COURSE SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Program offering the course	**Postgraduate Doctor Degree in Clinical Pathology-CPATH 630**
(2) Department offering the program	**Clinical Pathology Department**
(3) Department responsible for teaching the course	**Clinical Pathology Department**
(4) Part of the programme:	**Second part**
(5) Date of approval by the Department`s council	**16-5-2016**
(6) Date of last approval of programme specification by Faculty council	9/8/2016
(7) Course title:	**Hematology**
(8) Course code:	**CPATH 630HE** **CPATH 630 HEP**

(9) Credit hours	**CPATH 630HE (8)** **CPATH 630 HEP (4)**
(10) Total teaching hours:	**CPATH 630HE (120)** **CPATH 630 HEP (120)**

(B) Professional information

(1) Course Aims:

The broad aims of the course are as follows: (either to be written in items or as a paragraph)

The overall aim of the course is to :

To provide the student with the technical knowledge,technical skills to perform laboratory tests in the field of hematology as well as interpretative skills of hematology laboratory data and communication skills with the referring clinicians and other health care providers so that a clinically useful opinion can be derived from data.

(2) Intended Learning Outcomes (ILOs):

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills.

On successful completion of the course, the candidate will be able to:

A- Knowledge and Understanding

A1-Describe the causes,pathophysiology and clinical picture of various type of anemias
A2-Recognize the presentation,diagnosis and classification of acute and chronic leukemias
A3-Define the diagnostic criteria of different myeloproliferative neoplasms
A4-Classify myelodysplasia according to WHO guidelines
A5-Discuss the classification, natural history and molecular biology of myeloma, Hodgkin and non- Hodgkin lymphomas
A6- Outline the etiology, presentation and methods of diagnosis of various acquired and congenital platelet , coagulation and thrombotic disorders.
A7- Discuss methods of laboratory monitoring of anticoagulants
A8- Identify different antigens expressed on red cells, platelets and neutrophils
A9- Recognize clinical, laboratory and medicolegal aspects of blood transfusion
A10- Outline the molecular basis of hemoglobinopathies, thalassemia, hemophilia and thrombophilia
A11- Recall the hematological aspects of variuos systemic diseases
A12- Describe hematology in pregnancy, newborn and aged population

B- Intellectual skills

B1-Distinguish between various types of anemias based on laboratory results
B2-Interpret the results of appropriate laboratory methods to establish the diagnosis of acute and chronic leukemias
B3-Use appropriate laboratory methods to establish the dignosis of various myeloproliferative neoplasms
B4-Analyze the results of appropriate laboratory methods to establish the diagnosis of myelodysplastic syndromes
B5- Employ appropriate laboratory methods for diagnosis and staging of myeloma and determination of different types of lymphomas
B6-Interpret the results of laboratory screening tests for hemostasis and thrombophilia

C-Professional/practical skills

C1- Perform different hematological tests for diagnosis of anemias
C2- Carry out different hematological tests for diagnosis of acute and chronic leukemias
C3- Develop skills in preparation, staining and examination of peripheral blood and bone marrow smears
C4- Assesss the results of cytochemial staining, immunophenotyping and cytogenetic studies
C5- Evaluate the results generated by automated blood counters, platelet aggregometer and coagulation analyzers
C6- Perform blood grouping, cross matching and antiglobulin test
C7- Observe the performance of cytogenetic and molecular techniques

D- Communication & Transferable skills

D1- Search effectively electronic resources to find valid appropriate information and use them for evidence-based diagnostic practice

D2-Work effectively and cooperatively and demonstrate interpersonal skills in functioning as member of a multidisciplinary health care team .

D3-Demonstrate the ability to provide direct communication to the referring physician or appropriate clinical personnel when interpretation of a laboratory assay reveals an urgent , critical or unexpected finding and document this communication in an appropriate fashion

(3) Course content:

