Course Description Form

1. Course Name:
Pharmacognosy I (Theoretical+ Practical)
2. Course Code:
Phcog25_2210
3. Semester / Year:
Second semester/2025-2026
4. Description Preparation Date:
01/10/2025
5. Available Attendance Forms:
Students' signature on attendance sheet
6. Number of Credit Hours (Total) / Number of Units (Total)
3 hours Theoretical + 2 hours Practical (75) /4 units
7. Course administrator's name
Theoretical
Name: Assist. Prof Dr. Mohanned Emad Qazzaz Email: mohannad.qazzaz@uomosul.edu.iq Dr. Sameer M Mahmood Email: sm.mahmood@uomosul.edu.iq Dr. Ban Ali Ahmed Email: ban-alnuaimy67@uomosul.edu.iq
Practical
Assist. Lecturer: Zena Sideeq Email: zena.sideeq@uomosul.edu.iq Assist. Lecturer: Samara sameer Email: samara.sameer@uomosul.edu.iq Assist. Lecturer: Sura Maan Salim Email: sura.maan@uomosul.edu.iq Assist. Lecturer: Noor Saad Email: noormahmoodph88@gmail.com
8. Course Objectives

Course Objectives To introduce students to the fundamer concepts and principles of pharmacogno focusing on the study of natural produ derived from plants, animals, microorganisms.	• To familiarize students with the identification, collecti preparation, and evaluation of crude drugs and her medicines. • To provide students with an understanding of chemical constituents, pharmacological properties, therapeutic uses of medicinal plants and natural produ • To develop practical skills in the extraction, isolati purification, and analysis of bioactive compounds fr natural sources.

9. Teaching and Learning Strategies	
Strategy	Lecturing Homework Quiz Practical laboratory demonstrations and experiments

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3+2	A2: Understand the scope of Pharmacognosy and analyse its role in drug development. B1: Apply microscopic measurement and magnification tools in the laboratory. C1: Collaborate ethically in discussing scientific concepts related to crude drug examination.	The Scope of Pharmacognosy Micro measurement and magnification	Theoretical lectures. Laboratory experiments	Paper-based exams
2	3+2	A2: Distinguish the physical and cellular characteristics of crude drugs under the microscope. A7: Evaluate potential contaminants or toxic elements in natural samples. B1: Perform slide preparation and microscopic examination accurately.	Drugs from natural sources, crud drugs, official and non-official drugs Microscopical identification of crude drugs and cell contents.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
3	3+2	A2: Classify natural compounds according to their chemical structure. A7: Analyse the pharmacological and toxicological properties of flavonoids. B2: Conduct self-directed research on the medicinal uses of Ruta graveolens. C1: Present scientific findings in a responsible and ethical manner.	Classification of natural products. Microscopical identification of crude drugs and cell contents Flavonoids of Ruta graveolens.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
4	3+2	A2: Understand botanical nomenclature and analyse its relevance to drug identity. B1: Apply extraction and separation techniques in the laboratory. B4: Evaluate the purity of extracted materials for medicinal suitability.	Plant nomenclature and taxonomy. Extraction and separation techniques.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
5	3+2	A2: Analyse the impact of cultivation and drying conditions on active constituents. A7: Predict risks of deterioration or contamination due to improper storage. B3: Provide guidance on proper handling and storage of herbal preparation	Production of crude drugs Cultivation, collection, drying and storage Extraction and separation techniques.	Theoretical lectures. Laboratory experiments.	Paper-based exams

6	3+2	A7: Identify signs of deterioration in crude natural products. B1: Perform chromatographic isolation of citric acid. B4: Assess the quality and safety of isolated materials. C1: Maintain accuracy and integrity in documenting laboratory procedures.	Deterioration of crude natural products Chromatography Isolation of citric acid from lemon juice.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
7	3+2	A7: Evaluate pharmacological actions of natural compounds on biological systems. A2: Analyse correlations between chemical structure and biological activity. B3: Recommend the most suitable compound for a given therapeutic case.	Pharmacological activities of natural products Chromatography.	Theoretical lectures. Laboratory demonstration.	Paper-based exams
8	**Mid-term exam**				
9	3+2	A2: Understand the chemical composition of natural drug products and analyse their physical properties. B1: Apply paper chromatography for separation of active constituents. B4: Assess the purity of chromatographic outcomes for medicinal application.	Chemistry of natural drug products Paper chromatography	Theoretical lectures. Laboratory demonstration.	Paper-based exams
10	3+2	A2: Analyse quality control parameters of herbal products based on physical and chemical standards. A7: Evaluate potential impurities that may cause toxicity or drug interactions. B1: Perform paper chromatography as a verification tool for purity. C1: Document results following ethical scientific reporting standards.	Quality control Paper chromatography	Theoretical lectures. Laboratory demonstration.	Paper-based exams
11	3+2	A2: Understand principles of phytochemical screening for active constituents. B1: Apply thin-layer chromatography in compound detection. B2: Interpret chromatographic patterns through self-guided analysis.	Phytochemical investigation of herbal products Introduction to thin-layer chromatography	Theoretical lectures. Laboratory demonstration.	Paper-based exams
12	3+2	A2: Analyse separation mechanisms using microscopic TLC. B1: Design and conduct TLC experiments on glass slides. C1: Engage in collaborative evaluation of experimental results.	Separation technique TLC on microscope slides.	Theoretical lectures. Laboratory demonstration.	Paper-based exams

13	3+2	A7: Evaluate safety and efficacy of traditional herbal medicines compared to modern therapies. A2: Understand the principles of partition chromatography for volatile oil separation. B3: Advise patients on evidence-based and safe use of traditional remedies.	Traditional plant medicines as a source of new drugs. Partition chromatography for the separation of volatile oils	Theoretical lectures. Laboratory demonstration.	Paper-based exams
14	3+2	A2: Understand tissue culture principles and their role in producing active compounds. A7: Analyse the effect of adsorbents on Rf values and relate them to product quality. B2: Investigate alternative methods for laboratory-scale production of natural products. C1: Present research outputs ethically and systematically.	Tissue culture of medicinal plant Effect of activity of adsorbents on values	Theoretical lectures. Laboratory demonstration.	Paper-based exams

11. Course Evaluation

- 20 M Theoretical assessments;
  (Paper-based mid-term exam + quiz + attendance)
- 20 M practical assessment (attendance + quiz + practice)
- 60 M paper-based theoretical final exam

Total 100 M

12. Learning and Teaching Resources

Required textbooks	• **Trease, and Evans,W.C., Pharmacognosy,16th edition,2009,Elsevier Health Sciences.**
Main references (sources)	