



الجمهورية اليمنية

وزارة التعليم العالي والبحث العلمي
جامعة ٢١ سبتمبر للعلوم الطبية والتطبيقية
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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 &

APPLIEED SCIENCES



Faculty of Laboratory medicine.

Department of Hematology

Course Specification of **Blood Bank II**

Course No. (03,03,339)

2022/2023



5- Course name: Blood Bank II

I. Course Identification and General Information:					
1	Course Title:	Blood Bank II			
2	Course Code & Number:	03,03,339			
3	Credit Hours:	Theory Hours		Credit Hours	
		Lecture	Exercise		Practical
		2	0		2
4	Study Level/ Semester at which this Course is offered:	Third Level / 2 nd Semester			
5	Prerequisite (if any):	Blood Bank I			
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			

II.	Course Objectives and Learning Outcomes (description, objective, course learning outcome)
	A. Course Description:
	This course covers other blood group systems like Lewis, I, P, MNS, Kell, Duffy and Kidd. Also, it provides students with basic information about donor selection, blood components, and adverse transfusion reactions.

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 importance of other blood group systems in transfusion medicine, the different types of transfusion reaction.	A1
a2	Summarize the criteria of blood donor selection.	A2
B. Intellectual Skills: Upon successful completion of the course, students will be able to:		
b1	Identify the clinically significant blood group systems in blood transfusion.	B1
b2	Describe the impact of genetics and inheritance on antigens, Factors that interfere with antigen-antibody reactions.	B2
C. Professional and Practical Skills: Upon successful completion of the course, students will be able to:		
c1	Describe the sources of errors in blood bank lab, the procedures for separation blood component and unit storage.	C1
c2	Perform all aspects of testing within blood bank laboratory.	C3
D. Transferable Skills: Upon successful completion of the course, students will be able to:		
d1	Relate importance of other blood group systems in transfusion medicine.	D2

C. 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 importance of other blood group systems in transfusion medicine, the different types of transfusion reaction..	Lectures	Exams
a2	Summarize the criteria of blood donor selection.	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	Differentiate between various antigens to include ABO, Rh, Kell, Duffy, Kidd, Lewis, MNS, P, and Lutheran.	Lectures Laboratory practical,	Exam
b2	Describe the impact of genetics and inheritance on antigens, Factors that interfere with antigen-antibody reactions.	Lectures, Laboratory practical,	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	Describe the sources of errors in blood bank lab, the procedures for separation blood component and unit storage.	Lectures Laboratory practical	Practical Exam
c2	Perform all aspects of testing within blood bank laboratory.	Lectures 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 importance of other blood group systems in transfusion medicine.	Lectures, Laboratory practical,	Practical exam

V. Teaching Strategies of the Course:

IV. Course Content:

A – Theoretical Aspect:

NO.	Units/Topics List	Sub Topics List	Number of Weeks	Cont act hours	Learning Outcomes (CILOs)
1	Pathogenesis of HDFN		1	2	a1, b1
2	Lewis blood group system		1	2	a1, b1
3	P and I blood group systems		1	2	a2, b2,
4	MNS and Kell blood group systems		1	2	a1, b1, c1
5	Duffy and Kidd blood group systems		1	2	a2, a1
6	Mid-term exam		1	1	
7	Blood donor selection	Registration and demographic data, medical history and counseling	1	2	a2, b1, b2,
8	Blood donor selection	Physical examination and various method of hemoglobin estimation in blood bank	1	2	a1, b1, c1
9	Side effects of blood donation, components made from whole blood and apheresis method		1	2	a2, b1, a1
10	Required tests for donor blood, storage lesions and anticoagulants used in blood bags		1	2	a1, b2, c1
11	RBC freezing and rejuvenated red blood cells		1	2	a2, b1, c1
12	A platelet concentrates (PC) and Preparation of platelet concentrates by the platelet-rich plasma method (PRP) and Plateletpheresis		1	2	a2, a1, b1
13	Plasmapheresis and transfusion reaction		1	2	a2, b1, c1
14	Adverse transfusion reactions and therapeutic/prophylactic approach		1	2	a1, b1, c1
Number of Weeks /and Units Per Semester			14	27	
1-	Lectures				
2-	practical session				

B - Practical Aspect: (if any)				
No.	Tasks/ Experiments	Number of Weeks	Contact hours	Learning Outcomes
1	Revision of blood group examination	1	2	c1,c2
2	Direct Coombs test	1	2	c2.c1
3	Indirect Coombs test	1	2	c2,c1,d1
4	Titration test	1	2	c1, c2
5	Cross match	1	2	c1, c2
6	Cross match	1	2	c1, c2,d1
7	Antibody Screening and Identification	1	2	c2,c1
8	Final practical exam	1	2	c2,c1,d1
Number of Weeks /and Units Per Semester		7	14	

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,c2,d1
3	Final Exam	16	50	50%	a1,a2,b1,b2,c1
	Total		100	100%	

VIII. Learning Resources:

1- Required Textbook(s)

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| 1- | Denise Harmening- 2012- Modern Blood Banking & Transfusion Practices- Sixth 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.

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|----|---|
| 1- | AABB (AMERICAN ASSOCIATION OF BLOOD BANK) |
| 2- | Basic & Applied Concepts of Blood Banking and Transfusion Practices 5th Edition
by Paula R. Howard MS MPH MT(ASCP)SBB (Author) |

3- Electronic Materials and Web Sites etc.

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| 1- | Websites, Search engines (Saudi Digital Library, PubMed, Google Scholar) |
| 2- | TRANSFUSION Journal
http://www.aabb.org/programs/publications/Pages/transfusion.aspx |

IX. Course Policies:

Class Attendance:

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| 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. |
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Tardiness:

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| 2 | -If the student dose not attend for more than 6 times, the student will be obligated to withdrew from the course |
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Exam Attendance/Punctuality:

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| 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. |
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Assignments & Projects:

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| 4 | Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same. |
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Cheating:

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| 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. |
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Forgery and Impersonation:

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| 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. |
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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