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
General aspects of anemia	1.5		1.5		3
Iron-deficiency anemia	1.5		15		3
Iron refractory iron deficiency anemia	1.5		1.5		3
Iron overload	1.5		1.5		3
Anemia of chronic disease	1.5		1.5		3
Sideroblastic anemia	1.5		1.5		3
Hematological aspects of porphyria	1.5		1.5		3
Phenotype diversity of thalassemia and sickle cell anemia	1.5		1.5		3
Pre-implantation and prenatal diagnosis of thalassemia syndrome	1.5		1.5		3
Molecular techniques used in diagnosis of thalssemia syndrome	1.5		1.5		3
Molecular basis of thalassemia	1.5		1.5		3
Macrocytic anemias	1.5		1.5		3
General aspects of hemolytic anemias	1.5		1.5		3
Red cell membranopathies	1.5		1.5		3
Red cell enzymopathies	1.5		1.5		3
Hemoglobinopathies	1.5		1.5		3
Immune hemolytic anemias	1.5		1.5		3
Non-immune hemolytic anemias	1.5		1.5		3
Paroxysmal nocturnal hemoglobinuria	1.5		1.5		3
Microangiopathic hemolytic anemias	1.5		1.5		3
Aplastic anemia and Pure red cell aplasia	1.5		1.5		3
Congenital dyserthropoietic anemias	1.5		1.5		3
Pancytopenia	1.5		1.5		3
Stem cell transplantation	1.5		1.5		3
Benign disorders of granulocytes	1.5		1.5		3

Benign disorders of lymphocytes	1.5		1.5		3
Mononucleosis syndrome	1.5		1.5		3
Benign disorders of monocytes	1.5		1.5		3
Disorders of macrophages	1.5		1.5		3
Hypersplenism and hyposplenism	1		1		2
Oncogenesis	1.5		1.5		3.5
Cancer stem cell	1.5		1.5		3
Cytogenetics of hematological malignancies	1.5		2		3.5
Molecular genetics of hematological malignancies	1.5		2		3.5
Acute lymphoblastic leukemia	1.5		1.5		3
Acute myeloid leukemia	1.5		2		3.5
Myelodysplasia	1.5		1.5		3
Chronic myeloid leukemia	1.5		2		3.5
Polycythemia	1.5		1.5		3
Myelofibrosis	1.5		1.5		3
Primary thrombocythemia	1.5		1.5		3
Chronic lymphocytic leukemias	1.5		1.5		3
Hodgkin`s lymphoma	1.5		1.5		3
Non Hodgkin`s lymphoma	1.5		1.5		3
Multiple myeloma	1.5		2		3.5
Essential monoclonal gammopathy	1.5		1.5		3
Macroglobulinemia	1.5		1.5		3
Heavy chain disease	1.5		1.5		3
Free immunoglobulin light chain	1.5		1.5		3
Amyloidosis	1.5		1.5		3
Angiogenesis	1.5		1.5		3
Vascular purpuras	1.5		1.5		3
Thrombocytopenia	1.5		1.5		3

Thrombocytosis	1.5		2		3.5
Hereditary qualitative platelet disorders	1.5		1.5		3
Acquired qualitative platelet disorders	1.5		1.5		3
Hemophilias	1.5		1.5		3
Molecular genetics of hemophilia	1.5		1.5		3
vonWillebrand's disease	1.5		1.5		3
Acquired coagulopathies	1.5		1.5		3
Circulating inhibitors of coagulation	1.5		1.5		3
Hereditary thrombophilia	1.5		1.5		3
Molecular genetics of thrombophilia	1.5		1.5		3
Acquired thrombophilia	1.5		1.5		3
Antiphospholipid syndrome	1.5		1.5		3
Thrombotic microangiopathies	1.5		1.5		3
Antithrombotic therapy	1.5		1.5		3
Red cell antigens and antibodies	1.5		1.5		3
Leukocytes and platelet antigen and antibodies	1.5		1.5		3
Blood components therapy	2		1.5		3.5
Complications of blood transfusion	2		1.5		3.5
Autologous blood transfusion	1.5		1.5		3
Hematologic aspects of systemic diseases	2		1.5		3.5
Therapeutic apharesis	2		1.5		3.5
Blood alternatives	1.5		1.5		3
Hematology in pregnancy	2		1.5		3.5
Neonatal hematology	2		1.5		3.5
Geriatric hematology	2		1.5		3.5

(4) Teaching methods:

4.1: Lectures

4.2: Case study

4.3: Practical Lab

4.4: Self learning

5.4: Student teaching

(5) Assessment methods:

5.1: Written exam for assessment of knowledge & intellectual skills.

5.2: Oral exam for assessment of knowledge & intellectual skills.

5.3: Practical exam for assessment of practical skills.

5.4: MCQ continuous assessment at the end of each semester

Percentage of each Assessment to the total mark:

Written exam: 26.66% (80 marks)

Practical exam: 33.33% (100 marks)

Oral exam: 33.33%(100 marks)

MCQ exam: 6.66%(20 marks)

(6)References of the course:

6.1: Hand books: Guide to Clinical Pathology

6.2: Text books: William's Hematology

6.3: Journals: Blood, Hematology , Egyptian J of Hematology

Course coordinator: Prof. / Tarek Selim

Head of the department: Prof. / Osama Elbaz

Date: