation In The Ultraviolet Analysis Nitrite Nitrate Analysis Phospor Analysis, HMF Analysis))
	Practice	Analyses (Spectrophotometrıc Investigation In The Ultraviolet Analysis Nitrite Nitrate Analysis Phospor Analysis, HMF Analysis))
6	Theoretical	Elisa and Real Time PCR Equipment and Use
	Practice	Elisa and Real Time PCR Equipment and Use
7	Theoretical	Determination of meat species
	Practice	Determination of meat species
8	Intermediate Exam	Midterm
9	Theoretical	Introduction Seperation Methods
	Practice	Introduction Seperation Methods
10	Theoretical	Chromatography concept and Chromatographic Methods
	Practice	Chromatography concept and Chromatographic Methods
11	Theoretical	Gas Chromatography

11	Practice	Gas Chromatography
12	Theoretical	Analyses (Fatty Acid Composition)
	Practice	Analyses (Fatty Acid Composition)
13	Theoretical	High Pressure Liquid Chromatography
	Practice	High Pressure Liquid Chromatography
14	Theoretical	Analyses (Preservative (Sorbic and Benzoic Acid Analysis)
	Practice	Analyses (Preservative (Sorbic and Benzoic Acid Analysis)
15	Theoretical	Analyses (Determination of Triglyserit Composition)
	Practice	Analyses (Determination of Triglyserit Composition)
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	1	14
Lecture - Practice	14	0	2	28
Individual Work	14	1	0	14
Midterm Examination	1	7	1	8
Final Examination	1	10	1	11
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = **ECTS**				3

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Know the instrumental analysis techniques
2	Apply the spectroscopic, chromatographic and other instrumental techniques
3	Solve the instrumental problems during applications of techniques
4	Will be able to perform various analyzes with these techniques
5	Evaluate the results obtained by the instrumental techniques

Programme Outcomes *(Laboratory Technology)*

1	To be able to comprehend social, cultural and social responsibilities, to be able to follow national and international contemporary problems and developments
2	Atatürk is bound to Atatürk nationalism in the direction of principles and reforms; Adopting the national, moral, spiritual and cultural values of the Turkish people, open to universal and contemporary developments, the Turkish language is a rich, rooted and productive language; Have a love of language and a consciousness; To have the ability to use as much of a foreign language as he would need to read, taste and habit and professionally.
3	To be able to recognize the basic hardware units and operating systems of a computer, having information about internet usage and preparing documents, spreadsheets and presentations on computer by using office programs.
4	Acquires theoretical and practical knowledge at the basic level in mathematics, science and vocational field.
5	With the knowledge of laboratory technology in the field, he knows and analyzes problems, brings interpretation of data and suggests solutions.
6	In laboratories, according to the prepared business plan and program, necessary work can be done to obtain the desired quality products.
7	To have professional and ethical responsibility in business life.
8	Development and change are open, follow scientific social and cultural innovations, and develop themselves constantly.

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	2	4	2	5
P2	3	2	2	2	2
P3	2			3	
P4	4	5	5	5	5
P5	4	5	5	5	5
P6	5	5	5	5	5
P7	3		5	3	5
P8	3		5	3	3