



Hematology Course Specification

MD Degree in Clinical and Chemical Pathology

Program on which the course is given: MD in Clinical and Chemical Pathology

Department offering the program: Clinical and Chemical Pathology

Department offering the course: Clinical and Chemical Pathology

Course code: CCP 922 H

Element of the program (Compulsory/Elective): Elective course

Academic year: 2015-2016

Date of approval: July 2015

Credit points: 10 Credit points

Course duration: 30 weeks of teaching

Teaching hours: Theoretical 70%, practical 30%

Course Coordinators: Professor Azza Aboul Enien
Professor Samia Hassan Rizk
Professor Hala Sheba

I. AIM OF COURSE

- To provide candidates with the general knowledge and skills necessary to, interpret and give consultant level of advice on hematological laboratory investigations.
- To acquaints candidates with the principles of good laboratory practice and medical research.



II. INTENDED LEARNING OUTCOMES

A. Knowledge and understanding: By the end of the course the candidate should be able to:

1. Explain clearly the development, structure and physiology of normal hemolymphatic body system
2. Explain clearly the pathophysiology of blood diseases, their presentation and diagnostic findings
3. Describe the organization and operation of modern hematology laboratory services, as compliant with international standards
4. Describe the quality systems & procedures required for hematology laboratories
5. Describe principles of clinical investigation

B. Intellectual skills: By the end of the course the candidate should be able to:

1. Analyze and make decision about diagnostic hematology problems providing evidence based opinions.
2. Analyze and solve laboratory diagnostic errors & problems applying his quality knowledge
3. Provide consultant advisory services, regarding the clinical usefulness, interpretation, a limitations of different laboratory tests, and useful further testing.
4. Critically analyze hematology research papers
5. Effectively access pertinent scientific literature
6. Analyze the literature critically
7. Integrate new information in an ongoing fashion into diagnostic decision-making

C. Professional and practical skills: By the end of the course the candidates should be able to:

1. Effectively & timely communicate hematopathologic diagnoses by formulating an interpretive report that will provide, in a clear, concise, and complete form, the information needed by clinicians to proceed in the management of the patient.
2. Proficiently communicate in the presentation of information at clinical conferences and scientific meetings.
3. Successfully perform hematology diagnostic procedures according to the established standards
4. Perform hematology laboratory techniques, applying the necessary quality measures

Cairo University – Faculty of Medicine

Clinical and Chemical Pathology Department

MD Elective Course –Hematology [CCP 922 H]



D. General and transferable skills: By the end of the course the candidates should be able to:

1. Apply leadership and teamwork skills required to implement laboratory policies.
2. Lead multidisciplinary and scientific meetings in hematology
3. Communicate effectively orally and in writing
4. Demonstrate competent use of information technology including the use of word processing, databases, statistical programs, laboratory and hospital information systems
5. Contribute to the continuous development and training of medical and non-medical laboratory staff, through mentoring, supervision and appraisal.
6. Enhance their own knowledge and abilities through adopting life-long learning practices.



III. COURSE CONTENT

- i. Hematology
- ii. **Main topics: Students will receive presentations or group discussions about recent advances in the following subjects:**

HEMATOPOIESIS
<ul style="list-style-type: none"> • The hemopoietic microenvironment • Normal hematopoietic regulation • Indications for and current practice of allogeneic and autologous HSCT • The fundamentals of SCBRM • The business, legal, ethical, manufacturing and regulatory aspects involved in moving stem cells or related product into clinical practice
HEMATO-ONCOLOGY
<ul style="list-style-type: none"> • Cancer biology • Myeloproliferative neoplasms • Acute Myeloid Leukemia • Myelodysplastic syndromes • Chronic B-lymphoproliferative disorders • Plasma cell disorders& amyloidosis • B-Cell Lymphoma • B-cell Proliferations of Uncertain Malignant Potential • T-cell and NK-cell Neoplasms • Hodgkin’s Disease • Mastocytosis • Complications of hematologic neoplasms
BENIGN LEUKOCYTE DISORDERS
<ul style="list-style-type: none"> • White Blood Cell Disorders • Lymphopenia & lymphocyte dysfunction syndrome • Leukocytosis • Physiologic hematology changes • Pathologic hematology changes in systemic disorders
HEMOSTASIS
<ul style="list-style-type: none"> • Normal Hemostasis • Acquired platelets disorders • Thrombocytopenia • Thrombocytosis • Bleeding disorders • Thrombotic disorders • Pharmacological manipulations of bleeding& thrombosis
BLOOD TRANSFUSION
<ul style="list-style-type: none"> • Physiology and biochemistry of blood



