

# **Program Specification**

## **MD Histology**



## **Program Specification for MD Degree in Histology**

**Program type: single**

**Department offering the program: Department of Histology**

**Program Code: HIST 900**

**Total Credit points: 260 (140 MSc+120 MD)**

**Academic year: 2015/2016**

**Date of approval: October 2015**

**Program coordinator: Prof. Maha Baligh Zickri**

**External Evaluator: Prof. Hekmat Sorour Professor of Histology El Azhar University**

### **I. Aim of the Program**

The program aims to provide the postgraduate candidates with the knowledge, skills and attitude that allow them to master the advanced study of light and electron microscopic structure of cells, tissues and organs to be qualified in specialized courses and be expert in academic teaching. The program aims also to introduce the candidates to the methodology in the field of histology and cell biology including cytogenetics, immunohistochemistry and image analysis to be qualified in scientific research.

### **II. Intended Learning Outcomes of the Program (ILOs)**

**A. Knowledge and Understanding: By the end of the program the candidate should be able to:**

1. Describe the advanced histological structure of normal cells and tissues in relation to function and medical states.
2. Define and recognize the advanced functional histology of organs and systems of the body and related medical states.
3. Identify advanced methods and clinical applications of electron microscopy.
4. State the methods and clinical applications of immunohistochemistry.
5. Recognize the methods and clinical applications of image analysis.
6. Describe the methods and clinical applications of cytogenetics.

7. Identify the methods of tissue culture, stem cells and molecular biology.

**B. Intellectual Skills: By the end of the program the candidate should be able to:**

1. Correlate the structure and functions of cells and tissues with their related clinical conditions.
2. Correlate advanced histological structure of different systems of the body with their related clinical conditions.
3. Define the applications of electron microscopic in relation to effectology.
4. Recognize antibodies to tissue antigens in relation to immunohistochemical research applications.
5. Differentiate menus of image analysis related to various measurements in research work.
6. Distinguish cytogenetics applications in relation to methods.
7. Recognize molecular biology applications and correlate molecular biology, tissue and stem cell cultures with clinical applications.

**C. Professional and Practical Skills: By the end of the program the candidate should be able to:**

1. Demonstrate cells, tissues and organs using specialized micro- techniques, microscopes and stains.
2. Work safely in a laboratory environment, manage time effectively and pursue personally set objectives.
3. Prepare semithin and ultrathin sections to detect electron microscopic structure of cells and tissues.
4. Apply antibodies to detect cytoplasmic and nuclear antigens in immunohistochemistry.
5. Discover computer assisted image analysis using menu and mode.
6. Interpret karyotyping to detect normal and abnormal structure and number of chromosomes.
7. Select culture media for cells, tissues and stem cells.
8. Apply advanced tools for molecular biology.

**D. General and Transferable Skills: By the end of the program the candidate should be able to:**

1. Plan, execute and present an independent piece of work (an essay) within a supported framework.
2. Acquire the communication skills and presentational techniques including the ability to organize lectures and labs.
3. Develop interpersonal skills to allow him to participate in co-operative group planning and making decision.

4. Update their knowledge of histology by using recent references
5. Recognize the applicability of histology to their progressing careers using the internet for communication.

### III. Academic standards

**1.Academic reference standards:** The academic standards of Histology program is adopted and accredited by the departmental council

**2.External references for standards:**

**Universities offering similar program include: Oxford University (England) HISTOLOGY (MICROSCOPIC ANATOMY) at GEORGETOWN UNIVERSITY MEDICAL CENTER (USA).Medical Histology at Tulane University (USA)**

### IV. Program Admission Requirements

According to the Faculty of Medicine, Cairo University Bylaws for Postgraduate Programs (July 2009), applicants should have Master degree or equivalent accredit degree accredit of in the same specialty. Admission to the program is open during January and July. For details for admission, Refer to Postgraduate Student Affairs. Training prior to registration may be accredited according to departmental evaluation.

### V. Program Structure and Contents

**Program duration: 2 years**

**Program structure:**

- Total credit points 120 - (Table 1)
  - Compulsory courses; two academic years (30 weeks each) 16 credit points
  - Elective courses; 4 credit points
  - Scientific activities 4 credit points
  - Advanced practical training program 36 credit points
  - **MD Thesis:** 60 credit points.

