



Program Specification

Master Degree in Clinical and Chemical Pathology

Program type: Single

Department offering the program: Clinical and Chemical Pathology Department

Program Code: CCP 822

Total Credit Points: 160 CPs

Academic year: 2015/2016

Date of approval: July 2015

Program Coordinators:

- Prof.
- Assit. Prof.

External Evaluator:

Prof Dr. Ola Sharaky, Professor of Clinical and Chemical Pathology, Alexandria University

I. AIM OF PROGRAM

This program aims to develop honorable Clinical and Chemical Pathologists, capable of continuous learning and self-development academically and professionally, who will effectively participate in the provision of high quality healthcare services.

Cairo University - Faculty of Medicine
Clinical and Chemical Pathology Department
Master Degree in Clinical and Chemical Pathology



The program ensures that graduates will develop the knowledge, understanding, technical skills and attitudes needed for efficient and safe performance, of various medical laboratory tests according to acknowledged international standards for performance, health and safety of environment and society.

Graduates will also acquire the skills and competencies of an effective medical researcher who will contribute to the overall improvement of human health.

Graduates of the program will be capable of dealing with patients professionally, and communicating with colleagues and coworkers in effective teams.





II. INTENDED LEARNING OUTCOMES

A. Knowledge and Understanding:

By the end of the program the candidate should be able to:

1. Describe basic laboratory instrumentation, techniques, procedures and methodologies.
2. Outline procedures for specimen collection, and handling of common laboratory tests.
3. Describe how pre-analytical variables affect test results.
4. Explain basic principles of total quality management and safety in clinical laboratories.
5. Recognize basic biomedical statistics and list their applications in laboratory practice and medical research.
6. Explain basic pathophysiology of different body systems.
7. Describe the clinical usage of different laboratory tests including emergency and bedside testing.
8. Explain how available resources can be efficiently utilized to provide adequate healthcare service.
9. Describe the basic principles of medical research and research ethics.
10. Describe legal and ethical issues related to the field of laboratory medicine

B. Intellectual Skills:

By the end of the program the candidate should be able to:

1. Compare different methodologies and laboratory tests.
2. Select the most appropriate test/method to a certain clinical problem.
3. Evaluate a new method or instrument for introduction in laboratory service.
4. Correctly interpret laboratory test results, in context of available clinical information.
5. Analyze common laboratory problems and risks effectively.
6. Develop a sound research protocol
7. Carryout a systematic critical review of scientific literature
8. Write a scientific paper.



C. Professional and Practical Skills:

By the end of the program the candidate should be able to:

1. Collect and process samples according to standard procedures.
2. Adopt international standards for health and safety in medical laboratories.
3. Perform routine laboratory tests accurately and precisely.
4. Apply quality control measures in routine laboratory practice.
5. Write comprehensive comments on routine laboratory results.
6. Conduct effective medical research.
7. Adopt a proactive approach to new technologies.
8. Participate in service improvement.

D. General and Transferable Skills:

By the end of the program the candidate should be able to:

1. Communicate effectively with patients showing professionalism, empathy and respect to their dignity and confidentiality.
2. Participate in effective teams that collaborate to resolve technical, scientific, clinical, and management problems.
3. Explain clearly the significance of different routine laboratory tests to patients, their family members, and colleagues in other disciplines.
4. Recognize one's own limitations, and show willingness to ask for advice, learn from colleagues and accept constructive feedback.
5. Use ethical behavior in dealing with medical and non- medical laboratory staff and colleagues of other disciplines
6. Demonstrate competent use of word processing and data base programs.
7. Recognize opportunities for continuing professional development.
8. Manage time efficiently while working individually or in groups



III. ACADEMIC STANDARDS

Academic Reference Standards:

The academic standards of Clinical and Chemical Pathology program is adopted and accredited by the departmental council according to the Academic Reference Standards of the National Quality Assurance and Accreditation of Education (NAQAAE) Accreditation Body.

External References for Standards:

The external references for standards are guided by the following:

- 1- Chemical pathology (also known as clinical chemistry or clinical biochemistry): Royal college of pathologists
<https://www.rcpath.org/resourceLibrary/chemical-pathology-curriculum-.html>
- 2- Hematology: The college of American pathologists www.cap.org , The Royal college of pathologists
- 3- Blood banking/Transfusion medicine: international society of transfusion ISBT <http://www.isbtweb.org>



- 4- Immunology: The royal college of pathologists <https://www.rcpath.org/specialist-area/immunology.html>
- 5- Clinical microbiology: The royal college of pathologists, the American board of clinical microbiology, the American board of infection control.



IV. PROGRAM ADMISSION REQUIREMENT

According to Bylaws of the Faculty of Medicine, Cairo University for the Post Graduate Programs (July 2009), applicants should have MB.BCh or equivalent degree. According to Cairo University requirements, all applicants for postgraduate studies should fulfill preliminary courses as Medical statistics I, English language (TOEFL or equivalent degree), Computer skills (ICDL) or equivalent computer course offered by the medical education center (MEDC). Admission to the program is open twice yearly. Training prior to registration may be accredited according to departmental and hospital evaluation.



