PROGRAMME SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) Programme Title & Code	M.D. degree of Histology & Cytology / HIST 600
(2) Final award/degree	M.D. degree
(3) Department (s)	Histology & Cell biology
(4) Coordinator	Dr Shireen Mazroa
(5) External evaluator (s)	Dr. Somaya Hosny (Director of the Center of Research & Development in Medical Education & health services (CRD) – Head of Histology & Genetics department, Faculty of Medicine, Suez Canal University)
(6) Date of last approval by the Department`s council	30/4/2016
(7) Date of last approval of programme specification by Faculty council	**9-8-2016**

(B) Professional information

(1) Programme Aims:

The broad aims of the Programme are as follows:

The aim of the MD program is to prepare the candidate to be professional in the field of Histology and cell biology through increasing his/ her awareness about

1. Histological structures of cells and their organization in tissues and organ systems at light and electron microscope levels
2. The current topics in cytogenetics, clinical chemistry, immunology and hematology.
3. Using diverse techniques in the research including tissue culture, stem cell research, chromosomal culture, Karyotyping and electron microscopy.
4. Advanced diagnostic procedures including hematological, cytological, Immunological and ultra structural investigations.
5. The basics and methodologies of scientific research.
6. Decision making in vision of the information available.
7. Continuous self development and transfer of knowledge and expertise to others
8. Teaching and presentation of scientific data pertaining to the field, in conferences both as poster and verbal presentations and to take part in group discussions.

Intended learning outcomes (ILOs); Are four main categories: knowledge & understanding to be gained, intellectual qualities, professional/practical and transferable skills. On successful completion of the programme, the candidate will be able to:

A- Knowledge and Understanding

A1 Recognize the normal structure and function of the body and of each of its major systems at light and electron microscopic levels.

A2 Describe different stages of the cell cycle and how these affect normal structure and function of the body.

A3 Discuss karyotyping, explain the different patterns of inheritance, and the possible disorders and discuss the genetic basis of cancer.

A4 Recognize the theories and principles and modern techniques in the histological research

A 5 Discuss in details various levels of sections in the spinal cord, brain stem, cerebrum and cerebellum.

A6 Know the principles and fundamentals of quality in professional practice in research and teaching. .

A 7 Depict biochemical and laboratory data in different organs in diagnosis of many diseases.

A 8 Recognize recent aspects of hemostasis, fibrinolysis and hemostatic control and the common features of blood diseases.

A 9 Explain the basics of the body immunology and diseases related to the immune system

Matrix between program aims and knowledge ILOS

	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7	Aim 8
A1	x							
A2	x	x						
A3		x	x					
A4			x		X			
A5	x							
A6					X		x	x
A7		x				x		
A8		x		x				
A9		x		x				

B- Intellectual skills

B1 Analyze the histological data in relation to the function.

B2 Correlate the structural features of different types of tissues with genetic and basic laboratory data.

B3 Use the ultra structural investigations in diagnostic and research fields.

B4 Self study and education during histological research.

B5 Take professional decisions in different situations.

B6 Plan for development of performance in the field of Histology

Matrix between program aims and Intellectual skills

	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7	Aim 8
B1	x							
B2	x	x	x	x				
B3	x		x		X	x		
B4							x	x
B5						x		
B6		x	x	x				

C- Professional/practical skills

C1 Examine the normal histology of cells and major organ systems of the body at light and electron microscopic level.

C2 Perform tests showing the molecular, histochemical, immunocytochemical and cellular mechanisms.

C3 Prepare slides from different tissues and organs for electron microscopical examination.

C 4 Write a histological report and read karyotyping.

Matrices between program aims and Professional/practical skills

	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7	Aim 8
C1	x		x	x				
C2			x	x				
C3	x		x					
C4	x	x	x	x		x	x	

D- Communication & Transferable skills

D 1 Work in team.

D 2 Communicate and use internet.

D 3 Use of information technology to serve the development of research and professional practice

D 4 Teach others and evaluate their performance

D 5 Evaluate himself and learn continuously

D 6 Organize scientific meetings and manage time

Matrices between program aims and Communication & Transferable skills

	Aim 1	Aim 2	Aim 3	Aim 4	Aim 5	Aim 6	Aim 7	Aim 8
D1							x	x
D2				x			x	
D3	x	x	x	x	x	x		
D4							x	x
D5							x	
D6								x

(3) Academic standards:

3.a- Academic standards for the programme are attached in Appendix I. in which external reference point are used being approved by the Faculty Council on 14/7/2010.

External reference points/benchmarks are selected to confirm the appropriateness of the objectives and the structure of assessment of the programme:

Programme of Doctor of Philosophy degrees in Cell Biology and Neuroscience, Graduate School of Basic Medical Science, New York Medical College.

http://www.nymc.edu/graduate-school-of-basic-medical-sciences-gsbms/academics/degrees--programs/doctor-of-philosophy/cell-biology/

3.b- A table of comparison between ARS, NARS and program ILOS is attached in Appendix I I. ~ 90 % of programme aims of the Benchmark are covered by the current program.

مقارنة ما يقدمه البرنامج من نتائج تعليمية مستهدفة مع المعايير المرجعية لبرنامج الدكتوراة في علم الأنسجة و بيولوجيا الخلية

أ ــ المعرفة والفهم:

المقررات التى تحقق المعايير الأكاديمية للبرامج	ILOs مخرجات التعلم المستهدفة	(ARS) Benchmark New York Medical College, USA	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا (درجة الدكتوراة في علم الأنسجة و بيولوجيا الخلية)
HIST 602 EM HIST 602 GE HIST 602 HIST 602 CC HIST 602 HE HIST 602 IM	A1- A9	- Identify structural organization and correlated function of the microanatomy of the human body using new methods for studying structure and function (CELL 1420). - Discuss the structural details and the molecular functions of the different parts of the cell (CELL 1360). - Recognize different aspects in the fields of neurophysiology, neuroanatomy and neuropharmacology (BMS 1410)	1- Recent advances and areas under research in the field.
Advanced Course in Research Methods	A6	Recognize the basics in experimental design and interpretation of data as well as hands-on experience with various state-of-the-art techniques used in modern research (CELL 9110).	2- Scientific research ethics, research methodology & research design.
---------	----------	----------	3- Legal aspects in practice of histology and cell biology
HIST 602	A4	- Recognize principles and applications of molecular techniques and new discoveries in the molecular biology of eukaryotes(BIOC 1250). - Discuss diverse techniques including tissue culture, electrophysiology, confocal microscopy, recombinant DNA, digital imaging, protein chemistry and FPLC, immunohistochemistry, etc.(CELL 9110)	4- Principles and basic concepts of quality in professional practise including planning, improvement of performance and control of practising outcomes.
HIST 602 CC HIST 602 HE HIST 602 IM	A7, A8, A9	Discuss in several lectures the clinical aspects of special topics in Cell Biology and Histology (BMS 1410)	5- Knowledge related to environmental development and clinical applications.

ب ــ القدرات الذهنية :

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة Faculty of occupational medicine UK	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
Advanced Course in Medical Statistics	B1, B2, B3	- Recognize the basic methods of statistical analysis are emphasized including t-tests, ANOVA and regression. A mixture of theory and practical use is presented (BMS 1200).	1- Medical data analysis, interpretation and proper therapy choice.
HIST 602 EM HIST 602 GE HIST 602 HIST 602 CC HIST 602 HE HIST 602 IM	B1, B2, B3	- Integrate basic information obtained in lectures with patient demonstrations by clinicians from fields of neurosurgery, neurology, neuropathology, mental retardation, psychiatry and rehabilitation medicine (BMS 1410).	2- Medical problem solving and Evidence-based medicine.
HIST 602 P	B1, B3, B4	- Use different experimental approaches to elucidate certain biology principles (CELL 1360).	3- Participation in research development and innovation.
Thesis dissertation	B1, B2, B3, B4	- Students actively participate in "paper review sessions" (CELL 1360). - Students present and critically discuss current papers in a selected area (CELL 8010)	4- Scientific paper reviewing.
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HIST 602 P	B 6	Use diverse techniques including tissue culture, electrophysiology, confocal microscopy, recombinant DNA, digital imaging, protein chemistry and FPLC, immunohistochemistry, etc.(CELL 9110)	6- Planning for improvement of professional performance in the field of histology and cell biology
HIST 602 HIST 602 P Thesis dissertation	B5	The student prepares a research proposal in grant application format on a topic different from the projected thesis research and presents the topic in a seminar to members of the examining committee and the department.	7- Decision making skill.
HIST 602 P Thesis dissertation	B1, B2, B3	- Emphasis is placed on experimental approaches taken to elucidate certain biology principles (CELL 1360). - learn diverse research techniques in Cell Biology & Neurosciences (CELL 9110)	8- Development, innovation and medical breakthrough.
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ج ــ المهارات العملية:

المقررات التي تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة Faculty of occupational medicine UK	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
HIST 602 P Thesis dissertation	C1, C2, C3	Training in the broad areas of Cell Biology and Neuroscience leading to the Ph.D. degree	1- Professionalism and up to date practise.

		is available to prepare students for research and teaching careers in universities, medical schools and private industry.	
HIST 602 P Thesis dissertation	C4	Study structural aspects by viewing prepared microscope slides and related electron micrographs. Several lectures are devoted to the clinical aspects of special topics in Cell Biology and Histology (CELL 1420).	2- Medical report writing and evaluation/appropriateness of workers' medical report.
HIST 602 P Thesis dissertation	C3	- Students undertake at least two research rotations in different laboratories to gain an appreciation of different areas and strategies of investigation and to determine suitable dissertation topics.	3- Ability to investigate and evaluate methodology and techniques in the field.
HIST 602 P Thesis dissertation	C1, C2, C3	- Use diverse research techniques in Cell Biology & Neurosciences (CELL 9110)	4- Effective use of technology in medical practice
HIST 602 P Thesis dissertation	C1, C2, C3	- Discuss New methods for studying structure and function are discussed (CELL 1420).	5- Planning for improvement of professional performance in the field.

د- مهارات الاتصال:

المقررات التى تحقق المعايير الأكاديمية للبرامج	مخرجات التعلم المستهدفة ILOs	(ARS) Benchmark المعايير الأكاديمية لجامعة Faculty of occupational medicine UK	(NARS) المعايير القومية الأكاديمية القياسية العامة لبرامج قطاع الدراسات العليا
HIST 602 Thesis dissertation	D2, D6	The student presents a seminar in his/her own field of interest and attends the weekly seminars presented by invited guests, faculty members and students (CELL 8020).	1- Interpersonal and communication skills that result in the effective exchange of information and collaboration with others.
HIST 602 HIST 602 P Thesis dissertation	D3	Recognize the basics in experimental design and interpretation of data as well as hands-on experience with various state-of-the-art techniques used in modern research (CELL 9110).	2- Effective use of IT and healthcare information system in medical practice
HIST 602 HIST 602 P	D4	Students assist the faculty in teaching departmental courses to medical students (CELL 8310), (CELL 8320), (CELL 8330).	3- Teaching and evaluation skills as senior staff.
HIST 602 Thesis dissertation		Students are provided with a comprehensive reading list (BIOC 1250).	4- Self-appraisal and life-long learning.
HIST 602 EM HIST 602 GE HIST 602 HIST 602 CC HIST 602 HE HIST 602 IM	D2	Students are provided with a comprehensive reading list (BIOC 1250).	5- Accessibility to specialty-specific and other appropriate reference material in print or electronic format. Electronic medical literature databases with search capabilities.
Thesis dissertation	D1	Candidates for the doctoral degree elect this course while performing research under the guidance of a faculty member (CELL 9900).	6- Teamwork/leadership.
HIST 602	D6	Students present a "work in progress" seminar at the conclusion of each rotation in the course (CELL 9110).	7- Time management and meeting organization

(4) Curriculum structure and contents:

4.a- Duration of the programme (in years or months): 6 semesters

4.b- programme structure:

Candidates should fulfill a total of 60 credit hours

●4.b.1: Number of credit hours:

First part: 5 (Electron Microscope: 2 + Genetics: 3).

Second part: 25 (Compulsive course: 23 + Elective course: 2)

Thesis: 15

Practical training course in the Logbook 12

activities: 3

●4.b.2: Teaching hours:

First part:

Electron Microscope (15 weeks): Total: 30

Genetics (15 weeks): Total: 45

Second part and logbook :

Compulsive course: Histology & Cell Biology (4 semesters)

Theoretical course: 345 hours Practical course: 360 hours

Activities : 90

Elective course: (Clinical Chemistry, Haematology, Imuunology): Total: 30

●4.b.3: Number of credit hours for Basic science (Teached in the first part)= 5 Credit hours represents 8.3% of total hours.

●4.b.4: Number of credit hours for Specialized science (Teached in the second part) = 25 Credit hours represents 41.7% of total hours.

●4.b.5: Number of credit hours for Logbook activities and practical course = 15 credit hours represents 25% of total hours.

●4.b.6: Number of credit hours for Essay = 15 credit hours represent 25% of total hours.

