



الجمهورية اليمنية

وزارة التعليم العالي والبحث العلمي
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية
كلية الطب المخبري
قسم الدم
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Republic of Yemen
Ministry of Higher Education & Scientific Research
21 SEPTEMBER UMAS
Faculty of
Department of
Unit of Development & Quality assurance

Republic of Yemen

Ministry of Higher Education & Scientific Research

21 SEPTEMBER UNIVERSITY of MEDICALS &

APPLIED SCIENCES



Faculty of Laboratory medicine.

Department of Hematology

Course Specification of : Diagnostic Hematology I

Course No. (03,03,340)

2022/2023



7- Course name: Diagnostic Hematology I

I. Course Identification and General Information:					
1	Course Title:	Diagnostic Hematology I			
2	Course Code & Number:	03,03,340			
3	Credit Hours:	Theory Hours			
		Lecture	Exercise	Practical	Credit Hours
		2	0	2	3
4	Study Level/ Semester at which this Course is offered:	Fourth Level / 1 st Semester			
5	Prerequisite (if any):	Hematology			
6	Co –Requisite (if any):	None			
7	Program (s) in which the course is offered:	Bachelor in laboratory medicine			
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:	Dr. Rabea Mansor			
13	Date of Approval:	2023/3/11			

II. Course Objectives and Learning Outcomes (description, objective, course learning outcome)

A. Course Description:

	It provides essential information about laboratory diagnosis of blood and bone marrow disease based on the combination of clinical and laboratory data. It is the case study course related to blood bank and hemostasis.
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III. Course Intended Learning Outcomes (CILOs)		Referenced PILOs
A. Knowledge and Understanding: Upon successful completion of the course, students will be able to:		
a1	Understand the blood bank lab results, the coagulation test results.	A2
a2	Recognize normal and abnormal test results and integrate the clinical and lab for ensuring accuracy of the results.	A3
B. Intellectual Skills: Upon successful completion of the course, students will be able to:		
b1	Perform laboratory techniques used in the diagnosis of coagulation disorders, laboratory techniques used in blood bank lab.	B1
b2	Recognize errors or discrepancies in lab results.	B2,
C. Professional and Practical Skills: Upon successful completion of the course, students will be able to:		
c1	Demonstrate ethical and professional behavior, interest, enthusiasm, and willingness to learn as seen through active participation.	C1
c2	Act responsibly and reliably as measured by punctuality, attendance, dependability, and quality of work.	C2
D. Transferable Skills: Upon successful completion of the course, students will be able to:		
d1	Relate the blood bank lab results	D1

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	Understand the blood bank lab results, the coagulation test results.	Lectures	Exams



a2	Recognize normal and abnormal test results and integrate the clinical and lab for ensuring accuracy of the results.	Lectures	Exams
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(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1	Perform laboratory techniques used in the diagnosis of coagulation disorders, laboratory techniques used in blood bank lab.	Lectures, Laboratory practical	Exams
b2	Recognize errors or discrepancies in lab results.	Lectures, Laboratory practical	Exams

(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	Demonstrate ethical and professional behavior, interest, enthusiasm, and willingness to learn as seen through active participation.	Lectures, Laboratory practical	Practical exam
c2	Act responsibly and reliably as measured by punctuality, attendance, dependability, and quality of work.	Lectures, Laboratory practical	Practical exams

(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:

	Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1	Relate the blood bank lab results	Lectures	seminars

IV. Course Content:

A – Theoretical Aspect:

NO.	Units/Topics List	Sub-topics List	Number of Weeks	Contact hours	Learning Outcomes (CILOs)
1	Direct antiglobulin test (DAT) and its result interpretation		1	2	a1, b1
2	Indirect antiglobulin test (IAT) and its result interpretation		1	2	a1, b1
3	Column agglutination	Technology (Gel), solid phase adherence test and enhancement media used in blood bank	1	2	a2, a2 , c1
4	Antibody titration and its		1	2	a2, a2, b2

	application				
5	Serologic crossmatch test: immediate spin and IAT		1	2	a1, b2, c1
6	Mid-term exam		1	1	
7	Type and screen test (T and S) and red cell reagents (Screen Cells)		1	2	a2
8	Computer crossmatch and antibody identification		1	2	A1, b1, c1
9	Blood bank case study		1	2	a2, b2, c1
10	Blood bank case study		1	2	a2, b1, c1
11	Procoagulant mechanisms defects		1	2	a2, b1, c1
12	Coagulation factor defects and combined defects		1	2	a1, a2, b1
13	Hemostasis case study		1	2	a2, b1
14	Hemostasis case study		1	2	a2, b2, c1
	Final Theoretical				
	Number of Weeks /and Units Per Semester		14	27	

B - Practical Aspect: (if any)				
NO.	Tasks/ Experiments	Number of Weeks	Contact hours	Learning Outcomes
1	Direct antiglobulin test (DAT)	1	2	c1, c2
2	Indirect antiglobulin test (IAT)	1	2	c1, c2
3	Titration test	1	2	c2,d1
4	Crossmatching	1	2	c1, d1
5	Bleeding and clotting time	1	2	c2, c1
6	Platelet count	1	2	c1, c2
7	Prothrombin time (PT) and INR	1	2	c1, c2,
8	Partial thromboplastin time (PTT)	1	2	c2,d1
9	Thrombin time (TT) and D-dimer	1	2	c1, c2
10	Mixing tests in coagulation studies	1	2	c1,d1
11	Final practical exam	1	2	c1, c2



Number of Weeks /and Units Per Semester	11	22	
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V. Teaching Strategies of the Course:

1-	Lectures
2-	practical session
3-	Seminars

VI. Assessment Methods of the Course:

No	Assignment
1	Written Exams (Short Essays) and Quizzes
2	Multiple Choice Questions (MCQ)
4	Practical Exams (PE)

VII. Assignments:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Midterm Exam	8	20	20%	a1,a2,b1,b2,c1
2	Practical exam	14	30	30%	a1,a2,b1,b2,c1,c2,d1
3	Final Exam	16	50	50%	a1,a2,b1,b2,c1
	Total	100		100%	

VIII. Learning Resources:

1- Required Textbook(s)

1-	A. Victor Hoffbrand- 2016- Hoffbrand's Essential Hematology- Seventh edition
2-	Norman Beck- 2009- Diagnostic Hematology
	Dacie and Lewis Practical Haematology, Twelfth Edition • 2017.
2- Essential References.	
1-	Shirlyn McKenzie, Kristin Landis-Piwowar, Linne Williams (2019). Clinical Laboratory Hematology, 4th Edition, Pearson Publishers. ISBN-13: 978-0134709390; ISBN-10: 013470939X
3- Electronic Materials and Web Sites etc.	
1-	https://www.britannica.com/science/blood-biochemistry
2-	https://en.wikipedia.org/wiki/Blood
3-	https://pubmed.ncbi.nlm.nih.gov/?term=blood
4-	

IX. Course Policies:

Class Attendance:	
1	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.
Tardiness:	
2	-If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course
Exam Attendance/Punctuality:	
3	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.
Assignments & Projects:	
4	Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
Cheating:	
5	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.
Forgery and Impersonation:	
6	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.



Other policies:

- 7 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