



Basic Hematology and Blood Banking 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 BH, CCP 822 BB

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

Academic year: 2015-2016

Date of approval: July 2015

Credit points: 3 Credit points

Course duration: 10 weeks

Teaching hours: 76 total teaching hours

Program Coordinators: Prof. Dr. Manal Maklout

I. AIM OF COURSE

By the end of the course, the candidate will be competent in;

- Performing basic skills needed for collection and optimum processing of clinical samples,
- Operating Lab. Instrument,
- Proper interpretation of test results in hematology Lab and Blood Banks.

II. INTENDED LEARNING OUTCOMES

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

1. Describe the requirements for each laboratory test and advise the appropriate specimen.
2. List the criteria for acceptance and rejection of each specimen.
3. Recognize normal values of leucocytes and red blood cells.
4. List different blood components.
5. Describe appropriate blood component for transfusion therapy in different clinical conditions.
6. Understand principles of hemostasis and thrombosis.
7. Acquire knowledge of specialist areas in coagulation disorders
8. State technology used in hematology lab instruments.



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

1. Analyze laboratory results.
2. Predict the initial management different leucocyte disorders.
3. Solve problems in cross-matching.

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

1. Collect different clinical samples correctly.
2. Operate different automated devices in hematology Lab..
3. Conduct laboratory work-up to identify different hematological disorders.
4. Perform hemogram.
5. Write a hemogram report with recommendations for further investigations to reach proper diagnosis.
6. Apply proper blood grouping and cross matching techniques.
7. Examine clinical samples both macroscopically and microscopically.
8. 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 safety and quality guidelines in the lab.
2. Communicate effectively orally and in writing
3. Demonstrate competent use of lab instruments.
4. Expand and enhance their own knowledge and abilities through adopting life-long learning practices.



III. COURSE CONTENT

i. Compulsory Course Basic Hematology and Blood Banking

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

Lab safety and quality
1. Lab safety 2. Quality control and assessment in Hematology Lab
Blood sampling
1. Principles of blood collection 2. Blood properties
Hematology Lab instrumentation and technology
1. Instrumentation in haematology 2. Cell counters 3. Laser technology 4. Instruments in coagulation studies
Hematopoiesis and hematopoietic disorders
1. Haematopoiesis 2. Leucocytes: Granulocytic And Monocytic Series 3. Non Malignant Disorders of Granulocytes And Monocytes
Normal hemogram
1. Normal Haemogram 2. age and sex variation 3. manual counts
Hemostasis and thrombosis
1. Platelet Function In Haemostasis 2. Blood Coagulation Factors 3. Lab Assessment Of Coagulation Factors 4. Anticoagulants Therapy And Monitoring 5. Hypercoagulable State 6. Platelets aggregation
Immune Hematology
1. Introduction and ABO System 2. Detection and identification of antibodies 3. Haemolytic disease of the newborn 4. Autoimmune haemolytic anaemia
Blood Banking
1. Direct and reversed grouping 2. Cross matching

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

Subject	Lectures (hrs)	Tutorial / Small group discussion (hrs)	Practical (hrs)	Total (hrs)	% of Total
1- Lab safety and quality	2			2	2.6
2- Blood sampling	2	1		3	3.9
3- Hematology Lab instrumentation and technology	4		2	6	7.8
4- Hematopoiesis and hematopoietic disorders	6			6	7.8
5- Normal hemogram		1	12	13	17.1
6- Hemostasis and thrombosis	12	4	9	25	32.8
7- Immune Hematology	5			5	6.5
8- Blood Banking	6	4	6	16	21.0
Total	37	10	29	76	100

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	3.5 times/week; one hour each between 11:00 a.m. to 01:00 p.m.
2- Small group teaching / tutorials	1 hours / 10 week
3- Practical	3 hours / 10 week

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.

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 April and October.

Examination description:

- Written exam: Duration: 2 hours exam together of basic hematology and blood banking 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	80	A1-8, B1-3
Practical	35	B1-3, C1-8, D1-4
Oral	35	A1-8, B1-3
Total	150	

Head of Department

Prof. Dr. Fatma Elmougy