



جامعة بنها
كلية الطب البشرى
قسم / التشريح الادمي والاجنة

توصيف برنامج الدكتوراه / التشريح الادمي والاجنة
(عام 2013-2014)

*** معلومات أساسية :** Basic information

١ - اسم البرنامج : Doctorate of Anatomy & Embryology

٢ - طبيعة البرنامج : Multiple (مشترك)

٣ - الأقسام المسنولة عن البرنامج: قسم التشريح والاجنة ، وقسم الانسجة وقسم الكيمياء

٤ - القسم المانح للدرجة : قسم التشريح والاجنة

٤ - تاريخ إقرار البرنامج فى مجلس القسم : ٨ / ٩ / ٢٠١٣

٥ - تاريخ إقرار البرنامج فى مجلس الكلية ٣٥٦ : ١٥ / ٩ / ٢٠١٣

٦ - مسؤول البرنامج: Prof. Dr. Saadia Ahamed Shalaby

٧ - المراجعة الداخلية للبرنامج: Prof. Dr. Abd AlWnees Alawdan

٨ - المراجعة الخارجية للبرنامج: Prof. Dr. Mamdooh Al Ashtoky
(جامعة الزقازيق)

*** معلومات متخصصة:** Professional information

1- Program aims:

١ - الأهداف العامة للبرنامج :

The overall aims of the program are:

- To provide students with advanced & up-to-date knowledge & skills of anatomy and embryology and their related medical sciences.
- To enable students to correlate between the experimental embryology and the anatomy and congenital malformation.
- To enable the students to prepare the anatomical regional specimens



- for teaching injection techniques for freshly obtained bodies and how to prepare a museum jars.
- To offer lifelong learning competencies necessary for continuous professional development
 - To offer advanced skills necessary for delivery of research work in the field of Human anatomy and embryology.

٢ - المخرجات التعليمية المستهدفة من البرنامج :

2-Intended Learning Outcomes (ILOS):

2.a. Knowledge and Understanding : أ.2 - المعرفة والفهم :

On successful completion of the program, the graduate will be able to:

2.a. 1. Illustrate the detailed gross anatomy of different parts of human body, including the neuroanatomy.

2.a.2. Explain the development as a key to catch normal and abnormal anatomy.

2.a.3. Discuss the anatomical relations in different parts and regions of the human body.

2.a.4. Identify the terms and planes and movements of different parts and regions of human body.

2.a.5. Describe the morphology, location, vasculature and innervations different parts of human body.

2.a.6 . Describe the most recent important techniques of specimen preparation.

2.a.7. Know the details of surgical & applied anatomy.

2.a.8. Recognize the impact of fine structure of the anatomical components.

2.a.9. Discuss the measurements of different parts of human bodies .

2.a.10. Recognize the radiological anatomy to know the details of deeper structure .

2.a.11. Demonstrate the surface anatomy of the visible and deeper structures of the body.

2.a.12. Classify the body parameter in successive age advances to give a way for the study of the growth &development.



2.a.13.Categorize the teratogenic factors & their effects on the genetics and molecular biology.

2.a.14. Describe genetic map .

2.a.15.Explain the variations of human being .

2.b. Intellectual Skills:

2. ب - القدرات الذهنية :

On successful completion of the program, the graduate will be able to:

2.b.1. Interpret the results of radiological and surface anatomy.

2.b.2. Correlate between the developmental basis and its related anatomical facts including the teratogenic factors.

2.b.3 Appreciate the danger of the environmental factors on the development of body systems.

2.b.4. Formulate a systematic approach for different surgical incisions.

2.b.5. Correlate between the normal and abnormal gross structure in the different developmental ages.

2.b.6.Analyze the causes of genetic defects .

2.b.7.Interpret the developmental causes of nervous system .

2.b.8.Interpret the scientific knowledge to understand the vertebrate biology .

2.b.9.Combine the technical and investigational database to proficient in histological problem solving .

2.c. Practical and professional Skills: **ج . مهارات مهنية وعملية**

On successful completion of the program, the graduate will be able to:

2.c .1 Prepare the embryonic specimen, dissected regions of human



body and human organs

2.c.2. Prepare the histological sections to show the structural changes in vertebrate .

2.c.3 Process & stain the specific tissues specimen and report the immunological structures .

2.c .4. Perform anthropometric techniques & methods.

2.c.5. Write reports about different anatomical regions and on a radiographic films.

2.c.6 Perform a cross sectional anatomical specimens.

2.c.7 prepare the box slide for CNS specimens.

2.c.8 Prepare the museum specimen and recognize the molecular biology techniques .

2.2 . مهارات عامة و منتقلة:

2.d. General and transferable skills:-

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

2.d..1. Communicate effectively with teaching stuff and colleagues.

2.d..2. Demonstrate appropriate attitude towards teaching stuff and colleagues.

2.d.3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d.4. Present information clearly in written, electronic and oral forms.



2.d.5 .Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team

2.d.7. Establish life-long self-learning required for continuous professional development.

3- Academic Standards

٣ - المعايير الأكاديمية للبرنامج:

- Academic Standards of Doctorate Program of Anatomy & Embryology .
- Approved in department council : date / 6 / 2013

In faculty council no 354 : date 16 / 6 / 2013. (ملحق ١)

4- Reference standards (benchmarks)

4- العلامات المرجعية:

a) المعايير القياسية لبرامج الدراسات العليا (درجة الدكتوراه) الصادرة عن الهيئة القومية لجودة التعليم والإعتماد (مارس ٢٠٠٩)

Academic reference standards (ARS) , Doctorate Program (March 2009) , which were issued by the National Authority for Quality Assurance & Accreditation of Education (NAQAAE)

(ملحق ٢)

b) Academic reference standards of -----for example Oxford , (ملحق ٣)

(5): Program structure and contents

5 - هيكل ومكونات البرنامج :

أ - مدة البرنامج : سنتان ونصف السنة

Program duration

Two and half years to pass M.D. degree:

- 1st part: - One Semester .
- 2nd part: - Three Semesters
- Thesis: - Four Semesters .



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ب - هيكل البرنامج:

Program structure

- Total hours of program 60 credit hours
- Theoretical 22 تكتب عدد الساعات النظري.
- Practical 8 تكتب عدد الساعات العملي والاكلينيكي.

ج - هيكل البرنامج : درجة الدكتوراه في التشريخ الادمي والاجنة

المعمدة	الساعات	الكود	المقررات	البند
٦ ساعات		ويخصص له ٢٥% من الدرجة	مقررين من المقررات التالية:	الجزء الأول
	ANAT 701	Histology & techniques	الهستولوجيا	
	ANAT 702	Molecular Biology	البيولوجيا الجزيئية	
	ANAT 703	Bioanthropology	الأنثروبولوجيا البيولوجية	
	ANAT 704	Radiological anatomy	التشريح الأشعي	
	ANAT 705	Comparative anatomy	التشريح المقارن	
	ANAT 706	Advanced Neuroanatomy	التشريح العصبي (مستوي متقدم)	
	ANAT 707	Basic genetics	الوراثة الأساسية	
١٥ ساعة		وتجهيز عينات تشريحية للتدريس والتدريب علي أساليب التحنيط الحديثة	يسجل فيها الأنشطة العلمية من حضور مؤتمرات علمية ودورات تدريبية والمساهمة في تحضير عينات تشريحية للمتحف	كراسة الأنشطة
٢٤ ساعة	ANAT 708		مادة التشريح البشري شاملاً تشريح الجهاز العصبي والتشريح التطبيقي (الجراحي)	الجزء الثاني



رسالة الدكتوراه				١٥ ساعة
الإجمالي				٦٠ ساعة

6 - First part (one semester):

Course Title	Course Code	NO. of Teaching hours per week			Total teaching hours/ One Semester
		Theoretical	practical	Total/ W	
a-Compulsory courses : Advanced Neuroanatomy ويخصص له ٧٥% من الدرجة	ANAT 706	3	1	4	90hours
b-Elective courses : مقرر من المقررات التالية: ويخصص له 25% من الدرجة - Histology & techniques - Molecular Biology - Bioanthropology	ANAT 701 ANAT 702 ANAT 703	1	1	2.	60 hours



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- Radiological anatomy	ANAT 704			
- Comparative anatomy	ANAT 705			
- Basic genetics	ANAT 707			
Total:		4	2	6
				150hs

Second part (3 semesters)

a- Compulsory courses:

Course Title	Course Code	NO. of hours per week		Total
		Theoretical	Laboratory /practical	
Regional anatomy	ANT 708	18	6	24
Total		270	270	540

b- Elective courses: none

c- Selective: none

6 - متطلبات الإلتحاق بالبرنامج : Program admission requirements

مادة (٢٣) : يشترط لقيد الطالب لدرجة الدكتوراه في الطب أو الجراحة أو العلوم الطبية الأساسية أن يكون حاصلًا على درجة الماجستير في مادة التخصص بتقدير جيد على الأقل من إحدى جامعات ج . م . ع أو على درجة معادلة لها من معهد علمي آخر معترف به من الجامعة .

☒ مدة الدراسة لنيل الدكتوراه سنتان ونصف خمسة فصول دراسية موزعة كالآتي :



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- يشترط للتسجيل الحصول علي الماجستير بتقدير جيد ويكون مدة الدراسة خمسة فصول دراسية (سنتان ونصف) مقسمة علي ستة وستين ساعة معتمدة تبدأ عند بدء التسجيل للدرجة يكون للجزء الأول المحتوي علي العلوم الأساسية ست ساعات وللجزء الثاني خمسة وأربعون ساعة منها ثلاثون ساعة تدريب عملي ونظري وخمسة عشر لكراسة الأنشطة ويكون هناك مقررات أساسية وأخري إختبارية.

- وتسجل رسالة الدكتوراه المقدر لها خمسة عشر ساعة معتمدة إبتداء من الفصل الدراسي الثاني لمدة أربعة فصول دراسية (سنتان) وتناقش عند الإنتهاء منها أي بعد عامين من التسجيل بشرط نجاح الطالب في الجزء الثاني وتمنح درجة دكتوراه الفلسفة بعد مناقشة الرسالة وإجتياز الإمتحان الشامل ويكون التقدم للتسجيل مرتين سنوياً خلال شهري مارس وأكتوبر من كل عام.



- جزء أول : علوم أساسية ٠ فصل دراسي (٦ ساعات معتمدة) ومن يرسب يعيد مادة الرسوب فقط .
- الجزء الثاني : ثلاث فصول دراسية (٤٥) ساعة معتمدة يستوفى خلالها الطالب الساعات المعتمدة منها ثلاثون ساعة تدريب عملي ونظري وخمسة عشر لكراسة الأنشطة



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ويكون هناك مقررات أساسية وأخرى إختبارية. ثم يسمح له بالتقدم لامتحان التحريري وإذا اجتاز الامتحان التحريري بنجاح يحق له التقدم الى الامتحان الشفهي والعملي والإكلينيكي خلال شهر من تاريخ الامتحان التحريري .

• رسالة (١٥ ساعة معتمدة)

تبدأ الدراسة عند بداية التسجيل تنتهي بامتحان شامل في نهاية كل أربع فصول دراسية بعد اجتياز الطالب امتحانات الجزء الأول بنجاح يسمح له بتسجيل رسالة لمدة أربعة فصول دراسية تبدأ عند بداية الفصل الدراسي الثاني وتناقش بعد مرور عامين على الأقل من تاريخ تسجيل الرسالة على أن تكون المناقشة بعد ستة اشهر على الأقل مع اجتياز الامتحان التحريري والإكلينيكية والشفهي (الامتحان الشامل).

يمنح الطالب الدرجة بعد مناقشة الرسالة واجتياز الامتحان الشامل .

• يكون التقدم للقيود لدرجة الدكتوراه مرتين في السنة خلال شهرى مارس وأكتوبر من كل عام

٧- القواعد المنظمة لإستكمال البرنامج :

مادة (٢٤) : يشترط في الطالب لنيل درجة الدكتوراه في الطب أو الجراحة أو العلوم الطبية الأساسية ما يلي :

- ✍ حضور المقررات الدراسية بصفة مرضية طبقا للساعات المعتمدة .
- ✍ أن يقوم ببحث في موضوع تقره الجامعة بعد موافقة مجلس الكلية والقسم لمدة سنتان على الأقل.
- ✍ أن يتقدم بنتائج البحث في رسالة تقبلها لجنة الحكم بعد مناقشة علنية للرسالة .
- ✍ اجتياز الطالب ثلاث دورات في الحاسب الآلي (دورة في مقدمة الحاسب الآلي – دورة تدريبية " متوسطة " – دورة في تطبيقات الحاسب الآلي) ، وذلك قبل مناقشة الرسالة .
- ✍ اجتياز الطالب اختبار التوفيل بمستوى لا يقل عن ٥٠٠ وحدة وذلك قبل مناقشة الرسالة .
- ✍ أن يجتاز بنجاح الاختبارات التحريرية والإكلينيكية والشفهية المقررة وفقا لما هو مبين باللائحة.



