



A- COURSE TITLE, CODE, ACADEMIC YEAR:

Clinical Practice-4 (MLT-248) 1437-1438H

B- COURSE INFORMATION:

Course Code	Course Title	Credit Units			Study Level	Pre-requisites
		Total	Theory	Practical		
MLT-464	Clinical Practice-4	3		3	8 th	MLT-347
Course Coordinator		Extension		Email Address		
Dr. Abdel Rahim Mahmoud Muddathir		3614		ammahmoud@taibahu.edu.sa		

C- COURSE DESCRIPTION:

- By the end of this course, the medical laboratory student should be familiar with the routine work and able to use the equipment in the hospital laboratory in the field of body fluids analysis, toxicology, and blood cell disorders including anemia, leukemia, coagulation and blood transfusion.
- in this course the student should be able to identify the abnormal parameters relevant to iron deficiency anemia, megaloblastic anemia, hemolytic anemia, thalassemia, sickle cell anemia, various types of leukemia, hemophilia, thrombosis, and perform pre-transfusion compatibility and blood transfusion reaction measures.
- The medical laboratorian can correctly and safely handle and easily interpret the results of the parameters he tested in the laboratory.

D- COURSE OBJECTIVES:

The students will be provided a basic knowledge on the main procedures in doing complete blood counts by automated cell counters, preparing blood smears for commenting on CBC & for reticulocyte counts, & also do routine coagulation profile.

- Also, to provide a basic knowledge on routine blood bank work (blood grouping, cross matching, separation of blood product and storage of blood and blood product) & on the basic guidelines on clinical use of blood and blood products.
- Also, to do the routine body fluids analysis such as urine, CSF, saliva, etc. The students will know the routine lab work of the therapeutic drug monitoring.
- Brief summary of the knowledge or skill the course is intended to develop:

(Objective expected to be achieved by the end of the course)

Upon the completion of this course, the clinical laboratorian student should be able to:

- Record patient test data in appropriate logs; if available, use a computer-managed data system.
- Prepare thin blood smears with feathered edges and evenly distribute cells.
- Accurately identify and classify white blood cells, estimate the number and quality of platelets, identify normal and abnormal blood cell morphology on a Wright's stained blood smear.
- Follow written procedures and accurately perform and interpret the following tests:
- Set up and read an ESR



- Differential leucocyte count
- Prothrombin time
- Activated partial thromboplastin time
- Quantitative fibrinogen
- D-dimer

Operate the following instruments and obtain accurate results:

- Automated slide stainer, if available
- Automated hematology analyzer
- Automated coagulation analyzer
- Perform routine cleaning, start-up, and shut down procedures on an automated hematology analyzer(s).
- Discuss the calibration procedures(s) for automated hematology analyzer(s).
- Observe bone marrow aspiration/biopsy procedure is available.
- Correlate and evaluate hematology and coagulation test results with other clinical findings when appropriate, with other laboratory data.
- Observe proper security precautions involving confidential patient information.
- Develop skills in computer assisted data management systems as applied to the department.
- Observe and participate in quality assurance practices of the department.

* If test(s) not ordered within rotation period or not a routine procedure, the clinical instructor will review the procedure with the student pointing out special requirements, pitfalls, and

E-CLINICAL PRACTICE TOPICS:		
Week	Clinical Practice Topics	Contact Hours
1	Blood samples collection and processing	6
2	Blood cell counts (manual for TLC + automated)	6
3	Thin blood film spreading, staining and comment	6
4	White blood cell differential and absolute counts	6
5	White blood cells morphology and comment	6
6	Tests for anemia, leukemia and flow cytometer.	6
7	PT, INR , APTT, mixing study and specific factor assay	6
8	ABO group & Rhesus group+Direct & indirect Coombs test	6
9	Cross matching , Antibody screening	6
10	Antibody identification and Apheresis	6
11	Urine, CSF, Blood, Saliva, fluids examination	6
12	Urine, CSF, Blood, Saliva, fluids examination	6
13	Therapeutic drugs monitoring- and drug abuse	6
14	Therapeutic drugs monitoring- and drug abuse	6
15	Revision	6



G- ASSESSMENT TASKS:			
#	Type of assessment task	Week	Total Grades
1	Assignments, Case Studies and Reports 5% Toxicology and 5% Body fluids analysis	All over the course	10%
2	Other Assessment Methods: e.g. Quizzes, Internet searches, Home works, Exercises, Class activity, Scratch Cards, Presentations, Group work.....etc 5% Hematology ,5% Blood bank, 5% Toxicology and 5% Body fluids analysis	All over the course	20%
3	Laboratories and Hospitals work (e.g. Attitude, Safety, punctuality, behavior, discipline, ethics, and attendance....etc.)	All over the course	10%
4	Practical Tests 10% Hematology,10% Blood bank and 10% Body fluids analysis	Week 16	30%
5	Final written examination 10% Hematology,10% Blood bank,5% Body fluids analysis and 5% Toxicology	Week 17-18	30%

H- LEARNING RESOURCES:
<p><u>1- Required textbook:</u></p> <ul style="list-style-type: none"> • Varley H. (2002). Practical clinical biochemistry; 4th edition. Arnold • Hoffmann, Georg F.; Zschocke, Johannes; Nyhan, William L. 2010, Inherited Metabolic Diseases: A Clinical Approach • Technical Manual of the American Association of Blood Banks (AABB); (2011). 17th Edition; United States Publisher • Clinical Laboratory Hematology,3ed Edition Shirlyn B. McKenzie, PhD, CLS (NCA),University of Texas Health Science center at San Antonio, Lynne Williams, September 2014 • Denise M. Harmening (2012) Modern Blood Banking & Transfusion Practices Edition: 6th edition United States Publisher: F.A. Davis Company <p><u>2- Essential references:</u></p> <ul style="list-style-type: none"> • Michael L. Bishop et.al.(2010) Clinical chemistry principles, procedures, correlations. 428 Lippincott. • SM Lewis, BJ Bain, I Bates (2015). Dacie and Lewis practical hematology. Churchill Livingstone Elsevier. Hoyer JD, Kroft SH, eds. (2012). • Color Atlas of Hematology Disorders: A Compendium Based on Proficiency Testing. Chicago, IL: American Society of Clinical Pathology.

Notes:

- Assignments topics and requirements shall be announced by the end of Week-1, the deadline for submission is 12pm Thursday of Week-10 (each semester).



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- Assignments and written assessment tasks must be verified against plagiarism, the maximum acceptable percentage is determined by the department (according to each level).
 - Continuous assessments may include quizzes, internet searches, home-works, exercises, class activity, scratch cards, presentations, group work, etc.
 - Practical exams may contain hands-on experiments, laboratory work, simulations, or demonstrations.
 - Written exams will include multiple-choice questions (MCQ), short essay questions, and long essay questions.