KOMAR UNIVERSITY OF SCIENCE AND TECHNOLOGY (KUST)

Principles of Hematology Course Syllabus (Theory)			
Course Title	Principles of Hematology		
Course Code	MLS2410	**No. of Credits**	3
Department	Medical Laboratory Science (MLS)	**College**	Science
Pre-requisites Course Code	Human Biology BIO2311	**Co-requisites Course Code**	MLS2410L
Course Coordinator(s)	Dr. Dana Ahmed Abdullah Qadir	**Office**	312
Email	dana.ahmed@komar.edu.iq	**IP No.**	120
Other Course Teacher(s)/Tutor(s)	Mr Goran Sedeeq MSc (Laboratory Instructor)		
Class Hours	**Wednesday** 10:00-11:30 (S1), 007A **Wednesday** 13:30-15:00 (S2), 007A **Tuesday** 10:00-11:30 (S1), 007A **Tuesday** 13:30-15:00 (S2), 007A		
Contact Hours	**Thursday:** 15:00-16:00		
Course Type	Departmental Course		
Offered in Academic Year	Fall 2015		

COURSE DESCRIPTION

The lectures of this course are describing the basic concepts of hematology with principles of blood testing; both manual and currently available fully automated diagnostic tools. The course includes definition of the science of hematology, hematopoiesis, blood components and function etc. In addition, the manual automations in hematology and the common pathological blood disorders will also be covered.

COURSE OBJECTIVES

The goals of this course are to:

(1) Let the students understand the human blood and its disorders based on an up-to-date knowledge and in a simple stylish way.

(2) Familiarize students with the pathophysiological background of main blood disorders.

COURSE LEARNING OUTCOMES

By the end of this course, the students SHOULD be able to:

1. Understand the principles of hematology, both blood physiology, functions, and disorders.
2. Master the pathobiology of hematological disorders encountering in hospital practice.
3. Interpret diagnostic test results and erroneous test results and able to fix them.

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GUIDELINES ON GRADING POLICY

A	95-100%	**C**	70-74%
A-	94-90%	**C-**	65-69%
B+	87-89%	**D+**	60-64%
B	83-86%	**D**	55-59%
B-	80-82%	**D-**	50-54%
C+	75-79%	**F**	0-49%
W	Withdrawal	**I**	Incomplete
***Note: Passing Grade is from 65%**			

COURSE CONTENT

Course topics include:

1. Safety and Guidelines for Laboratory Health Workers.
2. Microscope (Components and principles of function).
3. Blood cells, an introduction to various blood morphologies and their functions.
4. Peripheral blood film: principles and staining methods.
5. Laboratory hematology automation.
6. Anemias: classification and current diagnosis tools.
7. Hemolysis: classification and current diagnosis tools.
8. Thalassemia disorders: types and tools for early detection.
9. Bleeding disorders: Roles of (PT/PTT/D-dimer/and platelet count).
10. ABO and Rh testing: Roles in hematology and medicine practice.
11. Blood banking and compatibility testing.
12. Errors in laboratory hematology test results: Causes and Ways of Management.

COURSE REQUIREMENTS

1. Copy of the Lecture.
2. Students required to make notes about what will be discussed in class.
3. Students required reading the designated text book for this course.

COURSE TEACHING AND LEARNING ACTIVITIES

This course is scheduled for 3 hours per week in two equal split over two different days. The complete semester composed of 15 instructional weeks followed by one week of final exam. Instructional methods will include:

- Lectures and Class discussions and presentations.
- Written activities.
- PowerPoint presentations and educational Videos.

COURSE ASSESSMENT TOOLS

Assessment Tools	Description	Weight
Quizzes	Students will take **6 quizzes** over the course and the highest 5 quiz marks will be counted toward your final grade.	10%
Class activity	Student's participation during the lecture including lecture presentation, asking/answering question, and others will be considered and rewarded.	5%
Mid-term Exam	No class activity. Students will take a central Mid-term Exam organized and supervised by the Exam committee. The Exam may include definitions, multiple-choices, True/False, short answers, enumerations, illustrations.	20%
Tests (1)	During the course schedule, students will take 1 test, after the Mid-term Exam. The test may include definitions, filling blanks, multiple-choices, True/False, short answers, illustrations, etc	10%
Laboratory work	Laboratory topics and experiments are coordinated in a way to complete each other and to reinforce the concepts introduced in lecture portion. Topics, grades, and other information for the lab is discussed in a separate syllabus.	25%
Final Exam	The exam will be close book and no materials are allowed, except those permitted by the exam committee.	30%

Essential Readings: (Journals, textbooks, website addresses etc.)