(5) Programme courses:

First part

a- Compulsory courses: Electron Microscope + Genetics

b- Elective courses: none

Course Title	Course Code	NO. of hours per week				Total teaching hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical Lectures	Laboratory /practical	Field	Total		
Electron microscopy 15wks	HIST 602 EM	2	---	----	2	30	A1, A4, B1, B3,B4,C1,C3, D1, D2, D3
Human genetics 15 wks	HIST 602 GE	3	----	----	3	45	A2, A3, B1, B4, C2, C4, D1, D2, D3, D5
Medical statistics and Medical researches & Use of computer in medical education (14 lectures)							A4, A6, A7, B1, B2, B3, B4, B6, D1, D2, D3, D5, D6

Second part (60 weeks duration)

a-Compulsory courses : Advanced Histology and Cell Biology, Advanced practical course

b-Elective courses: Clinical Chemistry, Haematology, Imuunology

Please refer to the courses for the credits and teaching hours

Course Title	Course Code	NO. of hours per week				Total teaching hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical Lectures	Laboratory /practical	Field	Total		
Advanced Histology and Cell Biology	HIST 602	23	---	---		345	A1, A2, A4, A5, B3, B4, B6, C1, C2, C3, D1, D2, D3, D4, D5, D6
Advanced practical course + Activities	HIST 602 P		12 3	--		360 + 90	A1, A5, B3, C1, C2, C3, C4, D1, D2, D3, D5
Clinical Chemistry			2			30	A8, B3, D2
Haematology			2			30	A9, B3, D2
Imuunology			2			30	A10, B3, D2
Thesis							A1, A4, A6, A7, B1, B2, B3, B4, B5, B6, C1, C2, C3, D1, D2, D3, D5, D6

Programme-Courses ILOs Matrix remove the practical ILOs from th courses which do not have practical exam

Programme ILOs are enlisted in the first row of the table (by their code number: a1, a2……etc), then the course titles or codes are enlisted in first column, and an "x" mark is inserted where the respective course contributes to the achievement of the programme ILOs in question.

P.S. All courses` specifications are attached in Appendix III.

Course Title/Code	Programme ILOs																									
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6
Electron microscopy	x			x							x		x	x							x	x	x			
Human genetics		x	x								x			x							x	x	x		x	
Medical statistics							X					X	x										x			
Medical researches & Use of computer in medical education				x		x	x				x	X	x	x		x					x	x	x		x	x
Advanced histology and cell biology	x	x		x	x								x	x		x	x	x	x	x	x	x	x	x	x	x
Clinical Chemistry								x					x									x				
Haematology									x				x									x				
Imuunology										x			x									x				
Thesis	x			x		x	X				x	x	x	x	x	x	X	x	x		x	x	x		x	x

(6) Programme admission requirements:

- **General requirements:**
  - Previous degree: MSc degree

- **Specific requirements (if applicable):**
  - Experience: well trained in practical histology & laboratory teaching of undergraduates

(7) Regulations for progression and programme completion:

Regulations for progression:

- **First part:**
  1. The student is allowed to attend the first part written exam only after finishing his courses and credit hours
  2. If failed in any of the courses of the first part, students re-examin only in this course.
  3. In order to pass the first part, the student must obtain at least 60% of each course score.

- **Second part:**
  1. The student is allowed to attend the second part exam after completing all the theoretical and practical courses and logbook.
  2. The student is allowed to attend the second part exam in May and November of each year, only after passing the first part exam.
  3. The student is not allowed to attend the oral and practical exam except after passing the written examination.
  4. In order to pass the written exams, the student must obtain at least 60% of the total scores.
  5. In order to pass the oral and OSPE practical exams, the students must obtain at least 60% in each. If failed in any of the oral or practical exams, he must re-examin in all of them.

- **Thesis:**

- Thesis registration is allowed after passage of 18 months from the date of registration.
- Requirements for discussion:

1. Passage of a period of not less than 24 months and not more than four years from the date of the registration of thesis.
2. Student success in the second part exams.
3. Acceptance of at least one abstract litter for publication from thesis results in a judged, regular specialized scientific Journal.

Regulations for programme completion:

success in three consecutive parts (success in the exam of the first part, and then the exams of the second part, and then acceptance of the thesis by judgment committee after public discussion)

(8) Evaluation of Programme's intended learning outcomes (ILOs):

Evaluator	Tools*
Quality Assurance Unit	Reports Field visits
Internal evaluator Dr. Sanaa A. El Sherbiny	Evaluation report
External Evaluator Dr. Somaya Hosny	Evaluation report
Senior student (s)	Questionnaires
Alumni	
Stakeholder (s)	Questionnaires
others	

* TOOLS= QUESTIONNAIRE, INTERVIEW, WORKSHOP, COMMUNICATION, E_MAIL

(9) Declaration

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specifications for this programme are in place.	
Programme coordinator: **Dr Shireen Mazroa**	Signature & date:
Head of responsible department **Dr Salwa Gaweesh**	Signature & date:
Dean: **Dr El-Saeed Abdel hady**	Signature & date:
Executive director of the quality assurance unit: **Name: Dr. Seham Gad El-Hak**	Signature & date:

P.S. The programme specification should have attached to it all courses specifications for all courses listed in the matrix.