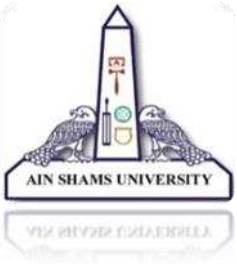

Faculty of Medicine
Ain Shams University

POSTGRADUATE STUDIES

Master of Science in
Anatomy and Embryology
درجة الماجستير فى التشريح و الأجنة

Program Code: AE 600

Program Guide and Logbook

Candidate Curriculum vitae

[Name]

Please attach your recent photo

[telephone no]
[mobile no]
[mailing address]

[email address]
[postcode]

Experience

[organization]
[your present job title]
[start date]
[location]
[responsibilities]

[organization]
[previous job title]
[start and end date]
[location]
[responsibilities]

[organization]
[previous job title]
[start and end date]
[location]
[responsibilities]

Education

[certificates]
[start and end date]
[school or college]

Training

[any other training that will be useful in your job]

Filled by post graduate authorities

Date of Registration

First semester _____

Second semester _____

Third semester _____

Fourth semester _____

TABLE OF CONTENTS:

Page

I – Welcome Statement:

The Department of Anatomy welcomes you to the Master degree in Anatomy and Embryology. As a department we are committed to produce competent professional capable of medical student education and continuously strive to improve your educational experience.

This handbook presents information guide and logbook activity of the Master degree in Anatomy and Embryology administered by the Anatomy department, Faculty of Medicine, Ain Shams University.

II - Mission Statement:

The mission of the Faculty of Medicine, Ain Shams University is "***Preparation of a trained physician, researcher and life long tutor capable of following standards of medical care and ethics, with managerial and technical skills in his specialty. Furthermore, promotion outstanding programs of health care to serve the society, environmental development and targeted scientific research for continual improvement of health".***

The mission of this degree ***is to prepare the graduate medical student for a junior academic career in Anatomy with adequate teaching and research competencies. In addition, it is a prerequisite to enroll for the Doctorate degree in Anatomy.***

III – Senior Supervisor and Affiliated Departments and Hospitals

Senior Supervisor

Prof.

E-mail:

Affiliated Departments and Hospitals

IV – Program Specifications

A- Basic Information

1. Program title: Master of Science in Anatomy and Embryology

2. Program type: **Single** ☐ **Double** ☐ **Multiple** ☐

3. Faculty: Faculty of Medicine, Ain Shams University

4. Department: Department of Anatomy

5. Assistant co-ordinator:

6. Co-ordinator: Prof. Kariman Mohamed Abdel Fattah Elgohary

7. Last date of program approval:

B- Professional Information:

1. Program aims:

This program is designed to help the postgraduate medical student to acquire sufficient knowledge and skills in identify the gross structures of the human body regions with special emphasis on the human embryology and neuroanatomy, particularly with a view to pursue an academic career in anatomy. Utilization of the acquired knowledge in solving relevant clinical problems is the ultimate goal. In addition, the course intends to promote e-learning and independent self-learning.

2. Intended learning outcomes (ILOs):

a. Knowledge and understanding:

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

a_1 **Describe** the structural components of the different regions of the human body.

a_2 **Correlate** the various structures of these regions with their function.

a_3 **Define** the surface markings of organs and viscera and **realize their clinical importance.**

a_4 **Recognize** common anatomical variation and their causes.

a 5 **Correlate** the structure of the nervous system with its function and identify the effect of lesions in its various components.

a_6. **Describe** the stages of general human development and **define** the congenital anomalies and the leading causes particularly the environmental factors.

a7. Understand the basis of cytogenetics and chromosomal aberrations.

a8- Realize how the culture & environmental factors affect the health

a9. Describe the structure, function and organization of human genomes

a10- Identify the age related changes on the different body systems

b. Intellectual capabilities:

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

b1 **Recognize** the major clinical anatomical problems.

b2 **Realize** the causes of the clinical problems and the suggested ways of management.

b3 **Analyze** in case-based discussions the information from clinical problems framed in a clinical presentation format to emphasize the embryology, gross anatomy and neuroanatomy of the human body.

b4 **Correlate** the gross anatomy, living anatomy and clinical anatomy using the imaging techniques .

b5 - **Localize** the possible site of lesion in the nervous system from given clinical data denoting sensory or motor loss.

b6- **Identify** the appropriate molecular biology technique required to diagnose a genetic disease.

b7. **Compare** between the age related changes and the pathological conditions in the body system.

c. Professional and practical skills:

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

c1 **Communicate** relevant information in concise, unambiguous writing, with sketched illustration.

c2 **Perform** a skilled dissection of any part of the cadaver **& Identify** the anatomical specimens (muscles, vessels, nerves, organs, glands and brain) in a precise and accurate manner.

c3 **Interpret** common diagnostic images (CTs, MRI and x-ray).

c4 **Communicate** scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.

c5. **Identify** anomalies in embryology specimens.

c6- Incorporate new molecular biology knowledge and tools into research projects

c7. Application of their knowledge base in Medical Genetics in using clues from pedigree, family history and other information to suggest likely inheritance patterns and / or diagnoses.

c8. . Identify the age related changes in histological sections of different systems.

c9.- Use the computer to retrieve and compare molecular biology data

d. General and transferable skills:

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

d1 Recognize and use anatomic principles during the course and throughout their careers.

d2 Deal with and treat the anatomical specimens (dead bodies, anatomical parts and bones) with respect.

d3 Apply effective verbal communication with colleagues and teaching stuff.

d4 Work in a team of his colleagues to collect information (using books and the internet) and prepare a written research about an anatomical topic.

d5. Conduct a self-directed learning on selected topics.

d6. Assess themselves and others and their performance in a critical manner.

d7. Use modern information technology methods to transfer or acquire the anatomical knowledge.

d8. Time management skills to accomplish individual designated tasks by a given date;

3. Academic standards: (Benchmarks)

National Academic Reference Standards (NARS)

4. Curriculum structure and contents:

4a- Program duration: 2 years (4 semesters)

المناهج			
المقررات الدراسية		الكود	الساعات المعتمدة
متطلبات الكلية	دورة أساسيات البحث العلمى		
الجزء الأول	علم الأجنة	AE6001	4
	مقدمة التشريح العام	AE6002	2
الرسالة			6
الجزء الثانى	تشريح عام	AE6003	12
	تشريح الجهاز|العصبى	AE6004	4
المقررات الاختيارية	يختار الطالب مادة واحدة من: - بيولوجيا جزيئية E6001 هستولوجيا عامة E6002 -بيولوجيا علم E6003 - مبادئ E6005 - بيولوجيا الهرم E6004الوراثة E6006علم الأجناس	E6001-E6006	2
كراسة الأنشطة			6
المجموع			36

درجة الماجستير فى التشريح و الاجنة (AE600)

المناهج				الأمتحانات					
	المقررات الدراسية	الكود	الساعات المعتمدة	التحريرى		عملى	شفوى	اكلينيكى	مجموع الدرجات
				عدد الورق	الدرجة				
متطلبات الكلية	دورة أساسيات البحث العلمى								
الجزء الأول	علم الأجنة	AE6001	4	1	120	60	20		300
	مقدمة التشريح العام	AE6002	2	1	60	30	10		
الرسالة			6						
الجزء الثانى	تشريح عام	AE6003	12	1 1	180 180	180	60		800
	تشريح الجهاز|العصبى	AE6004	4	1	120	60	20		
المقررات الاختيارية	يختار الطالب مادة واحدة من: هستولوجيا عامة E6001 - بيولوجيا جزيئية E6002 -بيولوجيا E6003 - مبادئ علم الوراثة E6004 - بيولوجيا الهرم E6005 - علم الأجناس E6006	E6001-E6006	2	1	60	30	10		100
كراسة الأنشطة			6						
المجموع			36		720	360	120		1200

6. Program admission requirements:

المادة (6) : يشترط لقيد الطالب للحصول على درجة الماجستير:-

1 - أن يكون حاصلاً على درجة البكالوريوس في الطب والجراحة من إحدى جامعات جمهورية مصر العربية أو على درجة معادلة 2- أن يكون قد أمضى سنة التدريب (الامتياز) 3- موافقة جهة العمل 4- تسديد الرسوم ومصاريف التدريب واستهلاك الأجهزة واستيفاء المستندات المطلوبة في الملحق (1) 5- التفرغ للدراسة لمدة فصلين دراسيين قبل دخول امتحان الجزء الثاني 0

ملحق (1) : يقدم طالب الإلتحاق لدرجة الماجستير الأوراق التالية :-

1- طلب إلتحاق0 2- شهادة البكالوريوس0 3- شهادة الإمتياز04- شهادة الميلاد أو مستخرج رسمي05- الموقف من التجنيد0 6- موافقة جهة العمل على التسجيل والتفرغ المطلوب0 7- عدد 6 صور فوتوغرافية جديدة0 8- بالنسبة للوافدين يقدم الطالب موافقة السفارة ويحدد جهة تحمل النفقات كما يقدم شهادة صحية0

7. Regulation for progression and program completion

مادة (8): يتم التسجيل للماجستير مرة واحدة في السنة تبدأ من أول يوليو حتى أخر أغسطس على أن تبدأ الدراسة في شهر أكتوبر من كل عام0 ويجوز قبول تسجيل النواب والمعيدين والوافدين في الفترة من أول نوفمبرحتى أخر ديسمبر على ألا يسمح لهم بدخول إمتحان الجزء الأول إلا بعد إنقضاء فترة الدراسة المطلوبة .

مادة (9): توزع الدراسة فى كل عام جامعى على فصلين دراسيين مدة كل منهما خمسة عشر اسبوعاً . يبدا الاول فى أول أكتوبر ويبدا الثانى فى منصف فبراير. مع تنظيم فصل دراسى صيفى مكثف لمدة ستة اسابيع . و يتم التسجيل للفصل الدراسى قبل اسبوعين من بدايته على الاقل بعد إستيفاء الشروط حسب المقررات المسجلة. ولاينبغى أن يزيد العبء الدراسى فى الفصل الواحد عن 6 ساعات معتمدة. ويجوز للطالب تعديل المقررات خلال اسبوعين من بداية الفصل الدراسى (بالحذف او الاضافة). كما يجوز له الانسحاب خلال سته اسابيع من احد المقرارت دون احتسابه راسباً فيه.

المادة (11) : مدة الدراسة للحصول على درجة الماجستير هي أربعة وعشرون شهراً (أربعة فصول دراسية) على جزئين يجتاز فيها الطالب برنامجاً تدريبياً متكاملاً طبقا للساعات المعتمدة الموضحة بالباب الرابع ويستوفى خلالها المطلوب منة فى كتيب متابعة الأنشطة ولا يسمح له بدخول الإمتحان قبل إستيفاء ثلاثة أرباع المطلوب منة في كل جزء من البرنامج 0

المادة (12) : مدة الدراسة في الماجستير الجزء الأول فصل دراسي واحد يجتاز بعدها الطالب إمتحاناً ولا يشترط النجاح فيه بالكامل للإنتقال للدراسة في الجزء الثاني. والجزء الثاني يتطلب تفرغ الطالب للتدريب لمدة فصلين دراسيين بأحد المستشفيات أو المراكز المعتمدة من الكلية.

مادة (13) : يقوم الدارس لدرجة الماجستير بتسجيل موضوع الرسالة على شكل بحث نظري أو عملي بعد إستيفاء فصل دراسي واحد على الأقل ويجوز أن يناقش رسالتة بعد ستة شهور من التسجيل على الأقل على أن يكون قد نجح فى مقررات الجزء الأول بالكامل وقبل دخول إمتحان الجزء الثاني ولا يخصص لها درجات **0**

مادة (14) : يقوم دارس الماجستير بإستيفاء متطلبات الجامعة قبل تسجيل الرسالة ومتطلبات الكلية قبل دخول إمتحان الجزء الثاني. ومتطلبات الجامعة هي الحصول على شهادة التويفل في اللغة الإنجليزية بمجموع (450 درجة على الأقل) ومتطلبات الكلية هي حضور دورات معتمدة من لجنة الدراسات العليا بالكلية في مجال مناهج البحث العلمى والإحصاء الطبى أو بإجتياز إختبارات خاصة تحددها اللجنة.

مادة (16): الساعات المعتمدة لدراسة الماجستير ثلاثون ساعة معتمدة على الأقل يخصص منها ست ساعات لكتيب متابعة الأنشطة وتشمل ست ساعات على الأقل للجزء الأول وثماني عشرة ساعة على الأقل للجزء الثاني ويضاف إليها ست ساعات للرسالة فى الماجستير.

مادة (22): مدة القيد لدرجة الماجستير أربع سنوات.

مادة (24): مجموع درجات الامتحان النهائى للماجستير 1200 درجة منها 300 درجة للجزء الأول. ويضاف اليها المعدل الفصلى التراكمى بما يوازى 300 درجة للماجستير.

مادة (25): يعقد إمتحان الدور الأول في أكتوبر ونوفمبر من كل عام ويعقد إمتحان الدور الثاني فى أبريل ومايو من كل عام.

مادة (26): يكون النجاح فى كل مادة من الماجستير بعد الحصول على 60% من الدرجة الكلية لكل لجان المادة مجتمعة على الا تقل درجة التحريرى عن 50 % .

مادة (29): فى حالة إستنفاذ مدة القيد يمكن لطالب الدراسات العليا إعادة التسجيل مرة أخرى ولا يعتد بالنجاح فى الجزء الأول أو الرسالة ويجب إعادتهما.

Assessment Schedule and Weighing of Assessments

Item		Mark			Points	GPA score	حالة الطالب Student state
		During semester	End of semester	Total			
First semester (If present)		100	300	400			
Second semester		100		100			
Third semester		100		100			
Fourth semester Final exam	Written		900	900			
	Oral						
	Practical /Clinical						
Total		300	1200	1500			

ملحوظة: تعادل درجات الطالب طبقا للنقاط على الوجه التالى:

1 -	90 % فأكثر	:	4	نقاط A
2-	من85% حتى أقل من 90 %	:	3.67	نقاط A^-
3 -	من80% حتى أقل من 85%	:	3.33	نقاط B^+
4 -	من75% حتى أقل من 80%	:	3.00	نقاط B
5 -	من70% حتى أقل من 75%	:	2.67	نقاط B^-
6 -	من65% حتى أقل من 70%	:	2.33	نقاط C^+
7-	من62% حتى أقل من 65%	:	2.00	نقاط C
8 -	من60% حتى أقل من 62%	:	1.67	نقاط C^-
9 -	أقل من 60%	:	صفر	F

مجموع درجات الامتحان النهائى الماجستير 1200 درجة منها 300 درجة للجزء الأول إن وجد. ويضاف إليها المعدل الفصلى التراكمى بما يوازى 300 درجة الماجستير .

ويتم حساب المعدل الفصلى (GPA) على أساس مجموع حاصل ضرب نقاط كل مقرر مضروباً فى عدد ساعاته المعتمدة مقسوماً على الساعات المعتمدة للمقررات التى درسها الطالب فى الفصل الدراسى. كما يتم حساب المعدل التراكمى للطالب (CGPA) على أساس مجموع حاصل ضرب النقاط التى حصل عليها الطالب فى كل مقرر مضروباً فى عدد ساعاته المعتمدة مقسوماً على مجموع الساعات المعتمدة الكلية.

فى حالة الرسوب فى مادة أو مجموعة من المقررات فى الدبلوم أوالماجستير أو الدكتوراه يتم الإعادة فى المادة أو المجموعة فقط. ويتم حساب التقدير الفعلى الذى يحصل عليه فى أول إعادة فقط أما إذا تكرر رسوبة فيحسب له عند النجاح تقدير 60% فقط (ای1.67 نقاط ای C^-).

مادة (23): تلتزم الاقسام المعنية بالأشتراك مع أقسام المواد المرتبطة بوضع إمتحانات موضوعية تشمل وسائل التقييم المختلفة من أسئلة طويلة وقصيرة ومتعددة الإختيارات ، وإختبارات إكلينيكية مقننة تقيس المهارات المختلفة على أن تشمل كراسة المناهج تفاصيل ذلك وتعتمد من لجنة الدراسات العليا بالكلية .

مادة (25): يعقد إمتحان الدور الأول في أكتوبر ونوفمبر من كل عام ويعقد إمتحان الدور الثاني فى أبريل ومايو من كل عام.

فى حالة الرسوب فى مادة أو مجموعة من المقررات فى الدبلوم أوالماجستير أو الدكتوراه يتم الإعادة فى المادة أو المجموعة فقط. ويتم حساب التقدير الفعلى الذى يحصل عليه فى أول إعادة فقط أما إذا تكرر رسوبة فيحسب له عند النجاح تقدير 60% فقط (ای1.67 نقاط ای C^-).

8. Appendices.

8.1 Course specification for Embryology

University Ain Shams **Faculty of Medicine**

Program(s) on which the course is given **Master of Science in Anatomy & Embryology**

Major or minor element of programs: **Embryology (major)**

Department offering the program: **Anatomy and Embryology**
Department offering the course: **Anatomy and Embryology**
Academic year / Level*:* **1st semester**
Date of specification approval ……..

A- Basic Information

Title: Embryology **Code: AE 6001**
Credit Hours: 4 hours **Lecture: 52**
Tutorial: **Practical: 16** **Total: 68**

Coordinator

……

B - Professional Information

1- Course Aims:

a) The course provides an outline of the events taking place during the early four weeks of human development; this lays the foundation for understanding further development of individual organs and systems. In addition, the course covers the formation of fetal membranes and placenta with a hint about their functions and common malformations. It also gives a brief idea about the genetic and environmental causes of congenital malformations.

b) The course provides an overview on the development of the various body systems in the human, and lays the foundation for understanding the underlying mechanisms of congenital malformations.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the general embryology course the candidate will be able to:

a 1. Describe the sequence of events taking place during early prenatal development of the human embryo, including gametogenesis, fertilization, implantation, cleavage, gastrulation, neurulation and folding.

a 2. List/identify the derivatives of each embryonic germ layer (e.g., derivatives of mesoderm etc.), the results of fertilization, the contents of umbilical cord, the functions of amnion or placenta.

a 3.Pair a derivative with its undifferentiated embryonic germ layer – or a given day with the corresponding stage of the fertilized ovum.

a 4.Compare between spermatogenesis and oogenesis, uniovular and binovular twins, 1ry, 2ry and 3ry chorionic villi, the parts of deciduas, the types of placenta previa, the 1ry, 2ry and definitive yolk sac.
a 5. Predict the result of union between a sperm (with normal or abnormal number of chromosomes) with an ovum (having a normal or abnormal number of chromosomes).
a6. Predict the possible congenital anomaly that may arise from a certain chromosomal defect or environmental agent including drugs.

By the end of the systemic embryology course the candidate will be able to:
a 7. Describe the sequence of events taking place during prenatal development of the various components of the body systems, including the cardiovascular, respiratory, digestive, urogenital, endocrine, musculoskeletal, nervous and integumentary systems, in addition to organs of special senses, the head and neck and coelomic cavities.
a 8. List/identify the derivatives of an embryonic structure (e.g., derivatives of sinus venosus, ventral mesogastrium, mesonephros, pharyngeal pouches ... etc.).
a 9. List/identify the embryonic source(s) of an organ (e.g., sources of the right atrium, the duodenum, the urinary bladder ... etc.).
a 10. Pair a derivative of an undifferentiated embryonic structure in the male with its counterpart in the female.
a 11. Predict the possible congenital anomaly that may arise if a certain fault occurs during embryonic development.

b. <u>Intellectual skills</u>

By the end of the course the candidate will be able to:
b 1. Solve problems by correlating between a given congenital abnormality and the faulty incidence during development.
b 2. Predict the prenatal age from the number of existing somites. **Predict** the state of the embryo in a given postovulation day.

<u>c- Professional skills</u>

By the end of the course the candidate will be able to:
c 1. identify any common congenital anomaly of the fetal membranes, fused twins, genetic anomalies in a given diagram, photograph or museum jar.

<u>d- General and transferable skills</u>
By the end of the course the candidate will be able to:

d 1.Communicate scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.

d 2.Research: run a library search or an internet search, collect data and present a concise review about a chosen topic.

3- Course content:

a) General Embryology

Topics	No. of hours			
	L	T	C/P	SDL
Gametogenesis	**3**			
Reproductive cycles in female	**1**			
Fertilization	**1**			
Cleavage	**1**			
Implantation	**1**			
Trophoblast & chorion	**1**			
Gastrulation	**2**			
Neurulation	**1**			
Folding	**1**			
Derivatives of the three germ layers	**1**			
Fetal membranes	**2**		**2**	
Congenital anomalies & teratology	**1**		**2**	**1**
Total	**16**		**4**	**1**

b) Systemic Embryology

Topics	**No of hours**			
	L	**T**	**C/P**	**SDL**
Development of the Limbs	**1**		**2**	
Development of the cardiovascular system (CVS)	**6**		**2**	
Development of the respiratory system	**2**			
Development of the GIT	**5**		**2**	**2**
Development of the urinary system	**4**		**2**	**1**
Development of the genital system	**3**		**2**	
Development of the head & neck	**7**		**2**	**1**

Development of musculoskeletal system	**2**			
Development of the nervous system (CNS)	**2**			
Development of organs of special senses	**3**			
Development of integumentary system	**1**			
Total	**36**		**12**	**4**

4 - Student Assessment Methods

4.1 Written to assess knowledge.

4.2 Oral to assess knowledge, general and transferable skills.

4.3 Practical to assess professional skills.

4.4 weighing of assessment:

- written 120 marks
- Oral 20 marks
- Practical 60 marks

5 -- List of References

5.1- Course Notes (paper and / or electronic)

- Introduction to Anatomy **(your first step to study Anatomy).** *Authors: (Kariman Elgohary, Mostafa Kamel, Osama Husein, Hany Shawky).*
- Lectures on Embryology; by Prof. Kariman El Gohary, Mostafa Kamel, Hany Shawky and Osama Hussein; 2008.

5.2- Essential Books (Text Books)

- Standring, S., **Gray's Anatomy**, 40th edition, Elsevier, 2008
- Tank, P.W., **Grant's Dissector**, 14th edition, Lippincott, Williams and Wilkins, 2008

5.3- Recommended Books

- Moore, K.L. and A.F. Dalley, **Clinically Oriented Anatomy**, 5th edition, Lippincott, Williams & Wilkins, 2006.
- *Sadler,T.W.* **, Langman's Medical Embryology**, 8th edition, Lippincott, Williams & Wilkins, 2000.

5.4- Periodicals, Web Sites, etc

- The official faculty's learning management system: http://mic2.shams.edu.eg/
- Medical education online: http://www.medicaleducationonline.org/
- Useful website http://www.embryology.ch/indexen.html

8.2 Course specification for Introduction to Anatomy

Program(s) on which the course is given: **Master of Science in anatomy and embryology**
Major or minor element of programs: major
Department offering the program: **Anatomy Department**
Department offering the course: **Anatomy Department**
Academic year / Level: **semester1**
Date of specification approval ……..

A- Basic Information

Title: Introduction to Anatomy **Code: E6003**
Credit Hours: 2 hours **Lecture: 22**
Tutorial: **Practical: 16** **Total: 38**
Coordinator
……

B - Professional Information

1- Course Aims:

a) To understand the structure of the human body tissues and how they are integrated to form functional units.
b) Awareness of the correlation between the structure and function and how anatomical knowledge can be applied effectively in clinical and scientific context.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 - Define the Anatomical position, planes and terms .
a2 - Describe the structural components of the different regions of the human body.
a3 - Realize the role of imaging in revealing the structure of the body.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1 - Describe the components of the central and peripheral nervous system
b2 - Explain the role of periosteum and epiphyseal cartilage in the growth of bone.
b3 - Recognize factors that help to stabilize a joint.
b4 - Compare between functional and anatomical end arteries

b5 - Predict what happens if:
- A lymph vessel is obstructed.
- A lymph node becomes infected or affected by cancer.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Identify bones forming the axial and appendicular skeleton. List types of bone according to structure or shape.

c2- Identify different types of muscles and recognize the different ways of attachment of skeletal muscles

c3- Define the different way of diagnostic imaging (x-ray, CT scans, MRI).

c4- Locate lymphatic aggregations

d- General and transferable skills

By the end of the course the candidate will be able to:

d1**.** ***Communicate*** scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.

d2. ***Research***: run a library search or an internet search, collect data and present a concise review about a chosen topic.

3- Course content:

Topics	No. of hours			
	L	T	C/P	SDL
anatomical terminology and anatomical terms of movements	2			
Body Tissues (skin & fascia & serous membrane)	2		2	
Skeleton (cartilage, bones & joints)	4		2	
Muscles : Types (smooth, skeletal & cardiac)	4		2	
Nervous System	3		2	
Cardiovascular system :	2		2	
Lymphatic system	2		2	
Endocrine System	1		2	
Diagnostic imaging	2		2	
Total	22		16	

4. Student assessment

4.1 written to assess knowledge

4.2 oral to assess knowledge, general and transferrable skills

4.3 practical to assess professional skills

4.4 weighing of assessment

- written; 60 marks
- Oral: 10 marks
- Practical: 30 marks

8.3 Course specifications of Gross human Anatomy 1

Program(s) on which the course is given: **Master of Science in Anatomy and Embryology**

Major or minor element of programs: major

Department offering the program: **Anatomy Department**

Department offering the course **Anatomy Department**

Academic year / Level: **Semester 2**

Date of specification approval ……..

A- Basic Information

Title: Gross human Anatomy1 **Code: AE6003a**

Credit Hours: 6 **Lecture: 57**

Tutorial: **Practical: 63** **Total: 120**

Coordinator

B - Professional Information

1- Course Aims:

This course was designed so postgraduate student would acquire sufficient knowledge and skills needed to identify the various structures of the upper limb,lower limb and thorax. Emphasis is given particularly to points of clinical relevance and fields of surgical importance.

2- Intended Learning Outcomes (ILOs):

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 - Describe the anatomy of the following **regions** upper limb, lower limb and thorax.

a2- Describe the Skeleton (axial and appendicular) and names of the various bony features and muscles attached.
a3- Identify the various Joints and ligaments of the upper limb, lower limb and thorax.
.
a4- Describe the origin, insertion, main action(s), innervations and relations of skeletal muscles of the upper limb, lower limb and thorax.
a5-Recognize the origin, course, surface landmarks, termination and branches/tributaries of the blood vessel.
a6- Define the origin, course, distribution of the nerves and realize the effect of nerve lesion.
a7- Describe the thoracic viscera and **organs** and define their site, size, shape, parts, structure, special features if any, relations, serous covering, neurovascular supply, lymphatic drainage and surgical anatomy.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Employ anatomical knowledge to solve clinical problems by correlating between a given trauma (wound, fracture, …etc.) or surgical procedure (e.g. intercostal nerve block) and the structure(s) liable to injury.
b2 - Interpret diagnostic images and understand the clinically relevant condition.
b3- Identify the structure present in a given surface landmark.
b4- Identify the group of lymph nodes to which cancer in a given region may spread

c- Professional skills

By the end of the course the candidate will be able to:

c1- Identify the anatomical specimens (muscles, vessels, nerves, organs) in a precise and accurate manner.
c2- Interpret common diagnostic images (CTs, MRI and x-ray).

d- General and transferable skills

By the end of the course the candidate will be able to:

d1**.** ***Communicate*** scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.
d2. ***Research***: run a library search or an internet search, collect data and present a concise review about a chosen topic.
d3 Apply effective verbal communication with colleagues and teaching stuff.

3- Course content:

a. Upper limb

Topics	No. of hours			
	L	T	C/P	SDL
Bones of the upper limb			4	
Pectoral region	1		2	
Axilla	2		4	
Mammary Gland	1			1
Back	1		2	
Scapular region	1		2	
Upper arm and Cubital fossa.	4		2	
Forearm and wrist.	4		3	
Hand and Digital muscles	2		2	
Joints of the upper limb	2		2	1
Dermatomes of the lower limb and lymphatic drainage	2			1
Total	20		23	3

b. Lower limb

Topics	No. of hours			
	L	T	C/P	SDL
Bones of the lower limb			4	
Front of the thigh	1		2	
The femoral triangle and femoral sheath	1		2	1
Medial side of the thigh and Adductor (subsartorial) canal	1		2	
Gluteal region	2		2	
Back of the thigh and popliteal fossa	2		2	
Leg (anterior lateral and posterior compartments)	2		4	
Dorsum of the foot	1		2	
Sole of the foot	1		2	
Joints of the lower limb	2		2	
Arches of the foot and mechanism of walking	2			1
Venous drainage of the lower limb	2		2	1
Dermatomes of the lower limb and lymphatic drainage	2			1
Total	19		26	4

c. Thorax

Topics	No. of hours			
	L	T	C/P	SDL
Bones: sternum, ribs & thoracic vertebrae			4	
Thoracic wall (intercostals space)	2		2	
Pleura and Lungs	2		2	
Pericardium and Heart	2		2	
Mediastinum	2		2	
Lymphatic drainage of the thorax&joints	2			1
X-rays, CT & MRI images & cross-sectional anatomy			2	
Total	10		14	1

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4. weighing of assessment

5 -- List of References

5.1- Course Notes (paper and / or electronic)

- **Thorax: (***Authors: (Kariman Elgohary, Ibtisam Bahei, Fatma Elrakhawy)*
- **Lower limb: (***Authors: (Kariman Elgohary, Ibtisam Bahei)*

5.2- Essential Books (Text Books)

- Standring, S., **Gray's Anatomy**, 40th edition, Elsevier, 2008
- Tank, P.W., **Grant's Dissector**, 14th edition, Lippincott, Williams and Wilkins, 2008

5.3- Recommended Books

- Moore, K.L. and A.F. Dalley, **Clinically Oriented Anatomy**, 5th edition, Lippincott, Williams & Wilkins, 2006.

5.4- Periodicals, Web Sites, etc

- The official faculty's learning management system: http://mic2.shams.edu.eg/
- Medical education online: http://www.medicaleducationonline.org/

Useful website http://isc.temple.edu/marino/embryo/genitan.htm

8.4 Course specifications of Gross human Anatomy2

Program(s) on which the course is given: **Master of Science in Anatomy and Embryology**
Major or minor element of programs: major
Department offering the program: **Anatomy Department**
Department offering the course **Anatomy Department**
Academic year / Level: **Semester 3.**
Date of specification approval ……..

A- Basic Information

Title: Gross human Anatomy 2 **Code: AE6003b**
Credit Hours: 6 **Lecture: 69 hr**
Tutorial: **Practical: 58 hr** **Total: 127 hr**

Coordinator

B - Professional Information

1- Course Aims:

This course was designed so postgraduate student would acquire sufficient knowledge and skills needed to identify the various structures of the abdomen, pelvis and head & neck. Emphasis is given particularly to points of clinical relevance and fields of surgical importance.

2- Intended Learning Outcomes (ILOs):

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1 - Describe the anatomy of the following **regions** abdomen, pelvis, perineum, and head and neck.

a2- Describe the Skeleton and names of the various bony features, muscles attached, foramina and structures passing through them

a3- Identify the various Joints and ligaments of this regions.

a4- Describe the origin, insertion, main action(s), innervations and relations of skeletal muscles of the abdomen, pelvis, perineum, and head and neck.

a5-Recognize the origin, course, surface landmarks, termination and branches/tributaries of the blood vessel.

a6- Define the origin, course, distribution of the nerves and realize the effect of nerve lesion.

a7- Describe the body viscera and **organs** and define their site, size, shape, parts, structure, special features if any, relations, facial covering, neurovascular supply and lymphatic drainage and surgical anatomy.

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Employ anatomical knowledge to solve clinical problems by correlating between a given trauma (wound, fracture, …etc.) or surgical procedure (e.g. cervical nerve block) and the structure(s) liable to injury.

b2 - Interpret diagnostic images and understand the clinically relevant condition.

b3- Identify the structure present in a given surface landmark.
b4- Identify the group of lymph nodes to which cancer in a given region may spread

c- Professional skills

By the end of the course the candidate will be able to:

c1- Identify the anatomical specimens (muscles, vessels, nerves, organs, glands) in a precise and accurate manner.
c2- Interpret common diagnostic images (CTs, MRI and x-ray).

d- General and transferable skills

By the end of the course the candidate will be able to:

d1. ***Communicate*** scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.
d2. ***Research***: run a library search or an internet search, collect data and present a concise review about a chosen topic.

a. Abdomen

Topics	No. of hours			
	L	T	C/P	SDL
Anteroior abdominal wall&peritoneum	2		2	
Inguinal region	2		1	2
Male external genital organs	1		1	2
Gastrointestinal tract,spleen& pancreas	2		1	
Liver and biliary passages	2		1	
Blood supply of the gut	2		1	
Posterior abdominal wall: muscles, vessels and nerves	2		1	
Kidneys and suprarenal gland	1		2	
Autonomic plexuses & lymphatics	1			2
Total	15		10	6

b. Pelvis and perineum

Topics	No. of hours			
	L	T	C/P	SDL
Regions and spaces (definitions and limits of the false pelvis, true pelvis and perineum).				1
Pelvic skeleton (hip bones, sacrum and coccyx)			2	
Pelvic joints and ligaments	2			
Pelvic muscles and fascia	1		2	
Pelvic vessels	1		2	
Pelvic nerves	1		2	
Pelvic lymph nodes				1
Pelvic peritoneum	1			
Pelvic viscera: urinary bladder, rectum, male and female reproductive organs	3		2	
Perineum: boundaries and subdivision	1			
Ischiorectal fossa and anal canal	2		2	
Total	12		12	2

c. Head & Neck

Topics	No. of hours			
	L	T	C/P	SDL
Bones: Skull, mandible			2	
Scalp, face, parotid region	2		2	
Cranial cavity	2		2	
Orbit	2		2	
Temporal & infratemporal fossa + pterygopalatine fossa & TMJ	2		2	
Submandibular region	2		2	
Triangles of neck	2		2	
Thyroid gland	2		2	
Fascia of the neck	2			
Last 4 cranial nerves			2	2
Prevertebral region	2		2	
deep dissection of neck	2		2	
Nose & paranasal sinuses	2		2	

Mouth, tongue, palate	2		2	
Pharynx	1		2	
Larynx	1		2	
Ear	1		2	
cervical vertebrae + Joints of the head & neck			2	2
X-rays, CT & MRI images			2	
Total	30		36	4

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4. weighing of assessment
Written: (2 papers each180 marks)
Oral: 60 marks
Practical: 180 marks

5 -- List of References

5.1- Course Notes (paper and / or electronic)

- El Gohary K.A. **Lecture Notes on Head & neck**

5.2- Essential Books (Text Books)

- Standring, S., **Gray's Anatomy**, 40th edition, Elsevier, 2008
- Tank, P.W., **Grant's Dissector**, 14th edition, Lippincott, Williams and Wilkins, 2008

5.3- Recommended Books

- Moore, K.L. and A.F. Dalley, **Clinically Oriented Anatomy**, 5th edition, Lippincott, Williams & Wilkins, 2006.

5.4- Periodicals, Web Sites, etc

- The official faculty's learning management system: http://mic2.shams.edu.eg/
- Medical education online: http://www.medicaleducationonline.org/
- Useful website http://isc.temple.edu/marino/embryo/genitan.htm

8.5 Course specifications of Neuroanatomy

Program(s) on which the course is given: **Master of Science in Anatomy and Embrology**
Major or minor element of programs: **major.**

Department offering the program: **Department of Anatomy**
Department offering the course: **Department of Anatomy**
Academic year / Level: **Semester 4**
Date of specification approval ……..

A- Basic Information

Title: Neuroanatomy **Code: AE 6004**
Credit Hours: 4 hrs **Lecture: 42**
Tutorial: **Practical: 36** **Total: 78**

Coordinator

……..

B - Professional Information

1- Course Aims:

This course aim that postgraduate student would acquire sufficient knowledge and skills needed to identify the gross structure of the human central nervous system (CNS). Emphasis is given particularly to points of clinical relevance and fields of surgical importance.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:
a1. Describe the gross anatomy of the CNS and its blood supply.
a2. List structures present in a certain region e.g., structures in the interpeduncular fossa, contents of a cerebellar peduncle, nuclei of cranial nerves.
a3. Identify the cranial nerve supplying a given structure.
a4. Pair/ associate any vessel with its area of distribution.

b- Intellectual skills

By the end of the course the candidate will be able to:
b1- Employ anatomical knowledge to solve clinical problems.
b2 - Localize the possible site of lesion in the nervous system from given clinical data denoting sensory or motor loss.
b3 **-** Interpret diagnostic images and understand the clinically relevant condition.

c- Professional skills

By the end of the course the candidate will be able to:

c1- Identify major structure(s) of the human brain

c2- Identify the different features of the brain stem

c3-Recognize the site of attachment of the cranial nerves to the brain

c4-Identify the different structures in TS and median sagittal section of the brain.

d- General and transferable skills

By the end of the course the candidate will be able to:

d1. ***Communicate*** scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.

d2. ***Research***: run a library search or an internet search, collect data and present a concise review about a chosen topic.

d3 Apply effective verbal communication with colleagues and teaching stuff.

Course content:

Topics	No. of hours			
	L	T	C/P	SDL
Gross morphology of the spinal cord and its blood supply & lesions	3		2	
Tracts	3		2	2
Gross morphology of the brain stem and its blood supply	3		2	
Cranial nerve nuclei	2		2	2
Fourth ventricle	1		2	
Gross morphology of the cerebellum and its blood supply	2		2	
Gross morphology of the diencephalon and its parts	3		2	
Gross morphology of the cerebral hemispheres	2		2	
Gross morphology of the limbic system	2		2	2
White matter of the cerebral hemispheres	3		2	
Gross morphology of the basal ganglia	2		2	

Brain ventricles (lateral & 3rd) & CSF	3		2	
Median sagittal section of the brain	2		2	
TS of the brain	2		2	
Meninges	2		2	
Blood supply of the brain	2		2	
Special sensory pathways (olfactory, visual auditory)	3		2	2
MRI & CT of the normal brain	2		2	
Total	42		36	8

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4 weighing of assessment
Written: 120 marks
Oral: 20 marks
Practical: 60 marks

5 -- List of References

5.1- Course Notes (paper and / or electronic)
……
5.2- Essential Books (Text Books)

- Standring, S., **Gray's Anatomy**, 40th edition, Elsevier, 2008
- Tank, P.W., **Grant's Dissector**, 14th edition, Lippincott, Williams and Wilkins, 2008

5.3- Recommended Books

- Snell, R.S., **Clinical NeuroAnatomy**, 8th edition, Lippincott, Williams and Wilkins, 2008.

5.4- Periodicals, Web Sites, etc

- The official faculty's learning management system: http://mic2.shams.edu.eg/
- Medical education online: http://www.medicaleducationonline.org/
- Useful website http://isc.temple.edu/marino/embryo/genitan.htm

8.6 - Elective Courses:
Student selects one of the six elective couses:

8. 6.1 Course Specifications of General histology

Ain Shams University **Faculty of Medicine**
1- Program title: Master of Science in Anatomy
2- Department offering the program: Anatomy Department
3- Major or minor element of programs: Minor
4- Department responsible for the course: Histology department
5- Course code: E6001
6- Year: 2009-2010 /Level: 4th semester
7- No. of hours/units: 2 credit hours
8-Authorization date of course specification:

A- Basic Information

Title: General Histology **Code: E 6001**
Credit Hours: 2 hours **Lecture: 18 hr**
Tutorial: **Practical: 26 hr** **Total: 44 hr**

Coordinator

B - Professional Information

1- Course Aims:

1- **Overall aims of the course:**

This course is the basic understanding of the microscopic structure of cells, organs, and systems in the human body and the direct relationship between the morphology (microscopic structure) of such an organ and its function.

2- Intended Learning Outcomes (ILOs) from the Course:

a) **Knowledge and understanding:** By the end of the course the student should be able to:

a1. Identify the microscopic structure of different cells, tissues and organs of the body.

a2. Recognize the ultrastructure of different cells, tissues and organs of the body.
a3. Correlate between the structure and function of different cells, tissues and organs of the body

b) **Intellectual skills**: By the end of the course the student should be able to

b1. Integrate basic histological knowledge with clinical data
b2. Interpret the structural changes in cells to understand the underlying cause for different diseases
b3. Retrieve, analyze and interpret the collected information in lectures, library and searching for solving problems related to structural dysfunction

c) **Professional and practical skills:** The students should be able to

c1. Adjust and deal properly with the light microscope
c2. Determine the proper magnification for examining the different cells, tissues and organs.
c3. Identify and draw the microscopic structure of different cells, tissues and organs provided.

d) **General and transferable skills:** The student should

d1. Respect his colleagues and work properly in a team
d2. Be aware with human and animal research ethics
d3. Comply with different believes in the community they serve

3) Course content:

Topics	Lectures (2hrs)	Practical (2hrs)
Microtechniques		4
Cell and its components Cell membrane Cytoplasmic organelles Cytoplasmic inclusions Cytoskeleton Nucleus	5	4
Epithelium Connective tissue	3	3
Cartilage Bone	3	3
Muscle tissue Nervous tissue	3	3
Blood	2	3
Vascular tissue & skin	2	3

4 - Student Assessment Methods

4.1 Written to assess knowledge.

4.2 Oral to assess knowledge, general and transferable skills.

4.3 Practical to assess professional skills.

4.4 weighing of assessment

Written: 60 marks

Oral: 10 marks

Practical: 30 marks

5. List of references:

- lecture notes prepared by staff of the department
- Essential books
  - Basic Histology. Text and Atlas 2005.
  - Functional Histology
  - Color textbook of Histology. Gartner& Hiatt.
  - Core text of neuroanatomy
  - Bloom and Fawcett Histology. A text book of Histology.
- Ham's Histology.
- Essential Histology.

- Periodicals and web sites:-

http://en.wikipedia.org/wiki/Histology

*www.najah.edu/nnu_portal/file/faculties/.../**Histology***

som.georgetown.edu/73239.html

*www.visual**histology**.com/*

8. 6.2 Course specifications of Molecular Biology

Ain Shams University **Faculty of Medicine**

1- Program title: Master of Science in Anatomy

2- Department offering the program: Anatomy Department

3- Major or minor element of programs: Minor

4- Department responsible for the course: Medical Biochemistry

5- Course code: E6002

6- Year: 2009-2010 /Level: 4th semester

7- No. of hours/units: 2 credit hours

8-Authorization date of course specification:

A- Basic Information

Title: Molecular biology **Code: E6002**
Credit Hours: 2 hr **Lecture : 19 hr**
Tutorial: 10 hr **Practical:** **Total: 29 hr**

Co-ordinator :

B - Professional Information

1- Course Aims:

1- To provide students with advanced information concerning the human genome, human genetics and the future of diagnostic and therapeutic medicine.

2- To equip the students with the specialized knowledge and skills necessary for future research in molecular biology.

2- Intended Learning Outcomes (ILOs) from the Course:

a- Knowledge and understanding

By the end of the course the candidate will be able to:

a1) Understand the structure, function and organization of human genomes
a2) Describe the main principles of methods for preparation and extraction of DNA and RNA.
a3) Understand the main principles of methods for DNA amplification (PCR, RT-PCR, Real-time PCR, etc.)
a4) Identify the main principles of methods for DNA sequencing
a5) Describe the main principles of DNA and RNA blotting
a6) Understand the concepts of recombinant DNA technology
a7) Understand the applications of molecular biology techniques in the diagnosis, taxonomy, species and strain differention of microorganisms.
a8) Understand the applications of molecular biology techniques in genetic testing, in paternity testing, studying drug resistance, and vaccine and drug development.
a9) Point out the principle of microarrays

a10) Describe the molecular basis of cancer, and role of telomerase and apoptosis in tumorogenesis

a11) Distinguish the type of mutated protein suitable for gene therapy and describe the general steps of this process and the expected problems

b- Intellectual skills

By the end of the course the candidate will be able to:

b1- Integrate basic molecular biology facts with clinical data.

b2- Identify the appropriate molecular biology technique required to diagnose a genetic disease.

b3- Analyse and interpret the results of molecular biology techniques.

B4- Identify tumor-associated genetic defects and relate them to patient prognosis.

c.. Professional and Practical skills

By the end of the course the candidate will be able to:

c1- Incorporate new molecular biology knowledge and tools into research projects

c2- Use the computer to retrieve and compare molecular biology data

c3- Solve any subject-related problems provided by staff

c4- Interpret the results of PCR and RT-PCR and DNA finger printing

d. General and transferable skills

By the end of the course the candidate will be able to:

d1 – develop the skill of working in teams

d2 – develop appropriate relationships with patient and family

d3- Use basic computing skills and internet to search gene and protein Database.

d4- Communicate relevant information with teaching staff and colleagues

3- Course content:

Basic principles in molecular biology	No. of hours			
	L (1h)	T	P	SDL
1- Nucleic acid structure and organization	2			
2- Cell cycle, DNA replication	1			

and repair				
3- RNA transcription and processing	2			
4- Regulation of gene expression	2			√
5-The Genetic code, mutation and protein synthesis	2			
6- Recombinant DNA technology		2		√
7- Techniques of genetic analysis -Extraction of DNA & RNA - PCR & RT-PCR - DNA electrophoresis - Blotting techniques - RFLP - Microarray - DNA sequencing - DNA fingerprinting	2	8		
8- Molecular basis of cancer - Oncogenes, - Tumor suppressor genes, - Apoptosis - Telomerase - invasion and metastasis - Angiogenesis	2			√
10- Transgenesis & Gene Therapy	2			√
11- Stem cells	2			√
12- The Human Genome Project	2			√

L: Lecture, 19 T: Tutorial, 10 , C/P: Clinical or Practical and SDL: Self directed learning

4 - Student Assessment Methods

4.1 Written to assess knowledge.

4.2 Oral to assess knowledge, general and transferable skills.

4.3 Practical to assess professional skills.

4.4 weighing of assessment

Written: 60 marks

Oral: 10 marks

Practical: 30 marks

5 -- List of References

5.1- Course Notes (paper and / or electronic)

Lecture notes provided by the staff of Medical Biochemistry and Molecular Biology

5.2- Essential Books (Text Books)

…USMLE Step 1 Biochemistry (Kaplan)

5.3- Recommended Books

…Lippincott Biochemistry……

5.4- Periodicals, Web Sites, etc

http://www.web-books.com/MoBio/

http://www.coe.uncc.edu/~hhilger/EB_I_F_06/web_links_on_basics_of_molecular_biology.htm

8. 6.3 Course Specifications of Cell Biology

Ain Shams University Faculty of Medicine

1- Program title: Master of Science in Anatomy

2- Department offering the program: Anatomy and Embryology Department

3- Major or minor element of programs: Minor

4- Department responsible for the course: Histology department

5- Course code: E6003

6- Year: 2009-2010 /Level: 4th semester

7- No. of hours/units: 2 credit hours

8-Authorization date of course specification:

A- Basic Information

Title: Cell Biology **Code: E 6003**

Credit Hours: 2 hours **Lecture: 21 hr**

Tutorial: **Practical: 18 hr** **Total: 39 hr**

Coordinator

B - Professional Information

1- Course Aims:

Overall aims of the course: To provide students with knowledge concerning the basic histological structure and ultrastructure of the eukaryotic cell with correlation to biological cellular activities, and basis of cytogenetics

2. Intended Learning Outcomes (ILOs) from the Course:

a). Knowledge and understanding: By the end of the course the student should be able to:

a1. Define and describe the structure and functions of the cytoplasmic components.

a2. Know the subunits of each nuclear component and their role in its function

a3. Explain the process of cell division and identify the activities that control the transition from each phase of the cell cycle to the other

a4. Understand the basis of cytogenetics and chromosomal aberrations.

b). **Intellectual skills**: By the end of the course the student should be able to

bl- Select appropriate methods to reveal specific microscopic features of cells.

b2-Predict which structures are present in a cell from its function.

b3- Differentiate between normal and abnormal karyotyping.

c) Professional and practical skills:

By the end of the course the students should be able to

c1. Recognize different cellular and intracellular components in electron Photomicrographs .

c2. Draw and label the structures they have seen in electron photomicrographs and under light microscope during practical classes

d). **General and transferable skills:** The student should

d1. Respect his colleagues and work properly in a team

d2. Be aware with human and animal research ethics

d3. Comply with different believes in the community they serve

3) Course content:

Topics	Lectures	Practical
Cell membrane (plasma membrane) and glycocalyx (LM & EM, Molecular structure, Functions, Endocytosis and Exocytosis, Receptors and signaling reception).	2	2
Mitochondria (LM & EM, Membrane enzymes, Elementary particles, Mitochondrial DMA & RNA, Functions)	2	2
Ribosomes (LM & EM, Free and attached, Polysomes, chemical composition, Functions)	1	2
Endoplasmic reticulum (Rough & Smooth , LM & EM, Functions), Golgi apparatus (LM & EM, Functions)	1	2
Lysosomes (LM, histochemical reactions & EM, Origin, Types and Fate, Functions)	1	2
Peroxisomes (LM, histochemical reactions, & EM, Origin, Types, Functions)	1	2
Anuulate lamellae, Coated vesicles and endosomes. Cytoplasmic inclusions (Stored food, pigments)	1	2
Cytoskeleton (Microfilaments, Intermediate filaments and Microtubules) Centrioles, Cilia, Cytosole (Cytomatrix) and Flagella	2	2
Nucleus of interphase (Nuclear envelope, Chromatin, Nucleolus, Nuclear sap)	2	2
The cell cycle (Interphase G1, S & G2 and mitosis)	2	

Cell division, Mitosis (Events, Mitotic chromosomes, Mitotic spindle, Phases) & meiosis	1	
Nucleic acids, DNA & RNA (Chemical composition, Structural differences, nucleotides & genes, codons & anticodons, protein synthesis, transcription, translation, replication & Types of RNA)	2	
Chromosomal number & sex chromosomes • Karyotyping & classification of chromosomes • Structure of chromosomes • Sex chromatin • Abnormalities of cell division	2	
Cell death (necrosis versus apoptosis)	1	

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4 weighing of assessment
Written: 60 marks
Oral: 10 marks
Practical: 30 marks

5). List of references:

- lecture notes prepared by staff of the department
- Essential books
  - Basic Histology. Text and Atlas 2005.
  - Functional Histology
  - Color textbook of Histology. Gartner& Hiatt.
  - Core text of neuroanatomy
  - Bloom and Fawcett Histology. A text book of Histology.
- Ham's Histology.
-Essential Histology.

- Periodicals and web sites:-

http://en.wikipedia.org/wiki/Histology

*www.najah.edu/nnu_portal/file/faculties/.../**Histology***

som.georgetown.edu/73239.html

*www.visual**histology**.com/*

8. 6.4 Medical Genetics course specification

Ain Shams University **Faculty of Medicine**

1- Program title: Master of Science in Anatomy and embryology

2- Department offering the program: Anatomy Department

3- Major or minor element of programs: Minor

4- Department responsible for the course: Genetics unit, department of pediatrics

5- Course code: E6004

6- Year: 2009-2010 /Level: 4th semester

7- No. of hours/units: 2 credit hours

8-Authorization date of course specification:

A- Basic Information

Title: Medical Genetics **Code: E6004**

Credit Hours: 2 hr

Lecture: 24 hr **practical: 12 hr** **Total: 36 hr**

Coordinator

……

B- Professional Information:

1- Overall aims of the course:

This course is designed to give students a working knowledge of the principles and practice of Medical Genetics which will allow them to evaluate, choose and interpret appropriate genetic investigations for individuals, families and populations with genetic disease. Students will also learn to recognize role of genetics in acquiring certain diseases and ethical aspects of medical genetics.

2- Intended learning outcomes (ILOs):

a- Knowledge and understanding:

By the end of this course the student are expected to develop an understanding of:

a1. Chromosomal disorders and methods used to characterize the underlying chromosomal abnormality.
a2. The molecular basis of inherited disease, diagnostic methods which are used to identify the causative mutations in patients or carriers.
a3. Treatments and therapy for inherited disease and cancer, including novel therapies such as gene therapy.
a4. The ethical issues which are an inherent part of Medical Genetics.

b- Intellectual skills:

By the end of this course the student should be able to demonstrate:
b1. The ability to identify cases with suspected genetic condition and to direct them to the proper investigation.

c- Professional and practical skills

By the end of this course the student should be able to demonstrate:
c1. Application of their knowledge base in Medical Genetics in using clues from pedigree, family history and other information to suggest likely inheritance patterns and / or diagnoses.
c2. Selection of the diagnostic or screening methods which will be most appropriate and informative in a given clinical situation whilst taking into account referring them to a geneticist.

d.. General and Transferable/key skills

By the end of this course the student should be able to demonstrate:
d1. Time management skills to accomplish individual designated tasks by a given date;
d2. Scientific report writing and oral presentation skills.
d3. Critical use of online databases and e-journals;
d4. Conduct a self-directed learning on selected topics.

Course Contents:

L: Lecture, C/P: Clinical or Practical and SDL: Self directed learning

Topic		No. of hours		
		L	C/P	SDL
Basic genetics	Gene structure and gene function	4		
	Organization and structure of chromosomes, karyotype, nomenclature and interpretation of abnormal karyotypes and chromosomal aberrations	4	6	
	Mutations and teratogens	4		
	Pedigree construction, Patterns of inheritance: traditional patterns & non-traditional patterns of inheritance.	4	6	
Diagnostic genetics	1. Molecular Diagnostic Techniques.	4		
	2. Cytogenetic Diagnostic Techniques.			
	3. Biochemical Diagnostic Techniques.			
Management of genetic diseases	1. Dietary therapy: restriction – supplementation	4		
	2. Drug therapy			
	3. Transplantation therapy: cell - tissue - organ			
	4. Stem cell therapy			
	5. Surgical intervention			
	6. Gene therapy			

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4 weighing of assessment
Written: 60 marks
Oral: 10 marks
Practical: 30 marks

5- List of references:

5.1- Course Notes (paper and / or electronic)

Lectures (handouts – electronic)

5.2- Essential Books (Text Books)
Davidson's principle and practice of Medicine
5.3- Recommended Books
……
……
5.4- Periodicals, Web Sites, etc
http://books.google.com/books?id=dMIFiNR0I7YC&pg=PA5&lpg=PP1&ots=ptiuYq7bNq&dq=genetics+in+rheumatology

8. 6.5 Course Specifications of Biology of aging

Ain Shams University **Faculty of Medicine**
1- Program title: Master of Science in Anatomy
2- Department offering the program: Anatomy Department
3- Major or minor element of programs: Minor
4- Department responsible for the course: Department of Anatomy
5- Course code: E6005
6- Year: 2009-2010 /Level: 4th semester
7- No. of hours/units: 2 credit hours
8-Authorization date of course specification:

A- Basic Information

Title: Biology of aging		**Code: E 6005**
Credit Hours: 2 hours		**Lecture: 23 hr**
Tutorial:	**Practical: 14**	**Total: 37 hr**

B - Professional Information
1- Overall aims of the course:

This course focus on understanding the biological aspects of aging and the different theories explaining the process of aging .The Course will summarize the age related changes on the different systems and the difference between age related changes and pathological conditions.

2- Intended Learning Outcomes (ILOs):

a. Knowledge and understanding
By the end of the course the student should be able to;
A1- Identify the Genetic effects on aging.
A2-Gain knowledge about the different theories of aging

A3-Recognize the importance of oxidative damage and inflammation
A3- Identify the age related changes on the different body systems

b. Intellectual skills:

By the end of the course the student should be able to
B1-Integrate the biological process responsible for aging
B2- compare between the age related changes and the pathological conditions in the body system.

c. Professional and practical skills:

By the end of the course the student should be able to:
Identify the age related changes in histological sections of different systems.

d. General and transferable skills:

By the end of the course the student should be able to
D1-Comply with different opinions about the aging process and its effect on the quality of life

Course Content:

Topic	Lectures	tutorials	practical	SDL
1-Introduction to biology of aging	2			
2-Genetic effects on aging.	2			
3-Theories of aging	2			
4-The relation between normal aging and diseases	2			
5-Oxidative Damage	2			
6-Cellular senescence	2			
7- Inflammation and aging	2			
8- Cellular Aspects of the aging human brain.	2	2		
9-Aging of the respiratory system	1	2		
10-Aging of the cardiovascular system	1	2		

11- Aging of the kidney	1	2		
12- Aging of the GIT	2	2		
13-Aging of the muscles and joints	1	2		
14- Aging of the Hematopoietic System.	1	2		
Total	23	14		

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4 weighing of assessment
Written: 60 marks
Oral: 10 marks
Practical: 30 marks

5. List of references:

- **Lecture notes**
- **Essential books:**

Merck manual of geriatrics
Merck manual of health & aging

- Periodicals, Web Sites, etc.

Gerontology
Journal of gerontology
Reviews in clinical gerontology

8. 6.6 Course Specifications of Anthropology

Ain Shams University Faculty of Medicine

1- Program title: Master of Science in Anatomy
2- Department offering the program: Anatomy and Embryology Department
3- Major or minor element of programs: Minor
4- Department responsible for the course: Anatomy Department
5- Course code: E6006

6- Year: 2009-2010 /Level: 4th semester
7- No. of hours/units: 2 credit hours
8-Authorization date of course specification: July, 2009

A- Basic Information
Title: Anthropology **Code:** E6006
Credit Hours: 2 hours **Lecture:** 18 hr
Tutorial: 12 hr - **Practical:**- **Total:** 30 hr

B- Professional Information

1 – Overall Aim of Course

Is to equip the student with theoretical background and practical information related to medical anthropology

2 – Intended Learning Outcomes of Course (ILOs)

At the end of the course graduate students should be able to:

a- Knowledge and Understanding:

a1- Understand how the culture & environmental factors affect the health
a2-Reconize the traditional medicine

b- Intellectual Skills

b1- Relate and identify the causative factors of diseases and their effects
b2- Differentiate between the formal & informal health practices & services

c- Professional and Practical Skills

c1- provide the principles of health awareness and preventive measures of the disease

d- General and Transferable Skills

d1-Relate the health believes with culture
d2-Appreciate the effect of the environmental factors on the health of people and community
d3- Communicate scientific English and medical terminology (verbal and written) in an understandable, logical, concise manner.

3- Contents

Topic	L	T
1- Anthropology and its branches	**3**	**2**
2- The field of medical anthropology	**3**	**2**
3- Culture, health and disease	**3**	**2**
4- The type of interaction between the formal & informal medicine	**3**	**2**
5- Hospital as culture system	**3**	**2**
6- The popular doctor in one society from developing countries	**3**	**2**

4 - Student Assessment Methods

4.1 Written to assess knowledge.
4.2 Oral to assess knowledge, general and transferable skills.
4.3 Practical to assess professional skills.
4.4 weighing of assessment
Written: 60 marks
Oral: 10 marks
Practical: 30 marks

6- List of References

6.1- Course Notes
Culture, health and disease theory and reality
6.2- Essential Books (Text Books)
6.3- Recommended Books

5. Program courses:
5.1- level/ year of programme ….1…… semester … 1…..
a. compulsory

Code No.	*Course title*	*No. of units*	*Total actual hours*		
			Lect.	Lab.	Exer.
AE6001	embryology	2	52	16	5
AE6002	**Introduction** to anatomy	1	22	16	

5.2- level/ year of programme ….1…… semester … 2…..
a. compulsory

Code No.	**Course title**	**No. of units**	**Total actual hours**		
			Lect.	**Lab.**	**Exer.**
AE6003a	**Human gross anatomy1 Upper limb, lower limb& thorax**	**3**	**49**	**63**	**8**

5.3- level/ year of programme ….1…… semester … 3…..
a. compulsory

Code No.	**Course title**	**No. of units**	**Total actual hours**		
			Lect.	**Lab.**	**Exer.**
AE6003b	**Human gross anatomy2 Abdomen, pelvis, head & neck**	**3**	**57**	**58**	**12**

5.4- level/ year of programme ….1…… semester … 4…..
a. compulsory

Code No.	Course title	No. of units	Total actual hours		
			Lect.	Lab.	Exer.
AE6004	neuroanatomy	18	42	36	8

b- Elective courses

Code no.	Course title	No. of units	Total actual hours		
			Lect.	Lab.	Exer.
E6001	General histology		18	26	
E6002	Molecular biology		19		10
E6003	Cell biology		21	18	
E6004	Medical genetics		24	12	
E6005	Biology of aging		23	14	
E6006	Anthropology		18		12

V- General Information

1 – Monitoring Of Training and Submission Of Training Reports

You must keep proper and updated records in your logbook to reflect the activities encountered in your training. Your logbook must be duly endorsed by an authorized signatory at the end of each semester.

You will be continuously assessed by your supervisors, in consultation with head of department. An assessment will be submitted within 2 weeks of completion of each semester.

2 - Miscellaneous Information:

Injury and/or Blood or Body Fluid Exposure:

During regular working hours, you should immediately report an exposure incident to the toxicology department. If exposure occurs after

regular working hours or during a weekend or holiday; please call your supervisor. For injury, please report to the Emergency Department.
Please also be sure to inform the supervisors of an exposure incident and/or injury.

3 - Action Completion Of Clinical Training

Once all training sessions are completed the log book should be signed by the senior supervisor and the head of the department and then should be submitted to post graduate Secretariat.

4- Reference

The Training Guide is available at the post graduate Secretariat and could be downloaded from the following website is

VI – Your log book

1- Introduction

The aim of this book is to give you a guide to the expectations for each item. It will be a guide for both you and your teachers to what you should be seeing and doing.

It will give you a list of the important topics that you should think about and should be covered in:

1. Clinical or practical sessions
2. Tutorials
3. Self-directed learning (SDL)

For each item there is also a list of

1. Clinical conditions or Practical sessions to be seen or attended (According to each degree)
2. Practical procedures to be seen and done

Remember

This document is *only a guide*. It is not an exhaustive list. It is not just a checklist to score points. It is a guide to encourage you to read and learn more. *This book is for your benefit*. It will form a record of your clinical training and experience.

2 - Supervisors

……

……

3–Tables for Training Records

Candidates are required to fulfill 75% of the listed activities in order to be eligible for the exam entry. The minimum number required for each activity = 75%. You are free to attend more and record your extra attendance.

Weekly Department Plan

Day /time	**Saturday**	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
dissection						
Conference						
teaching						
seminar attendance						

Monthly activity……active participant in seminar…….
Sixth monthly activity ……
Yearly activity

Conferences attendance

(NB. Minimum number required is one/year)

No	**Date**	**Place**	**Topics**	**Supervisor signature**

Seminars attendance

(NB. Minimum number required is 1/month)

No	Date	Place	Topics	Supervisor signature
1				
2				
3				
4				
5				
6				

Thesis attendance

(NB. Minimum number required is 3/year)

No	Date	Place	Name of the thesis	Supervisor signature
1				
2				
3				
4				
5				
6				

Activities Attended

(NB. Minimum number required is 6)

No	Date	Place	Name	Supervisor signature
1				
2				
3				
4				
5				
6				

Case presentations

(NB. Minimum number required is 4)

No	Date	Place	Diagnosis	Supervisor signature
1				
2				
3				
4				

Dissection performance

(NB. Minimum number required is 5)

No	Date	Place	Name of dissected part	Supervisor signature
1				
2				
3				
4				
5				

1. Temporal and infratemporal fossa.
2. Pterygopalatine fossa.
3. Suboccipital triangle.
4. Prevertebral muscles.
5. Pharyngeal constrictors.
6. Laryngeal cartilage and muscles.
7. Excision and dissection of spinal cord.
8. Sacral canal.
9. Ventricular system of the brain

Undergraduate Teaching Experience

Date	Topic

5 - Log book preview

The candidate logbook will be reviewed and skills performed summarized by groups during the semester evaluation and at the end of the course in the table below. The results of this review will be totaled in the summary chart below.

For master degree

Summary

Semester	1st	2nd	3rd	4th	Total
Activity	No	No	No	No	
Supervisor signiture					

VII - Head Of Department Approval For The Exam Entry

VIII – Thesis Follow up

التقرير النصف السنوى لعام / **التاريخ/**
عن الطالب /
المقيد لدرجة (ماجسيتر / الدكتوراة)
بقسم /
تقرير السادة الاساتذة المشرفين

جمع المادة العلمية و كتابة المقدمة	**بدأ**	☐	**قطع شوطا محدودا**	☐
	أوشك على الإنتهاء	☐	**إنتهى من الجمع**	☐
الجزء العملى	**بدأ**	☐	**قطع شوطا محدودا**	☐
	أوشك على الإنتهاء	☐	**إنتهى من التحليل**	☐
مناقشة النتائج	**بدأ**	☐	**قطع شوطا محدودا**	☐
	أوشك على الإنتهاء	☐	**إنتهى من التحرير**	☐
المراجعة النهائية مع المشرف	**بدأ**	☐	**قطع شوطا محدودا**	☐
	أوشك على الإنتهاء	☐	**إنتهت تماما**	☐

رأى السادة المشرفين	**إستمرار قيد الطالب**	☐	**مد القيد**	☐
	شطب قيد الطالب	☐		☐

تم تشكيل لجنة المناقشة **نعم** **تاريخ التشكيل** / /
لا

مد / شطب القيد

توقيع السادة المشرفين **وكيل الكلية**

VIII – Evaluation Forms

To be completed at ----------
Candidate
Supervisor
Location

Aim of training

_____
_____
_____
_____

Agreed educational objectives and timescale in which objectives should be achieved.

_____
_____
_____
_____

Comments by Candidate

_____
_____
_____
_____

Comments by Supervisor

_____
_____
_____
_____
_____
____

Date of next meeting

Signed by candidate

Signed by Supervisor

Date

Degree Program Evaluation Form by The Candidate

To be completed at the end of your degree.

Please consider each pair of statements and decide which most clearly reflects your view and **tick one box or answer the question**.

I. Individual Information

1. Are you a graduate of ASU?

yes no to some degree

2. Year and semester when studies began:

II. General Questions

1. What are the advantages/disadvantages of the general study environment at the University ASU?

2. What were your expectations when you applied to the degree?

3. Do you feel that the degree program prepares you well for your future studies or employment according to the demands and expectations of those institutions?

yes no to some degree

4. Has the time limit of the program (two or three academic years) caused you any difficulties or inconveniences?

yes no to some degree

III. Structure of Degree Program

1. Did you receive enough guidance in planning your study schedule in the beginning of the program?

yes no to some degree

2. What were the main difficulties in the planning of your study schedule?

3. What is your general opinion on the structure of the degree program?

4. In your opinion, does the degree program offer a good balance of lectures, seminars, conferences, and book exams?

yes no to some degree

a) General Studies

i) Do you feel that you have received enough guidance on academic writing?

yes no to some degree

ii) Do you feel that you have acquired sufficient knowledge on research skills (eg. quantitative and qualitative research methods)?

yes no to some degree

b) Courses

i) Have you had some special difficulties in completing some of the courses? Please specify.

ii) Has there been a sufficient variety of courses offered for your optional studies?

yes no to some degree

iii) Have you received enough guidance for the preparation of your thesis?

yes no to some degree

IV. Concluding Points

1. Did the degree program meet your expectations?

yes no to some degree

2. What aspects of the degree program do you particularly like?

3. What aspects of the degree program do you particularly dislike?

4. What are your suggestions on how to improve the program?

Thank you!