COURSE SPECIFICATION

(Hematology II)

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme offering the course:	Postgraduate Master degree of clinical hematology/HEMA 500
(2) Department offering the programme:	Internal Medicine Department
(3) Department responsible for teaching the course:	Hematology Unit
(4) Part of the programme:	Second part
(5) Date of approval by the Department`s council	30/04/2010
(6) Date of last approval of programme specification by Faculty council	9\8\2016
(7) Course title:	Hematology
(8) Course code:	HEM 510 HE
(9) Total teaching hours:	105 hours theoretical 210 hrs clinical
(10) Credit hours	7 hours theoretical–7 hr clinical

(B) Professional information

The course represents another copy of the hematology course MS degree in its aims, ILOs and course contents which is totally unacceptable

(1) Course Aims:

The broad aims of the course are as follows:

1- To educate the candidate the basics of hematopoiesis, erythropoiesis & hemostasis
2- For proper diagnosis and treatment of benign & malignant hematological disorders
3- To deal with hematological emergencies

(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

A 1: To identify structure of the bone marrow, the hematopoietic microenvironment and the lymphoid tissues.

A 2: To describe the spectrum of clinical symptomatology related to different hematological disorders.

A 3: To recognize the clinical spectrum of common hematological disorders with multisystem reflection.

A 4: To develop the concept of emergency management of acute hematological disorders.

A5: To identify the basic principles of research, including how such research is conducted, evaluated, explained to patients, and applied to patient care.

A 7: To identify the principles of transfusion medicine, including the evaluation of antibodies, blood compatibility, and the indications for and complications of blood component therapy and apheresis procedures.

A8: To identify effects of systemic disorders and drugs on the blood, blood forming organs, and lymphatic tissues.

A9: To recognize chemotherapeutic drugs, biologic products, and growth factors and their mechanisms of action; pharmacokinetics, clinical indications, and their limitations, including their effects, toxicity, and interactions

A10: To identify multiagent chemotherapeutic protocols and combined modality therapy of blood diseases.

A11: To state treatment of patients with disorders of hemostasis and the biochemistry and pharmacology of coagulation factor replacement therapy.
A12: To comprehend basics of pain management in patients with blood disorders.
A13: To recognize rehabilitation and psychosocial aspects of clinical management of patients with hematologic disorders.
A14: To illustrate the palliative care, including hospital and home care.
A15: To identify human immunodeficiency virus-related malignancies.
A16: To comprehend thoroughly care and management of geriatric patients with hematologic disorders.
A17: To identify principles of, indications for, and complications of autologous and allogeneic bone marrow or peripheral blood stem cell transplantation and peripheral stem cell harvests, including the management of post transplant complications.
A18: To identify concepts of supportive care, including hematologic, infectious disease, and nutrition.
A19: To identify basic molecular and pathophysiologic mechanisms, diagnosis, and therapy of diseases of the blood, including anemias, diseases of white blood cells and stem cells, and disorders of hemostasis and thrombosis
A20: To explain etiology, epidemiology, natural history, diagnosis, pathology, staging, and management of neoplastic diseases of the blood, blood-forming organs, and lymphatic tissues.
A21: To identify principles of molecular genetics, the nature of oncogenes and their products, and cytogenetics.
A22: To outline clinical epidemiology and medical statistics, clinical study and experimental protocol design, data collection, and analysis.
A23: To identify Immune markers, immunophenotyping, flow cytometry, cytochemical studies, and cytogenetic and DNA analysis of neoplastic disorders.

B- Intellectual skills :

B 1: To Make a proper diagnosis of common benign and malignant hematological disorders and acute emergencies

B 2: To demonstrate competence in the prevention, evaluation, and management of:

B 2**a**: acquired and congenital disorders of red cells, white cells, platelets and stem cells;

B 2**b**: hematopoietic & lymphopoietic malignancies, including disorders of plasma cells;

B 2**c**: congenital and acquired disorders of homeostasis and thrombosis, including the use of antithrombotic therapy;

B 3: To construct meaningful, supervised research experience with appropriate protected time either in blocks or concurrent with clinical rotations while maintaining the essential clinical experience.

B4:: To correlates clinical information with cytology, histology, and immunodiagnostic imaging techniques.

B 5: To interpret the results of blood smears, bone marrow aspiration, and biopsy.

B 6: To interpret results of complete blood count, including platelets and white cell differential to approach patients with blood disorders.

B7: To integrate etiology, epidemiology, natural history, diagnosis, pathology, staging and management of neoplastic of blood, blood forming organs and lymphatic tissues.

C- Professional/practical skills

C 1: To apply efficiently the use of chemotherapeutic agents and biological products through all therapeutic routes.

C 2: To demonstrate competence in the performance and/or (where applicable) interpretation of the serial measurement of tumor masses.

C 3: ؛ To demonstrate competence in the performance and/or (where applicable) interpretation of assessment of tumor imaging by computed tomography, magnetic resonance, PET scanning and nuclear imaging techniques;

C 4: To demonstrate competence in the performance and/or (where applicable) interpretation of complete blood count, including platelets and white cell differential, by means of automated or manual techniques, with appropriate quality control;

C 5: To demonstrate competence in the performance and/or (where applicable) interpretation of bone marrow aspiration and biopsy, preparation, staining, and interpretation of blood smears, bone marrow aspirates, and touch preparations, as well as interpretation of bone marrow biopsies.

