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| **1** | **Course title** | Pharmacognosy – Practical |  |
| **2** | **Course number** | 1201322 |  |
| **3** | **Credit hours (theory, practical)** | One credit hour ( practical ) |  |
| **Contact hours (theory, practical)** | Three hours / week |  |
| **4** | **Prerequisites/corequisites** | Biology 102 ( 0304102 ) , Biochemistry (1) ( 1203251 ) |  |
| **5** | **Program title** | BCs pharmacy , Doctor of pharmacy |  |
| **6** | **Program code** | Not available |  |
| **7** | **Awarding institution** |  |  |
| **8** | **School** | Faculty of pharmacy |  |
| **9** | **Department** | Department of Pharmaceutical Sciences |  |
| **10** | **Level of course** | Third year |  |
| **11** | **Year of study and semester (s)** | First semester 2021/2022 |  |
| **12** | **Final Qualification** | BSc of pharmacy and PharmD |  |
| **13** | **Other department (s) involved in teaching the course** |  |  |
| **14** | **Language of Instruction** | English |  |
| **15** | **Date of production/revision** | 1/10/2021 |  |

**16. Course Coordinator:**

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| Name: MSc. Haneen Mohammad  Office number: 303  Phone number: 0798022932  Email: [Haneen.mohammad@ju.edu.jo](mailto:Haneen.mohammad@ju.edu.jo) |

**17. Other instructors:**

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| Pharmacist Zahra Sulaiman |

**18. Course Description:**

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| Understanding the definition and material of pharmacognosy science and its applications in therapy and pharmacy, acquainting knowledge of natural drug products, their classification, production, evaluation as well as their general chemistry, and understanding the qualitative and quantitative tests used to evaluate plant material in its crude and powdered status according to pharmacopeia and WHO guidelines for plant-based material. |

**19. Course aims and outcomes:**

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| **A- Aims:**  At the end of the course the student will have gained knowledge in the science of pharmacognosy and the use of natural products (e.g. medicinal plants and herbs) in pharmacy and therapy. Students will be able to define and investigate in the different fields and disciplines related to study of natural drugs and pharmacognosy science including sample preparation and separation. They will also acquaint practical knowledge of methods of identification, classification, production, chemical and physical evaluation of natural drug products. They will also gain practical skills needed to evaluate macroscopically and microscopically some selected medicinal plants, as crude drugs, covered by the theoretical course.  **B- Course Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to: |
| 1. Apply the science of pharmacognosy and the use of natural products (e.g. medicinal plants and herbs) in pharmacy and therapy. |
| 1. Plant primary metabolites as natural products. |
| 1. Define information and investigate in the different fields and disciplines related to study of natural drugs and pharmacognosy science including sample preparation and separation. |
| 1. Define, identify and evaluate natural drugs derived from plant primary metabolism (carbohydrates, lipids, and proteins). |
| 1. Acquaint practical knowledge of methods of identification, classification, production, chemical and physical evaluation of natural drug products. |
| 1. Identify natural products of plant primary metabolism and their applications in therapy, pharmacy and food industry. |
| 1. Demonstrates team workspirit as a work-group and discuss results with other colleagues. |
| 1. Demonstrates respect to the instructors in the lab by observing active listening inside the lab |
| 1. Demonstrates the ability to conduct a literature survey, access specific information about medicinal plants and natural products as well as how to collect data of others’ research to prepare a group common report. |

**20. Topic Outline and Schedule:**

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Week** | **Topic** | **Resources** | | Assignments (Done by every week BEFORE class) | | 1 | Identification of Starches | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 2 | Identification of Seeds. | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 3 | Identification of Leaves and Herbs | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 4 | Identification of Fruits. | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 5 | Midterm exam | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 6 | Identification of Barks and Woods | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 7 | Identification of subterranean organs | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 8 | Identification of Flowers. | - Lab manual  - Videos for experiments posted on Microsoft teams. | Pre-lab quizzes | | | 9 | Revision lab. |  |  | | | 10 | Final exam |  |  | | |  |

**21. Teaching Methods and Assignments:**

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| Development of ILOs is promoted through the following teaching and learning methods:  1- Theoretical introduction, practical demonstration and online videos (e-learning)  2- Practical tests and discussion  3- Discussions, and Assignments   * Blended Learning + Flipped Learning |

**22. Evaluation Methods and Course Requirements:**

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| Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:  Practical exams, reports, assignments and quizzes. |

**23. Course Policies:**

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| **A- Attendance policies:**  Attendance: Mandatory.  First warning – after first absences  Last warning – with 2 absences  Failing in the subject – with 3 absences  **B- Absences from exams and submitting assignments on time:**  Will result in zero achievement unless health report or other significant excuse is documented.  **C- Health and safety procedures:**  **N/A**  **D- Honesty policy regarding cheating, plagiarism, misbehaviour:**  The participation, the commitment of cheating will lead to applying all following penalties together  1) Failing the subject he/she cheated at  2) Failing the other subjects taken in the same course  3) Not allowed to register for the next semester. The summer semester is not considered as a semester  **E- Grading policy:**  Mid Exam 30 points (practical and theoretical)  In class Quizzes 10 points  Online Quizzes 5 points  Reports 10 points  Evaluation 5 points  Final Exam 40 points  Total 100 points |

**24. Required equipment: (**Facilities, Tools, Labs, Training….)

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| Microscopes |

**25. References:**

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| 1. Required book (s), assigned reading and audio-visuals:   Practical Manual  Pharmacognosy (by: Tyler, Brady, and Robbers). 1990.   1. Recommended books, materials, and media:   Trease and Evans’ Pharmacognosy (by W.C. Evans). Edition (year): 15th (2000). |

**26. Additional information:**

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| **Course material and announcements**: this course is **taught using blended learning**, students are asked to watch the provided videos on e-learning platform before coming to the lab and participate in the online prelab quizzes before coming to the lab session. In addition in participating in the online assignments and discussions during the semester.  Students need to have a lab manual, slides and cover slips  In addition, course related announcements will be posted on canvas, it is the responsibility of the students to check in the site on a regular basis to obtain extra material required for the specified weeks  **Grievance policy:**  According to the general policies applied at the University of Jordan for grievance when there is a complaint or conflict between a student and an academic/staff member or another student the following procedures must be followed :  1. The student writes a formal complaint describing the situation of conflict to the Dean of the School or the President of the University  2. Dean or President will first try to resolve the controversy by meeting/listening to both parties  3. If agreement was not possible, Dean or President forms an investigation committee which will follow, within a specified timeline, the general policies for relevant circumstances. The following points are considered:  a. The committee will meet/talk to both parties and witnesses ( if applicable) within two weeks of conflict  b. All meetings and discussions are documented according to university policies  c. Results/recommendations will be sent to the Dean or President who is responsible for their implementation  **Course Assessment:**   * **Online Assessment (30)** * **In-Class Assessment (70)** |

Name of Course Coordinator: Haneen Mohammad Signature: ------------------ Date: 1/11/2021

Head of curriculum committee/Department: ----------------------------- Signature: ---------------------------

Head of Department: ------------------------------------------------------------ Signature: -----------------------

Head of curriculum committee/Faculty: ----------------------------------------- Signature: --------------------

Dean: --------------------------------------------------------- -Signature: -------------------------------------------