<ul style="list-style-type: none"> • Fundamentals of Immunoematology • Organization and functions of blood centers • Blood donation and pre transfusion testing • Blood components and component therapy • Transfusion Complications • Medico-legal considerations
ERYTHROID DISORDERS
<ul style="list-style-type: none"> • Microcytic hypochromic anemia • Macrocytic anemia • Bone marrow failure syndromes • Hereditary Hemoglobin Disorders: Molecular Basis. • Sickle cell disease & Other Abnormal HB • Red cell Membrane Disorders • Enzymopathies • Acquired Hemolytic Anemia • Hemochromatosis • Porphyrias
BONE MARROW PATHOLOGY & HEMATO-MORPHOLOGY
CELL CULTURE TECHNIQUES

iii. **Course contents:** Distribution of course contents

Subject	Lectures (hrs)	Tutorial / Small group discussion (hrs)	Practical (hrs)	Total (hrs)	% of Total
1. Hematopoiesis	14	7	-	21	10.8
2. Hemato-oncology	19	5	10	34	17.4
3. Benign leukocyte disorders	8	-	9	17	8.7
4. Hemostasis	13	7	-	20	10.3
5. Blood transfusion	10	5	21	36	18.5
6. Erythroid disorders	11	6	-	17	8.7
7. Bone marrow pathology & hemato-morphology	-	-	25	25	12.8
8. Cell culture techniques	-	-	25	25	12.8
Total	75	30	90	195	100



IV. TEACHING METHODS

The course will be managed through the following teaching methods:

- Lectures 3 times weekly.
- Journal club (presentation of interesting articles in periodicals) once every two weeks.
- Scientific meetings arranged by the department (annual meeting).
- Scientific meetings arranged by the sub-specialty (weekly meeting).
- Practical classes in the lab.
- **Lecture Timetable**

Item	Time schedule
1- Lectures	3 times/week; Three hours each between 10 AM to 1 PM
2- Small group teaching / tutorials	Discussion 3 hours /week included in the lectures' time
3- Practical	3 hours / week
4- Others	Seminar once/week

V. LIST OF REFERENCES

- Basic materials:
 - Course notes
- Essential books (text books):
 - Wintrobe's Text book of hematology
 - Williams' Hematology
 - Laboratory hematology Dacie & Lewis
- Recommended books:
 - Post graduate Hematology
- Periodicals, Web sites, ... etc:
 - Online hematology image & educational material



VI. TEACHING AND LEARNING FACILITIES

- Lecture halls
- Audio-visual aids: Data show, Blackboard, Computers, CDs, overhead projection and videos.
- Rooms for small groups
- Laboratory

VII. ASSESSMENT

Assessment criteria:

The prerequisite for sitting to the final exam is 75% attendance of the lectures and fulfilling all the credit points specified for the scientific activities, the training program and the elective course which should be registered in the log book.

Assessment tools:

- Continuous assessment is carried throughout the course and registered in the logbook
- Final summative examination will be carried at the end of the course.

Assessment schedule: The final exam is held twice per year in May and November.

Examination description:

- Written exam three hour duration
- Oral examination; two stations each evaluated by eight examiners.
- Practical examination:
 - Day 1 Practical case commentary
 - Day 2: Practical long case
 - Day 3: Practical morphology
 - Day 4: Practical techniques and immunohematology

Weighing of assessment

Exams	Marks	Intended Learning Outcomes
Written	200	A1-5, B1-3
Oral	150	A1-5, B1-3

Cairo University – Faculty of Medicine

Clinical and Chemical Pathology Department

MD Elective Course –Hematology [CCP 922 H]



Practical	150	C3,4
Total	500	

Head of Department

Prof. Fatma Elmougy