

## Course Description Second Year Second Semester

**Review the performance of the higher education institution  
(review of the academic program)**

**This course description provides a summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, proving whether he has made the most of the available learning opportunities and must be linked to the program .description**

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>1. Educational Institution</b>                                                                                                                                                                                                                                                                                                                                                       | <b>Al-Zahrawi University College -<br/>Ministry of Higher Education and<br/>Scientific Research</b> |
| <b>2. University Department / Center</b>                                                                                                                                                                                                                                                                                                                                                | <b>Pharmacy</b>                                                                                     |
| <b>3. Course Name / Code</b>                                                                                                                                                                                                                                                                                                                                                            | <b>Pharmacognosy I (Practical) PPCG 21</b>                                                          |
| <b>4. Programs in which it is included</b>                                                                                                                                                                                                                                                                                                                                              | <b>Bachelor of Pharmaceutical Sciences</b>                                                          |
| <b>5. Available Forms of Attendance</b>                                                                                                                                                                                                                                                                                                                                                 | <b>Daily Attendance</b>                                                                             |
| <b>6. Semester / Year</b>                                                                                                                                                                                                                                                                                                                                                               | <b>Second Semester / Second year</b>                                                                |
| <b>7. Total Number of Study Hours</b>                                                                                                                                                                                                                                                                                                                                                   | <b>2 hours weekly/ 30 hours Total</b>                                                               |
| <b>8. Date of preparing this description</b>                                                                                                                                                                                                                                                                                                                                            | <b>2025-2026</b>                                                                                    |
| <b>9. Course Objectives:</b> Learn about the basics and principles of pharmacology and phytochemistry since the beginning of this science and the developments taking place at the present time the program also includes methods of examining and classifying plants, in addition to the general methods used to extract herbal materials as well as methods of laboratory examination |                                                                                                     |
| <b>10. Learning Outcomes, Teaching and Learning Methods, and Evaluation</b>                                                                                                                                                                                                                                                                                                             |                                                                                                     |

## **A. Knowledge and Understanding**

1. Identify all sources of natural products and raw medicines.
2. Methods of extracting active substances
3. Study of chemistry and biosynthesis
4. Study of plant components by microscope and identification of different cellular tissues
5. Study of the separation of different plant components

## **B. Subject-Specific Skills**

1. Acquire skills in extraction methods.
2. Acquire skill in isolating active compounds.
3. Acquire skill in identifying separate compounds.
4. Acquire skills in using microscopy to identify different cell

## **C. Teaching and Learning Methods**

1. Theoretical lectures
2. Seminars and reports
3. Laboratory Experiments.
4. Field visits to herbal centers in addition to the botanical garden

## **D. Evaluation Methods**

- Semi-semester exams and final exams.
- Oral exams
- Classroom activities and assignments
- Assessment of student work during the experiment

## **E. Thinking Skills**

- The use of modern methods in the preparation of lectures and presentations in the form of PowerPoint
- The use of group discussion to understand the article
- Giving homework that stimulates and activates thinking and linking

information

## **F. General and Transferable Skills**

- The student should be able to employ the knowledge he has received.
- Giving confidence to the student through the discussion of seminars.
- The student should be able to embody what he has acquired in professional development.

| 11. Course Structure |       |                            |                                                                |                  |                                                                        |
|----------------------|-------|----------------------------|----------------------------------------------------------------|------------------|------------------------------------------------------------------------|
| Weeks                | Hours | Required Learning Outcomes | Unit Name / Course or Topic                                    | Learning Methods | Evaluation Method                                                      |
| 1                    | 2     | Knowledge and lab skills   | General Introduction and Plant nomenclature.                   | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 2                    | 2     | Knowledge and lab skills   | Micro measurement and magnification                            | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 3                    | 2     | Knowledge and lab skills   | Microscopical identification of crude drugs and cell contents. | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 4                    | 2     | Knowledge and lab skills   | Extraction techniques (conventional technique).                | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 5                    | 2     | Knowledge and lab skills   | Experiments on Extraction of Alkaloid                          | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 6                    | 2     | Knowledge and lab skills   | Experiments on Extraction of Flavonoid                         | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 7                    | 2     | Knowledge and lab skills   | Separation Techniques                                          | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |
| 8                    | 2     | Knowledge and lab skills   | Chromatography                                                 | Lab Experiment   | Evaluation of laboratory skills and lab reports oral and written exams |

|       |    |                          |                                                                      |                |                                                                        |
|-------|----|--------------------------|----------------------------------------------------------------------|----------------|------------------------------------------------------------------------|
| 9     | 2  | Knowledge and lab skills | Paper chromatography (circular and horizontal paper chromatography). | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 10    | 2  | Knowledge and lab skills | Paper chromatography (Ascending chromatography).                     | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 11    | 2  | Knowledge and lab skills | Introduction to thin-layer chromatography                            | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 12    | 2  | Knowledge and lab skills | TLC on microscope slides.                                            | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 13    | 2  | Knowledge and lab skills | Partition chromatography for the separation of volatile oils.        | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 14    | 2  | Knowledge and lab skills | Effect of activity of adsorbents on R <sub>f</sub> values            | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| 15    | 2  | Knowledge and lab skills | Column chromatography<br>Other Types of Chromatography (HPLC)        | Lab Experiment | Evaluation of laboratory skills and lab reports oral and written exams |
| Total | 30 |                          |                                                                      |                |                                                                        |

| 12. Infrastructure                                                                    |                                                                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Required Readings:</b>                                                             | <b>References:</b> <ul style="list-style-type: none"> <li>• W.C Evans, “Trease and Evans: Pharmacognosy” 16 Edition, 2009</li> <li>• Pharmacognosy Lab Manual</li> </ul> |
| <b>Special Requirements (Workshops, Journals, Software, Websites):</b>                | <b>Electronic Websites:</b>                                                                                                                                              |
| <b>Social Services (Guest Lectures, Professional Training, Field Studies, Others)</b> | <b>Organizing workshops and courses for graduates:</b>                                                                                                                   |

| 13.                               |                                         |
|-----------------------------------|-----------------------------------------|
| <b>Prerequisites</b>              | Admission according to the central plan |
| <b>Minimum Number of Students</b> | /                                       |
| <b>Maximum Number of Students</b> | Admission exceeds the capacity plan     |

**Name of the Instructor:**  
**Lecture assistant Ahmed Abdul-Wahab**