V. PROGRAM STRUCTURE AND CONTENT

Program duration: Three academic years

Program structure: Total Credit points 160

FIRST PART MASTER DEGREE



Code	Title	CPs	Total
COMPULSORY COURSES (1.5 academic years)			
CCP 822 BCM	Basic Clinical Microbiology	1.5	12
CCP 822 BCP	Basic Chemical Pathology	3.0	
CCP 822 BCI	Basic Clinical Immunology	1.5	
CCP 822 BH	Basic Hematology	2.5	
CCP 822 BB	Blood Banking	0.5	
CCP 808	General Medicine	1.5	
CCP 810	Pediatrics	1.5	
ELECTIVE COURSES (Two courses to be chosen with 1 credit point)			
GROUP A:			1
MEDC 1	Critical Reading	0.5	
MEDC 2	Scientific Writing	0.5	
MEDC 3	Evidence Based Medicine	0.5	
MEDC 4	Medical Statistics (2)	0.5	
MEDC 5	Medical Ethics	0.5	
GROUP B:			1.0
CCP 822MIC	Infection Control (Advanced and TOT)	1.0	



CCP 822 QC Lab Safety and Quality Control	1.0	
SCIENTIFIC ACTIVITIES: Seminar: Speaker 1.0 CP, attendant 0.5 CP Workshops: Organizer 1.5 CP, attendant 1.0 CP Conferences: Speaker 1.5 CP, attendant 1.0 CP Thesis Discussion: attendance 0.5 CP		2.0
TRAINING COURSE		
CCP 822 C1 Basic Training Course		44
TOTAL FIRST PART		60

SECOND PART MASTER DEGREE

Code	Title	CPs	Total
COMPULSORY COURSES (1.5 academic years)			
CCP 822 H	Hematology	5	16
CCP 822 CP	Chemical Pathology	5	
CCP 822 CI	Clinical Immunology	3	
CCP 822 CM	Clinical Microbiology	3	
SCIENTIFIC ACTIVITIES Seminar: Speaker 1.0 CP, attendant 0.5 CP Workshops: Organizer 1.5 CP, attendant 1.0 CP Conferences: Speaker 1.5 CP, attendant 1.0 CP Thesis Discussion: attendance 0.5 CP			4



TRAINING COURSE	
CCP 822 C2 Specialized Training Course	60
TOTAL SECOND PART	80
MASTER THESIS	20



FIRST PART

The first part is one and a half years with 60 total credit points including compulsory courses and elective courses. It also includes the basic part of training course and scientific activities. During this period the students will attend the first part courses and complete the elective courses.

Basic training course

The basic training course obeys the Faculty of Medicine, Cairo University Bylaws for Post Graduate Programs (July 2009). All students should have a basic training for 18 months. They should spend at least 6 months in a general department and 6 months in specialized department(s).

Scientific activities

Each activity is monitored and given credit points registered in a special section in the logbook. Before sitting for final exam, the student should participate and collect the required points of activities as:

- Seminars (including recent topics and controversial issues) once weekly. Students are expected to participate in the discussions.
- Workshops related to Clinical and Chemical Pathology
- Conferences related to specialty
- Attendance of Thesis discussions

Master Thesis

All master-degree students should prepare a thesis in the specialty with 20 total credit points. The department and the ethical committees must approve the protocol of the research. The thesis should include a review part and a research part. The thesis is supervised by one or more senior staff members and may include other specialties



according to the nature of the research. The thesis should be evaluated and approved by a committee of three professors including one of the supervisors and an external professor.

SECOND PART

The second part is one and a half years with 80 total credit points including compulsory courses, specialized training course and scientific activities.

Specialized Training

All students should complete the special part of the residency training course in the department. They should spend 18 months in order to acquire the needed credit points. During this period the students will attend the courses of the second part and will participate in the scientific activities of the department.

VI. REGULATIONS FOR PROGRESSION AND PROGRAM COMPLETION

After collecting the required credit points for the respective courses, the first phase of the training (basic training), and the scientific activities, the student will be eligible to sit for the first part examination. In case the student fails to pass the examination, he/she may proceed in the specialized clinical training while resubmitting for the next examination. After passing the first part, the student submits a protocol for Master Thesis at the beginning of second part. Before submitting to the final examination, he/she should finish the thesis and get the approval, complete the phase of special training course, and collect the required credit points. The candidate will receive his degree after passing the final examination. The Master Degree should be obtained within a maximum of 6 years from the registration date





VII. ASSESSMENT METHODS AND REGULATIONS

A: Assessment Tools

Supervision and Monitoring of Training Program

According to the Faculty of Medicine, Cairo University Bylaws for practical Training Programs, professors carry continuous assessment during the program. A practical training program logbook will be kept for each candidate to document all his/her practical activities as well as his/her participation in different scientific activities. The head of the department should allow the candidates to undergo the final examination when they complete their training program and collect the credit points needed.

Formative Assessment

The formative assessment is carried out throughout the academic year to build up the candidate knowledge and skills and is documented in the logbook.

