

School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

PHARMACOGNOSY II

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
PHARMACOGNOSY II	PHA3214155	Spring Semester	2+0	2	4
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	English				
Course Level	First Cycle (Bachelor's Degree)				
Course Type	Required				
Course Coordinator	Assist.Prof. Şule Nur KARAVUŞ				
Name of Lecturer(s)	Assist.Prof. Şule Nur KARAVUŞ				
Assistant(s)					
Aim	To provide information about the amino acids, enzymes and alkaloids from plants and other natural sources; explain their biosynthetic pathways, biological activities, and chemical properties.				
Course Content	This course contains; 1. Definition and Properties of Alkaloids,2. Protoalkaloids,3. Piperidine and Pyridine Alkaloids,4. Tropane Alkaloids,5. Pyrrolizidine and Quinolizidine Alkaloids,6. Indole Alkaloids-Ergoline alkaloids, monoterpenoid indole alkaloids,7. Quinoline Alkaloids,8. Isoquinoline Alkaloids-morphinan alkaloids,9. Isoquinoline Alkaloids-Benzyltetrahydroisoquinolines,10. Isoquinoline Alkaloids-Monoterpenoid isoquinolines,11. Purine bases, Terpenoid and steroid alkaloids,12.Amino Acids, Lectins, Natural protein sweeteners,13.Enzymes, Probiotics and prebiotics,14. Homeopathy, Apitherapy, Hirudotherapy.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
1.Define alkaloids, discuss their general properties and chemical classification.			10, 14, 16, 19, 9	A, D, E	
3.Summarize various functions of amino acids in biosynthetic pathways.			10, 14, 16, 19, 9	A, D, E	
1.1. Explain pharmacological effects of alkaloids.			10, 14, 16, 19, 9	A, D, E	
1.2. List alkaloid containing botanical drugs.			10, 14, 16, 19, 9	A, D, E	
1.3. Evaluate critical issues with the use of ergot alkaloids.			10, 14, 16, 19, 9	A, D, E	
2. Discuss the use of certain alkaloids as an anticancer agent (e.g., camptothecin, taxol and others).			10, 14, 16, 19, 9	A, D, E	
2.1. Discuss biological activities of Isoquinoline alkaloids			10, 14, 16, 19, 9	A, D, E	
2.2. Discuss biological activities of tropane alkaloids			10, 14, 16, 19, 9	A, D, E	
2.3. Discuss biological activities of terpenoid alkaloids			10, 14, 16, 19, 9	A, D, E	
3.1. Discuss biological activities of lectins.			10, 14, 16, 19, 9	A, D, E	
3.2. Classify enzymes and explain their therapeutical uses.			10, 14, 16, 19, 9	A, D, E	
3.3. Discuss the natural protein sweeteners			10, 14, 16, 19, 9	A, D, E	
Teaching Methods	10: Discussion Method, 14: Self Study Method, 16: Question - Answer Technique, 19: Brainstorming Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam, D: Oral Exam, E: Homework				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	1. Definition and Properties of Alkaloids	1, 2, 3, 4, 5			
2	2. Protoalkaloids	1, 2, 3, 4, 5			
3	3. Piperidine and Pyridine Alkaloids	1, 2, 3, 4, 5			
4	4. Tropane Alkaloids	1, 2, 3, 4, 5			
5	5. Pyrrolizidine and Quinolizidine Alkaloids	1, 2, 3, 4, 5			
6	6. Indole Alkaloids-Ergoline alkaloids, monoterpenoid indole alkaloids	1, 2, 3, 4, 5			
7	7. Quinoline Alkaloids	1, 2, 3, 4, 5			
8	8. Isoquinoline Alkaloids-morphinan alkaloids	1, 2, 3, 4, 5			
9	9. Isoquinoline Alkaloids-Benzyltetrahydroisoquinolines	1, 2, 3, 4, 5			
10	10. Isoquinoline Alkaloids-Monoterpenoid isoquinolines	1, 2, 3, 4, 5			
11	11. Purine bases, Terpenoid and steroid alkaloids	1, 2, 3, 4, 5			
12	12.Amino Acids, Lectins, Natural protein sweeteners	1, 2, 3, 4, 5			
13	13.Enzymes, Probiotics and prebiotics	1, 2, 3, 4, 5			
14	14. Homeopathy, Apitherapy, Hirudotherapy	1, 2, 3, 4, 5			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			

Resources

1- Pharmacognosy II lecture notes will be provided. 2- Pharmacognosy, Phytochemistry, Medicinal Plants, Jean Bruneton, Intercept Ltd., 2nd Edition, 1999. 3- Trease and Evans Pharmacognosy, William C. Evans, Elsevier, 16th Edition, 2009. 4- Farmakognozi Cilt 2, M. Tanker ve N. Tanker, Ankara Üniversitesi Basımevi, Yayın no. 65, 1990. 5- Fundamentals of pharmacognosy and phytotherapy, Churchill Livingstone/ Elsevier, Edinburgh, 2013, c2012.