C 6: To apply the following:

C6a: apheresis procedures

C6b: performance and interpretation of partial thromboplastin time, prothrombin time, platelet aggregation, and bleeding time, as well as other standard coagulation assays;

C6c: blood banking and current blood bank practice;

C6d: clinical experience in bone marrow or peripheral stem cell harvest for transplantation;

C6e: 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; and,

C 7: To demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Candidates are expected to demonstrate:

C7a: compassion, integrity, and respect for others;

C7b: responsiveness to patient needs that supersedes self-interest;

C7c: respect for patient privacy and autonomy;

C7d: accountability to patients, society and the profession; and,

C7e: sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

C8: To apply indications, contraindications, limitations, complications, techniques, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline.

C8a: to educate patients about the rationale, technique, and complications of procedures and in obtaining procedure-specific informed consent.

C9: To manage and take care of indwelling venous access catheters;

D- Communication & Transferable skills

D1: To develop personal attitudes and coping skills in care for critically ill patients.

D2: To participate in a multidisciplinary case management conference or discussion.

D3: To demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

D4: To work effectively in various health care delivery settings and systems relevant to their clinical specialty.

D5: To coordinate patient care within the health care system relevant to their clinical specialty.

D6: To incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate.

D7: To advocate for quality patient care and optimal patient care systems.

D8: To work in inter-professional teams to enhance patient safety and improve patient care quality.

(3) Course content: Lectures (105 hours)

Please make a separate table for each module

Insert a separate table for clinical sessions over which 210 teaching hours should be distributeed

Subjects	Lectures	Clinical	Laboratory	Field	Total Teaching Hours
(1)Hematopoietic and hematopoietic growth factors	3h				
(2)Erythropoiesis and general aspects of anemia	2h				
(3)Hypochromic anemias	2h				
(4)Hereditary hemochromatosis and other iron overload disorders	3h				
(5)Megaloblastic anemias and other macrocytic anemias	2h				
(6)Genetic disorders of hemoglobulin.	3h				
(7)Hemolytic anemias	3h				
(8)Porphyria	2h				
(9)Bone Marrow Failure Syndromes • Aplastic anemia, acquired and constitutional,Paroxi mal nocturnal hemoglobinuria	4h				

• Pure red cell aplasia	1h				
(10)Myelodysplastic syndromes (MDS).	3h				
(11)Myeloproliferative neoplasm (MPN).	6h				
(12)The white blood cells • Granulocytes, monocytes and their benign disorders • Lymphocytes and their benign disorders	2h 2h				
(13)The genetics of hematological malignancies	2h				
(14)Acute leukemias	6h				
(15) Chronic leukemias	6h				
(16)Lymphoid neoplasm	9h				
(17)Multiple myeloma and other plasma cell disorders	4h				
(18)Hematopoietic stem	3h				

cell transplantation					
(19)Transfusion: blood and blood component	5h				
(20)Platelets, blood coagulation and hemostasis • Bleeding disorders caused by vascular and platelet abnormalities • Coagulation abnormalities • Thrombosis and antithrombotic therapy	2h 2h 3h 3h				
(21)Hematological changes in systemic diseases.	3h				
(22) Pregnancy and pediatric hematology.	2h				
(23)Hematological emergencies	5h				
(24)Management of complication of chemotherapy	5h				
(25)Nutritional support	3h				
(26)Hospice and palliative care	4h				
Total	105h				

(4) Teaching methods:

4-1-Lectures with power point presentations and discussions.

4-2-Interactive bedside teaching with clinical case presentations and group discussion.

4-3-Problem based case scenarios {commentary}.

4-4-Seminars.

4-5-Workshops and training courses for procedural skills.

4-6-clinical training 30 months in the hematology unit and 6 months in different units of the internal medicine department, with attendance of activities including discussions, clinical rounds, outpatients clinics, procedures…with both senior and genior staff.

4-7-Presentation of the assay.

(5) Assessment methods:

Log Book for assessment of the attendance and activities throughout the course

5.1Written exam for assessment of knowledge and intellectual ILOs

5.2: Oral exam for assessment of knowledge and intellectual ILOs

5.3: OSCE Clinical exam for assessment of knowledge, intellectual and clinical ILOs

5.4: MCQ exam continuous assessment for assessment of knowledge and intellectual ILOs

Assessment schedule:

Assessment 1: Final exam week/month: 36th weekt

Assessment2: : MCQ continuous assessment exam at the end of each semester

Percentage of each Assessment to the total mark:

Written exam: 160 marks

OSCE Clinical exam: 100 marks

MCQ exam continuous assessment represents (40 marks)

Structured Oral exam: 100

- Presentation and open discussion of the MSc assay.

(6) References of the course:

6.1: Hand books: BETHESDA Hand book of Clinical Hematology, Hand book of Cancer Chemotherapy.

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

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

(7) Facilities and resources mandatory for course completion:

-Lectures Halls.

-Data show.

-Equipped Laboratory.

-Computer laboratory

Course coordinator: Prof. Dr Sameh Shamaa

Prof Dr Mohamed Nasr Mabed

Prof Dr Emad Azmy

Head of Hematology Unit: Prof Mohamed Nasr Mabed

Head of the department: Prof. Dr Salah Al Gamal

Date of First Approval: 22/12/2010

Date of Last Approval: 30/03/2016