

**Hemato-Lymphoid System**  
*First Semester 2022/2023*  
*Number of Lectures and Laboratory Sessions: 56*  
*4 Credit hours*  
*Course number: 0500371*

Subject	Lecture number	Topic
Histology	1	<b>Blood cells-1</b> (Histology of Erythrocytes)
	2	<b>Blood cells-2</b> (Histology of Granulocytes)
	3	<b>Blood cells-3</b> (Histology of Agranulocytes and Thrombocytes)
	4	<b>Hematopoiesis- 1</b> (Erythropoiesis)
	5	<b>Hematopoiesis- 2</b> (Granulopoiesis)
	6	<b>Lymphatic system-1</b> (Histology of Lymph nodes)
	7	<b>Lymphatic system-2</b> (Histology of Spleen, Tonsils and MALT)
	8	<b>Lymphatic system-3</b> (Histology of Thymus, T cells development)
Physiology	1	<b>Introduction</b> (Blood composition, function, Plasma proteins (majors)(M.W and concentrations)
	2	<b>Erythrocytes</b> (Shape, size, dimensions of normal erythrocyte, Function of RBCs Number/ul and PCV (HcT), Erythropoiesis)
	3	<b>Hemoglobin</b> (Definition, concentration, structure, Human Hb genetic variants)
	4	<b>Leukocytes</b> (Cell types, the percent distribution of the different cell types, Physiological variations in leukocyte count)
	5	<b>Thrombocytes</b> (Production, approximate concentration, structure and survival time, Platelet function (Hemostasis)
	6	<b>Fibrinolysis, Thrombosis</b>
	7	<b>Anticoagulant (Invivo and Invitro)</b>
	8	<b>Body fluids and Lymphatic system</b>
	9	<b>Blood groups and blood transfusion- 1</b>
	10	<b>Blood groups and blood transfusion- 2</b>
	11	<b>Blood groups and blood transfusion- 3</b>
Biochemistry	1	<b>Hemoglobin Overview</b>
	2	<b>Regulation of Hemoglobin function</b>
	3	<b>Hemoglobinopathies</b>
	4	<b>Metabolism in Erythrocytes</b>
	5	<b>Metabolism of iron</b> (Synthesis, storage, transport and genetic diseases)
	6	<b>Metabolism of Heme</b> (Structure, biosynthesis and degradation)
	7	<b>Biochemical view of Blood coagulation-1</b>
	8	<b>Biochemical view of Blood coagulation-2</b>
Pathology	1	<b>Red blood cells disorders-1</b>
	2	<b>Red blood cells disorders-2</b>
	3	<b>Red blood cells disorders-3</b>
	4	<b>Red blood cells disorders-4</b>
	5	<b>Bleeding disorders</b>
	6	<b>White blood cells disorders-1</b>
	7	<b>White blood cells disorders-2</b>
	8	<b>White blood cells disorders-3</b>
	9	<b>White blood cells disorders-4</b>
	10	<b>White blood cells disorders-5</b>
Microbiology	1	<b>Blood protozoa: Plasmodium &amp; Babesia</b>
	2	<b>Hemoflagellates: Trypanosoma and Leishmania</b>
	3	<b>Viral diseases in the hematology-1</b>
	4	<b>Viral diseases in the hematology-2</b>
Pharmacology	1	<b>Agents used in Anemias</b>
	2	<b>Hematopoietic growth factors</b>
	3	<b>Drugs used in Thromboembolic Diseases-1</b>

	4	Drugs used in Thromboembolic Diseases-2
	5	Drug treatment in hematopoietic malignancy-1
	6	Drug treatment in hematopoietic malignancy-2
	7	Antimalarial drugs
	8	Antiviral drugs
Clinical	1	Case presentation
	2	Case discussion
Physiology lab	Lab 1	Red Blood Cells and White Blood Cells Count
	Lab 2	Differential Leukocyte Count Reticulocyte Count Packed Cell Volume Hemoglobin Concentration Erythrocyte Sedimentation Rate
	Lab 3	Blood Typing Bleeding Time Clotting Time Osmotic Fragility Test
Histology lab	Lab 1	Histology of Blood Cells and Primary Lymphoid Organs Erythrocytes, Leukocytes (granulocytes and agranulocytes), Thrombocytes, Bone marrow, Thymus
	Lab 2	Histology of Secondary Lymphoid Organs Lymph nodes, Spleen, Tonsils

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### **Recommended books**

#### **Physiology:**

- 1- Guyton and Hall Textbook of medical physiology, 13th edition, Hall.
- 2- Ganong's review of medical physiology, 25th edition. Barrett, Barman, Boitano, Brooks.

#### **Histology:**

Junqueira's Basic Histology: Text and Atlas, by Anthony L. Mescher, 15th edition.

#### **Biochemistry:**

Lippincott illustrated reviews series, 6th edition, Farrier.

#### **Microbiology:**

- 1- Basic clinical parasitology. F. A. Neva & H.W. Brown. Prentice Hall, International Editions.
- 2- Sherries Medical Microbiology, 6th edition, Ryan, Ray, Ahmad, Drew.

#### **Pathology:**

Robbins & Cotran Pathologic Basis of Disease, 9th edition, Kumar, Abbas, Aster.

#### **Pharmacology:**

Basic and Clinical Pharmacology, 13th edition, Katzung, Trevor.