Reference book:

Essential Haematology, 2nd edition (2011)

Others references:

1. A Beginner's Guide to Blood Cells, 2nd edition (2004)
2. A Manual of Laboratory and Diagnostic Tests, 9th edition (2015)

((Note: All the above ebooks are provided to the student's representative))

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Course Policy (including plagiarism, academic honesty, attendance etc)

KUST Academic Policy:

http://sar.komar.edu.iq/files/Student%20hand%20Book%202013.pdf

Attendance:

- Students are expected to attend **all lectures** and must attend **all tests/examinations**, quizzes, and practical exercises.
- There is no make-up work for students who miss classes without official permission.
- Students who have official permission must arrange with the instructor to make-up the missed class/test.
- Students are subject to the regulation and policies mentioned in the KUST Student Handbook.
- KUST guidelines for lateness are as follows: Three occasions of lateness count as one absence.
- You can be considered late after 10 minutes of the lecture time.

Guidelines for Success

The following points are essential for a successful outcome:

1. **Classroom attitude:** Having the spirit of (I don't understand), and to ask whatever seem unclear to you.
2. **Classroom habit:** To pay your attention during giving the lecture.
3. **Studying habit:** Try to study fresh lectures and not allow collecting the duties and face a chaos while studying. Daily basis exercise will be the only ideal way to your success in theory duties.
4. **Tasks and duties:** Writing assays, doing your homework and preparing reports will help you to master your course.
5. **Punctuality:** Attend the lectures on time; missed class cannot be substituted, in case you have no reasonable excuse.

Cell Phones

All cell phones and beepers are expected to be switched to vibrating mode if available and turned off completely if this feature is not an option. Disruption of class due to beepers or a cell phone will not be tolerated and the student will be asked to leave the class. All other electronic equipment that the faculty member deems not essential to the provision of academic learning is prohibited from being used in class.

REVISION TO THE SYLLABUS

This syllabus is subject to change. It is the duty of the instructor to inform students of changes in a timely fashion after approval of Quality Assurance Office (QAO).

Course calendar: Please check the academic calendar for 2015/2016
http://komar.edu.iq/osar/upload/2015/September/20150920024837874938.pdf

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Week	Lecture	Date	Topics	Activity
1	Lec 1	30, September 2015	Safety and Guidelines for Laboratory Health Workers	Nil
	Lec 2	1, October 2015		
2	Lec 3	7, October 2015	Microscope (Components and principles of function)	Quiz 1 (Lecture 1/2)
	Lec 4	8, October 2015		
3	Lec 5	14, October 2015	Hematopoiesis	Nil
	Lec 6	15, October 2015	Normal blood cells	Nil
4	Lec 7	21, October 2015	Abnormal blood cells	Nil
	Lec 8	22, October 2015	Blood cells (continuation)	Nil
5	Lec 9	28, October 2015	Peripheral blood film: Staining methods	Quiz 2 (lectures 5/6/7/8)
	Lec 10	29, October 2015		
6	Lec 11	4, November 2015	Laboratory hematology automation	Nil
	Lec 12	5, November 2015		
7	Lec 13	11, November 2015	Anemias and classification system	Quiz 3 (lectures 9/10)
	Lec 14	12, November 2015	Diagnostic tools in anemia	
------ Mid-Term Exam ------				
8	Lec 15	25, November 2015	Hemolysis classification system	Quiz 4 (lectures 13/14)
	Lec 16	26, November 2015	Diagnostic tools in hemolysis	
9	Lec 17	2, December 2015	Thalassemia disorders	Nil
	Lec 18	3, December 2015	Laboratory tools to diagnose	
10	Lec 19	9, December 2015	Bleeding disorders	Quiz 5 (Lectures 17/18)
	Lec 20	10, December 2015	Roles of (PT/PTT/D-dimer)	
11	Lec 21	16, December 2015	ABO and Rh testing	Nil
	Lec 22	17, December 2015		
12	Lec 23	23, December 2015	Blood banking and compatibility testing (part 1)	**Test**
	Lec 24	24, December 2015		
13	Lec 25	30, December 2015	Blood banking and compatibility testing (part 2)	Nil
	Lec 26	31, December 2015		
14	Lec 27	6, January 2016	Errors in laboratory hematology test results	Quiz 6 (Lectures 23/24/25/26)
	Lec 28	7, January 2016		
15	Lec 29	13, January 2016	Review of the topics with student discussion	Nil
	Lec 30	14, January 2016		
----- Final exam -------				