



الجمهورية اليمنية
وزارة التعليم العالي والبحث العلمي
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية
كلية الطب المخبري
قسم الدم
وحدة التطوير وضمان الجودة

Republic of Yemen
Ministry of Higher Education & Scientific Research
21 SEPTEMBER UMAS
Faculty of Laboratory medicine.
Department of hematology
Unite of Development & Quality assurance

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 Anemia

Course No. (03,03,341)

2022/2023



9- Course name: Anemia

I. Course Identification and General Information:				
1	Course Title:	Anemia		
2	Course Code & Number:	03,03,341		
3	Credit Hours:	Theory Hours		
		Lecture	Exercise	Practical
		2	0	2
3			Credit Hours	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. Motaher Abo Hadi		
13	Date of Approval:	2023/3/11		



II. Course Objectives and Learning Outcomes (description, objective, course learning outcome)	
	A. Course Description:
	It provides information about red blood cell disorders including IDA, megaloblastic anemia, ACD, hemochromatosis, hemoglobinopathies and aplastic anemia.

III. Course Intended Learning Outcomes (CILOs)		Referenced PILOs
A. Knowledge and Understanding: Upon successful completion of the course, students will be able to:		
a1	Define anemia and identify causes, pathophysiology, clinical features, and laboratory diagnosis of anemia.	A3
a2	Describe morphological and aetiologic classification of anemia, differential diagnosis of anemias.	A2
B. Intellectual Skills: Upon successful completion of the course, students will be able to:		
b1	Perform laboratory techniques used in diagnosis of anemia, blood film morphological assessment of different types of anemia.	B1
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..	C4
D. Transferable Skills: Upon successful completion of the course, students will be able to:		
d1	Related causes, pathophysiology, clinical feature and laboratory diagnosis of different anemias.	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	Define anemia and identify causes, pathophysiology, clinical features, and laboratory diagnosis of anemia.	<ul style="list-style-type: none"> Interactive lectures Self-learning Discussion 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes)
a2	Describe morphological and aetiologic classification of anemia, differential diagnosis of anemias.	<ul style="list-style-type: none"> Interactive lectures Self-learning Discussion 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes)

(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 diagnosis of anemia, blood film morphological assessment of different types of anemia..	<ul style="list-style-type: none"> Interactive lectures Discussion Self-learning Presentation 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes). Final oral exam Assignment
b 2	Recognize errors or discrepancies in lab results.	<ul style="list-style-type: none"> Interactive lectures Discussion Self-learning Presentation 	<ul style="list-style-type: none"> Written exam (mid and final terms and quizzes). Final oral exam Assignment

Discussion

	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.	Practical session	<ul style="list-style-type: none"> Final practical exam Assignment
c2	Act responsibly and reliably as measured by punctuality, attendance, dependability, and quality of work.	Practical session	<ul style="list-style-type: none"> Final practical exam Assignment

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

	Course Intended Learning	Teaching strategies	Assessment Strategies
--	--------------------------	---------------------	-----------------------

	Outcomes		
D1	Related causes, pathophysiology, clinical feature and laboratory diagnosis of different anemias.	<ul style="list-style-type: none"> • Seminars • Discussion • Case study (CBL) 	<ul style="list-style-type: none"> • Assignment: <ul style="list-style-type: none"> - Research - Homework - Team work

IV. Course Content:					
A – Theoretical Aspect:					
NO.	Units/Topics List	Sub-topics List	Number of Weeks	Contact hours	Learning Outcomes (CILOs)
1	Introduction to anemia	definition, classification, clinical and laboratory features of anemia	1	2	a1,a2
2	Microcytic hypochromic anemias: Iron deficiency anemia		1	2	a1,a2
3	Microcytic hypochromic anemias	Iron deficiency anemia: anemia of chronic disease, sideroblastic anemia and lead poisoning	1	2	a1,a2
4	Macrocytic anemia	megaloblastic and non-megaloblastic anemia	1	2	a1,a2
5	Disorders of hemoglobin synthesis and abnormal types		1	2	a1,b1,d1
6	Mid-term exam		1	1	c1,c2
7	Hemolytic anemia	definition, classification, causes, clinical and laboratory features	1	2	a1,a2,b1,d1
8	Hereditary hemolytic anemia:	spherocytosis and elliptocytosis	1	2	a1,a2,b1,d1
9	Hereditary hemolytic anemia: sickle cell	definition, classification, causes, clinical and laboratory	1	2	a1,a2,b1,d1

		features			
10	Thalassemia	definition, classification, causes, clinical and laboratory features	1	2	a1,a2,b1,d1
11	immune and non-immune	definition, classification, causes, clinical and laboratory features	1	2	a1,a2,b,d1
12	Aplastic and bone marrow failure anemia	definition, classification, causes, clinical and laboratory features	1	2	a1,a2,b1,d1
13	Hematology of pregnancy and neonates	definition, classification, causes, clinical and laboratory features	1	2	a1,a2,b1,d1
14	Final Theoretical		1	2	c1, c2
	Number of Weeks /and Units Per Semester		14	24	



الجمهورية اليمنية
وزارة التعليم العالي والبحث العلمي
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية
كلية الطب المخبري
قسم الدم
وحدة التطوير وضمان الجودة

Republic of Yemen
Ministry of Higher Education & Scientific Research
21 SEPTEMBER UMAS
Faculty of Laboratory medicine.
Department of hematology
Unit of Development & Quality assurance

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 (OSPE)

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,d1
2	Practical exam	14	30	30%	c1
3	Final Exam	16	50	50%	a1,a2,b1
	Total	100		100%	

VIII. Learning Resources:

1- Required Textbook(s) .

- 1- A. Victor Hoffbrand- 2016- Hoffbrand's Essential Hematology- Seventh edition
Dacie and Lewis Practical Haematology, Twelfth Edition • 2017.
- 2- Barbra j.Bain ,Imel...Elsevier (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
- 2-

3- Electronic Materials and Web Sites etc.

- 1- Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar)
- 2- <https://www.britannica.com/science/blood-biochemistry>
- 3- <https://en.wikipedia.org/wiki/Blood>



4- <https://pubmed.ncbi.nlm.nih.gov/?term=blood>

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