PROGRAMME SPECIFICATION

Faculty of Medicine– Mansoura University

(A) Administrative information

(1) **Programme Title & Code**	**Master Degree of Human Anatomy and Embryology**
(2) **Final award/degree**	**M.Sc.**
(3) **Department**	**Anatomy and Embryology**
(4) **Coordinator**	**Prof. Adel Elhawary**
(5) **External evaluator**	**Prof. Ashraf Saber Bayomy**
(6) **Date of approval by the Department`s council**	**18/5/2016**
(7) **Date of last approval of program specification by Faculty council**	**9-8-2016**

(B) Professional information

(1) Program Aims:

The broad aims of the Program are to

1. Prepare the candidate to acquire a detailed knowledge of and deep insights into the human anatomy and embryology and related fields of medicine.
2. Achieve proficiency in the application and the fundamentals of the scientific research methodologies and the use of its various tools.

(2) Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding:

On successful completion of the M.Sc. program, the candidate should understand and be aware of**:**

- **K 1 Describe** the process of fertilization, implantation and the various developmental stages of the human body and related congenital anomalies.
- **K 2 Define** principles of the radiological sciences **and** the clinical application of various radiological tools
- **K 3 Recognize** anatomical structures and their variations in radiological films
- **K 4 Define** the principles of genetics and clinical applications dependent on genetic basis (basics of genetic elective course)/ or principles of molecular biology and clinical applications dependent on its basis (basics of molecular biology elective course)
- **K 5 Describe** the structure and function of DNA and RNA.
- **K 6 Recognize** the human genome, gene mutation, pattern of inheritance and genetic basis of cancer.
- **K7Define** the basis of histology and cytology.
- **K 8 Describe** the relations between the different body organs and structures
- **K9 Identify** the structure and function of musculoskeletal system**.**

- **K** 10 **Describe** the clinical correlations and explanations based on anatomical and embryological bases.
- **K** 11 **Recognize** the distribution of nerves and blood vessels and effect of different nerve lesions
- **K 12 Recognize** the anatomy of particular regions of the body.
- **K 13 Discuss** of the different neuroanatomical syndromes

B- Intellectual Skills

On successful completion of th**e** M.Sc. program, the candidate will be able to**:**

- **I 1 Integrate** anatomical events with their embryological basis.
- **I 2 Correlate** his/her knowledge in embryology with the clinical findings caused by errors in development
- **I 3 Evaluate** risk factors that can cause congenital malformations.
- **I 4 Integrate** basic knowledge in anatomy and radiology to solve medical problems.
- **I 5 Analyze** different histological sections
- **I 6 Integrate** anatomical events with genetic/molecular biology basis.
- **I 7 Analyze** different cytogenetic techniques.
- **I 8 Integrate** recombinant DNA technology, gene cloning and expression.
- **I 9 Analyze** PCR and Blotting techniques.

- **I 10 Integrate** the anatomical facts with clinical problems.
- **I 11 Correlate** the clinical aspects of the selected region based on anatomical and embryological knowledge**.**
- **I 12 Correlate** the anatomical knowledge with clinical signs seen in cases of nerve injuries and CNS lesions**.**

C- Practical Skills:

On successful completion of the master program, the candidate should be able to**:**

- **P1 Prepare** histological sections of different embryological stages.

- **P 2 Sketch** diagrams of stages of development.

- **P 3 Design** a practical model for all the stages of development from the stage of gametogenesis to the full term.

- **P 4 interpret** normal X-ray and ultrasonography of the human body.
- **P 5 Demonstrate** basic skills in ultrasonography.
- **P6 Prepare** histological sections of different tissues.

- **P 7 Design** experiments using different staining techniques and microscopic tools.
- **P 8 Assemble** the different internal structures in cadavers during teaching.

- **P 9 Dissect** professionally selected regions of the human body.
- **P 10 Plan** for developing his performance in anatomical teaching.

D- Communication & Transferable skills

On successful completion of the master program, the candidate should be able to**:**

- **T 1 Use** information and communication technology efficiently in the field of anatomy and its applied aspects and in teaching and research.
- **T 2 Support** the learning of others when involved in a team work.
- **T 3 Demonstrate** self-awareness and motivation and ability to identify his own needs.
- **T 4 Be prepared** for self lifelong learning.
- **T 5 Manage** time and manipulate information effectively.
- **T 6 Work** effectively in a group in collecting data or durin preparation of seminars.
- **T 7 Setup** rules and parameters for self evaluation and evaluating others performance.

(3) Academic Standards:

3.a- External reference points/benchmarks are selected to confirm the appropriateness of the objectives, ILOs and structure of assessment of the program:

http://www.gvsu.edu/gsga
http://oeas.ucf.edu/BenchmarkingComparativeResources
http://ebenchmarking.com/

3.b- Comparison of the specification to the selected external reference/ benchmark:

All programme aims of the Benchmark are covered by the current programme

(4) Curriculum Structure and Contents:

4.a- Duration of the programme (the minimum): 4 semsters

4.b- programme structure:

- 4.b.1: Parts of the programme:

1. First part

2. Second part

3. Thesis

- 4.b.2: Number of credit hours: 45 credit hours

Candidates should fulfill a total of **45 credit hours**

First part: 8 hours **Second part: 15** hours **Thesis: 10** hours

Log Book and activities: 12 hours: **10** practical hours (**3** hours in the 1st part & **7** in the 2nd part), 2 hours for activities including conferences, workshops, journal clubs and seminars.

- 4.b.3: Teaching hours/week:

First part:	Lectures: 8	Lab: 6	Total: 14
Second part:	Lectures: 15	Lab: 14	Total: 29

(5) Programme Courses:

1. First part:

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week					Total teaching hours	Program ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total CREDIT Hours		
		Lectures	seminars					
General Embryology	ANA 501 GE	2	-	1	-	3	60	All points cover the ILOs
Histology	ANA 502	1	-	1	-	2	45	
Radiological Anatomy	ANA 501 RA	2	-	2	-	3	90	
TOTAL		6	-	4	-	9	195	

b- Elective courses:

Course Title	Course Code	NO. of hours per week					Total teaching hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total CREDIT hours		
		Lectures	seminars					
Basics of molecular biology		2	-	-		2	30	All points cover the ILOs
Genetics		2	-	-		2	30	

2. Second part:

a- Compulsory courses :

Course Title	Course Code	NO. of hours per week					Total teaching hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total CREDIT Hours		
		Lectures	seminars					
Human Anatomy and Embryology:	ANA 501	10	-	5	-	15	300	All points cover the ILOs
TOTAL		10	-	5	-	15	300	

b- Elective courses:

Course Title	Course Code	NO. of hours per week					Total teaching hours	Programme ILOs covered (REFERRING TO MATRIX)
		Theoretical		Laboratory /practical	Field	Total CREDIT Hours		
		Lectures	seminars					
Elective Course in Applied Anatomy	ANA 501 EAA	5	-	2	-	6	135	All points cover the ILOs
TOTAL		5	-	2	-	6	135	

(6) Master program aims-ILOs matrix:

Program Aims	Program ILOs: Knowledge and Understanding "K"											
	K1	K 2	K 3	K 4	K 5	K 6	K7	K 8	K9	K 10	K11	K12
Aim no. 1	X	X	X	X	X	X	X	X	X	X	X	X
Aim no. 2												

Program Aims	Program ILOs: Intellectual skills "I"										
	I1	I 2	I3	I4	I5	I6	I7	I8	I9	I10	I11
Aim no. 1	X	X	X	X	X	X	X	X	X	X	X
Aim no. 2	X	X	X	X	X	X	X	X	X	X	X

Program Aims	1. Program ILOs: Practical skills "P"									
	P1	P 2	P 3	P 4	P 5	P6	P7	P 8	P9	P10
Aim no. 1										
Aim no. 2	X	X	X	X	X	X	X	X	X	X

Program Aims	2. Program ILOs: communications and transferable skills "T"						
	T1	T 2	T 3	T4	T 5	T 6	T7
Aim no. 1	X	X	X	X	X	X	X
Aim no. 2	X	X	X	X	X	X	X

(7) Master program courses-ILOs matrix:

1. Program ILOs: Knowledge and Understanding "K"

COURSE	K1	K 2	K 3	K 4	K 5	K 6	K7	K 8	K9	K10	K11	K12
General Embryology, ANA 501 GE	X									X		
Histology, ANA 502							X					
Radiological Anatomy, ANA 501 RA		X	X									
Elective coarse				X	X	X						
Human Anatomy and Embryology: ANA 501	X							X	X	X	X	X
Elective Course in Applied Anatomy, ANA 501 EAA										X		X

2. Program ILOs: Intellectual skills "I"

COURSE	I 1	I 2	I 3	I 4	I 5	I 6	I 7	I8	I9	I 10	I 11
General Embryology, ANA 501 GE	**X**	**X**	**X**								X
Histology, ANA 502					X						
Radiological Anatomy, ANA 501 RA				**X**							
Elective course						X	X	X	X		
Human Anatomy and Embryology: ANA 501	X	X								X	X
Elective Course in Applied Anatomy, ANA 501 EAA	X	X								X	X

3. Program ILOs: Practical skills "P"

COURSE	P1	P2	P3	P 4	P5	P 6	P 7	P8	P9	P10
General Embryology, ANA 501 GE	**X**	**X**	**X**							
Histology, ANA 502						X	X			
Radiological Anatomy, ANA 501 RA				**X**	X					
Elective course										
Human Anatomy and Embryology: ANA 501	X	X						X	X	X
Elective Course in Applied Anatomy, ANA 501 EAA	X	X						X	X	X

4. Program ILOs: communications and transferable skills "T"

COURSE	T1	T2	T3	T 4	T5	T 6	T 7
General Embryology, ANA 501 GE	**X**	**X**	**X**	X	X	X	X
Histology, ANA 502	**X**	**X**	**X**	X	X	X	X
Radiological Anatomy, ANA 501 RA	X	X	X	**X**	X	X	X
Elective course							
Human Anatomy and Embryology: ANA 501	X	X	X	X	X	X	X
Elective Course in Applied Anatomy, ANA 501 EAA	X	X	X	X	X	X	X

(8) Program Admission Requirements:

- General requirements:

  Postgraduate bylaws of the Faculty of Medicine

- Specific requirements (if applicable):

  Not applicable

(9) Regulations for progression and program completion:

1. Peer teaching observations and feedback.
2. Annual program monitoring.
3. Attendance criteria: minimum attendance accepted for each course is 75%.
4. Log book should fulfill and signed by Head of the Department.

5. Successfully complete the courses by passing the different exams.
6. Successfully defend the Thesis.

(10) Evaluation of Program's intended learning outcomes (ILOs):

1. **First part:**

Course	Assessment	Distribution of marks			Total
		Written	Oral	Practical	
General Embryology, ANA 501 GE	**3 hours written exam, Oral exam, Practical exam**	**120**	**45**	**45**	210
Histology, ANA 502	**3 hours written exam, Oral exam, Practical exam**	**120**	**45**	**45**	210
Radiological Anatomy, ANA 501 RA	**3 hours written exam, Oral exam, Practical exam**	**120**	**45**	**45**	210
Elective courses	**3 hours written exam,**	**210**			210
Total marks					**840**

2. **Second part:**

Course	Assessment	Distribution of marks			Total
		written	Oral	Practical	
Human Anatomy and Embryology: ANA 501	**3 hours written exam, Oral exam, Practical exam**	**200**	**100**	**100**	400
Elective Course in Applied Anatomy, ANA 501 EAA	**3 hours written exam, Oral exam, Practical exam**	**100**	**50**	**50**	200
TOTAL MARKS					**600**

We certify that all information required to deliver this programme is contained in the above specification and will be implemented. All course specification for this programme are in place.	
Programme coordinator: Name: **Prof. Adel El Hawary**	Signature & date:
Dean: Name: **Prof. El-Said Abdel-Hady**	Signature & date:
Executive director of the quality assurance unit: Name: **Seham Gad Elhak**	Signature & date:

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