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- مادة (٢٥) : على الطالب أن يقيد اسمه للامتحان قبل موعده بشهر على الأقل.
- مادة (٢٦) : يشترط لنجاح الطالب في امتحان الدكتوراه الحصول على الحد الأدنى للنجاح في جميع الاختبارات المقررة وفي كل جزء من أجزاءها على حدة ذلك بأخذ المتوسط لتقديرات أعضاء اللجنة اذا رسب الطالب في أى مقرر من المقررات بعد الامتحان في جميع المقررات.
- مادة (٢٧) : يعقد الامتحان التحريري لدرجة الدكتوراه في شهرى نوفمبر ومايو من كل عام - لمن يجتاز الامتحان التحريري في نفس الدور يتقدم الامتحان الشفهي والاكلينيكى والعملى.
- مادة (٢٨) : لا يجوز للطالب أن يبقى مقيدا لدرجة الدكتوراه لأكثر من أربع سنوات دون أن يتقدم لمناقشة الرسالة ويجوز لمجلس الكلية أن يعطى الطالب مهلة لمدة سنتين في حالة قبول العذر.
- مادة (٢٩) : تضاف درجات التحريرى ووصف الحالة لبعضها ويعتبر النجاح والرسوب فى المجموع الكلى للتحريرى (٦٠% على الاقل من الدرجة للتحريرى) ومن ينجح فى الامتحان التحريرى يصرح له بدخول باقى الامتحانات الإكلينيكية والشفوية والعملية وعدد الرسوب يعيد الطالب الامتحان الشفوى والاكلينيكى .
لا يحق للطالب التقدم للامتحان التحريرى أكثر من أربع مرات .
- مادة (٣٠) : تبين فى شهادة الدكتوراة موضوع الرسالة والمادة أو المواد الاختيارية.
- مادة (٣١) : تبين الجداول فى الباب الخامس المقررات الدراسية التى تدرس لنيل درجة الدكتوراه طبقا للساعات المعتمدة الاختبارات التحريرية والإكلينيكية والشفوية .



8 - طرق وقواعد تقييم الملحقين بالبرنامج :

8- Students Assessment Methods:

م	الوسيلة	مخرجات التعلم المستهدفة
1	Written examination	To assess knowledge , understanding & intellectual skills.2.a.1.....2.a.15., 2.b.1.....2.b.9.
2	Oral examination	To assess knowledge, understanding , intellectual skills & General & transferable skills 2.a.1.....2.a.15, 2.b.1.....2.b.9 &2.d.1.....2.d.7.
3	Practical examination	To assess practical skills, knowledge, understanding , intellectual skills & General & transferable skills 2.a.1.....2.a.15., 2.b.1.....2.b.9. 2.c.1.....2.c.8, &2.d.1.....2.d.7

9-Final examination

-First part:

إجمالي	الدرجة			الاختبار	المقرر
	عملي	شفهي	تحريري		
225	75	50	100	اختبار تحريري مدته ٢ ساعة + اختبار شفهي+ عملي	a- Advanced Neuroanatomy



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75	25	10	40	اختبار تحريري مدته ساعة واحدة + اختبار شفهي+عملي	b-Elective courses: مقرر واحد من المقررات التالية: Histology Molecular Biology Bioanthrobology Radiological anatomy Comparative anatomy Basic genetics
300	100	60	140		Total

Second part (one compulsory course)

إجمالي	الدرجة			الاختبار	المقرر
	عملي+logbook	شفهي	تحريري		
٧٠٠	٢٥٠	١٠٠	١٧٥ ورقة اولي + ١٧٥ ورقة ثانية	اختباران تحريريان مدة كل منهما ثلاث ساعات+ اختبار شفهي + اختبار عملي	التشريح البشري
٧٠٠	إجمالي الدرجة				



١٠- طرق تقويم البرنامج :

10- Evaluation of Program:

Evaluator	Tools	sample
Internal evaluator (s) مقيّم داخلي	Focus group discussion Meetings	1-2 report
External Evaluator (s) مقيّم خارجي	Reviewing according to external evaluator checklist report.	1-2 report
Senior student (s) طلاب السنة النهائية	questionnaires	50%
Alumni الخريجون	questionnaires	50%
Stakeholder (s) أصحاب العمل	questionnaires	<u>Represent all sectors</u>
Others طرق أخرى		

Program Coordinator: Prof. Dr. Saadia Ahamed Shalaby

Signature Saadia Ahamed Shalaby

Date 9/2013



توصيف المقررات

Program courses

First part	
1- Advanced Neuroanatomy = ANAT 706	
2- Histology,techniques = ANAT 701	
3- Molecular Biology = ANAT 702	
4- Bioanthropology = ANAT 703	
5- Radiological anatomy = ANAT 704	
6- Comparative anatomy = ANAT 705	
7- Basic genetics = ANAT 707	
Second part	
Regional anatomy = ANAT 706 :General anatomy , General Embryology ,Systemic Embryology , Head &Neck ,Related neuroanatomy ,Thorax ,Abdomen ,Pelvis ,Upper limb &Lower limb	



توصيف مقرر/ الدكتوراه في التشريح الادمي والاجنة

Benha University

Faculty of Medicine

Department of Human Anatomy & Embryology

Course Specification

Course title: Advanced Neuroanatomy

(Code): ANAT 706

Academic Year (2013 – 2014)

A) Basic Information:

- **Department offering the course:** Anatomy & Embryology
- **Academic level:** First part of M.D.
- **Date of specification approval:** Department council, date **9 / 2013**
- **Allocated marks:** 225marks
- **Course duration:** **15** weeks
- **Teaching hours:** -

	Hours / week	Total hours
1-Tutorial, Small group teaching	3hs/week	45hs
2- practical	1hs/week	45hs
Total	4hs/week	90hs

B) Professional information :

1- Overall Aims of the Program:

- **To provide advanced & up-to-date knowledge & skills of advanced neuroanatomy and their related medical sciences.**



- To correlate between normal neuroanatomy and their congenital malformation.
- To prepare the nervous specimens for teaching injection techniques and how to prepare a museum jars.
- To offer life-long learning competencies necessary for continuous professional development
- To offer advanced skills necessary for delivery of research work in the field of Human neuroanatomy .

2-Intended Learning Outcomes (ILOS):

2.a. Knowledge and Understanding:

By the end of the course the student should be able to:

2.a.1. Illustrate the detailed gross anatomy of different parts of nervous system .

2.a.2 Describe the development of nervous system as a key to catch the abnormal nervous system.

2.a.3 Explain the anatomical relations in different parts of the nervous system .

2.a. 4 Identify the terms of different parts of nervous system.

2.a.5 Describe the morphology , location and vasculature of different parts of nervous system.

2.a.6 Explain the different variations of nervous system to give an idea for the clinical application of anatomical facts.

2.a.7 Describe different techniques of the different specimen's preparation.



2.a.8 discuss the details of surgical & applied anatomy in neuroanatomy

2.a.9 Outline the impact of fine structure of the different parts of the nervous system .

2.a.10 Describe the morphometry of the brain and spinal cord.

2.a.11 Illustrate the radiological anatomy to know structure of deeper details.

2.a.12 Describe the surface anatomy of the important parts in the brain.

2.a.13 Illustrate the body parameter in successive age advances to give a way for the study of the growth &development brain and spinal cord .

2.a.14 Highlight the teratogenic factors & their effects on the different parts of nervous system.

2.b. Intellectual Skills:-

By the end of the course the student should be able to:

2.b.1. Interpret results of radiological and surface anatomy.

2.b.2. Interpret the developmental causes of anomalies of nervous system.

2.b.3 Evaluate the danger of environmental factors on the development of brain and spinal cord.

2.b.4. Design a systematic approach for the different surgical incisions.

2.b.5. Evaluate according to developmental base the correlation between the normal and abnormal gross structure.



2.c. Practical & Clinical Skills:-

By the end of the course the student should be able to:

2.c .1 Prepare the embryonic specimen, dissected parts of the brain and spinal cord

2.c ..2. Prepare the age related embryos by using serial sections.

2.3.3 Process & stain the different parts of nervous system.

2.c.4. Write detailed reports on the different radiographic films from anatomical point of view.

2.c.5. Perform a cross sectional anatomical specimens of the brain and spinal cord .

2.c.6. Prepare the box slide for different CNS specimens.

2.c.7 Prepare the different museum specimen and models by casting & die injection.

2.d. General and transferable skills:-

By the end of the course the student should be able to:

2.d..1. Communicate effectively with teaching stuff and colleagues.

2.d.2. Demonstrate appropriate attitude towards teaching stuff and colleagues.

2.d..3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d..4. Present information clearly in written, electronic and oral forms.

2d.5. Establish effective interpersonal relationship to Communicate ideas and arguments.



2.d. 6. Work effectively as a member or a leader of an interdisciplinary team.

2.d.7. Establish life-long self-learning required for continuous professional development.

3- Course contents:

<i>Subject</i>	<i>Tutorial / Small group discussion (hrs)</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1-Introduction , neurons , meninges , subarachnoid space ,C.S.F.	3	3	6	6.7%
2-Vertebral canal , intervertebral foramen , spinal cord , spinal meninges ,internal structures of spinal cord	6	3	9	10%
3-Gross features of brain stem , internal structure ,	6	3	9	10%
4-Cerebellum ,4 th ventricle , internal structure	6	4	10	11.1%
5-Insula ,limbic system , olfactory pathway	3	3	6	6.7%
6-Diencephalon ,3 rd ventricle, internal structure	3	6	9	10%
7-Cerebrum :gross anatomy , lateral ventricle , internal structure of cerebrum	6	6	12	13.4%
8-Blood supply of the brain and spinal cord	3	3	6	6.7%



9-Functional components of peripheral nerves		3	3	6	6.7%
10-Tractology		3	6	9	10%
11-Autonomic nervous system		3	5	8	8.9%
TOTAL		45	45	90	100%

4- Teaching and learning methods:

METHODS USED:

1. Small group discussions: Seminars
2. Problem solving.
3. Practical sessions

TEACHING PLAN:

Item	Time schedule	Teaching hours
-Small group teaching	<u>3hs</u> /week	45hs
-practical	<u>1hs</u> /week	45hs
Total	4hs /week	90hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty bylaws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge ,understanding, intellectual skills



Oral examination practical	To assess knowledge ,understanding, intellectual skills, practical, attitude and presentation.
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5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
Final exam:		
a -Written	100	44.4 %
b- Oral	50	22.2%
c- Practical &Log book	75	33.4%
Total	225	100%

FORMATIVE ASSESSMENT:

5-E) Examinassions description:

Examination	Description
Final exam:	
a- Written	Short QS, clinical cases , filling spaces , cross matching , true and false , MCQS.
b- Oral	Many sessions
6- Assignments & other activities	e.g. Assignments, projects, etc



6- List of references:

6.1. Basic materials:

6.1.2. Museum and Practical books.

6.2. Essential books (text books):

Standring, S.; Borley, N.R.; Collins, P.; Crossman, A.R.; Gatzoulis, M.A.; Healy, J.C.; Johnson, D.; Mahadevan, V. and Wigley, C.B. (2008): Gray's anatomy, 40th ed., Churchill Livingstone, Edinburg, London

6.3. Recommended books:

Chummy, S.S. (2012): Last's Anatomy, Regional and applied. Pub. Churchill Livingstone, Edinburgh, London, New York. 10th ed.,

6.4. Periodicals, Web sites, etc:

6.4.1. <http://www.medscape.com>.

6.4.2. <http://www.pubmed.com>.

6.4.3. <http://master.emedicine.com/maint/cme.asp>.

6.4.4. <http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof. Dr./Saadia Ahmed Shalaby

Head of department Prof. Dr./ESSAM MOHAMED EID

Date: 8/ 9/ 2013



Benha University

Faculty of Medicine

Department of Human Anatomy and Embryology

Course Specifications

Course title: *Histology & Techniques*

(Code): ANAT 701

Academic Year (2013 – 2014)

A) Basic Information:

- Department offering the course: Histology & Cell Biology
- Academic year of doctorate program of anatomy : 2013-2014
- Date of specification approval: Department council, date 8 / 9 / 2013
- Allocated marks: 75 marks
- Course duration: 15 weeks of teaching
- Teaching hours:

methods	Hours / week	Total hours
1- Lectures/ small group discussion	1 h/week	15 h
2- Practical	1h/week	45 h
Total	2 h/week	60 h

B) Professional Information:

1- Overall Aim of the Course:

- To provide the scientific knowledge essential to practice Histology & dealing with tissue processing & imaging procedures by light & electron microcopies.



- To provide the scientific knowledge essential for establishing & maintaining good researchers.
- Advanced scientific knowledge essential for following the rules of medical ethics.
- Diagnostic, problem solving and decision making as well as communication skills necessary for proper evaluation and management of health problems & researches.
- Life- long learning competencies necessary for continuous professional development.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

By the end of the course, the student should be able to:

- 2.a.1. Describe** the normal fine structure and function of the human body cells at the level of its organ & system .
- 2.a.2. Describe** the normal growth and development of the human body cells & its impact on cellular function.
- 2.a. 3. Identify** the cell signaling & altered cell behavior.
- 2.a.4. Describe** the altered development, growth, structure and function of the body and mind that will be associated with common clinical conditions.

2.b. Intellectual skills:

By the end of the course, the student should be able to:

- 2.b.1. Combine** the technical and investigational database to be proficient in histological problem solving.
- 2.b.2. Generate** a list of initial technical hypotheses for each problem.
- 2.b.3 Analyzes** all sources of information to Interpret and evaluate the tissue samples

2.c. Professional and practical skills:

By the end of the course, student should be able to:

- 2.c.1.** Adopt an empathic and holistic approach to the researches and their problems.



2.c.2 Demonstrate the more recent in researches in stem cells.

