COURSE DESCRIPTIONS

Faculty	Pharmacy				
Department	Medical Laboratory Sciences			**NQF level**	5
Course Title	Introduction to Hematology	**Code**	902265	**Prerequisite**	901358
Credit Hours	3	**Theory**	2	**Practical**	1
Course Leader	Dr. Mohammad Bani-Ahmad	**email**	m.baniahmad@jadara.edu.jo		
Lecturers	Dr. Mohammad Bani-Ahmad	**emails**	m.baniahmad@jadara.edu.jo		
Lecture time	Sun, Tue 8:30-10:00	**Classroom**	D302	**Attendance**	Fulltime
Semester	First 2022/2023	**Production**	2019	**Updated**	2022

Short Description

Hematology LM251 is introduced with the study blood and its components specifically the formed cellular elements including erythrocytes, leukocytes and thrombocytes. A detailed description of these elements will be provided with a major prospect on their generation, structure, function and metabolism. A considerable portion of the course will be directed to provide the students with an intensive specialized knowledge of the laboratory procedures for enumeration, examination and identification.

Course Objectives

The major goal of this course is to provide the students with the basic knowledge in hematological science as a preparation for the diagnostic hematopathology courses where blood and bone marrow disorders will be discussed.

Therefore, upon completion of this course, the student will be able to:

1. To understand the basic concepts and terminology in hematology.
2. To understand the principles of blood cells generation (hematopoiesis) and the regulatory mechanisms involved in this process.
3. To define cellular components of blood in regard of their structure, function and metabolism.
4. To experience the technical laboratory procedures for the enumeration and examination of blood cells.
5. To be able to interpret the laboratory findings and correlated these to the diagnostic aspects of blood disorders.

Course Intended Learning Outcomes (CILOs)

A. Knowledge - Theoretical Understanding

a1. Outline the structure, production, and function of blood cells.
a2. Explain the procedures, reference ranges , and principles of medical tests that are used in hematology laboratory.

B. Knowledge - Practical Application
a3. Apply technical laboratory procedures for the enumeration and examination of blood cells.
C. Skills - Generic Problem Solving and Analytical Skills
b1. Analyze the scientific evidence underlying our current understanding of hematology to solve problems in medical analysis.
D. Skills - Communication, ICT, and Numeracy
b2. prove the ability to intellectual independence and commitment to lifelong learning.
E. Competence: Autonomy, Responsibility, and Context
c1. Adapt the knowledge gained from this course, in some of the specific methodologies used in medical tests in hematology
Teaching and Learning Methods
• Lectures will be given according to the specified time and location as assigned on the academic • schedule (see course information above) Lectures will be administrated using power-point presentations and will be provided to the students • through JU e-learning website. • Textbook is obligatory and required by the students
Assessment Methods
• Midterm Exam • Assignments • Quizes • Final Exam

Course Contents					
Week	**Hrs**	**CILOs**	**Topics**	**Teaching & Learning Methods**	**Assessment Methods**
1 Oct 23 – 25 2022	3	a1	• Introduction: Blood and it's components • Hematopoiesis	Handout Textbook (chapter 7)	Midterm & Final Exam
2 Oct 30 – Nov 25 2022	3	a1	• Erythrocytes (I): Structure and Function • Erythrocytes (II): Hemoglobin	Handout Textbook (chapter 9,10)	Midterm & Final Exam
3 Nov 6 – 8 2022	3	a1	• Erythrocytes (III): Iron Homeostasis • Erythrocytes (IV): Erythrocyte life cycle	Handout Textbook (chapter 8, 10)	Midterm & Final Exam
4 Nov 13 – 15 2022	3	a2, a3, b1, c1	• Erythrocytes (V): Routine Examination of erythrocytes (I) • Erythrocytes (VI): Routine Examination of erythrocytes (II)	Handout Textbook (chapter 14, 16)	Midterm & Final Exam
5 Nov 20 – 22 2022	3	a1	• Leukocytes (I): Classification and Structure • Leukocytes (II): Function	Handout Textbook (chapter 12)	Midterm & Final Exam
6 Nov 27 – 29 2022	3	a3, b1, b2	• **Midterm Exam (9:00 AM)** • Leukocytes (III): Leukopoiesis	Handout Textbook (chapter 12)	
7 Dec 4 – 6	3	a2, a3, b1, c1	• Leukocytes (IV): CBC and Differential	Handout	Final Exam

2022			• Leukocytes (V): Morphological Examination	Textbook (chapter 14)	
8 Dec 11 – 13 2022	3	a1	• Hemostasis (I): Platelets Structure and Function • Hemostasis (II): Megakaryopoiesis	Handout Textbook (chapter 13)	Final Exam
9 Dec 18 – 20 2022	3	a1, a2, a3	• Hemostasis (III): Coagulation System Hemostasis (IV): Anti-Coagulation • and Fibrinolysis	Handout Textbook (chapter 13)	Final Exam
10 Dec 25 – 27 2022	3	a1, a2, a3, b2	• Homeostasis (VI): Hemostatic Evaluation (I) • Homeostasis (VI): Hemostatic Evaluation (II)	Handout Textbook (chapter 9)	Final Exam
11 Jan 1 – 3 2023	3	a2, a3 b1, b2, c1	• Practical Session (I): Blood cells count • Practical session (II) Hematocrit and Hemoglobin concentration	Lab Manual	Quizzes Reports & Final Exam
12 Jan 8 – 7 2023	3	a2, a3 b1, b2, c1	• Practical Session (III): ESR and reticulocytes count • Practical session (IV)	Lab Manual	Quizzes Reports & Final Exam
13 Jan 15 – 17 2023	3	a2, a3 b1, b2, c1	• Practical Session (V): Blood film examination • Practical session (IV): Hemostatic evaluation (Bleeding and clotting time)	Lab Manual	Quizzes Reports & Final Exam

Infrastructure	
Textbook	**Hematology: Clinical principles and applications** Bernadette F. Rodak, George A. Fritsma and Kathryn Doig Saunders Elsevier 2016 5th edition ISBN: 9780-323-23906-6 https://evolve.elsevier.com
References	---
Required reading	---
Electronic materials	As provided at Jadara E-learning system
Other	---

Course Assessment Plan						
Assessment Method		**Grade**	**CILOs**			
First (Midterm)		30				
Second (if applicable)						
Final Exam		50				
Coursework						
Coursework	Assignments					
	Case study					
	Discussion and interaction					

	Group work activities					
	Lab tests and assignments	10				
	Presentations					
	Quizzes	10				
Total		100				

Plagiarism
Plagiarism is claiming that someone else's work is your own. The department has a strict policy regarding plagiarism and, if plagiarism is indeed discovered, this policy will be applied. Note that punishments apply also to anyone assisting another to commit plagiarism (for example by knowingly allowing someone to copy your code). Plagiarism is different from group work in which a number of individuals share ideas on how to carry out the coursework. You are strongly encouraged to work in small groups, and you will certainly not be penalized for doing so. This means that you may work together on the program. What is important is that you have a full understanding of all aspects of the completed program. In order to allow proper assessment that this is indeed the case, you must adhere strictly to the course work requirements as outlined above and detailed in the coursework problem description. These requirements are in place to encourage individual understanding, facilitate individual assessment, and deter plagiarism.