



## **Program Specification**

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

**Program type:** Single

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

**Program Code:** CCP 922

**Total Credit Points:** 280 (160 for MSc Degree + 120 MD Degree)

**Academic year:** 2015/2016

**Date of approval:** July 2015

**Program Coordinators:**

- Prof. Samia Rizk
- Prof. Inas Raafat
- Prof. Lamia Mansour
  
- Prof Mona Wassef

**External Evaluator:**

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



## **I. AIM OF PROGRAM**

The aim of program is to develop outstanding Clinical and Chemical Pathology consultants, with an in-depth knowledge and understanding of the principles and practices of laboratory medicine.

The program ensures the development of deep awareness for current problems and recent advances in laboratory medicine, thus enabling graduates to act as leaders of innovation and improvement in the field.

The program targets the structure, methodologies, ethics, tools, analysis and critical appraisal of scientific research.

The program also ensure the improvement of effective communication skills required to lead teams and competently run and manage medical laboratories.

Graduates will adopt the principles of good laboratory practice, and international standards of performance, with a commitment to development of society and preservation of environment.



## II. INTENDED LEARNING OUTCOMES

### A. Knowledge and Understanding:

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

1. Describe the organization and operation of modern laboratory services, as compliant with international standards
2. Explain medical laboratory “method and instrument” development, performance and application.
3. Identify how pre, intra and post-analytical processes interact, contribute to the final laboratory result, and affect patient care.
4. Explain the pathophysiology of different body systems.
5. Describe the role of laboratory medicine in management of different diseases
6. Explain the standards and updated guidelines related to subspecialty.
7. Describe scientific research methodologies and ethics in medical research.
8. Describe the concepts of laboratory certification, accreditation and total quality management.
9. Mention health and safety principles and requirements in a medical laboratory including potential environmental hazards.
10. Describe ethical and legal aspects encountered in laboratory medicine practice.

### B. Intellectual Skills:

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

1. Acquire a critical insight into laboratory methodology, and instrumentation regarding their performance and application.
2. Make informed decisions regarding the introduction of a new diagnostic test/method/instrument in the laboratory
3. Analyze, interpret and provide possible explanations for sophisticated and unusual laboratory results.
4. Detect possible interferences affecting laboratory results, whether pre-analytical, analytical or post-analytical
5. Discuss clinical problems with colleagues, and clinicians of other disciplines, providing evidence based opinions and showing respect for others.
6. Provide consultant advisory services, regarding the clinical usefulness, interpretation, and limitations of different laboratory tests, and suggest useful further testing.



7. Evaluate hazards and identify, assess and mitigate risk in the laboratory.
8. Review scientific literature using a systematic critical approach.

**C. Professional and Practical Skills:**

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

1. Gain in-depth practical experience of up to date techniques used for the most commonly measured analytes, and some advanced techniques according to subspecialty.
2. Troubleshoot failures in laboratory instruments or processes logically and systematically.
3. Perform an evaluation study of a method or instrument according to guidelines.
4. Write explicit reports, business letters and e-mails to communicate with colleagues, clinicians of other disciplines, suppliers and producers of laboratory instruments and consumables, service engineers, .etc
5. Implement health and safety policies and procedures in the laboratory.
6. Plan and implement quality improvement programs, in collaboration with colleagues.
7. Compare and benchmark provided laboratory services and formulate a strategy for service improvement in context of available and potential resources.
8. Lead and participate in effective research underpinning the chosen subspecialty
9. Handle data and apply statistical analysis proficiently.
10. Write and publish high quality scientific papers.
11. Design and deliver an effective teaching event.

**D. General and Transferable Skills:**

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

1. Apply leadership, teamwork, and time management 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 including the use of word processing, databases, statistical programs, laboratory and hospital information systems



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. ACADEMIC STANDARDS**

#### **Academic Reference Standards:**

The academic standards of Clinical and Chemical Pathology program are 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:

- 1- Chemical pathology (also known as clinical chemistry or clinical biochemistry): Royal college of pathologists <https://www.rcpath.org/resourceLibrary/chemical-pathology-curriculum-.html>

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- 2- Hematology: The college of American pathologists [www.cap.org](http://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.