2.c.3 identify histological features under microscopes

2.d. General and transferable skills:

By the end of the course, the student should be able to:

2.d..1. Establish life-long self-learning required for continuous professional development.

2.d..2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d..3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d..4. Present information clearly in written, electronic and oral forms.

2.d..5.Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team .

2-Course contents:

<i>Subject</i>	<i>Lecture/Tutorial / Small group discussion (hrs)</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1-Epithelial tissue: -Properties of epithelium , Types of epithelium Examples and sites of each type ,Functional importance , Modification of epithelial cell surfaces	2	7	9	15%
2- Connective tissue: -General character of connective tissue proper , constituents of CT , structure , types and staining properties of CT fibers , Types of connective tissue proper and site of each	3	8	11	18.3%
3- Cartilage : -Histological features of cartilage cells, fibers & matrix. -Types of cartilage and their specific histological features.	1	4	5	11.7%



4-Bone : -General microscopic features of bone and how it can be studied histologically ,Types , Bone cells , Intercellular substance of bone ,The development and ossification	3	8	11	18.3%
5-Muscle tissue: -General character and types ,skeletal muscle ,cardiac musle &smooth muscle - Comparative study of three types of muscles. - Growth and regenerative ability of muscular tissue	2	6	8	13.3%
6-Nervous tissue : -Structure of neuron (LM&EM), Types of nerve cells , Types and structure of nerve fibers ,Organization of nerve fibers , Nerve ganglia , Synapses, Degeneration and regeneration of neurons , stain used to study nervous tissue including those of degeneration Neuroglia ,Types and structure of nerve endings	2	6	8	13.3%
7-Blood : -Red blood corpuscles , granular leucocytes, non- granular leucocytes Differential leucocytic count , Blood platelets, Haemopoiesis, myeloid	2	6	8	13.3%
TOTAL	15	45	60	100%

4- Teaching and learning methods:

METHODS USED:

- 4.a .Lectures
- 4.b.Small group discussions: demonstration (slides photographs and video films).
- 4.c.Tutorials.
- 4.d.Practical classes.
- 4.e.Seminars.



TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	<u>1 h</u> /week;	15hs
Practical	<u>1</u> hours / <u> </u> week	45hs
Total	2 hours/week	60hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty by laws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge acquisition
Oral examination	To assess understanding and stability of knowledge given, attitude and presentation.
Practical examination	To assess practical skills.

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
a -Written	40	53.3%
b- Practical	25	33.3%
c- Oral	10	13.4%
Total	75	100%

5-E) Examinassions description:

Examination	Description
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1- Final exam:	
a- Written	MCQs, Short essay
b- Practical	Do, identify
c- Oral	One session of 2 staff members
Total	—

6- List of references:

6.a. Basic materials:

1. Junqueira Basic Histology. (2004)
2. Wheater's functional Histology (2005)

6.b.2 Essential books (text books):

-Gartner &Hiatt Atlas Histology (2000)

6.c. Recommended books:

-Mechiel ross text of histology (2000)

6.d. Periodicals, Web sites, etc:

6.d.1.<http://www.medscape.com>.

6.d.2.<http://www.pubmed.com>.

6.d.3.<http://master.emedicine.com/maint/cme.asp>.

6.d.4.<http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof. Dr./ Mohamed Magdi Zaky

Head of Department: Prof Dr./ Omuma Mohammed

Date: 8 / 9 /2013.



Benha University

Faculty of Medicine

Department of Human Anatomy and Embryology

Course Specification

Course title: Molecular Biology

(Code): ANAT 702

Academic Year (2013– 2014)

A) Basic Information:

- Department offering the course: - Medical Biochemistry
- Academic year of MD program of anatomy: 2013_ 2014.
- Date of specification approval: Department council, date 8 / 9 / 2013
- Allocated marks: 75 marks
- Course duration:15 weeks of teaching
- Teaching hours: -

method	Hours / week	Total hours
1- Lectures/ small group discussion	1hs /week	15hs
2- Practical	1hs /week	45hs
Total	2hs /week	60hs

B) Professional Information:

1- Overall Aim of the Course:

By the end of the course, the student should be able to:

- To provide the advanced scientific knowledge essential to practice



Cell Biology dealing with tissue processing

- To provide the advanced scientific knowledge essential for establishing & maintaining good researchers.
- To make student aware with basic principles of molecular biology
- To enable the students familiar with biotechnology methods and their clinical application.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

By the end of the course, the student should be able to:

- 2.a.1. Describe the normal structure and function of the human body cells on the molecular level.
- 2.a.2 Point out the process of replication, Transcription, translation
- 2.a.3. Describe the component , regulation and abnormality of cell cycle
- 2.a. 4. Identify the cell signaling & altered cell behavior.
- 2.a.5. Explain the genetic code ,recombinant of DNA boitechniques associated with clinical implication
- 2.a.6.Describe principals of gene

2.b.Intellectual skills:

-By the end of the course, the student should be able to:

- 2.b.1. Analyze the causes and consequences of genetic defect.
- 2.b.2. Interpret the photographs of electrophoresis
- 2.b.3 Evaluate the DNA technology



2.c. Professional and practical skills:

By the end of the course, the student should be able to:

2.c.1. Apply the molecular biology techniques.

2.c.2. Interpret results of DNA electrophoresis .

2.c.3 Practice basics of safety in laboratory.

2.d. General and transferable skills:

By the end of the course, the student should be able to:

2.d.1. Establish life-long self-learning required for continuous professional development.

2.d.2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d.3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d.4. Present information clearly in written, electronic and oral forms.

2.d.5. Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team .



3- Course contents:

Subject	Lecture/Tutorial / Small group discussion (hrs)	Practical/ (hrs)	Total (hrs)	% of Total
1Nucleotides and nucleic acid chemistry	2	6	8	13%
2-Cell cycle :regulatory factors, Apoptosis, Oncogenes and Carcinogenesis	2	6	8	13%
3-DNA replication, Mutations and Repair telomere, telomerase	2	6`	8	13%
4- Gene Expression and Transcription	2	6	8	13%
5- Protein Synthesis and Modification	2	6	8	13%
6-Recombination DNA Technology	2	6	8	13%
7-Gene Therapy, Human genome	3	9	12	23.3%
TOTAL	15	45	60	100%

4- Teaching and learning methods:

METHODS USED:

- Small group discussions: Museum specimens, demonstration (slides photographs and video films), models and case study.
- Tutorials.
- Practical classes.
- Seminars.



TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	1 h /week;	15hs
Practical	1hours / week	45hs
Total	2hours/week	60

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty by laws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge and understanding, intellectual skills
Oral examination	To assess knowledge and understanding and intellectual skills, attitude and presentation.
Practical examination	To assess practical skills, knowledge and understanding, intellectual skills.

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September



5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
a-Written	40	53.3%
b- Practical	25	33.3%
c- Oral	10	13.4%
Total	75	100%

5-FORMATIVE ASSESSMENT:

5-E) Examinassions description:

Examination	Description
1- Final exam:	
a- Written	Short QS., clinical cases ,filling spaces ,cross matching ,true &false ,MCQS.
b- Practical	e.g. Do, identify
c- Oral	e.g. many sessions
Total	-

6- List of references:

6.a . (text books):

6.a.1. DM Vasudevan and Sreekumari (2007): Text boock of biochemistery for medical student 5 th edition.

6.b. Recommended books:

6.b.1. *Pamela Richard Havey and Denise Ferrier (2010):Lippinchot's illustrated Biochemistery,29 th ed.*

6.c. Periodicals, Web sites, etc:



6.c.1.<http://www.medscape.com>.

6.c.2.<http://www.pubmed.com>.

6.c.3.<http://master.emedicine.com/maint/cme.asp>.

6.c.4.<http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof Dr. /Amal Idrees

Head of Department: Prof Dr. Amal abo el Fadel

Date : 8 / 9 / 2013



Benha University

Faculty of Medicine

Department of Human Anatomy and Embryology

Course Specifications

Course title: *Bioanthropology*

(Code): ANAT 703

Academic Year (2013 – 2014)

A) Basic Information:

- Department offering the course: Anatomy & Embryology
- Academic year of doctorate program of anatomy : 2013 - 2014
- Date of specification approval: Department council, date 8 / 9 / 2013
- Allocated marks: 75 marks
- Course duration: 15 weeks of teaching
- Teaching hours:-

method	Hours / week	Total hours
1- Lectures/ small group discussion	1 h/week	15 h
2- Practical	1h/week	45 h
Total	2 h/week	60 h

B) Professional Information:

1- Overall Aim of the Course:

By the end of the course, the student should be able to:

- To provide the scientific knowledge essential to know the Origin of species, Stage of Morphological Growth , Human adjustment , Human adaptation and Distribution of variability.
- To provide the scientific knowledge essential I for establishing &



- maintaining good researchers.
- Advanced scientific knowledge essential for following the rules of medical ethics.
- Diagnostic, problem solving and decision making as well as communication skills necessary for proper evaluation and management of health problems &researches.
- Life- long learning competencies necessary for continuous professional development.
- Research education as related to medical practice &more advanced scientific researches.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

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

2.a.1. Describe the genetic population , genetic equilibrium ,mutations ,gene flow and mating

2.a.2. Explain the factors affecting the differential fertility rates.

2.a.3. Describe the normal growth and development of the human body

2.a. 4. Explain the stages of morphological Growth

2.a.5.Outline the human adjustment ,Human adaptation and Distribution of variability

2.b.Intellectual skills:

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

2.b.1. Combine the technical and investigational database to be proficient in anthropological problem solving.

2.b.2. Generate a list of initial technical hypotheses for each problem.

2.b.3. Analyzes all sources of information to Interpret and evaluate the Variations of human being.

2.c. Professional and practical skills:

By the end of the course, the student should be able to:



2.c.1. identify human ages and variability

2.c .2 Demonstrate the more recent in researches in competition& extinction.

2.c.3 Adopt an empathic and holistic approach to the researches and their problems.

2.d. General and transferable skills:

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

2.d..1. Establish life-long self-learning required for continuous professional development.

2.d..2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d..3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d..4. Present information clearly in written, electronic and oral forms.

2.d..5.Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team .

2.d.7. Apply the principles of statistical methods for collection,

4- Course contents:

<i>Subject</i>	<i>Lecture/Tutorial / Small group discussion (hrs)</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
Definition , objectives , Aims , Branches ,Methods &Application .	1	2	3	5%



Origin of species: -Genetic of population , genetic equilibrium - mutations -gene flow -mating - Amish. Factor affecting: differential fertility rates. Isolation: geographic, temporal &reproductive. Preadaptation , specialization , competition& extinction. Natural selection: variability , environment & habitat.	4	8	12	20%
Nature of human growth &development.	2	5	7	11.7%
Stage of Morphological Growth	3	5	8	13.3%
Pre-Adult Age Determination	1	4	5	8.3%
Secular Trend in Growth & Development	1	6	7	11.7%
Human adjustment.	1	5	6	10%
Human adaptation.	1	6	7	11.7%
Distribution of variability	1	4	5	8.3%
TOTAL	15	45	60	100%

4- Teaching and learning methods:

METHODS USED:

4.a .Lectures

4.b.Small group discussions: demonstration (slides ,photographs and video).

4.c.Tutorials.

4.d.Practical classes.

4.e.Seminars.



TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	<u>1 h</u> /week	15hs
Practical	<u>1 hours</u> / week	45hs
Total	2 hours/week	60hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty by laws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge and understanding, intellectual skills
Oral examination	To assess knowledge and understanding, intellectual skills, attitude and presentation.
Practical examination	To assess practical skills, knowledge and understanding, intellectual skills

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
a -Written	40	53.3%
b- Practical	25	33.3%
c- Oral	10	13.4%
Total	75	100%

FORMATIVE ASSESSMENT:



5-E) Examinassions description:

Examination	Description
1- Final exam: a- Written b- Practical c- Oral	MCQs, Short essay Do, identify One session of 2 staff members
Total	—

6- List of references:

6.a. Basic materials:

- 6.a.1- Introduction to Physical Anthropology. Belmont, CA: Cengage Learning (2013)
6.a. 2- *Human Biodiversity: Genes, Race, and History*. New York: Aldine de Gruyter. (1995)
6.a.3-Plain Statements About Race”, *Science*, 83:511–513.

6.b. Essential books (text books):

- 1- *Human Heredity*, [Eden Paul](#) and [Cedar Paul](#), translators. New York: Macmillan,
2- The New Physical Anthropology”, *Transactions of the New York Academy of Sciences*, Series II, 13:298–304.

6.c. Recommended books:

- 6.c.1- Remodelling the Human Way of Life: Sherwood Washburn and the New Physical Anthropology, in *Bones, Bodies, Behavior:(1988)*
6.c.2-*Biological Anthropology*, of the *History of Anthropology*, v.5, G. Stocking, ed., Madison, Wisc., University of Wisconsin Press, pp. 206–259

6.d. Periodicals, Web sites, etc:

- 6.d.1.<http://www.medscape.com>.
6.d.2.<http://www.pubmed.com>.
6.d.3.<http://master.emedicine.com/maint/cme.asp>.
6.d.4.<http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof. Dr./ Saadia Ahamed Shalaby

Head of Department: Prof Dr./ Essam Mohamed Eid

Date: 8 / 9 /2013.



Benha University

Faculty of Medicine

Department of Human Anatomy and Embryology

Course Specifications

Course title: *Radiological Anatomy*

(Code): ANAT 704

Academic Year (2013 – 2014)

A) Basic Information:

- Department offering the course: Anatomy & Embryology
- Academic year of doctorate program of anatomy : 2013-2014
- Date of specification approval: Department council, date 8 / 9 / 2013
- Allocated marks: 75 marks
- Course duration: 15 weeks of teaching
- Teaching hours: 2hours/week

method	Hours / week	Total hours
1- Lectures/ small group discussion	1 h/week	15 h
2- Practical	1h/week	45 h
Total	2 h/week	60 h

B) Professional Information:

1- Overall Aim of the Course:

By the end of the course, the student should be able to:

- To provide the scientific knowledge essential to interpret the anatomical structures in the radiological images .
- To provide the scientific knowledge essential I for establishing & maintaining good researchers.



- Diagnostic, problem solving and decision making as well as communication skills necessary for proper evaluation and management of health problems &researches.
- Appropriate ethical and professional education necessary for demonstrating appropriate attitudes with students and colleagues.
- Life- long learning competencies necessary for continuous professional development.
- Research education as related to medical practice &more advanced scientific researches.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

By the end of the course, the student should be able to:

- 2.a.1. Describe the radiological films in all body systems**
- 2.a.2. Identify the radiolucent and opaque structures in radiological films .**
- 2.a.3. Describe the normal anatomical structures through the radiographs.**
- 2.a.5.Outline the anatomical structures in different directions of radiographic films**

2.b.Intellectual skills:

By the end of the course, the student should be able to:

- 2.b.1. Combine** the technical and investigational database to be proficient in radiological problem solving.
- 2.b.2. Generate** a list of initial technical hypotheses for each problem.
- 2.b.3 Analyzes** all sources of information to Interpret and evaluate the variations of human being.
- 2.b. 4. Differentiate** between the normal and abnormal anatomical structures in radiographs.

2.c. Professional and practical skills:

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

- 2.c.1. read radiological films**



2.c .2 Adopt an empathic and holistic approach to the researches and their problems.

2.c.6. Conduct counseling sessions for more advances in researches.

2.d. General and transferable skills:

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

2.d..1. Establish life-long self-learning required for continuous professional development.

2.d..2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d..3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d..4. Present information clearly in written, electronic and oral forms.

2.d..5.Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team .

1- Course contents:

<i>Subject</i>	<i>Lecture/Tutorial / Small group discussion (hrs)</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1-Introduction to radiological anatomy	1	2	3	5%
2-Radiology of the Skull and Brain	2	8	10	16.7%
3-Radiology of the Vertebral column & Spinal cord	1	5	6	10 %
4-Radiology of Thorax	2	5	7	11.7%
5-Radiology of Abdomen	2	4	6	10 %
6-Radiology of Pelvis , Neonatology	2	6	8	13.3%
7-Radiology of upper limb	2	5	7	11.7%
8-Radiology of lower limb	2	6	8	13.3%
9-Radiology of breast & Endocrine glands	1	4	5	8.3%



TOTAL	15	45	60	100%
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4- Teaching and learning methods:

METHODS USED:

- 4.a .Lectures
- 4.b.Small group discussions: demonstration (slides ,radiographs and video films).
- 4.c.Tutorials.
- 4.d.Practical classes.
- 4.e.Seminars.

TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	<u>1 h</u> /week	15hs
Practical	<u>1 hours</u> / week	45hs
Total	<u>2 hours</u> /week	60hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty by laws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge and understanding, intellectual skills
Oral examination	To assess knowledge and understanding, intellectual skills, attitude and presentation.
Practical examination	To assess practical skills, knowledge and understanding, intellectual skills

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September



5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
a -Written	40	53.3%
b- Practical	25	33.3%
c- Oral	10	13.4%
Total	75	100%

FORMATIVE ASSESSMENT:

5-E) Examinassions description:

Examination	Description
1- Final exam: a- Written b- Practical c- Oral	MCQs, Short essay Do, identify One session of 2 staff members
Total	—

6- List of references:

6.a. Basic materials:

6.a.1-Applied Radiological Anatomy 3.8 out of 5 stars (4 ... Any rental and extension fees paid will be applied towards the buyout price of the book. Textbook Rental FAQ
6.a.2-An Atlas of Radiological Anatomy on Amazon.com. *FREE* shipping on qualifying offers.

6.b. Essential books (text books):

6.b.1-Clinical and Radiological Anatomy of the Lumbar Spine 5e continues to offer practical, comprehensive coverage of the subject area in a unique single volume ..

6.b.2-Applied Radiological Anatomy for Medical Students, first published in 2007, is the definitive atlas of human anatomy, utilizing the complete range of imaging ..

6.c. Recommended books:

6.c.1-Imaging Atlas of Human Anatomy. Book, February 2010, ... Netter's Concise Radiologic Anatomy. Book, February 2014, by Weber Notes on Anatomy and Oncology.

6.c.2-Applied Radiological Anatomy is an exhaustive yet practical imaging ...



6.d. Periodicals, Web sites, etc:

6.d.1.<http://www.medscape.com>.

6.d.2.<http://www.pubmed.com>.

6.d.3.<http://master.emedicine.com/maint/cme.asp>.

6.d.4.<http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof. Dr./ Saadia Ahamed Shalaby

Head of Department: Prof Dr./ Essam Mohamed Eid

Date: 8 / 9 /2013.



Benha University

Faculty of Medicine

Department of Human Anatomy and Embryology

Course Specifications

Course title: *Comparative Anatomy*

(Code): ANAT 705

Academic Year (2013 – 2014)

A) Basic Information:

- **Department offering the course:** Anatomy & Embryology
- **Academic level:** First part.
- **Date of specification approval:**
 - Department council, date **8 / 9 / 2013**
- **Allocated marks:** 75marks
- **Course duration:** **15** weeks
- **Teaching hours:** -

method	Hours / week	Total hours
1`- Small group teaching	1hs/week	15h
2- Practical	1h/week	45/hs
Total	2 hs/week	60hs

B) Professional information :

1- Overall Aims of the Program:

- **To provide the students with advanced & up-to-date knowledge & skills of comparative anatomy.**



- To enable students to correlate between vertebrates and non vertebrates .
- To offer life-long learning competencies necessary for continuous professional development.
- To offer advanced skills necessary for delivery of research work in the field of comparative anatomy.

2-Intended Learning Outcomes (ILOS):

2.a. Knowledge and Understanding:

By the end of the course the student should be able to:

2.a.1. Describe the vocabulary of comparative anatomy.

2.a.2. Explain the basic morphological features ,functions of representative chordate systems

2.a. 3. Describe the evolutionary basis of morphological differences and similarities among vertebrate taxa.

2.a.4.Outline how vertebrates originated, their characteristic anatomical and physiological features.

2.b. Intellectual Skills:-

By the end of the course the student should be able to:

2.b.1. Interpret the factors affecting the development of vertebrate .

2.b.2. Interpret primary scientific literature to understand the vertebrate biology.



2.c. professional and Practical Skills:-

By the end of the course the student should be able to:

2.c .1 Prepare The histological sections to show the structural changes in vertebrates through their evolution from fish to mammals

2.c .2 Identify microscopically the slides of various structures of vertebrate .

2.c .3 Write detailed reports on the morphology of vertebrates images

2.d. General and transferable skills:-

By the end of the course the student should be able to:

2.d..1. Communicate effectively with teaching stuff and colleagues.

2.d.2.Demonstrate appropriate attitude towards teaching stuff and colleagues.

2.d..3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d..4. Present information clearly in written, electronic and oral forms.

2d.5. Establish effective interpersonal relationship to Communicate ideas and arguments.

2.d.6. Work effectively as a member or a leader of an interdisciplinary team.

2.d.7. Establish life-long self-learning required for continuous professional development.



3- Course contents:

<i>Subject</i>	<i>Tutorial / Small group discussion</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1- Introduction and Concepts Vertebrate body: notochord, pharynx, CNS, vertebrae.	1	3	4	6.6%
2-chordate:Pisces, line of vertebro- evolution	1	3	4	6.6%
3-Prochordate : urochordate , cephalochordate , chordate relationship	1	3	4	6.6%
4-Early Vertebrates Morphogenesis Egg, Fertilization, Gastrulation, Extraembryonic membranes	2	6	8	13.2%
5-Skin:Fishes,Agnathans, birds, Mammals	1	3	4	6.6%
6- Skulls: Neuro-cranium, Visceral cranium, Derma cranium	2	6	8	13.2%
7- Appendicular skeleton , Muscles, Digestive system	2	6	8	13.2%
8- Respiratory system, Vascular system	2	6	8	13.2%
9- Urogenital system, Nervous system, Sense organs system	2	6	8	13.2%
10-Endocrine system	1	3	4	6.6%
TOTAL	15	45	60	100%



4- Teaching and learning methods:

METHODS USED:

- 1.Small group discussions: Seminars
2. Practical
- 3.Problem solving.

TEACHING PLAN:

Item	Time schedule	Teaching hours
Small group teaching	1hs /week	15hs
Practical	1hs /week	45hs
Total	2hs /week	60hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty bylaws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge and understanding, intellectual skills
Oral examination Practical	To assess knowledge and understanding, intellectual skills, attitude and presentation, practical skills

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September



5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
Final exam:		
a -Written	40	53.3 %
c -Practical	25	33.3%
b- Oral	10	13.4%
Total	75	100%

FORMATIVE ASSESSMENT:

Student knows his marks after the Formative examinations .

5-E) Examinassions description:

Examination	Description
Final exam:	
a- Written	Short QS, clinical cases , filling spaces , cross matching , true and false , MCQS.
b- Oral	Many sessions
6- Assignments & other activities	e.g. Assignments, projects, etc

6- List of references:

6.1. Essential books (text books):

- **Kardong, K. V. (2012).** Vertebrates: Comparative anatomy, function, and evolution. 6th edition. McGraw Hill Publ., Boston, MA.
- **Fishbeck, D.W. and A. Sebastiani. (2008).** Comparative anatomy: Manual of Vertebrate Dissection. 2nd edition. Morton Publishing Co., CO



.2. Recommended books:

- *Van de Graff, K. M. and J. L. Crawley. (2005):* A photographic atlas for the zoology laboratory. 5th. ed. Morton Publishing Co., CO 154 pp.

6.3. Periodicals, Web sites, etc:

6.3.1. <http://www.medscape.com>.

6.3.2. <http://www.pubmed.com>.

6.3.3. <http://master.emedicine.com/maint/cme.asp>.

6.3.4. <http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
Department lab.

Course coordinator: Saadia Ahmed Shalaby

Head of Department: Prof. Dr./ESSAM MOHAMED EID

Date: 8 / 9 / 2013



Benha University

Faculty of Medicine

Department of Human Anatomy & Embryology

Course Specification

Course title: Basic genetics

(Code): ANAT 707

Academic Year (2013– 2014)

A) Basic Information:

- Department offering the course: -Histology & Cell Biology
- Academic year of MD. program of anatomy: 2013 - 2014.
- Date of specification approval: Department council, date 8 / 9 / 2013
- Allocated marks: 75 marks
- Course duration: 15 weeks of teaching
- Teaching hours:-

	Hours / week	Total hours
1- Lectures/ small group discussion	1h /week	15hs
2- Practical	1 h /week	45hs
Total	2hs /week	60hs

B) Professional Information:

1- Overall Aim of the Course:

By the end of the course, the student should be able to:

- To provide the advanced scientific knowledge of basic genetics essential to know the genetic aberrations.



- To provide the advanced scientific knowledge essential for establishing & maintaining good researchers in basic genetics
- To provide the advanced scientific knowledge essential for following the rules of medical ethics.
- Appropriate ethical and professional education necessary for demonstrating appropriate attitudes with students and colleagues.
- Life- long learning competencies necessary for continuous professional development.

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

By the end of the course, the student should be able to

2.a.1. Describe the chromosomes and their component structures and function, chromosomal aberrations

2.a.2. Identify the normal structure and function of the human body cells at biochemical levels (including the principles of genetics).

2.a.3. Describe the Genetics and human development, Genetic markers and genetic mapping.

2.a.4. Identify the clinical application of Genetics

2.b. Intellectual skills:

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

2.b.1. Interpret Immunogenesis and clinical application

2.b.2. Correlate between the genetic defects and congenital abnormality



2.b.3 relate the causes , detection and consequences of genetic defects

2.c. Professional and practical skills:

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

- 2.c .1 Identify immunoflourscent stain and clinical use in diagnosis**
- 2.c .2 Demonstrate the more recent in researches in stem cells and Basic Genetics.**
- 2.c..3. read immunological stain reports**
- 2.c.5. Conduct counseling sessions for more advances in researches.**

2.d. General and transferable skills:

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

- 2.d.1. Establish life-long self-learning required for continuous professional development.**
- 2.d.2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.**
- 2.d.3. Retrieve, manage, and manipulate information by all means, including electronic means.**
- 2.d.4. Present information clearly in written, electronic and oral forms.**
- 2.d.5.Establish effective interpersonal relationship to Communicate ideas and arguments .**
- 2.d.6. Work effectively as a member or a leader of an interdisciplinary team .**



3- Course contents:

<i>Subject</i>	<i>Lecture/Tutorial / Small group discussion (hrs)</i>	<i>Practical/ (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1-cell cycle and cell division (mitosis meiosis) -Gametogenesis	3	9	12	20%
2--Cytogenetics : - Chromosomes :structure ,chromosomal study& karyotyping , chromosomal bands , banding, fluorescence in situ hybridization , Sex chromatin , Barr body ,chromosomal aberrations	3	9	12	20%
3-Gentics and human development, somatic cell genetic ,Genetic markers, Twins studies, mapping and identifying gene	3	9	12	20%
4- Genetic in medicine:Immunogenesis,Genetic factor in common diseases	3	9	12	20%
5-ClinicalGenetic : Congintal abnormality, chromosome disorders, single gene disorders	3	9	12	20
TOTAL	15	45	60	100%

4- Teaching and learning methods:

METHODS USED:

- Small group discussions: Museum specimens, demonstration (slides photographs and video films), models and case study.
- Tutorials.
- Practical classes.



- Seminars.

TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	1 h /week;	15hs
Practical	1 hours / week	45hs
Total	2 hours/week	60

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA: Faculty by laws

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge acquisition
Oral examination	To assess understanding and stability of knowledge given, attitude and presentation.
Practical examination	To assess practical skills.

5-C) TIME SCHEDULE:

Examination	Time
Final examination	May or September

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
a-Written	40	53.3%
b- Practical	25	33.3%
c- Oral	10	13.4%



Total	75	100%
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5- ASSESSMENT OF STUDENTS :

Student knows his marks after the Formative exams.

5-E) Examinassions description:

Examination	Description
1- Final exam:	
a- Written	Short QS., clinical cases ,filling spaces ,cross matching ,true &false ,MCQS.
b- Practical	e.g. Do, identify
c- Oral	e.g. How many sessions
Total	–

6- List of references:

6.a . (text books):

6.a.1. **Junqueira Basic Histology :Junqueria, L.C. and Carneiro, J. (2005):** Digestive tract. In: Basic histology, text and atlas, 11th ed., Mc Graw – Hill, New York, Chicago, Toronto.

6.a.2. **Gartner &Hiatt Atlas Histology2001) : Gartner, L.P. and Hiatt, J. (2001):** Color text book of histology: Chapter 18, Digestive system, Gland. Lippincott. 3rd ed., Williams and Wilkins. Philadelphia. London.

6.a.3. **Wheater's functional Histology (2006):** Barbara Young, James S. Lowe, Alan Stevens and John W. Heath Wheater's Functional Histology: A Text and Colour Atlas, 5th Edition

6.b. Recommended books:



6.b.1. *Mechiel Ross text of histology (2011) : Michael H. Ross and Wojciech Pawlina* , Histology A text and Atlas, sixth edition, chapter 18 Lippincott, Philadelphia, New York ,London and Tokyo

6.c. Periodicals, Web sites, etc:

6.c.1. <http://www.medscape.com>.

6.c.2. <http://www.pubmed.com>.

6.c.3. <http://master.emedicine.com/maint/cme.asp>.

6.c.4. <http://www.science direct.com>.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 2
- Museum hall:6th floor
- Department lab

Course coordinator: Prof Dr. Mohamed Magdi Zaky

Head of Department: Prof Dr. OMUMA MOHAMMED

8 / 9 / 2013



Benha University

Faculty of Medicine

Department of Human Anatomy & Embryology

Course Specification

Course title: Human anatomy

(Code) ANAT 708

Academic Year (2013 – 2014)

A) Basic Information:

- Department offering the course: Anatomy & Embryology
- M.D. program: 2nd part .
- Date of specification approval: Department council Date 8 / 9/ 2013
- Allocated marks: __700__ marks
- Course duration 45 weeks of teaching
- Teaching hours :-

method	Hours / week	Total hours
1- Lectures	18hs/w	270 hs
2- Practical	6hs/w	270 hs
Total	24hs/w	540hs

B) Professional Information:

1- Overall Aim of the Course:

- To provide the student with educational experience necessary for further practice in anatomy.
- To educate student about the experimental embryology to give them the key stone in understanding the anatomy and congenital malformation.
- To enable the student to practice the principles of preparation the anatomical regional specimens for teaching injection



techniques for freshly obtained bodies and how to prepare a museum jars

2- Intended Learning Outcomes (ILOs):

2.a. Knowledge and understanding:

By the end of the course, student should be able to:

2.a.1 Describe the morphology, location, vasculature, innervations & relations of different parts of human body.

2.a.2 Classify the most common variations to give an idea for the clinical application.

2.a.3 Point out the impact of fine structure of the anatomical components.

2.a.4 Describe the most important technique of specimen preparation.

2.a.5 Describe the details of surgical & applied anatomy.

2.a.6 Explain the radiological anatomy to know structure of deeper details.

2.a.7 Demonstrate the surface anatomy of the visible and deeper structures of the body.

2.b. Intellectual Skills:

By the end of the course, student should be able to:

2.b.1. Analyze the different techniques ,stains, and chemicals for preservation & study of the anatomical specimen and tissues



2.b.2.. Interpret result of radiological and surface anatomy

2.b.3.Solve problem environmental factors on the development of body systems.

2.c. Professional and Practical Skills:-

By the end of the course, student should be able to:

2.c.1 Prepare the embryonic specimen, dissected regions of human body and human organs

2.c.2 Prepare the age related embryos by using serial sections.

2.c.3 Apply the anatomical facts on a radiographic films.

2.c.4 Perform a cross sectional anatomical specimens.

2.c.5 prepare the box slide for CNS.

2.c.6 prepare the museum specimen and models by casting & die injection.

2.d. General and transferable Skills:

By the end of the course, the student should be able to

2.d.1.Establish life-long self-learning required for continuous professional development.

2.d.2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice.

2.d.3.Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.4.Retrieve, manage, and manipulate information by all means,



including electronic means.

2.d.5.Present information clearly in written, electronic and oral forms.

2.d.6.Establish effective interpersonal relationship to Communicate ideas and arguments.

2.d.7.Apply the principles of statistical methods for collection, presentation & analysis of all types of data .

3- Course contents:

<i>Subject</i>	<i>Tutorial / Small group discussion (hrs)</i>	<i>Practical / (hrs)</i>	<i>Total (hrs)</i>	<i>% of Total</i>
1-General Anatomy				
1-Definitions , terms of positions & planes, movements	2	2	4	0.7%
2-Bones: names , structure, functions classifications, general features ,blood supply -Cartilage : features &types	8	8	16	3%
3 -Joints -Muscles - skin : features - fascia :form & features	8	8	16	3%
4-Nervous system: parts of CNS, cranial & spinal nerves, autonomic nervous system	3	3	6	1.1%
5-Blood vessels : characters of arteries and veins, types of anastomosis ,lymphatic system :characters of lymph vessel, lymph nodes, lymph	4	4	8	1.4%
Total	25	25	50	9.3%
2-General Embryology				



1-male & female reproductive system, oogenesis, ovulation	3	3	6	1.1%
2-spermatogenesis, structure of mature sperm, fertilization	3	3	6	1.1%
3-cleavage, implantation & decidua, bilaminar disc, trilaminar disc	4	4	8	1.4%
4-Folding of embryo	2	2	4	0.7%
5-Derivatives of ectoderm & endoderm & mesoderm	2	2	4	0.7%
6-Fetal membranes: placenta, umbilical cord, amnion, yolk sac - Twins: types ,characters	7	7	14	2.6%
7-Teratology :teratogens ,causes ,mechanisms	4	4	8	1.4%
Total	25	25	50	9.3%
3-Systemic Embryology				
1-Development and anomalies of GIT, related glands& Respiratory system	5	5	10	1.9%
2-Development and anomalies of urinary system	2	2	4	0.7%
3-Development and anomalies of genital system in male and female	3	3	6	1.1%
4-Development and anomalies of heart and big vessels ,Fetal circulation	5	5	10	1.9%
5-Development and anomalies of branchial arches	4	4	8	1.4%
6-Development and anomalies of face ,palate , tongue ,thyroid gland	3	3	6	1.1%
7-Development and anomalies of nervous system	2	2	4	0.7%
8-Development and anomalies of musculoskeletal system and limbs	2	2	4	0.7%
9-Development and anomalies of serous membrane	2	2	4	0.7%
10-Development and anomalies of endocrine gland , skin .	2	2	4	0.7%



Total	30	30	60	11%
4-Upper Limb				
1-Pectoral region and breast , Axilla, Back ,Shoulder region	6	6	12	2.2%
2-Superficial veins of U.L. ,cutaneous nerves , Compartments of arm, Anastomoses around elbow, Cubital fossa & compartments of forearm	8	8	16	3%
3- Dorsum of hand , palm of hand	5	5	10	1.9%
4-Joints of U.L. : shoulder joint, joints of shoulder girdle elbow joint, radio-ulnar joint ,wrist joint, joints of fingers	2	2	4	0.7%
5-nerve injuries, collateral circulation in upper limb	2	2	4	0.7%
6-Surface anatomy of structure in upper limb &Radiological anatomy	2	2	4	0.7%
Total	25	25	50	9.3%
5-Lower Limb				
1-Front of thigh and its medial side	5	5	10	1.9%
2-Gluteal region	3	3	6	1.1%
3-Back of thigh and Popliteal fossa	3	3	6	1.1%
4-anterior and lateral compartments of leg and dorsum of foot	4	4	8	1.4%
5-Posterior compartment of leg and sole of foot	5	5	10	1.9%
6-Joints of lower limb and Radiology	3	3	6	1.1%
7-Surface anatomy and Applied anatomy	2	2	4	0.7%
Total	25	25	50	9.3%
6-Thorax				



1-Thoracic cage, thoracic wall, intercostals spaces, azygos system	4	4	8	1.4%
2-Mediastinum and its divisions (superior ,anterior ,middle and posterior mediastinum)	4	4	8	1.4%
3-Lung and pleurae	5	5	10	1.9%
4-Heart and pericardium	6	6	12	2.2%
5-Large arteries: aorta, pulmonary trunk ,big veins ,nerves ,tubes (trachea, oesophagus , thoracic duct),lymph nodes, joints and applied anatomy	4	4	8	1.4%
6-Joints of thorax ,surface anatomy and applied anatomy ,Radiological anatomy	2	2	4	0.7%
Total	20	20	40	7.4%
7-Abdomen				
1-Anterior abdominal wall, rectus sheath, inguinal canal and male external genitalia	6	6	12	2.2%
2-Peritoneum , classification of peritoneal folds, lesser sac ,abdominal oesophagus and stomach	6	6	12	2.2%
3-Small intestine (duodenum ,jejunum & ilium) ,large intestine (caecum ,appendix ,colon)	5	5	10	1.9%
4-Liver, biliary system ,spleen and pancreas	7	7	14	2.6%
5-Arterial supply of G.I.T. portal system	4	4	8	1.4%
6-Kidney ,ureters and suprarenal glands	3	3	6	1.1%
7-Diaphragm ,muscles of posterior abdominal wall, abdominal aorta , I.V.C., lymph nodes ,lumbar plexus and autonomic fibers	5	5	10	1.9%
8-Joints of lumbar vertebrae ,surface anatomy ,applied anatomy ,Radiological anatomy	4	4	8	1.4%
Total	40	40	80	14.8%
8-Pelvis &Perineum				



1-Arrangement of pelvic organs , pelvic peritoneum , pelvic fascia ,pelvic muscles ,pelvic vessels ,pelvic nodes and pelvic nerves.	5	5	10	1.9%
2-Distal part of G.I.T. (rectum and anal canal)and urinary system (pelvic part of ureter ,urinary bladder and urethra)	4	4	8	1.4%
3-Genital systems in male and female	4	4	8	1.4%
4-Perineum (ischioanal fossa and urogenital triangle ,pudendal nerve and internal pudendal vessels	5	5	10	1.9%
5-Bony pelvis ,Joints of pelvis , Applied anatomy	2	2	4	0.7%
Total	20	20	40	7.4%
9-Head and Neck				
1-Face ,scalp ,parotid gland	4	4	8	1.4%
2-Temporal , infratemporal regions , tempromandibular joint and styloid apparatus	6	6	12	2.2%
3-Cranial cavity, Dura ,dural sinuses and pituitary gland	4	4	8	1.4%
4-Orbit and orbital contents	5	5	10	1.9%
5-Nose ,Nasal cavity and paranasal sinuses	3	3	6	1.1%
6-External ear ,middle ear & inner ear	4	4	8	1.4%
7-Surface landmark, Fascia of neck , triangles of neck ,posterior triangle	4	4	8	1.4%
8-Anterior triangle ,submandibular region, thyroid and parathyroid	6	6	12	2.2%
9-Blood vessels of H&N .	4	4	8	1.4%
10-Oral cavity ,tongue, palate, pharynx ,larynx ,trachea ,oesophagus	6	6	12	2.2%
11-lymphatic drainage of H&N, Joints of neck	3	3	6	1.1%



12-Surface anatomy , Applied anatomy and Radiological anatomy	3	3	6	1.1%
13-Cranial nerves and their nuclei &their connections with higher centers ,cervical nerves &sympathetic chain .	8	8	16	3%
Total	60	60	120	22.2%
TOTAL				
	270	270	540	100%

4- Teaching and learning methods:

METHODS USED:

- Modified Lectures
- Small group discussions
- Problem solving
- Practical classes

TEACHING PLAN:

Item	Time schedule	Teaching hours
Lectures	3 times/week each time =2 hs	270 hs
Practical	2 times/week each time =3 hs	270hs
Total	12 hours/week	540 hs

5- Students Assessment methods:

5-A) ATTENDANCE CRITERIA:

1.Log book.

5-B) Assessment TOOLS:

Tool	Purpose (ILOs)
Written examination	To assess knowledge and understanding and intellectual skills



Oral examination	To assess knowledge and understanding and intellectual skills and how to make a decision.
Practical examination	To assess practical skills and intellectual, general skills

5-C) TIME SCHEDULE:

Examination	Week
1- First examination	May or September
2- Second examination	June or October

5-D) Weighting System:

Examination	Marks allocated	% of Total Marks
1- First exam.	300	30%
a- Written	140	
b- Practical	100	
c- Oral	60	
1- Second exam.	700	70%
a- Written	350	
b- Practical	250	
c- Oral	100	
Total	1000	100%

- The minimum passing & Passing grades (Faculty bylaws).
Passing grades are: EXCELLENT >85%, VERY GOOD 75- <85%,
GOOD 65- <75% and FAIR 60-<65%.

FORMATIVE ASSESSMENT:

A postgraduate knows his marks after the Formative exams.



5-E) Examinassions description:

Examination	Type	Description
Final Examination	1. Written	A three-hour written paper composed of short essay , clinical cases , completion ,cross matching , MCQs. (two papers-3 hours each)
	2. Practical	Spots 10 spots including slides & Bone, On each specimen, a small question should be answered (quiz). Dissection.
	3. Oral	One oral examination station with 2 staff members .

6- List of references:

6.1- Basic materials:

- Gray's anatomy : Susan Standring et-al 2010

6.2- Essential books (text books):

-Last :Anatomy regional & applied 2006.

-T.W. Sadler :Medical embryology 2010

-Carpenter's: Human Neuroanatomy.2000

6.3- Recommended books:

- Cunningham:Romances,2006

-Keith Moore &Persaud :before we are born,2008

-BruceCarlson:Humanembryology&development,2009

6.4- Periodicals, Web sites, ... etc: www.bfom.edu.eg.

7- Facilities required for teaching and learning:

Facilities used for teaching this course include:

- Lecture halls: 1
- Small group classes



توصيف برنامج -الدكتوراه في التثريح الادمي والاجنة



- Laboratory:1
- Information technology / AV aids
- Models etc

Course coordinator: Prof. Dr. / SADIA AHAMED SHALABY

Head of Department: Prof Dr./ESSAM MOHAMED EID

Date: 8 / 9 / 2013



الملحقات

ملحق ١ : Academic standard of the program

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ملحق ١

Academic standard of the program

جامعة بنها
كلية الطب
قسم التشريح الادمي والاجنة

وثيقة المعايير الأكاديمية المرجعية لبرنامج الدكتوراه في التشريح الادمي والاجنة

Academic Reference Standards (ARS) for M.D. Degree in Anatomy & Embryology

1-Graduate attributes : مواصفات الخريج

By the end of the program the graduate should be able to:

- To provide students with advanced & up-to-date knowledge & skills of anatomy and embryology and their related medical sciences.
- To enable students to correlate between the experimental embryology and the anatomy and congenital malformation.
- To enable the students to prepare the anatomical regional specimens for teaching injection techniques for freshly obtained bodies and how to prepare a museum jars.
- To offer lifelong learning competencies necessary for continuous professional development
- To offer advanced skills necessary for delivery of research work in the field of Human anatomy and embryology.

2-Intended Learning Outcomes (ILOS):

2.a. Knowledge and Understanding : 2.أ - المعرفة والفهم :

On successful completion of the program, the graduate will be able to:

2.a. 1. Illustrate the detailed gross anatomy of different parts of human body, including the neuroanatomy.

2.a.2. Explain the development as a key to catch normal and abnormal anatomy.

2.a.3. Discuss the anatomical relations in different parts and regions of the human body.

2.a.4. Identify the terms and planes and movements of different parts and regions of human body.

2.a.5. Describe the morphology, location, vasculature and innervations different parts of human body.

2.a.6 . Describe the most recent important techniques of specimen preparation.

2.a.7. Know the details of surgical & applied anatomy.

2.a.8. Recognize the impact of fine structure of the anatomical components.

2.a.9. Discuss the measurements of different parts of human bodies

2.a.10. Recognize the radiological anatomy to know the details of deeper structure .

2.a.11. Demonstrate the surface anatomy of the visible and deeper structures of the body.

2.a.12. Classify the body parameter in successive age advances to give a way for the study of the growth & development.

2.a.13. Categorize the teratogenic factors & their effects on the genetics and molecular biology.

2.a.14. Describe genetic map .

2.a.15. Explain the variations of human being .

2.b. Intellectual Skills:

2. ب - القدرات الذهنية :

On successful completion of the program, the graduate will be able

to:

2.b.1. Interpret the results of radiological and surface anatomy.

2.b.2. Correlate between the developmental basis and its related anatomical facts including the teratogenic factors.

2.b.3 Appreciate the danger of the environmental factors on the development of body systems.

2.b.4. Formulate a systematic approach for different surgical incisions.

2.b.5. Correlate between the normal and abnormal gross structure in the different developmental ages.

2.b.6. Analyze the causes of genetic defects .

2.b.7. Interpret the developmental causes of nervous system .

2.b.8. Interpret the scientific knowledge to understand the vertebrate biology .

2.b.9. Combine the technical and investigational database to proficient in histological problem solving .

2.c. Practical and professional Skills: 2.ج . مهارات مهنية وعملية

On successful completion of the program, the graduate will be able to:

2.c .1 Prepare the embryonic specimen, dissected regions of human body and human organs

2.c.2. Prepare the histological sections to show the structural changes in vertebrate .

2.c.3 Process & stain the specific tissues specimen and report the immunological structures .

2.c .4. Perform anthropometric techniques & methods.

2.c.5. Write reports about different anatomical regions and on a radiographic films.

2.c.6 Perform a cross sectional anatomical specimens.

2.c.7 prepare the box slide for CNS specimens.

2.c.8 Prepare the museum specimen and recognize the molecular biology techniques .

2.د . مهارات عامة و منتقلة:

2.d. General and transferable skills:-

By the end of the program the graduate should be able to:

2.d..1. Communicate effectively with teaching stuff and colleagues.

2.d..2. Demonstrate appropriate attitude towards teaching stuff and colleagues.

2.d.3. Retrieve, manage, and manipulate information by all means, including electronic means.

2.d.4. Present information clearly in written, electronic and oral forms.

2.d.5. Establish effective interpersonal relationship to Communicate ideas and arguments .

2.d.6. Work effectively as a member or a leader of an interdisciplinary team

2.d.7. Establish life-long self-learning required for continuous professional development.

3- Academic Standards

٣ - المعايير الأكاديمية للبرنامج:

- **Academic Reference Standards (ARS) of Doctorate Program of Anatomy & Embryology .**
- Approved in department council : date 8 / 9 / 2013

In faculty council no : date 15 / 9 / 2013. (ملحق ١)

اعتماد مجلس القسم رقم (٢٣٥) بتاريخ ٢٠١٣ / ٦

رئيس مجلس القسم

أ.د. / عصام عيد

اعتماد مجلس الكلية ٣٥٤ ٢٠١٣/٦/١٦

ملحق ٢

المعايير القياسية العامة لبرامج قطاع الدراسات العليا- برامج الدكتوراه تخصص التشريح الادمي والاجنة

١- مواصفات الخريج :

- خريج برنامج الدكتوراه في تخصص التشريح والاجنة يجب ان يكون قادرا على
- ١-١ اتقان اساسيات ومنهجيات البحث العلمي
 - ٢-١ العمل المستمر على الاضافة للمعارف في مجال تخصص التشريح والاجنة
 - ٣-١ تطبيق المنهج التحليلي والناقد للمعارف في مجال تخصص التشريح والاجنة والمجالات ذات العلاقة
 - ٤-١ دمج المعارف المتخصصة مع المعارف ذات العلاقة مستتبطا ومطورا للعلاقات البينية بينها
 - ٥-١ اظهار وعيا عميقا بالمشاكل الجارية والنظريات الجدية في مجال تخصص التشريح والاجنة
 - ٦-١ تحديد المشكلات المهنية وايجاد حلولاً مبتكرة لحلها
 - ٧-١ اتقان نطاقا واسعا من المهارات المهنية في مجال تخصص التشريح والاجنة
 - ٨-١ التوجه نحو تطوير طرق وادوات واساليب جديدة للمزاولة المهنية
 - ٩-١ استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
 - ١٠-١ التواصل بفاعلية وقيادة فريق عمل في سياقات مهنية مختلفة
 - ١١-١ اتخاذ القرار في ضوء المعلومات المتاحة
 - ١٢-١ توظيف الموارد المتاحة بكفاءة وتنميتها والعمل على ايجاد موارد جديدة
 - ١٣-١ الوعي بدوره في تنمية المجتمع والحفاظ على البيئة
 - ١٤-١ التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة
 - ١٥-١ الالتزام بالتنمية الذاتية المستمرة ونقل علمه وخبراته للآخرين

٢- المعايير القياسية

١-٢ المعرفة والفهم

- بانتهاء دراسة برنامج الدكتوراه يجب ان يكون الخريج قادرا على الفهم والدراسة بكل من
- ١-٢ النظريات والاساسيات الحديثة من المعارف في مجال تخصص التشريح والاجنة والمجالات ذات العلاقة
 - ٢-١-٢ اساسيات ومنهجيات واخلاقيات البحث العلمي وادواته المختلفة
 - ٣-١-٢ المبادئ الاخلاقية والقانونية للممارسة المهنية في مجال التخصص
 - ٤-١-٢ مبادئ واساسيات الجودة في الممارسة في مجال التخصص
 - ٥-١-٢ المعارف المتعلقة بأثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها

٢-٢ المهارات الذهنية

- بانتهاء دراسة برنامج الدكتوراه يجب ان يكون الخريج قادرا على
- ١-٢-٢ تحليل وتقييم المعلومات فى مجال تخصص التشريح والاجنة والقياس عليها والاستنباط منها
 - ٢-٢-٢ حل المشاكل المتخصصة استنادا على المعطيات المتاحة
 - ٣-٢-٢ اجراء دراسات بحثية تضيف الى المعارف
 - ٤-٢-٢ صياغة أوراق علمية
 - ٥-٢-٢ تقييم المخاطر فى الممارسات المهنية
 - ٦-٢-٢ التخطيط لتطوير الاداء فى مجال التخصص
 - ٧-٢-٢ اتخاذ القرارات المهنية فى سياقات مهنية مختلفة
 - ٨-٢-٢ الابتكار/الابداع
 - ٩-٢-٢ الحوار والنقاش المبني على البراهين والادلة

٣-٢ المهارات المهنية

- بانتهاء دراسة برنامج الدكتوراه يجب ان يكون الخريج قادرا على
- ١-٣-٢ اتقان المهارات المهنية الاساسية والحديثة فى مجال تخصص التشريح والاجنة
 - ٢-٣-٢ كتابة وتقييم التقارير المهنية
 - ٣-٣-٢ تقييم وتطوير الطرق والادوات القائمة فى مجال التخصص
 - ٤-٣-٢ استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية
 - ٥-٣-٢ التخطيط لتطوير الممارسة المهنية وتنمية اداء الاخرين

٤-٢ المهارات العامة والمنتقلة

- بانتهاء دراسة برنامج الدكتوراه يجب أن يكون الخريج قادرا على
- ١-٤-٢ التواصل الفعال بأنواعه المختلفة
 - ٢-٤-٢ استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
 - ٣-٤-٢ تعليم الاخرين وتقييم ادائهم
 - ٤-٤-٢ التقييم الذاتى والتعليم المستمر
 - ٥-٤-٢ استخدام المصادر المختلفة للحصول على المعلومات والمعارف
 - ٦-٤-٢ العمل فى فريق وقيادة فرق العمل
 - ٧-٤-٢ ادارة اللقاءات العلمية والقدرة على ادارة الوقت

ملحق 3

(المعايير المرجعية الخارجية) Benchmarks

Programme Specification: M.D. in Neuroscience

1. Awarding institution/body	University of Oxford	
2. Teaching institution	University of Oxford	
3. Programme accredited by	n/a	
4. Final award		MSc
5. Programme Neuroscience		
6. UCAS code		n/a
7. Relevant subject benchmark statement	n/a	
8. Date of program specification	July 2008	

▪ 9. Educational aims of the program

- To expose students to a broad range of topics within neuroscience and add both breadth and strength to the traditional '3-year PhD' training.
- To provide formal training in the theory and practical technology of neuroscience from the most basic molecular mechanisms through to clinical neurobiological issues.
- To offer research projects in a very wide range of well-established laboratories.
- To offer a flexible response to developing research needs.
- To bring students from a variety of scientific backgrounds into the field of neuroscience

10. Program outcomes

A. Students will develop a knowledge and understanding of:

1. Structure and Function of the Brain, Neuroanatomy, Neuronal Cell and Molecular Biology, Synapses and Transduction, Systems Neuroscience, Cognitive and Behavioral neuroscience.

Related teaching/learning methods and strategies

There is an eight-week introductory course of lectures and practical classes in the first term.

Reading is assigned and there is an opportunity to practice writing of essays, providing formative assessment.

Assessment

One written three-hour paper (Qualifying Examination) taken at the end of the first term, with one opportunity to reset early during the following term in the case of failure. Each student has an academic advisor from among the Course Committee to whom they can turn for advice and help.

2. Advanced topics in Neuroscience

In the second and third terms, students select from further, advanced lecture modules, which also have associated practical requirements. Students select five modules from this group, at least one module within each branch of the subject (broadly Cellular, Systems and Molecular Neuroscience).

Students also choose from a wide range of research projects to undertake in the remainder of the year, after consultation with members of the Organising Committee. Two placements in research laboratories working in different areas will be completed by the end of the year, studying research topics approved by the Organising Committee.

Assessment

Each module is assessed in the form of an extended essay (3000 words) on a topic chosen by the student and approved by the module organizer. Written feedback is provided on each essay. A journal club at which students make presentations of areas of research is available to offer instead of one of the essay modules. The research projects each require a formal dissertation (not more than 10,000 words) and a public presentation of the research material. Written and oral feedback is provided.

B. Skills and other attributes

Students will have the opportunity to develop the following skills during the course:

2. Intellectual skills

A Ability to evaluate and synthesize complex research material.

B Experience of initiating and completing research projects with self-appraisal of the outcome.

C Ability to present verbally and in written form the results of their research projects

D Knowledge of current activity in the field of Neuroscience (in its broadest sense).

Teaching/learning methods and strategies

- A. Students are required to produce 5 extended essays (or participate in a journal club as a substitute for one essay) and two research dissertations during the course. They are supported in these activities by advice on the scope and format of the essays, by research supervision during the project that leads to the dissertation and the programme of advanced lectures that forms the core teaching of the course
- B. Students are expected to select two research projects from a proposed list, to take responsibility under supervision for setting up the design of the research study, to conduct the experimental component of the research independently and to prepare the written account of the project independently with feedback from their supervisors.
- C. Students are required to give a formal talk with slides on their first research project and present the second research project in poster format. See also B
- D. Students are required to attend lectures for the entire Introductory Course and for the 5 advanced modules that they have selected. Breadth is enforced by insisting on a selection of modules including at least one from each of the major fields, cellular, systems and molecular and by requiring each student to justify their choice of modules to the Organizing Committee before the advanced section of the course begins.

Assessment:

- A. The extended essays are given indicative marks and written feedback when essays are handed in. A summative assessment is prepared by the Examiners.
- B and C. Each student receives individual written feedback on their research dissertations and the presentations of the research projects.
- D. The Qualifying Examination ensures a minimum standard. The final examination includes an oral examination of both research projects and typically includes questions designed to require the candidates to place their project work in a broadly-based context.

II. Practical skills

Experience of laboratory-based research requiring a wide variety of technical skills, including computing data analysis, experimental design, understanding the use and operation of laboratory equipment. General understanding of computing and statistics and methods of research presentations. Time management skills.

Teaching/learning methods and strategies

Where relevant, practical laboratory classes, associated with lectures, are given in both introductory and advanced modules.

Assessment

Students receive formative assessment of these skills from their project supervisors and members of the Organizing Committee

III. Transferable skills

Presentation skills for communication. Ability to write scientifically at an advanced level. Personal skills in integrating into the host research group and in some cases in meeting and dealing with human experimental subjects.

Teaching/learning methods and strategies

Students are required to take a professional development programme, including courses in communication and presentation skills, commercial exploitation of science, time management, and the relationship between academic and industrial research

Assessment:

These courses are not formally assessed in themselves. However, students are, for example, tested on their communication and presentation skills in the oral and poster presentations of their project work. Tested informally via feedback from research group and from research supervisors. More formal tests of written communication skills from feedback on extended essays and project dissertations.

11. Program Structures and Features

Learning Year 1

Subjects

Introductory courses

- Introduction to the brain
- Neuroanatomy
- Synapses and transduction
- Neuronal cell and molecular biology
- Overview of systems neuroscience

Advanced courses

- Strategies for monitoring and analysing neuronal circuits
- Cognitive neuroscience
- Cellular signaling
- Motor systems
- Computational neuroscience
- Sensory systems
- Animal models and clinical aspects of neuroscience
- CNS development, plasticity and repair
- Molecular neuroscience

Professional Development

- Communication and presentation skills
- Commercial exploitation of science
- Time management
- Relationship between academic and industrial research
- Careers

Two independent 3-month research projects

Assessment

All students are required to pass the Qualifying Exam on the introductory material at the end of the first term. Students will write either a 3,000-word essay or an equivalent practical write-up (as appropriate) on completing each of their specialist modules. They will write up a 10,000-word research report on each of their two research projects. They will also be assessed on their oral and poster presentation. The award of Distinctions is made on the basis of submitted written work and performance in the final oral examination.

12. Support for Students and their learning. There is a full time Course Lecturer (Dr Clarke), whose office is in the MSc Centre. Students would usually approach her in the first instance, and she would determine whether the problem should be referred to the Course Director and/or discussed with the Organizing Committee. An open system is encouraged in which several avenues for complaint are made available so that the students should not feel constrained by any personal factors in making their views known. In addition, all students will have a College Advisor or Graduate Tutor, who can act as a liaison point in more serious cases.

The students have access to superb IT facilities. The MSc Centre is solely for use by MSc Neuroscience and MSc in Psychological Research (a total of around 40 students). The Centre has 20 PC's, networked to a single server, so they can connect from any machine and access their files, plus laser and colour printers. IT maintenance support is provided by the Experimental Psychology department. All PC's are loaded with a variety of standard software packages, and if students require anything additional for their project, it can usually be installed (depending on licence restrictions). The Colleges also provide good IT resources and Support Officers prepared to train and assist students. In addition there is the University Computing Service, which provides facilities and classes from a basic level through to training students to use very sophisticated programmes and computing languages.

Students at Oxford have access to a wide range of libraries. The most important University libraries for these students are the Radcliffe Science Library with very extensive holdings of scientific books and journals. In addition students have access to departmental libraries of all contributing departments and their college library, which may be able to purchase books upon request. The OLIS cataloguing system incorporates the holdings of all major University libraries, Faculty libraries, and most College libraries.

13. Criteria for Admission

The same deadline deals with the both studentships, Wellcome Trust 4-year applications and the 1-year MSc. This deadline is in early January. The procedure for both is identical:

Candidates are required to submit a CV, a statement of no more than 1000 words explaining why they want to pursue the course, and request that two referees send letters of recommendation.

The Course Director (Dr Taylor) and Course Lecturer (Dr Clarke) perform a first round of shortlisting, selecting the best candidates. These applications are then sent to the members of the Organizing Committee to score, and at a subsequent meeting of the Organising Committee candidates are selected for interview.

Interviews are usually half an hour, consisting of a 10 minute presentation given by the student on

their research project, followed by questions. Attributes assessed at interview include

- Ability to undertake doctoral research in Neuroscience
- Capacity to benefit from theoretical and practical training in advanced Neuroscience
- Good quality degree in science or mathematics (equivalent to 2.1 standard in UK universities)
- Ability to reflect critically on experience to date

Studentships are offered to the best candidates, then further candidates are offered self-funding places at the discretion of the Organizing Committee.

Overseas candidates are sometimes exempted from interview on the basis of outstanding academic merit, for example after the award of a prestigious competitive scholarship.

14. Methods for evaluating and improving the quality and standards of learning

Feedback is collected even before the students start the course. In the summer before they start students are asked to complete a questionnaire on their level of current knowledge in various areas of neuroscience, computing and statistics. This is considered in respect of the teaching to be given in the first term.

Feedback is collected towards the end of each term, both on the taught components of the course, and the Professional Development and Careers course. This feedback is considered by the respective module organizer, and the MSc organizing committee.

We also hold feedback meetings, usually once a term, with all the students to discuss more general aspects of the course. Each student is assigned an academic mentor from the members of the Organizing Committee, which provides a route for more informal feedback. In addition, Dr. Clarke holds regular meetings (at least once per term) to hear progress and feedback related to the course from the students and supply relevant information to the students. These meetings are minuted.

The course is routinely reviewed by the Division of Medical Sciences on behalf of the University. The last review was in 2003/2004. The Division bears formal responsibility for the quality and standard of the course and as well as instigating reviews also regularly receives examiners' reports. The internal examiners' report offers reflection on both the assessment and teaching of the course. The Division ensures that the course committee responds appropriately to the reports. The Divisional Graduate Studies Committee plays an active role in formulating policy in respect of graduate courses.

Several studentships for the course are derived from external funding (Wellcome Trust, MRC). The course and its outcome have therefore been peer-reviewed by external bodies on a regular basis.

The IAUL offers a wide range of opportunities for staff development, and complements the provision made by the Division for new academic staff members. All staff have annual appraisals at which training needs may be discussed and new appointees are subject to review before being confirmed in post after 5 years. The review includes an evaluation of teaching skills.

The pass rate is 100% among those students who have pursued the course to completion. In a small number of cases, students have opted not to complete the course and an important activity is to support and enable students to perform at their best and complete in all cases where possible. Most students proceed to a D.Phil. and there is considerable enthusiasm from subsequent research supervisors about the calibre of the students produced by the course.

15. Regulation of assessment

The assessment of the course is subject to the regulations made by the Division and approved by the central EPSC published in *Examination Regulations*. Any changes to these regulations must have approval of the Division and of the central EPSC.

The marking conventions (marking scheme, weighting, combining of marks) are also subject to approval by the Division. They are communicated to students via the handbook, and any changes made during the year as a result of review are communicated separately.

The Division approves the nomination of examiners, proposed by the course committee. These are subject to approval by the Vice-Chancellor and Proctors on behalf of the University.

Boards of Examiners, under their elected Chairs, are responsible for the setting of all papers and for marking scripts. Assessors may be appointed to assist where necessary.

An External examiner is appointed for the end-of-year examinations. The external examiner writes reports, which are considered by the course committee. External examiners are asked to comment on overall standards, as well as on the examination process itself.

Examiners' reports (internal and external) are considered in the first instance by the course committee. The D-EPSC then sees the reports together with the response of the committee. The D-EPSC may make its own recommendations which are then communicated to the course committee. Changes may be introduced to the course or assessment procedure for the following year. The reports and responses are also monitored by the central EPSC.

Final Examination

Marking Scale

7.5+	Distinction	Equivalent to First Class at graduate level
6.5-7.4		Equivalent to high upper Second Class at graduate level
5.5-6.4	Satisfactory	Equivalent to low upper Second Class at graduate level
5.0-5.4		Equivalent to lower Second Class at graduate level
NS(below 5.0)	Not satisfactory	Equivalent to Third Class at graduate level

1

16. Indicators of quality and standards

Reports from external examiners regularly make reference to the high quality of the students.

The MSc in Neuroscience was included in the QAA Subject Review of Psychology and received the top rating of 24/24.

ملحق ٤

مصفوفة المعايير الأكاديمية للبرنامج مع المعايير القياسية للدراسات العليا الصادرة عن الهيئة

١ - مواصفات الخريج:

مواصفات الخريج بالمعايير الأكاديمية للبرنامج	مواصفات الخريج بالمعايير القياسية للدراسات العليا (درجة الدكتوراه)
1-To provide the students with advanced & up-to-date knowledge & skills of anatomy and embryology and their related medical sciences.	1- Continue the work on the added knowledge in the field of specialty Anatomy and Embryology 2-Work continuously to add knowledge in anatomy and embryology 3-Apply analytical methodology in anatomy and embryology and the related basic medical sciences.
2- To enable students to correlate between the experimental embryology and the anatomy and congenital malformation	4-Integrate specialized and related knowledge deducing and new concepts in anatomy 5-Show deep awareness of current problems and new concepts in anatomy
3-To provide students with basic knowledge for the preparation of different anatomical specimens and injection techniques for freshly obtained bodies and how to prepare a museum jars.	6-Identify the professional problems and propose creative solutions to address them 7-Show proficiency in a wide range of professional skills in the field of anatomy and embryology .
4-To offer lifelong learning competencies necessary for continuous professional development in anatomy and embryology.	8-Show awareness of current problems and new concepts in anatomy and embryology 9- Use appropriate technological methods that serve his professional practice . 10-Communicate effectively and lead work teams in different professional contexts 11-Make decisions in light of available information 12-Employ available resources effectively ,develop them and work to find new resources

5-To offer advanced skills necessary for delivery of research work in the field of Human anatomy and embryology.

13-Show awareness of his role in community development and environmental preservation
14-Conduct himself in a manner that reflects integrity and sincerity and follows the ethical code of practice
15-Use appropriate technological methods that serve the professional practice .

٢ - المخرجات التعليمية المستهدفة من البرنامج

أ - المعرفة والفهم:

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة لبرامج الدراسات العليا (درجة الدكتوراه)
<p><i>By the end of MD program, the candidate should recognize and understand the followings:</i></p> <p>2.a. 1. Illustrate the detailed gross anatomy of different parts of human body, including the neuroanatomy.</p> <p>2.a.2. Explain the development as a key to catch normal and abnormal anatomy.</p> <p>2.a.3. Discuss the anatomical relations in different parts and regions of the human body.</p> <p>2.a.4. Identify the terms and planes and movements of different parts and regions of human body.</p> <p>2.a.5. Describe the morphology, location, vasculature and innervations different parts of human body.</p> <p>2.a.9. Discuss the measurements of different parts of human bodies</p>	<p>٢-١-١ النظريات والاساسيات الحديثة من المعارف في مجال التخصص والمجالات ذات العلاقة</p>
<p>2.a.6 . Describe the most recent important techniques of specimen preparation.</p> <p>2.a.13.Categorize the teratogenic factors & their effects on the genetics and molecular biology.</p> <p>2.a.14. Describe genetic map .</p> <p>2.a.15.Explain the variations of human being .</p>	<p>٢-١-٢ اساسيات ومنهجيات واخلاقيات البحث العلمى وادواته المختلفة</p>
<p>2.a.7. Know the details of surgical & applied anatomy</p> <p>2.a.10. Recognize the radiological anatomy to know the details of deeper structure</p> <p>2.a.11. Demonstrate the surface anatomy of the visible and deeper structures of the body.</p> <p>2.a.13.Categorize the teratogenic factors & their effects on</p>	<p>٢-١-٣ المبادئ الاخلاقية والقانونية للممارسة المهنية في مجال التخصص</p>

the genetics and molecular biology. 2.a.14. Describe genetic map .	
2.a.6 . Describe the most recent important techniques of specimen preparation 2.a.8. Recognize the impact of fine structure of the anatomical components. 2.a.14. Describe genetic map .	٤-١-٢ مبادئ واساسيات الجودة فى الممارسة فى مجال التخصص
2.a.12. Classify the body parameter in successive age advances to give a way for the study of the growth &development. 2.a.13.Categorize the teratogenic factors & their effects on the genetics and molecular biology.	٥-١-٢ المعارف المتعلقة بأثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها

ب - القدرات الذهنية :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة لبرامج الدراسات العليا (درجة الدكتوراه)
The end of the study for a doctorate program the graduate must be able to : 2.b.1. Interpret the results of radiological and surface anatomy. 2.b.2. Correlate between the developmental basis and its related anatomical facts including the teratogenic factors.	بانتهاؤ دراسة برنامج الدكتوراه يجب ان يكون الخريج قادرا على: ١-٢-٢ تحليل وتقييم المعلومات فى مجال التخصص والقياس عليها والاستنباط منها
2.b.6.Analyze the causes of genetic defects . 2.b.7.Interpret the developmental causes of nervous system	٢-٢-٢ حل المشاكل المتخصصة استنادا على المعطيات المتاحة
2.b.8.Interpret the scientific knowledge to understand the vertebrate biology .	٣-٢-٢ اجراء دراسات بحثية تضيف الى المعارف
2.b.9.Combine the technical and investigational datab proficient in histological problem solving	٤-٢-٢ صياغة أوراق علمية
2.b.3 Appreciate the danger of the environmental factors on the development of body systems	٥-٢-٢ تقييم المخاطر فى الممارسات المهنية
2.b.1. Interpret the results of radiological and surface anatomy.	٦-٢-٢ التخطيط لتطوير الاداء فى مجال التخصص

4. Formulate a systematic approach for different surgical incisions	٧-٢-٢ اتخاذ القرارات المهنية في سياقات مهنية مختلفة
2.b.6. Analyze the causes of genetic defects	٨-٢-٢ الابتكار/الابداع
2.b.4. Formulate a systematic approach for different surgical incisions. 2.b.5. Correlate between the normal and abnormal gross structure in the different developmental ages.	٩-٢-٢ الحوار والنقاش المبني على البراهين والادلة

ج. مهارات مهنية وعملية :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة لبرامج الدراسات العليا (درجة الدكتوراه)
The end of the study for a doctorate program the graduate must be able to : 2.c .1 Prepare the embryonic specimen, dissected regions of human body and human organs 2.c.2. Prepare the histological sections to show the structural changes in vertebrate . 2.c.3 Process & stain the specific tissues specimen and report the immunological structures . 2.c .4. Perform anthropometric techniques & methods.	بإنهاء دراسة برنامج الدكتوراه يجب ان يكون الخريج قادرا على: ١-٣-٢ اتقان المهارات المهنية الاساسية والحديثة في مجال التخصص
2.c.5. Write reports about different anatomical regions and on a radiographic films	٢-٣-٢ كتابة وتقييم التقارير المهنية
2.c.6 Perform a cross sectional anatomical specimens.	٣-٣-٢ تقييم وتطوير الطرق والادوات القائمة في مجال التخصص
2.c.3 Process & stain the specific tissues specimen and report the immunological structures . 2.c .4. Perform anthropometric techniques & methods.	٤-٣-٢ استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية

2.c.7 prepare the box slide for CNS specimens.
2.c.8 Prepare the museum specimen and recognize the molecular biology techniques .

٥-٣-٢ التخطيط لتطوير
الممارسة المهنية
وتنمية اداء الاخرين

د . مهارات عامة و منتقلة :

المعايير الأكاديمية للبرنامج	المعايير القياسية العامة لبرامج الدراسات العليا (درجة الدكتوراه)
By the end of MD program, candidate should accept the following skills: 2.d..1.Communicate effectively with teaching stuff and colleagues. 2.d.5 .Establish effective interpersonal relationship to Communicate ideas and arguments .	بانتهاج دراسة برنامج الماجستير يجب أن يكون الخريج قادرا على: ١-٤-٢ التواصل الفعال بأنواعه المختلفة
2.d.4. Present information clearly in written, electronic and oral forms.	٢-٤-٢ استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية
2.d..2. Demonstrate appropriate attitude towards teaching stuff and colleagues.	٣-٤-٢ تعليم الاخرين وتقييم ادانهم
2.d.7. Establish life-long self-learning required for continuous professional development	٤-٤-٢ التقييم الذاتى والتعليم المستمر
2.d.5 .Establish effective interpersonal relationship to Communicate ideas and arguments .	٥-٤-٢ استخدام المصادر المختلفة للحصول على المعلومات والمعارف
2.d.6. Work effectively as a member or a leader of an interdisciplinary team	٦-٤-٢ العمل فى فريق وقيادة فرق العمل
2.d.3.Retrieve, manage, and manipulate information by all means, including electronic means.	٧-٤-٢ ادارة اللقاءات العلمية والقدرة على ادارة الوقت

-نسبة تغطية البرنامج للمعايير القومية الاكاديمية القياسية العامة لبرنامج الدكتوراة في
التشريح والاجنة

أ-المعرفة والفهم = ١٠٠ % ب- المهارات الذهنية = ١٠٠ %

ج-المهارات المهنية والعلمية = ١٠٠ % د-المهارات العامة = ١٠٠ %

ملحق ٥: مصفوفة مضاهاة المعايير الأكاديمية للبرنامج و أهداف و نواتج تعلم البرنامج

اهداف البرنامج	مواصفات الخريج بالمعايير الأكاديمية للبرنامج
1-To provide the students with advanced & up-to-date knowledge & skills of anatomy and embryology and their related medical sciences.	1- Continue the work on the added knowledge in the field of specialty Anatomy and Embryology 2-Work continuously to add knowledge in anatomy and embryology 3-Apply analytical methodology in anatomy and embryology and the related basic medical sciences.
2- To enable students to correlate between the experimental embryology and the anatomy and congenital malformation	4-Integrate specialized and related knowledge deducing and new concepts in anatomy 5-Show deep awareness of current problems and new concepts in anatomy
3-To provide students with basic knowledge for the preparation of different anatomical specimens and injection techniques for freshly obtained bodies and how to prepare a museum jars.	6-Identify the professional problems and propose creative solutions to address them 7-Show proficiency in a wide range of professional skills in the field of anatomy and embryology .
4-To offer lifelong learning competencies necessary for continuous professional development in anatomy and embryology.	8-Show awareness of current problems and new concepts in anatomy and embryology 9- Use appropriate technological methods that serve his professional practice . 10-Communicate effectively and lead work teams in different professional contexts 11-Make decisions in light of available information 12-Employ available resources effectively ,develop them and work to find new resources
5-To offer advanced skills necessary for delivery of research work in the field of Human anatomy and embryology.	13-Show awareness of his role in community development and environmental preservation 14-Conduct himself in a manner that reflects integrity and sincerity and follows the ethical code of practice 15-Use appropriate technological methods that serve the professional practice .

نواتج تعلم البرنامج											المعايير الأكاديمية للبرنامج				
المعرفة و الفهم knowledge and Understanding															
2.a.15	2.a.14	2.a.13	2.a.12	2.a.11	2.a.10	2.a.9	2.a.8	2.a.7	2.a.6	2.a.5		2.a.4	2.a.3	2.a.2.	2.a.1.
	√		√	√	√	√	√	√	√	√	√	√	√	√	By the end of the program the graduate should be able to: 1. Know the basic principles and practice and recent advances in anatomy and Embryology
	√		√		√			√					√		2. The mutual influence between professional practice and its impact on the environment
			√							√					3-The scientific development in Anatomy and Embryology
					√	√	√								4-The ethical and legal principles of professional practice in the field of anatomy and embryology
							√	√	√						5-The principles and fundamentals of quality in professional practice in anatomy and embryology
							√	√	√						6-The fundamentals and ethics of scientific research

نواتج تعلم البرنامج									المعايير الأكاديمية للبرنامج المهارات الذهنية
Intellectual skills									
2.b.9	2.b.8	2.b.7	2.b.6	2.b.5	2.b.4	2.b.3	2.b.2.	2.b.1.	
				√	√		√		By the end of the program the graduate should be able to: 1. Analyze, evaluate and interpret data in anatomy and embryology and apply the information in problem solving .
			√		√				2. Solve problems according to available data.
	√				√	√	√		3. Link between different knowledge to solve professional problems
√							√		4-Conduct a research study and write a scientific study about a specific research problem
						√	√		5. Assess risks in professional practices in the field of anatomy and embryology
					√	√	√		6. Plane for the development of performance in the field of anatomy and embryology
		√			√	√	√		7-Make professional decisions in a variety of professional contexts

نواتج تعلم البرنامج								المعايير الأكاديمية للبرنامج المهارات المهنية
Practical/Professional skills								
2.c.1.	2.c.2.	2.c.3	2.c.4	2.c.5	2.c.6	2.c.7	2.c.8	
√	√	√	√	√	√	√	√	By the end of the program the graduate should be able to: 1-Show proficiency in basic and up to date professional skills in Anatomy and Embryology
			√					2. Write and evaluate professional reports.
√	√	√				√		3. Evaluate and develop methods used in different clinical investigations.

نواتج تعلم البرنامج								المعايير الأكاديمية للبرنامج المهارات العامة والمنتقلة
General and transferable skill								
2.d.1.	2.d.2.	2.d.3	2.d.4	2.d.5	2.d.6	2.d.7		
√	√			√	√			By the end of the program the graduate should be able to: 1. Communication effectively using different methods.
		√	√			√		2. Use information technology in developing professional practice.
						√		3. Exercise autonomy in self-evaluation and identification of personal learning needs
√	√							4-Use various resources for the retrieval of information and knowledge

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									√	√	√							5-Develop standards and indicators assessing the performance of others
								√										6-Work effectively in a team as leader member in various professional situations
																	√	7-Demonstrate independent and continuous learning

المقررات مع البرنامج : Program-Courses ILOs Matrix

المعارف Knowledge & Understanding															ILOs
2.a.15	2.a.14	2.a.13	2.a.12	2.a.11	2.a.10	2.a.9	2.a.8	2.a.7	2.a.6	2.a.5	2.a.4	2.a.3	2.a.2	2.a.1	Courses & codes
							√		√						Histology ANAT 701
	√	√													Molecular Biology ANAT 702
			√			√									Bioanthropology ANAT 703
					√										Radiological anatomy ANAT 704
√			√												Comparative anatomy ANAT 705
														√	Advanced neuroanatomy ANAT 706
			√												Basic genetics ANAT 707
			√	√				√	√	√	√	√	√	√	Human anatomy ANAT 708

المهارات ذهنية Intellectual Skills	ILOs
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2.b.9	2.b.8	2.b.7	2.b.6	2.b.5	2.b.4	2.b.3	2.b.2	2.b.1	Courses
√									• Histology
			√						• Molecular Biology
	√					√			• Bioanthropology
								√	• Radiological anatomy
	√								• Comparative Anatomy
		√							• Advanced Neuroanatomy
			√						• Basic genetics
				√	√			√	• Human anatomy

مهارات عملية و مهنية Practical & Clinical Skills								ILOs
2.c.8	2.c.7	2.c.6	2.c.5	2.c.4	2.c.3	2.c.2	2.c.1	Courses
					√	√		• Histology
√					√			• Molecular Biology
				√				• Bioanthropology
			√					• Radiological anatomy
						√		• Comparative Anatomy
	√							• Advanced neuroanatomy
					√			• Basic genetics
√		√					√	• Human anatomy

General & transferable skills							ILOs
2.d.7	2.d.6	2.d.5	2.d.4	2.d.3	2.d.2	2.d.1	Courses & codes
√	√	√	√	√	√	√	• Histology
√	√	√	√	√	√	√	• Molecular Biology
√	√	√	√	√	√	√	• Bioanthropology
√	√	√	√	√	√	√	• Radiological anatomy
√	√	√	√	√	√	√	• Advanced neuroanatomy
√	√	√	√	√	√	√	• Comparative anatomy
√	√	√	√	√	√	√	• Basic genetics
√	√	√	√	√	√	√	• Human anatomy

We certify that all information required to deliver this program is contained in the above specification and will be implemented. All course specification for this program are in place.

Program coordinator:

Name: ا. د / سعدية شلبي

Signature & date:

ا. د / سعدية شلبي

Head of department:

Name: ا. د. عصام عيد

Signature & date:

ا. د / عصام عيد