



# Paramedical Program

<b>Specialization</b>	<b>Medical Laboratories</b>
<b>Course Number</b>	<b>21107161</b>
<b>Course Title</b>	<b>Basics in Hematology</b>
<b>Credit Hours</b>	<b>(3)</b>
<b>Theoretical Hours</b>	<b>(2)</b>
<b>Practical Hours</b>	<b>(3)</b>



**Brief Course Description:**

This course is designed to provide students with needed knowledge to perform a variety of lab test and to know the different component of the blood and their pathology .it will enable the student to know also the normal hemostase and it's pathology and how to investigate the hemostase and the coagulation abnormalities

**Course Objectives:**

Upon the completion of the course, the student should be able to:

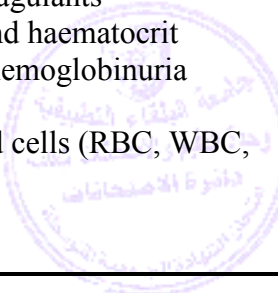
- 1-know the blood cells and their morphological abnormalities
- 2- Define anemia and polycythemia and their causes
- 3- Define leukemia's and their classifications
- 4-know the role of platelets and their anomalies
- 5-know the normal hemostase
- 6-know the coagulation abnormalities



## Detailed Course Description:

Unit Number	Unit Name	Unit Content	Time Needed
1	<b>BLOOD</b>	<p>A-Introduction Classification as a tissue Composition of the whole blood</p> <p>B-bone marrow: General structure Function Bone marrow examinations: aspiration and trephine biopsy</p> <p>C-Haematopoeisis: Site Hematopoietic stem cells</p>	
2	<b>Red blood cells &amp; ERYTHROPOEISIS:</b>	<p><b>Erythropoietin</b> -Substances needed for erythropoeisis -Hemoglobin synthesis, structure and functions -Erythrogenesis (Formation, Red blood cells life span, morphology and metabolism -Red blood cells destruction</p> <p><b>ANEMIA</b> -General aspects of anemia -Classification of anemia: Normochromic, Normocytic Macrocytic , Microcytic ,Hypochromic -Clinical features and investigation of anemia</p> <p><b>POLYCYTHEMIA</b> - Definition ,Causes</p>	



<p>3</p>	<p><b>White blood cells</b></p>	<p><b>LEUCOCYTOGENE-SIS</b>                      -Normal granulocyte appearance                      -Granulocytes formation, kinetics, and functions                      -Non granulocytes formation, kinetic, and function                      -Discuss and perform lab tests used to detect WBC disorders</p> <p><b>LEUCOPENIA, LEUCOCYTOSIS</b>                      -Definition ,Causes</p> <p><b>LEUKEMIA</b>                      -Etiology                      -Classifications: acute versus chronic.                      Myeloid versus lymphoid                      -Cells of origin of leukemia                      -Chromosomes changes</p>	
<p>4</p>	<p><b>PLATELETS</b>                      &amp;  <b>HEMOSTASIS</b></p>	<p>-Production                      -Circulation                      -Structures                      -Functions                      -Platelets disorders:                      Thrombocytopenia:                      Production failure                      Increase destruction</p> <p>-HEMOSTATIC CONTROL AND FIBRINOLYSIS.</p> <p>-THE ROLE OF LABORATORY IN DIAGNOSIS OF HEMOSTATIC DISEASES</p>	
<p>5</p>	<p><b>PRACTICAL COURSE</b></p>	<p>1-Lab safety and quality control                      2-Phlebotomy and anticoagulants                      3-Haemoglobinometry and haematocrit                      4-Hemoglobinemia and hemoglobinuria                      5-ESR                      6--Manual count of blood cells (RBC, WBC, and PLATLETES)                      7- differential count                      8-Blood film</p>	



**Evaluation Strategies:**

Exams		Percentage	Date
Exams	First Exam	20%	--/--/----
	Second Exam	20%	--/--/----
	Practical Exam	10%	--/--/----
	Final Exam	35%Theory 15%Practical	--/--/----

**Teaching Methodology:**

- ❖ Lectures
- ❖ Slides and posters
- ❖ Practice inside labs

**Text Books & References:**

**Reference**

- 1-Winetrobe's Clinical Hematology ,9Ed .Richard lee, Thomas C.Bithell,John Athen and John Lukens
- 2-A.V.Hoffbrand, J.E.Petit" Essential Hematology" Black well Scientific Publications
- 3-Clinical Hematology and fundamental of Hemostase .Denise Harmening, 5th Ed..F.A.Davis .2009

