Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS & APPLIEED

SCIENCES

Faculty of Laboratory medicine..

Department of Hematology
Course Specification of Advanced Diagnostic Hematology
Course No. (03.13.315)
2022/2023

Prepared by:	Reviewed by:	Heamatolgy Department Charge D'affairs	Vice Dean for Quality affairs	Dean of College:
. Dr Fuad Balkam	- Dr. Abdulrahman Amer	Dr\Gamil Taher Abdul Mughni	Dr\Gamil Taher Abdul Mughni	- Associate Prof. Dr. Ebtesam Al-Zabedi

I. Course Identification and General Information:

1	**Course Title:**	Advanced Diagnostic Hematology			
2	**Course Code & Number:**	03.13.315			
3	**Credit Hours:**	Theory Hours			
		Lecture	Exercise	Practical	Credit Hours
		2	0	2	3
4	**Study Level/ Semester at which this Course is offered:**	1st Level / 1st Semester			
5	**Pre –Requisite (if any):**	None			
6	**Co –Requisite (if any):**	None			
7	**Program (s) in which the Course is Offered:**	Master Degree Medical Diagnostic Hematology			
8	**Language of Teaching the Course:**	English			
9	**Study System:**	Semester			
10	**Mode of Delivery:**	Regular			
11	**Location of Teaching the Course:**	University Campus			
12	**Prepared by:**				
13	**Date of Approval:**	2022-2023			

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II. Course Description:
This course provides an in-depth look at the diagnosis of hematologic disorders. Topics covered include the interpretation of blood cell counts, peripheral blood smears, bone marrow biopsies, and other diagnostic tests. Students will also learn about the role of molecular diagnostics in the diagnosis of hematologic disorders

III. Alignment Course Intended Learning Outcomes with program outcomes

	III. Course Intended Learning Outcomes (CILOs)	Referenced PILOs
A. Knowledge and Understanding: **Upon successful completion of the course, students will be able to:**		
a1	Describe the pathophysiology of hematologic disorders	**a1**
B. Intellectual Skills: **Upon successful completion of the course, students will be able to:**		
b1	**Interpret and Explain** result of blood cell counts, peripheral blood smears, bone marrow biopsies	**b1**
C. Professional and Practical Skills: **Upon successful completion of the course, students will be able to:**		
c1	**Interpret**, verify and validate results and report findings to the requesting clinician.	**c1**
D. Transferable Skills: **Upon successful completion of the course, students will be able to:**		
d1	**Communicated** effectively through oral presentational, computer procession and presentation and written report	**d1**

IV. Alignment Course Intended Learning Outcomes with Teaching Strategies and Assessment methods :			
(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1	Describe the pathophysiology of hematologic disorders	Lecture	Exam
(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1	**Interpret and Explain** result of blood cell counts, peripheral blood smears, bone marrow biopsies	Lecture	Exam
C Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1	**Interpret**, verify and validate results and report findings to the requesting clinician.	Lecture Discussion Presentation	Exam Discussion Presentation
(D Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:			
	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1	**Communicated** effectively through oral presentational, computer procession and presentation and written report	Lecture Discussion Presentation	Exam Discussion Presentation

Course Content:					
A – Theoretical Aspect:					
Order	**Units/Topics List**	**Sub Topics List**	Number of Weeks	**contact hours**	**Learning Outcomes**
1	Complete blood count (CBC)		2	4	a1,b1,c1,d1
2	Red blood cell indices		3	6	a1,b1,c1,d1
3	White blood cell differential		1	2	a1,b1,c1,d1
4	Platelet count		3	6	a1,b1,c1,d1
5	Peripheral blood smears		2	4	a1,b1,c1,d1
	Bone marrow biopsies		2	4	a1,b1,c1,d1
7	Coagulation studies		1	2	a1,b1,c1,d1
8	Other diagnostic tests for hematologic disorders	Flow cytometer Immunohistochemistry Molecular diagnostics	1	2	a1,b1,c1,d1
9	Peripheral blood smear Bone marrow biopsy	interpretation Differential diagnosis	1	2	a1,b1,c1,d1
Number of Weeks /and Units Per Semester			16	**32**	

V. Teaching Strategies of the Course:	
1-	Lectures
2-	Practical session
3-	Self leaning
4-	**Group discussion**
	Case study analysis

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VI. Assessment Methods of the Course:	
No	**Assignment**
1	**Written Exams (Essays) and Quizzes**
2	Structured Oral Exams
4	Objective Structured Practical Exams (OSPE)
5	Student presentation
6	Case study analysis

VII. Assignments:

No.	Assignments	Week Due	Mark	Proportion of Final Assessment	Aligned CILOs (symbols)
2	**Activity**	Throughout the semester	10	10%	a1,b1,c1,d1
3	Practical Report	Throughout the semester	10	10 %	a1,b1,c1,d1
4	**Practical exam**	12	20	20%	a1,b1,c1,d1
5	**Final Exam**	14	60	60%	a1,b1,c1,d1
Total					

X. Learning Resources:	
· *Written in the following order: (Author - Year of publication – Title – Edition – Place of publication – Publisher).*	
1- Required Textbook(s) (maximum two).	
1-	Basic Principles and Practice , 2017 by Ronald Hoffman et al.
2-	Williams Hematology ,2010 ,by Kenneth Kaushansky et al.
2- Essential References.	
1-	Clinical Hematology, Theory and Procedures by Mary Louise Turgeon 2018 .
2-	Hematology: Principles and Practice, 9th Edition by Kenneth Kaushansky, Michael Greaves, and Richard Aster
3- Electronic Materials and Web Sites *etc*.	
1-	The American Society of Hematology website www.hematology.org
2-	The National Institutes of Health, National Heart, Lung, and Blood Institute Website www.nhlbi.nih.gov
3-	The World Health Organization website (www.who.int)
4-	The Centers for Disease Control and Prevention website (www.cdc.gov)
	Medscape Hematology (www.medscape.com/hematology)
	Blood Journal (www.bloodjournal.org)

XI. *Course Policies:*	
1	**Class Attendance:** Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** -If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration