



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Laboratory Equipment							
Course Code		KMT211		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	4	Workload	104 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Knowing the tools necessary for basic chemistry laboratory. It needs to use chemical substances least interacting material when it needs to perform operations such as especially mixing, adding, gas tight. This At the beginning of these materials are glass-based products. Most of these products are used in laboratory. It is aimed to have knowledge about glass, metal, paper, plastic materials and equipment, such as the most used and encountered and to learn proper cleaning of the tools and utensils used in the laboratory.							
Course Content		Glassware used in laboratories, Laboratory instruments and materials, Laboratory Techniques and equipment used, Laboratory cleaning and prevention, glass cleaning, Cleaning Solutions, Cleaning of other materials, Introduction of complicated devices used in chemical analysis, Techniques used during device operation, Usage purposes and methods.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Individual Study, Problem Solving					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Laboratuvar araç gereçleri 524KI0238 Ankara, MEB modülü
2	ANADOLU ÜNİVERSİTESİ ECZACILIK FAKÜLTESİ Doç. Dr. Zafer Asım KAPLANCIKLİ Öğr. Gör. Dr. Yusuf ÖZKAY Temel laboratuvar bilgisi ders notları

Week	Weekly Detailed Course Contents	
1	Theoretical	Glass materials used in laboratories, their structure and properties
2	Practice	Laboratory tools and materials, structure and properties of porcelain, metal, plastic materials
3	Theoretical	Promotion using images and examination of some materials
4	Practice	Cleaning of laboratory materials, Washing solutions and preparation.
5	Practice	Cleaning of glass and other materials
6	Theoretical	Preparation of the appropriate washing solutions according to the test made and examination of the cleaning of the materials
7	Theoretical	Use of drying cabinet, ash furnace, Incubators sterile cabinet, autoclave
8	Intermediate Exam	midterm
9	Theoretical	Water, oil, sand bath, Centrifuge, magnetic stirrer, shaker, mill, screen introduction, water distillation device, scales usage techniques and aims, preservation, density determination, alcohol grade
10	Practice	Use of Water bath, Centrifuge, magnetic stirrer, shaker, precision scales,
11	Theoretical	PH meter, microscope, refractometer, polarimeter, colorimeter, photometer, usage techniques and aims, pH estimation, Refraction Index
12	Theoretical	Determination of pH, Refractive Index or brix, density
13	Theoretical	Chromatographic introduction, description of chromatographic applications
14	Theoretical	Usage techniques and purposes of spectrophotometer
15	Practice	Usage techniques and purposes of spectrophotometer
16	Final Exam	final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28



Individual Work	14	1	1	28
Midterm Examination	1	6	2	8
Final Examination	1	10	2	12
Total Workload (Hours)				104
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To be able to know basic glass materials in the laboratory
2	Ability to use glass materials in laboratory
3	Ability to gain skills in using materials
4	Be able to gain careful working habits against laboratory accidents and harmful chemical substances
5	Ability to use some devices for their purposes
6	To be able to learn the techniques of using some devices

Programme Outcomes (Cosmetic Technology)

1	To know the classification of cosmetic raw materials, for what purpose, in which products and how much they should be used
2	Define and classify cosmetics,
3	To define, classify toxicity, Toxic substances and detoxification ways of these substances to know. To be able to analyze toxic substances.
4	To be aware of the precautions to be taken when working with hazardous chemicals in terms of laboratory safety and human health.
5	To have the ability to use basic mathematical methods to produce solutions.
6	To be able to define the carrier systems used in cosmetics, to be able to choose the carrier system to be used according to the cosmetic product.
7	To know and apply the necessary tests in cosmetic raw materials, intermediate products and finished products.
8	Depending on the Atatürk nationalism in accordance with Atatürk's principles and reforms, adopted the national, moral, spiritual and cultural values of the Turkish Nation, and has adopted that the Turkish language is a rich, rooted and productive language; have love and awareness of language; to have the ability to use the foreign language sufficiently to have the pleasure and habit of reading and need professionally.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	2		3	3		
P2	3	3	2			3
P3	2		3	5		
P4	3		2			
P5	2	3	2	3	3	2
P6	3					
P7	2	2	4		2	2

