

School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

PHARMACOGNOSY LAB. III

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
PHARMACOGNOSY LAB. III	PHA4114867	Fall Semester	0+3	1,5	3
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Ayşe Esra KARADAĞ				
Name of Lecturer(s)	Assist.Prof. Ayşe Esra KARADAĞ				
Assistant(s)					
Aim	The aim of this course is to provide information about the essential oils from plants; evaluate practically identification, distillation, qualitative and quantitative determination and pharmacopoeia analysis.				
Course Content	This course contains; Demonstration, Microscopic examination of essential and fixed oil contained drugs, Extraction and quantitative determination of lipids in plant material, Determination of acid value and saponification number of lipids, Quantitative analysis of volatile oils (volumetric), Total aldehyde quantitation, Total alcohol quantitation, Quantitative analysis of phenolic compounds, Pharmacopoeia analysis of Oleum Thymi and Oleum Terebinthinae, Analysis of herbal teas, TLC analysis of different volatile oils, GC-MS analysis of volatile oil, Article presentation, Article presentation.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1. Identify essential and fixed oil containing drugs using microscope			10, 17, 5, 8, 9	A, D, G	
1.1. perform qualitative and quantitative analyses of fixed and essential oils found in herbal drugs.			10, 17, 5, 8, 9	A, D, G	
1.2. design fixed oil assays.			10, 17, 5, 8, 9	A, D, G	
1.3. design and distillate essential oils from herbal drugs using gravimetric and volumetric methods.			10, 17, 5, 8, 9	A, D, G	
1.4. perform analysis of essential oils according to European Pharmacopoeia.			10, 17, 5, 8, 9	A, D, G	
2. will be able to design specific analysis of the main compounds of the essential oils.			10, 17, 5, 8, 9	A, D, G	
2.1. perform water determination of drugs.			10, 17, 5, 8, 9	A, D, G	
2.2. perform the determination of phenolic compounds found in the essential oils.			10, 17, 5, 8, 9	A, D, G	
2.3. perform the determination of total alcohols found in the essential oils.			10, 17, 5, 8, 9	A, D, G	
3. will be able to arrange analysis of herbal teas.			10, 17, 5, 8, 9	A, D, G	
3.1. perform analysis of herbal teas.			10, 17, 5, 8, 9	A, D, G	
Teaching Methods	10: Discussion Method, 17: Experimental Technique, 5: Cooperative Learning, 8: Flipped Classroom Learning, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, D: Oral Exam, G: Quiz				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Demonstration	1, 2, 3, 4			
2	Microscopic examination of essential and fixed oil contained drugs	1, 2, 3, 4			
3	Extraction and quantitative determination of lipids in plant material	1, 2, 3, 4			
4	Determination of acid value and saponification number of lipids	1, 2, 3, 4			
5	Quantitative analysis of volatile oils (volumetric)	1, 2, 3, 4			
6	Total aldehyde quantitation	1, 2, 3, 4			
7	Total alcohol quantitation	1, 2, 3, 4			
8	Quantitative analysis of phenolic compounds	1, 2, 3, 4			
9	Pharmacopoeia analysis of Oleum Thymi and Oleum Terebinthinae	1, 2, 3, 4			
10	Analysis of herbal teas	1, 2, 3, 4			
11	TLC analysis of different volatile oils	1, 2, 3, 4			
12	GC-MS analysis of volatile oil	1, 2, 3, 4			
13	Article presentation	1, 2, 3, 4			
14	Article presentation	1, 2, 3, 4			
Evaluation Methods		Weight(%)			
Midterm Exam		60			
General Exam		40			

Resources

1- Pharmacognosy III Laboratory notes will be provided. 2- Pharmazeutische Biologie 4, Drogen analyse II: Inhaltstoffe und Isolierungen, E. Stahl, W. Schild, Gustav Fischer Verlag, Stuttgart, 1981. 3- Fundamentals of Pharmacognosy and Phytotherapy, M. Heinrich, J. Barns, S. Gibbons, E.M. Williamson, Churchill Livingstone, London, 2004. 4- Pharmacognosy, Phytochemistry, Medicinal Plants, J. Bruneton, Lavousier Publishing, London, New York, 1999.