Summative Assessment

According to the Faculty of Medicine, Cairo University Bylaws for Post Graduate Programs (July 2009). Students should be assessed at the end of the program

- **Final Exam Part I**
 - **Basic Microbiology:** One hour written exam + oral exam + practical exam
 - **Basic Immunology:** One hour written exam + oral exam + practical exam
 - **Basic Chemical Pathology:** Two hours written exam + oral exam + practical exam
 - **Basic Hematology and Basic Blood Banking:** Two hours written exam + oral exam + practical exam
 - **Internal Medicine:** One hour written exam + oral exam + clinical exam



- **Pediatrics:** One hour written exam + oral exam + clinical exam
- **Pass the elective courses**

- **Final Exam Part 2**

Written exams (short essay, problem solving, and MCQ)

- **Hematology:** two hours written exam + oral + practical
- **Chemical pathology:** two hours written exam + oral + practical
- **Clinical Immunology :** one and a half hours written exam + oral + practical
- **Clinical Microbiology:** one and a half hours written exam + oral + practical

B: Assessment Schedule:

The written final exam is held twice a year in April and October to be followed by the practical/clinical and oral exams in separate days.

First Part Written Exams

- Day one:** Basic Clinical Immunology (CCP822 BCI), one hour
Basic Clinical Microbiology (CCP822 BCM), one hour
- Day two:** Basic Chemical Pathology (CCP822 BCP), two hours
- Day three:** Basic Hematology and Blood Banking (CCP822 BH, BB), two hours
- Day four:** Internal Medicine (CCP 811), one hour
Pediatrics (CCP 813), one hour

Second Part Written Exams

- Day One:** Hematology (CCP 822 H), 2 hours



Day Two: Chemical Pathology (CCP 822 CP), 2 hours
Day Three: Clinical Immunology (CCP 822 CI), 1.5 hours
Day Four: Clinical Microbiology (CCP 822 CM), 1.5 hours

C: Weighing Of Assessment:

The marks allocated to courses are equal to 50 marks for each credit point.

FIRST PART MASTER DEGREE					
Code	Compulsory courses	Written	Oral	Practical OSCE	Total
CCP 822 BCM	Basic Clinical Microbiology	40	15	20	75 marks
CCP 822 BCI	Basic Clinical Immunology	40	15	20	75
CCP 822 BCP	Basic Chemical Pathology	80	35	35	150
CCP 822 BH & CCP 822 BB	Basic Hematology and Blood Banking	80	35	35	150
CCP 811	Internal Medicine	40	15	20	75
CCP 813	Pediatrics	40	15	20	75



TOTAL FIRST PART	600 marks
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SECOND PART MASTER DEGREE					
Code	Compulsory courses	Written	Oral OSPE	Practical OSCE	Total
CCP 822 H	Hematology	100	75	75	250
CCP 822 CP	Chemical Pathology	100	75	75	250
CCP 822 CI	Clinical Immunology	80	35	35	150
CCP 822 CM	Clinical Microbiology	80	35	35	150
TOTAL SECOND PART					800 marks

Remarks

It is mandatory to pass all the papers of written exams separately.

*The passing mark in any written exam is $\geq 60\%$. **III. Evaluation***



VIII. PROGRAM EVALUATION

Evaluator	Tool	Sample
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<ul style="list-style-type: none"> • Senior Students 	Questionnaire at the end of the program	All the PG students
<ul style="list-style-type: none"> • Alumni 	The faculty is currently developing an Alumni office for postgraduates	Not yet determined
<ul style="list-style-type: none"> • Stakeholders 	A meeting will be arranged during the annual conference of the department.	Representatives from <ul style="list-style-type: none"> • Army hospitals • National medical insurance • Medical syndicate • Ministry of health
<ul style="list-style-type: none"> • External Evaluators 	Review the program and courses. Attend the final exam.	Once before implementation Bi-annual report
<ul style="list-style-type: none"> • Quality Assurance unit 	Annual program review	

Head of Department
 Prof. Fatma El Mougny

Cairo University - Faculty of Medicine

Clinical and Chemical Pathology Department

Master Degree in Clinical and Chemical Pathology





Matrix of Courses and ILOs for Master Program in Clinical and Chemical Pathology

Courses	A Knowledge and Understanding										B Intellectual Skills								C Professional and Practical Skills								D General and Transferable Skills															
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8								
Basic Clinical Microbiology, CCP822, BCM	X	X	X	X															X							X									X	X	X	X				
Basic Clinical Immunology, CCP822, BCI	X	X	X																X							X									X	X	X	X				
Basic Chemical Pathology, CCP822, BCP	X	X	X	X	X			X			X	X							X	X						X									X	X	X					
Basic Hematology, CCP822, BH & Blood Banking, CCP822, BB	X	X	X	X											X	X					X	X					X								X	X	X	X	X			
Internal Medicine, CCP 811						X	X	X				X	X															X	X	X	X	X									X	
Pediatrics, CCP 813						X	X	X				X	X															X	X	X	X	X									X	