**Table 1**

<b>Courses</b>	<b>Course modules</b>	<b>Credit points</b>	<b>total</b>	<b>ILOs</b>
<b>Compulsory courses</b>				
General Histology	<b>Cytology Tissues</b> • Epithelial tissue • Connective tissue • Muscular tissue • Nervous tissue • Blood	0.5 0.5 0.5 0.5 0.5	3	A1, B1, C1&2, D B2, C1&2, D
	<b>Heart &amp; blood vessels</b> <b>Lymphatic system</b> <b>Phagocytic system</b> <b>Skin</b>	0.5 1 0.5 1	3	A2, B2, C1&2, D
	<b>Respiratory system</b> <b>Digestive system</b> <b>Endocrine system</b>	1 2 1	4	A2, B2, C1&2, D
	<b>Urinary system</b> <b>Male genital system</b> <b>Female genital system</b>	1 1 1	3	A2, B2, C1&2, D
	<b>Special senses</b> <b>Central nervous system</b>	1 2	3	A2, B2, C1&2, D
	<b>Elective Courses: choose 2 courses</b>			
	○ Electron microscopic techniques ○ Immunohistochemistry ○ Image analysis ○ Cytogenetics ○ Tissue culture and stem cell ○ Molecular Biology	2 2 2 2 2 2	4	A3 B3 C3,4,5,6,7,8 D A4 B4 C3,4,5,6,7,8 D A5 B5 C3,4,5,6,7,8 D A6 B6 C3,4,5,6,7,8 D A7 B7 C3,4,5,6,7,8 D A7 B7 C3,4,5,6,7,8 D

<b>Scientific activities</b>	4	D
<b>Practical training program</b>	36	C D
<b>Thesis</b>	60	

**MD Thesis:**

All MD degree candidates should prepare a thesis in one of the main domains of Histology and Cell Biology (Electron microscopy, immunohistochemistry, tissue/ stem cell culture and cytogenetics associated with image analysis). The research and ethical committee must approve the protocol of the research. The thesis must 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.

**Scientific Activities:**

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

- 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.

**MD Matrix**

Courses	A Knowledge & Understanding							B Intellectual Skills							C Practical Skills								D General & Transferable Skills
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8	
HIST900 Cytology	+							+							+	+							+
HIST900 Tissues	+							+							+	+							+
HIST900 Heart & blood vessels		+							+							+	+						+
HIST900 Lymphatic system		+							+							+	+						+
HIST900 Phagocytic system		+							+							+	+						+
HIST900 Skin		+							+							+	+						+
HIST900 Respiratory system		+							+							+	+						+
HIST900 Digestive system		+							+							+	+						+
HIST900 Endocrine system		+							+							+	+						+
HIST900 Urinary system		+							+							+	+						+
HIST900 Male genital system		+							+							+	+						+
HIST900Female genital system		+							+							+	+						+
HIST900 Special senses		+							+							+	+						+
HIST900Central nervous system		+							+							+	+						+
HIST900 Elective EM			+							+							+	+	+	+	+	+	+
HIST900 Elective IHC				+							+						+	+	+	+	+	+	+
HIST900 Elective IA					+							+					+	+	+	+	+	+	+
HIST900 Elective Cytogenetics						+							+				+	+	+	+	+	+	+
HIST900 Elective TC & Molecular Biology							+							+			+	+	+	+	+	+	+

**VI. Regulations for Progression and Program Completion**

After collecting the required credit points for the respective courses, the advanced practical training, the scientific activities, and the Thesis the student will be eligible to sit for the final examination. In case the student fails to pass the examination, he/she

may resubmit for the next examination. The candidate will receive his/her degree after passing this final examination. MD degree should be obtained within a maximum of 6 years after registration date.

## VII. Assessment

### 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 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.

- **Formal Assessment**

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

### B: Assessment Schedule:

**Compulsory course:** Two written exams (Three hours each including long and short essay questions and MCQ) + oral exam + practical exam

Written exam will be held on two days:

**Elective courses:** For each course one written exam (Two hours) + oral exam + practical exam

The candidate should pass the written exam before sitting for the oral and practical exam. If he/she fails in practical/oral exam, the result of the previous written exam will be invalid and he/she should resit for a new written exam.

### C: Weighing Of Assessment (Marks allocated to courses):

(50 marks for each credit point)

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

		Marks			
Code	Title	Written	Oral	Practical	Total
	Compulsory course	150+150	250	250	800
	Elective courses	40+40	30+30	30+30	100+100



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

## VIII. Evaluation of Program Intended Learning Outcomes

<b>Evaluator</b>	<b>Tool</b>	<b>Sample</b>
1. Senior Students	Questionnaire at the end of the program	All the PG students
2. Alumni	The faculty is currently developing an Alumni office for postgraduates	Not yet determined
3. Stakeholders	A meeting will be arranged during annual conference of the department	Available 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>
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation Bi-annual report
5. College Quality Assurance committee	Annual program reviewer	

## Signatures

Date of approval by department council: 7<sup>th</sup> of October 2015

Program coordinator:

***Program Coordinator***

Prof. Maha Baligh Zickri

***Head of Department***

Prof. Gihan Ibrahim Abou EIFotouh