



## **Hematology Specification**

### **Master Degree in Clinical and Chemical Pathology**

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

**Department offering the program:** Clinical and Chemical Pathology Department

**Department offering the course:** Clinical and Chemical Pathology Department

**Course code:** CCP 822 H

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

**Academic year:** 2015-2016

**Date of approval:** July 2015

**Credit points:** 5 Credit points

**Course duration:** 16 weeks

**Teaching hours:** 105

**Program Coordinators:** Prof. Mervat Korshied

#### **I. AIM OF COURSE**

By the end of the course, the candidate will be competent in essential skills and knowledge needed for optimum processing of clinical samples with excellent interpretation and correlation of hematological test results with the clinical situation of the patient.

#### **II. INTENDED LEARNING OUTCOMES**

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

1. Acquire scientific knowledge that will help in dealing with patient with different hematological problems.
2. Recognize urgent hematological problems.
3. List different types of anemia.
4. List acute and chronic leukemias.
5. Define myeloproliferative disorders.
6. Define myelodysplastic syndromes.
7. Tabulate research results.
8. Acquire essential knowledge of specialist areas within hematology.
9. Describe flowcytometry principles and applications



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

1. Analyze laboratory results.
2. Think critically and use the problem solving techniques while dealing with different disease.
3. Predict the initial management of common anemia, acute and chronic leukemia, myeloma and lymphoma.
4. Write bone marrow report.
5. Differentiate between diseases having the same presentations.
6. Recommend laboratory tests to reach diagnosis of hematological disorders.

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

1. Operate different hematology lab instruments.
2. Conduct laboratory work-up to identify different hematological disorders
3. Perform bone marrow aspirate and biopsy properly.
4. Write bone marrow report.
5. Diagnose malignant hematological disorders, red cell abnormalities & malaria parasite.
6. Apply flowcytometry techniques.
7. Practice aseptic techniques and other laboratory safety measures.

**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 and participate in multidisciplinary and scientific meetings.
3. Communicate effectively orally and in writing
4. Demonstrate competent use of information technology
5. Contribute to the continuous development and training of laboratory staff, through mentoring, supervision and appraisal.
6. Expand and enhance their own knowledge and abilities through adopting life-long learning practices.



### III. COURSE CONTENT

**i. Compulsory Course Hematology**

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

1. Flowcytometry; principles and applications
2. Erythropoiesis
a) Red cell maturation
b) Red cell physiology
c) Benign abnormalities of red cells
d) Membrane characteristics
e) Red cell enzymes
f) Red cell inclusions (hemoparasites)
3. Hemoglobinopathies
a) Thalassemias
b) Sickle cell anemia
4. Anemias
a) Iron hemostatis
b) Blood loss anemia
c) Megaloblastic anemia
d) Aplastic anemia
e) Sideroblastic anemia
f) Hemolytic anemia
5. Hematological malignancies
a) AML
b) ALL
c) Histocytic disorders
6. Myeloproliferative neoplasms
7. Myelodysplastic syndromes
8. Lymphoproliferative disorders
a) CLL
b) MM
9. Bone marrow
a) Indications of BM examination

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

<b>Subject</b>	<b>Lectures (hrs)</b>	<b>Tutorial / Small group discussion (hrs)</b>	<b>Practical (hrs)</b>	<b>Total (hrs)</b>	<b>% of Total</b>
Flowcytometry; principles and applications	2		3	5	4.76
Erythropoiesis	2		4	6	5.71
Hemoglobinopathies	6	2	6	14	13.33
Anemias	8	6	6	20	19.0
Hematological malignancies	6	2	7	15	14.28
Myeloproliferative neoplasms	4	2	6	12	11.43
Myelodysplastic syndromes	4	3	4	11	10.47
Lymphoproliferative disorders	4	3	4	11	10.47
Bone marrow	4	2	5	11	10.47
<b>Total</b>	<b>40</b>	<b>20</b>	<b>45</b>	<b>105</b>	<b>100</b>

**IV. TEACHING METHODS****The course will be managed through the following teaching methods:**

1. Lectures with interactive discussions in lecture halls aided by Audio-visual aids (data-show, slide projection).
2. Tutorials
3. Slides / data show
4. Discussion
5. Presentations: Independent assignments
6. Practical sessions: light microscopical examination of the slides



### Lecture Tutorial and Lab Timetable

Item	Time schedule
1- Lectures	2 times/week; two hour each between 9:00 a.m. to 11:00 a.m.
2- Small group teaching / tutorials	1.5 hours / week
3- Practical	2 hours / week
Total	

## V. LIST OF REFERENCES

1. Hand outs of lectures and practical lessons
2. Practical notes of the department
3. Essential reading (text books):
  - Post Graduate Hematology by Hoffbrand, Lewis & Tuddenham (ISBN 978-1-4051-9180-7)
  - Clinical Hematology: Theory & Procedures by Mary Louise Turgeon (ISBN 978-1-60831-076-0)
4. Periodicals (extra readings)
  - Seminar in Hematology
  - British Journal of Hematology
  - American Journal of Clinical Pathology

## 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.

# Cairo University - Faculty of Medicine

Clinical and Chemical Pathology Department  
Second Part Master Compulsory –Hematology  
[CCP 822 H]

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## 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: Duration: 2 hours exam with type of questions: short essay & MCQ.
- Practical: Two sessions of 3 hours practical exam.
- Oral: Number of examiners: 2

## Weighing of assessment:

Examination	Marks allocated	Intended Learning Outcom
Written	100	A1-9, B1-3
Practical	75	B1-6, C1-7, D2-3
Oral	75	A1-9, B1-6, D2-3
<b>Total</b>	<b>250</b>	

## Head of Department

*Prof. Dr. Fatma Elmougy*