

**TISHK INTERNATIONAL UNIVERSITY  
FACULTY OF APPLIED SCIENCE  
Department of MEDICAL ANALYSIS,  
-2022 Fall**

**Course Information for MA 305 HEMATOLOGY AND CLINICAL HEMATOLOGY**

<b>Course Name:</b>		HEMATOLOGY AND CLINICAL HEMATOLOGY				
<b>Code</b>	<b>Regular Semester</b>	<b>Theoretical</b>	<b>Practical</b>	<b>Credits</b>	<b>ECTS</b>	
MA 305	5	2	2	3	4	
<b>Name of Lecturer(s)- Academic Title:</b>		Zhikal Omer - MSc				
<b>Teaching Assistant:</b>		Mr. Muhammad Qadir				
<b>Course Language:</b>		English				
<b>Course Type:</b>		Main				
<b>Office Hours</b>		Sunday 14:00- 15:00				
<b>Contact Email:</b>		zhikal.omer@tiu.edu.iq Tel:07508297397				
<b>Teacher's academic profile:</b>		-----				
<b>Course Objectives:</b>		This course is an introduction to haematology, which is the area of general pathology that is concerned with diseases that affect the blood, such as blood clotting disorders, anaemias, types of blood cancer, and haemoglobinopathies. Blood transfusion and bone marrow transplantation also will be discussed during the blood transfusion course. The student will develop competency in haematological techniques conducted in laboratories, including blood collection procedures, complete blood count, blood grouping, blood films, differential count, staining methods for microscopy, and coagulation tests.				
<b>Course Description (Course overview):</b>		Hematology and Clinical Hematology course will cover the diagnosis and management of blood cell disorders, anatomy and physiology of hematopoiesis, routine specialized hematology tests, analysis, classification, and monitoring of blood cell abnormalities.				

**COURSE CONTENT**

<b>Week</b>	<b>Hour</b>	<b>Date</b>	<b>Topic</b>
1	2	6-10/2/2022	Introduction, short history, role of blood, composition of blood.
2	2	13-17/2/2022	Haematopoiesis
3	2	20-24/2/2022	Erythrocyte production, regulation of erythrocyte production
4	2	27/2-3/3/2022	Hemoglobin, structure and function, Transport of oxygen, Adjustment to the Metabolic Needs of Individual Tissues, Transport of Carbon Dioxide, Carbon Monoxide Poisoning.
5	2	6-10/3/2022	Oxygen Delivery and Storage, myoglobin. Erythrocyte destruction, The Fate of Expired Erythrocytes and Hemoglobin, Iron Metabolism, The Pathway of Iron Absorption, Transport, and Storage.
6	2	27-31/3/2022	Hemostasis—The Control of Bleeding, Vascular Spasm, Platelet Plug Formation, Coagulation, Initiation of Coagulation, Completion of Coagulation.
7	2	3-7/4/2022	.
8	2	10-14/4/2022	Midterm Exam
9	2	17-21/4/2022	Blood Disorders, Red Blood Disorders, Anaemias, Iron-Deficiency Anemia
10	2	24-28/4/2022	Aplastic Anemia, Hemolytic anemia, Hereditary Spherocytosis,
11	2	8-12/5/2022	G6PD Deficiency (favism), Sickle Cell Anemia, Polycythemia
12	2	15-19/5/2022	Thalassemia, Alpha- thalassemia, Beta- thalassemia
13	2	22-26/5/2022	Leukemia, Acute myelocytic leukemia, Chronic myeloid leukemia,

14	2	29/5-2/6/2022	Chronic Lymphocytic Leukemia, Acute lymphoblastic leukemia
15	2	5-9/6/2022	Final Exam
16	2	12-16/6/2022	Final Exam

### COURSE/STUDENT LEARNING OUTCOMES

- 1 Interpret haematology test results and evaluate blood film morphology to analyse the differential diagnosis and suggest further tests to determine the actual diagnosis for a wide range of haematological disorders
- 2 Understand and be able to communicate the normal physiology and pathophysiological conditions associated with dysfunction of various organ systems.  
Understand the aetiology, pathophysiology and laboratory diagnosis of a wide range of conditions including leukaemia, proliferative disorders, various anaemic conditions, haemolytic disorders, haemoglobin disorders and haemostatic dysfunction.
- 3 Communicate scientific and haematological concepts clearly, concisely and logically.
- 4 Practise haematology within the laboratory environment safely and with due regard to occupational health and safety guidelines.

### COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES

(Blank : no contribution, I: Introduction, P: Proficient, A: Advanced )

#### Program Learning Outcomes

**Cont.**

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|----|--|---|
| 1  | Evaluate clinical laboratory data by interpreting laboratory results and relating the data to various disease states.  | P |
| 2  | apply principles of evidence-based medicine to determine clinical diagnoses.   | P |
| 3  | apply the basic principles of gross and microscopic anatomy, physiology, biochemistry, immunology, microbiology/virology.  | I |
| 4  | formulate and implement acceptable treatment modalities to various disease states.   |   |
| 5  | use technology effectively in the delivery of instruction, assessment, and professional development.   |   |
| 6  | exhibit essential employability qualities by demonstrating laboratory safety, analyzing laboratory results, and displaying professional conduct.   | I |
| 7  | exhibit organizational skills, accountability, and ethical behavior.   | I |
| 8  | apply skills needed in operating laboratory equipment for testing, assessing quality assurance for lab equipment, and adhering to standard safety practices in the laboratory environment. | P |
| 9  | apply problem-solving and decision-making skills.  |   |
| 10 | apply and promote health policies and regulatory standards in the field career.  |   |
| 11 | develop research in the field of medical analysis using qualitative and quantitative methods.  |   |

**Prerequisites (Course Reading List and References):**

-Biology -physiology

**Student's obligation (Special Requirements):**

-Attendance in lecture (either electronic or on campus) is expected. You are responsible for everything covered, mentioned, discussed and displayed in class. If you miss a class, get a classmate's notes as my notes will not be available.

**Course Book/Textbook:**

-Clinical Hematology Atlas by Bernadette F. Rodak MS MLS and Jacqueline H. Carr MS CLS -Atul B. Mehta, A. Victor Hoffbrand- Hematology at a glance 4th edition

**Other Course Materials/References:**

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**Teaching Methods (Forms of Teaching):**

Lectures, Practical sessions, Presentation, Seminar, Project, Assignments, Demonstration, activities, ,

### COURSE EVALUATION CRITERIA

Method	Quantity	Percentage (%)
Attendance	1	2
Participation	1	3
Quiz	1	5
Homework	2	2.5
Project	1	10
Midterm Exam	1	20
mind map	1	5
Final Exam	1	40

**Total**

**90**

**Examinations:** Essay Questions, Fill in the Blanks, Multiple Choices, Short Answers, , ,

**Extra Notes:**

**ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

<b>Activities</b>	<b>Quantity</b>	<b>Workload Hours for 1 quantity*</b>	<b>Total Workload</b>
Theoretical Hours	16	2	32
Practical Hours	16	2	16
Final Exam	1	12	12
Attendance	1	3	3
Participation	1	8	8
Quiz	1	5	5
Homework	2	10	20
Project	1	8	8
Midterm Exam	1	8	8
mind map	1		0
<b>Total Workload</b>			<b>112</b>
<b>ECTS Credit (Total workload/25)</b>			<b>4.48</b>

**Peer review**

Signature:

Name:

Lecturer

Signature:

Name:

Head of Department

Signature:

Name:

Dean