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### **IV. PROGRAM ADMISSION REQUIREMENT**

According to Bylaws of the Faculty of Medicine, Cairo University for the Post Graduate Programs (July 2009), applicants should have Master degree or an equivalent accredited degree in the same specialty. Admission to the program is open during January and July. The training prior to registration may be accredited according to departmental and hospital evaluation.



## V. PROGRAM STRUCTURE AND CONTENT

**Program duration:** Two academic years

**Program structure:** Total Credit points 280

Code	Title	CPs	Total
<b>MASTER DEGREE</b>			<b>160</b>
<b>COMPULSORY COURSES</b> ( <i>one academic year</i> )			
CCP 922 G	General Laboratory Medicine	10	10
<b>ELECTIVE COURSES:</b> One course to be chosen ( <i>one academic year</i> )			
CCP 922 CM	Clinical Microbiology	10	10
CCP 922 CI	Clinical Immunology	10	
CCP 922 H	Hematology	10	
CCP 922 CP	Chemical Pathology	10	
<b>SCIENTIFIC ACTIVITIES</b>			
- Seminars		Speaker 1 CP Attendant 0.5 CP	5
- Journal Club		Speaker 1 CP Attendant 0.5 CP	
- Scientific Meeting		1 CP	
- Workshops		Organizer 2 CP Attendant 1 CP	
- Conference		Speaker 2 CP Attendant 1 CP	
- Thesis Discussion		0.5 CP	
<b>TRAINING COURSE</b>			
CCP 922 P	Advanced training		55
<b>THESIS</b>			40
<b>TOTAL</b>			<b>280</b>

### **Scientific Activities:**

The candidates should participate in the scientific activities of the department such as:



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- Seminars
- Journal clubs
- Scientific meetings
- Workshops
- Conferences
- Thesis discussions

Each activity is monitored and given credit points registered in a special section in the logbook. Candidates should collect the required points before allowed to sit for final exam.

### **Training Course**

Third Phase: (3<sup>rd</sup> phase Advanced Training)

According the Faculty of Medicine, Cairo University Bylaws for Post Graduate Programs (July 2009), the duration of the advanced training is 24 months. During this period the students will attend the advanced general laboratory course and the elective course related to subspecialty. All training activities will be monitored and registered in the student's logbook.

### **Medical Doctorate Thesis**

All MD students should prepare a thesis in one of the four subspecialties of Clinical and Chemical Pathology. 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 from the Clinical and Chemical Pathology Department 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. Approving the thesis is mandatory to allow the student to set for the final exam.



## **VI. REGULATIONS FOR PROGRESSION AND PROGRAM COMPLETION**

After collecting the required credit points for the respective courses, the advanced training course, and the scientific activities, the student will be eligible to sit for the final examination. Before submitting to the final examination, he/she should finish the MD thesis and get the approval. In case the student fails to pass the written examination, he/she may resubmit for the next examination. After passing the written examination, the student is able to continue the oral and practical examinations. In case of failure in oral or practical exams, the student may resubmit (maximum twice), for these exams without retaking the written examination. The candidate will receive his degree after passing the final examination. The MD degree should be obtained within a maximum of 6 years from 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

Formative assessment is carried out throughout the academic year to build up the candidate knowledge and skills and is registered in the student's 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

- **General Laboratory Medicine Course (CCP 922 G):**  
One written exam over 3 hours, plus oral and practical exams
- **Elective Course:**  
One written exam of three hours duration, plus a practical and an oral exam.

### B: Assessment Schedule:

The written final exam is held twice a year in May and November to be followed by the clinical and oral exams on separate days.

- Day one: 1<sup>st</sup> General Laboratory Medicine written paper
- Day two 2<sup>nd</sup> Elective Course (related to subspecialty) written paper

### C: Weighing Of Assessment:

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

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Code	Compulsory Courses	Written	Oral	Practical	Total
CCP 922 G	General Laboratory Medicine	200	150	150	500
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Code	Elective Courses	Written	Oral	Practical	Total
CCP 922 CM	Clinical Microbiology	200	150	150	500
CCP 922 CI	Clinical Immunology				
CCP 922 H	Hematology				
CCP 922 CP	Chemical Pathology				
Total					<b>1000</b>

### Remarks

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

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



## VIII. PROGRAM EVALUATION

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

**Head of Department**

*Prof. Fatma El Mougny*