



الجمهورية اليمنية

وزارة التعليم العالي والبحث العلمي  
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية  
كلية الطب المخبري  
قسم علم الدم  
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Republic of Yemen  
Ministry of Higher Education & Scientific Research  
**21 SEPTEMBER UMAS**  
Faculty of Laboratory medicine  
Department of HEMATOLOGY  
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 : Hematology III (Hemostasis)

Course No. (03,03,338)

2022/2023

## 6- Course name: Hematology III (Hemostasis)

I. Course Identification and General Information:					
1	Course Title:	Hematology III (Hemostasis)			
2	Course Code & Number:	03,03,338			
3	Credit Hours:	Theory Hours			
		Lecture	Exercise	Practical	Credit Hours
		2	0	2	3
4	Study Level/ Semester at which this Course is offered:	Third Level / 2 <sup>nd</sup> 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. Boshra Al-absi			
13	Date of Approval:	2023/3/11			

	<b>II. Course Objectives and Learning Outcomes (description, objective, course learning outcome)</b>
	<b>A. Course Description:</b>
	The course provides knowledge about hemostasis theory including coagulation cascade, intrinsic and extrinsic pathways, thrombosis and fibrinolysis. Also, it focuses on platelet physiology, platelet coagulation disorders, other coagulation disease conditions and coagulation laboratory testing principles, including PT, INR, APTT, fibrinogen, D-dimer, FDPs.

<b>III. Course Intended Learning Outcomes (CILOs)</b>		<b>Referenced PILOs</b>
<b>A. Knowledge and Understanding: Upon successful completion of the course, students will be able to:</b>		
a1	Understand the hemostatic system (hemostasis, coagulation system and fibrinolysis system) and its disorders.	<b>A1</b>
a2	Recognize normal and abnormal coagulation test results and correlate the data with appropriate pathologic conditions	<b>A2</b>
a3	Summarize hemostasis theory supporting test principles.	<b>A3</b>
<b>B. Intellectual Skills: Upon successful completion of the course, students will be able to:</b>		
b1	Perform laboratory techniques used in the diagnosis of bleeding disorders and thrombosis.	<b>B1</b>
b2	Assess the validity of the data (including integrity and significance)	<b>B2</b>
b3	Recognize errors or discrepancies in results during lab procedures.	<b>B3</b>
<b>C. Professional and Practical Skills: Upon successful completion of the course, students will be able to:</b>		
c1	Demonstrate ethical and professional behavior, interest, enthusiasm, and willingness to learn as seen through active participation..	<b>C1</b>
c2	Act responsibly and reliably as measured by punctuality, attendance, dependability, and quality of work.	<b>C2</b>
<b>D. Transferable Skills: Upon successful completion of the course, students will be able to:</b>		
d1	Relate hemostatic system (hemostasis, coagulation system and fibrinolysis system) and its disorders.	<b>D1</b>

**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
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a1	Understand the hemostatic system (hemostasis, coagulation system and fibrinolysis system) and its disorders.	Lectures,	Exams
a2	Recognize normal and abnormal coagulation test results and correlate the data with appropriate pathologic conditions	Lectures	Exams
a3	Summarize hemostasis theory supporting test principles.	Lectures	Exams

**(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 bleeding disorders and thrombosis.	Lectures, Laboratory practical	Exams
b2	Assess the validity of the data (including integrity and significance)	Lectures, Laboratory practical	Exams
b3	Recognize errors or discrepancies in results during lab procedures.	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 exam

**(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 hemostatic system (hemostasis, coagulation system and fibrinolysis system) and its disorders.	Lectures, Laboratory practical,	Exam

**IV. Course Content:**

**A – Theoretical Aspect:**

NO.	Units/Topics List	Sub-topics List	Number of Weeks	Contact hours	Learning Outcomes (CILOs)
1	The Procoagulant Aspect of Hemostasis		1	2	a1, b1,b3
2	Platelet structure & function		1	2	a1, b1,b2
3	Natural inhibitors of platelet function		1	2	a2, a3, b2

4	The Initiation of Hemostasis		1	2	b1, b3, c1,a1
5	The Amplification of Hemostasis		1	2	a2, a3
6	Mid-term exam		1	1	
7	Coagulation in vivo		1	2	a2,, b2, c1
8	Destruction of Fibrin and Clotting Factors		1	2	a2, b1, c1,b3
9	Fibrinolysis		1	2	a3, b1, c1,b2
10	The Hemostatic Screen (Tests of Hemostatic Function)		1	2	a2, b1, c1,b3
11	Vascular Bleeding Disorders		1	2	a2, b1, c1,a2
12	Abnormal bleeding due platelet defect		1	2	a2, a3, b3,a1
13	Abnormal bleeding due to hereditary coagulation disorders		1	2	a2, b1, c1,a1
14	Acquired coagulation disorders		1	2	a2, b1, c1,a1
	Final Theoretical				
	<b>Number of Weeks /and Units Per Semester</b>		<b>14</b>	<b>27</b>	

<b>B - Practical Aspect: (if any)</b>				
<b>NO.</b>	<b>Tasks/ Experiments</b>	<b>Number of Weeks</b>	<b>Contact hours</b>	<b>Learning Outcomes</b>
1	Introduction to coagulation tests	1	2	a1,a2,a3
2	Bleeding time	1	2	c1, c2,d1
3	Clotting time	1	2	c1, c2
4	Platelet count	1	2	C1, c2,d1
5	Prothrombin time (PT) and INR calculation	1	2	c1, c2
6	Partial thromboplastin time (PTT) and mixing tests	1	2	c1, c2.d1
7	Thrombin time (TT)	1	2	c1, c2,d1
8	D-dimer test	1	2	C1, c2



9	Practical exams	1	2	c1, c2,d1
Number of Weeks /and Units Per Semester		9	18	

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)
3	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,d1
3	Final Exam	16	50	50%	a1,a2,b1,b2,c1



Total		100	100%	
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### VIII. Learning Resources:

#### 1- Required Textbook

- 1- A. Victor Hoffbrand- 2016- Hoffbrand's Essential Hematology- Seventh edition
- 2- - Ian Todd, Gavin Spickett, lecture notes in immunology Six Edition (2000).  
- Frank Firkin, DeGrushi hematology in medical practice, fifth edition (2005)

#### 2- Essential References.

- 1- McKenzie, Kristin Landis-Piwowar, Linne Williams (2019). Clinical Laboratory Hematology, 4th Edition, Pearson Publishers. ISBN-13: 978-0134709390; ISBN-10: 013470939X
- 2- 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- Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
- 2- TRANSFUSION Journal  
<http://www.aabb.org/programs/publications/Pages/transfusion.aspx>
- 3- Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
- 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.



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