



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Laboratory Materials and Measurement Equipment							
Course Code		LBT109		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	2	Workload	54 (Hours)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		The aim of this lesson is to give information to students about field and horticultural plants latest advances in the production. Students gain ability to decide which plant will be used in which condition. They also learn production methods of the plants							
Course Content		Definition of field crop production, classification, production problems of this plants, production techniques of first and second crops. Crop production areas in Turkey. Biological and physiological principles of horticultural plants, production techniques in horticultural plants, cultural practices, maturity, harvest and conservation							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Individual Study					
Name of Lecturer(s)		Ins. Burcu KESER, Ins. Hilal DEMİRPEŇE							

### 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
3	Prof. Dr. Lale ZOR, 17. ve 19. Ünite, Ders Notları, AÖF, Anadolu Üniversitesi, 2004
4	Klinik Laboratuvarında Temel Kavramlar Ankara üniversitesi Dikimevi Sağlık Hizmetleri Meslek Yüksekokulu Yayınları Yayın No:1 Uzm. Dr. Ayşegül AKBAY, Dr. Yeşim ÖZTAŞ, Dr. Gülelendam BOZDAYI
5	Laboratuvar Araç-Gereçleri Ve Laboratuvarında Çalışma Kuralları Doç.Dr. Mustafa Altınışık Adütf Biyokimya Ad 2007
6	Mohrig, J. R., Hammond, C. N., Morrill, T. C. and Neckers, D. C., Experimental Organic Chemistry, W. H. Freeman and Company, New York, 1999
7	Enstrümental Analiz Ders Notları Prof. Dr. Mehmet Yaman
8	Yüksek Performanslı Sıvı Kromatografisi Ars. Gör. Mehmet Gümüştas
9	Prof. Dr. Ulvi Reha Fidancı – Kromatografi ders notları
10	Enstrümental Gıda Analizleri Yrd. Doc. Dr. Cemalettin Baltacı, Doç Dr. Ali Gündoğdu
11	Esogü Fen-Edebiyat Fak. Kimya Bölümü, Yrd. Doç. Dr. Devrim Özöğüt Organik Kimya Lab. Notları
12	Milli Eğitim Bakanlığı Kimya Teknolojisi Kromatografik Analizler Ankara 2013

Week	Weekly Detailed Course Contents	
1	Theoretical	Glass materials used in laboratories, their structure and properties
	Practice	Promotion using images and examination of some materials
	Preparation Work	Supply of visual materials
2	Theoretical	Laboratory tools and materials, structure and properties of porcelain, metal, plastic materials.
	Practice	Promotion using images and examination of some materials
	Preparation Work	Supply of visual materials
3	Theoretical	Glass, porcelain, metal, plastic materials used in laboratories, usage purposes and usage techniques.
	Practice	Demonstration of exploration and use of usage objectives with a couple of examples
	Preparation Work	Preparation of equipment, supply of materials
4	Theoretical	Cleaning of laboratory materials, Washing solutions and preparation.
	Practice	Preparation of the appropriate washing solutions according to the test made and examination of the cleaning of the materials
	Preparation Work	Solution preparation
5	Theoretical	Cleaning glass materials and other materials



5	Practice	Make cleaning according to the experiment
	Preparation Work	Preparation of materials related to the subject
6	Theoretical	Measuring devices used in the laboratory (introduction, use techniques and purposes, protection) Drying cabinet, ash furnace, Incubators sterile cabinet, autoclave
	Practice	Displaying devices in the laboratory environment and making the analysis by making the appropriate environment
	Preparation Work	Preparation of materials related to the subject
7	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
	Practice	Displaying devices in the laboratory environment and making the analysis by making the appropriate environment
	Preparation Work	Preparation of materials related to the subject
8	Intermediate Exam	Mid-term exam
9	Theoretical	PH meter, microscope, refractometer, polarimeter, colorimeter, photometer, usage techniques and aims, pH estimation, Refraction Index
	Practice	Displaying devices in the laboratory environment and making the analysis by making the appropriate environment
	Preparation Work	Preparation of materials related to the subject
10	Theoretical	Chromatographic introduction, description of chromatographic applications
	Practice	Examination of thin layer chromatography and paper chromatography samples
	Preparation Work	Preparation of materials related to the subject
11	Theoretical	Usage techniques and purposes of spectrophotometer
	Practice	Promotion using images and examination of some materials
	Preparation Work	Preparation of materials related to the subject
12	Theoretical	Usage techniques and purposes of spectrophotometer
	Practice	Display of device in laboratory environment
	Preparation Work	Preparation of materials related to the subject
13	Theoretical	HPLC device, use techniques and objectives
	Practice	Explaining and examining experimental images
	Preparation Work	Preparation of materials related to the subject
14	Theoretical	HPLC device, use techniques and objectives
	Practice	Explaining and examining experimental images
	Preparation Work	Preparation of materials related to the subject
15	Theoretical	Giving information about GC, IR, NMR, GC-MS, etc. kompleks devices
	Practice	Explaining and examining images
	Preparation Work	Preparation of materials related to the subject
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
Midterm Examination	1	5	1	6
Final Examination	1	5	1	6
Total Workload (Hours)				54
[Total Workload (Hours) / 25*] = <b>ECTS</b>				2

\*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 (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	L6
P4	5	5	5	5	5	5
P5	5	5	5	5	5	5
P6	5	5	5	5	5	5

