

**Hemato-Lymphoid System**  
*First Semester 2020/2021*  
*Number of Lectures and Laboratory Sessions: 55*  
*4 Credit hours*  
*Course number: 500371*

First week						
Date	8-9	9-10	10-11	11-12	12-1	1-2
Sunday 11/10/2020	Physio 1	Histo 1	Biochem 1	Patho 1		
Monday 12/10/2020	Physio 2	Histo 2	Biochem 2	Patho 2		
Tuesday 13/10/2020	Physio 3	PBL 1	Biochem 3	Patho 3		
Wednesday 13/10/2020		Histo Live meeting	Biochem Live meeting	Patho Live meeting	Histo 3	
Second week						
Date	8-9	9-10	10-11	11-12	12-1	1-2
Sunday 18/10/2020	Physio 4	Histo 4	Histo 5	Patho 4	Histo lab 1	
Monday 19/10/2020	Physio 5	Histo 6	Biochem 4	Patho 5	Physio lab 1	
Tuesday 20/10/2020	Physio 6	Pharma 1	Biochem 5	Patho 6		
Wednesday 21/10/2020		Histo Live meeting	Biochem Live meeting	Patho Live meeting	Histo 7	
Third week						
Date	8-9	9-10	10-11	11-12	12-1	1-2
Sunday 25/10/2020	Physio 7	Pharma 2	Biochem 6	Patho 7	Histo lab 2	
Monday 26/10/2020	Physio 8	Pharma 3	Biochem 7	Patho 8	Physio lab 2	
Tuesday 27/10/2020	Physio 9	Pharma 4	Micro 1	Patho 9		
Wednesday 28/10/2020		Histo Live meeting	Biochem Live meeting	Pharma Live meeting	Histo 8	
Fourth week						
Date	8-9	9-10	10-11	11-12	12-1	1-2
Sunday 1/11/2020	Physio 10	Pharma 5	Micro 2	Patho 10		
Monday 2/11/2020	Physio 11	Pharma 6	Micro 3	PBL 2	Physio lab 3	
Tuesday 3/11/2020		Pharma 7	Micro 4			
Wednesday 4/11/2020		Physio Live meeting	Micro Live meeting	Pharma Live meeting	Patho Live meeting	PBL Live meeting

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

	4	Drugs used in Thromboembolic Diseases-2
	5	Drug treatment in hematopoietic malignancy-1
	6	Drug treatment in hematopoietic malignancy-2
	7	Antimalarial drugs
PBL	1	Problem based learning -1
	2	Problem based learning -2
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

#### 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.

**Physiology:** Prof. Dr. Salim Khrisha, [salimkh@ju.edu.jo](mailto:salimkh@ju.edu.jo)

**Pathology:** Dr. Tariq Aladily, [tnaladily@ju.edu.jo](mailto:tnaladily@ju.edu.jo)

**Histology:** Dr. Heba Kalbouneh, [heba.kalbouneh@ju.edu.jo](mailto:heba.kalbouneh@ju.edu.jo)

**Biochemistry:** Prof. Dr. Mamoun Ahram, [m.ahram@ju.edu.jo](mailto:m.ahram@ju.edu.jo)

**Pharmacology:** Prof. Dr. Munir Gharaibeh, [mgharaib@ju.edu.jo](mailto:mgharaib@ju.edu.jo)

**Microbiology:** Dr. Nader Araidah, [naderalaridah@gmail.com](mailto:naderalaridah@gmail.com)

**PBL:** Dr. Feras Farajeh, [ferasmf@hotmail.com](mailto:ferasmf@hotmail.com)

**Physiology Lab:** Dr. Tamara Al-Qudah, [tamara.alqudah@ju.edu.jo](mailto:tamara.alqudah@ju.edu.jo)

**System Coordinator: Dr Heba Kalbouneh**

**Electronic Office hours:** Sundays and Wednesdays 10.00 am-12.00 pm

[heba.kalbouneh@ju.edu.jo](mailto:heba.kalbouneh@ju.edu.jo)

[heba.kalbouneh@gmail.com](mailto:heba.kalbouneh@gmail.com)