COURSE SPECIFICATION

(Laboratory Diagnosis in Hematology-HEM 630 LD)

Faculty of Medicine- Mansoura University

(A) Administrative information

(1) Programme offering the course:	Postgraduate Doctorate Degree of Clinical Hematology/HEMA 600
(2) Department offering the programme:	Internal Medicine Department
(3) Department responsible for teaching the course:	Hematology Unit and Clinical Pathology department.
(4) Part of the programme:	First part
(5) Date of approval by the Department`s council:	26/04/2016
(6) Date of last approval of programme specification by Faculty council:	9/08/2016
(7) Course title:	Laboratory Diagnosis in Hematology
(8) Course code:	HEM 630 LD
(9) Credit hours	2 hour
(10) Total teaching hours:	30 hours

(B) Professional information

(1) Course Aims:

The laboratory diagnosis course aims to build capacity of the field disease investigators to manage the laboratory aspects of blood investigations. Within that purpose, the overall objectives are to provide the candidates with the ability to:

- Manage specimen and sample collection in accordance with best practice and established protocols • Identify the appropriate tests needed for diagnosis of a disease
- Interpret the diagnostic and epidemiological significance of reports from laboratory tests
- Communicate effectively with the laboratory team
- Understand the impact laboratory results has on a case definition and how this affects the case status
- Be aware of the future of laboratory testing methods and the limitations and possibilities/potential of laboratory testing

(2) Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding

A1: To identify nature and structure of the bone marrow, the hematopoietic microenvironment and the lymphoid tissues.

A2: To make a proper updates in diagnosis of common benign and malignant hematological disorders and their acute emergencies.

A3: To identify the principles of blood product transfusion, including the evaluation of antibodies, blood compatibility, and the indications for and complications of blood component therapy and apheresis procedures.

A4: To identify effects of systemic disorders and drugs on the blood, blood forming organs, and lymphatic tissues.

A5: To identify immune markers, immunophenotyping, flow cytometry, cytochemical studies, and cytogenetic and DNA analysis of neoplastic disorders.

A6: To identify system errors and implementing potential systems solutions and to be able to demonstrate the strengths and limitations of laboratory investigation in overwhelmed time as well as the limitations of laboratory testing and turnaround times

A7: To demonstrate a comprehensive working knowledge of interpersonal and communication skills that result in a most appropriate communication pathways when dealing with laboratories and

effective exchange of information and collaboration with patients, their families, and health professionals.

B- Intellectual Skills:

B1: To decide the appropriate tests needed for the diagnosis of a disease and to correlate clinical information with laboratory, cytology, histology, and immunodiagnostic imaging techniques to diagnose medical and hematological disorders.

B2: To interpret the results of blood smears, bone marrow aspiration, and biopsy to diagnose medical and hematological disorders and to interpret graphs, charts and test results from the laboratory in the context of the disease

B3: To interpret results of complete blood count, including red blood cells and hemoglobin level, platelets and white cell differential to approach patients with blood disorders and to interpret graphs, charts and test results from the laboratory in the context of the disease.

B4: To communicate the laboratory findings to the laboratory team and to coordinate laboratory requests including test selection

B5: To differentiate between test specificity and sensitivity and false positives and false negatives

B6: To name the organisms and their nomenclature

B7: To demonstrate a comprehensive working knowledge of:

B7a: apheresis procedures

B7b: performance and interpretation of partial thromboplastin time, prothrombin time, platelet aggregation, and bleeding time, as well as other standard coagulation assays;

B7c: blood banking and current blood bank practice;

B7d: clinical experience in bone marrow or peripheral stem cell harvest for transplantation;

B7e: formal instruction and clinical experience in allogeneic and autologous bone marrow or peripheral blood stem cell transplantation, and in the nature and management of post-transplant complications.

B8: To be able to distinguish between different types of laboratories in Mansoura and Egypt and what services they offer.

(3) Course Contents (2 credit hours/30 teaching hours/theoretical):

Subjects	Lectures	Total Teaching Hours
Laboratory Diagnosis of Microcytic anemia	2	2 hours
Diagnosis of vitamin B12 and folic acid deficiency	2	2 hours
Laboratory investigation of intravascular and extravascular hemolysis	2	2 hours
Diagnosis of hereditary and acquired hemolytic anemia	2	2 hours
Laboratory testing of genetic disorders of hemoglobin	2	2 hours
Genetic abnormalities associated with hematological malignancies	2	2 hours
Diagnostic methods used to study malignant cells	2	2 hours
Value of genetic markers in management of hematological malignancies.	2	2 hours
Laboratory diagnosis of acute leukemia	1.5	1.5 hours
Laboratory diagnosis of chronic leukemia	1.5	1.5 hours
Laboratory investigation of myeloproliferative neoplasm	2	2 hours
Hematological, biochemical and histological finding of Hodgkin's lymphoma	1.5	1.5 hours
Hematological, biochemical and histological finding of non-Hodgkin's lymphoma	1.5	1.5 hours
Laboratory investigation of multiple myeloma and related disorders	2	2 hours
Hematological and genetic abnormality of aplastic anemia and bone marrow failure.	2	2 hours
Laboratory investigation of bleeding and coagulation disorders.	2	2 hours
	2 credit hours /30teaching hours	

(4) Teaching methods:

4.1: Power Point presentation.

4.2: Laboratory work.

(5) Assessment methods:

5.1: Written exam and MCQ for assessment of knowledge

Assessment schedule:

Final exam 25th week

Percentage of each Assessment to the total mark:

Written exam: 80 marks

MCQ: 20 marks

(6) References of the course:

Text books:

6.1: Manual of Clinical Hematology, Post Graduate Hematology, Williams Hematology, Wintrobes Clinical Hematology, Hollan-Frei Cancer Medicine, DeVita Cancer Principles and Practice of Oncology

6.2: Journals: American Society of Hematology (ASH), European Hematology Associatation (EHA).

(7) Facilities and resources mandatory for course completion:

-Lecture Hall.

-Data show.

-Equipped Laboratory.

Course coordinator: Dr Mona Taalab

Head of Hematology Unit: Prof Mohamed Nasr Mabed

Head of the Internal Medicine Department: Prof. Dr. Salah Al-Gamal

Date of First Approval: 22/12/2010

Date of Last Approval: 26/04/2016