

Peer Revision

Reviewers	University	Date of Revision
- Prof. Dawlat Salem	Cairo	10/12/2011
- Prof. Ahmad K. Mansur	Mansura	28/11/2011

Program specification of Master Degree in Human Anatomy and Embryology

Sohag University

Faculty of Medicine

A. Basic Information

1. Program title: Master Degree of Human anatomy and Embryology
2. Program type: single
3. Faculty: Faculty of Medicine
4. Department: Human Anatomy and Embryology
5. Coordinator: Dr. Mohamed Al-Badry.
6. Assistant Coordinator: Ahlam Wageh Mohammed
7. External evaluator: Pr. Dr. Omer Gaber
8. Last date of program specifications approval Faculty council No. "317", decree No. "1533" dated 17/12/2018.

B. Professional Information

1. Program aims

The aim of the program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of anatomy and embryology and necessary to gain further training and practice in the field of anatomy and embryology through providing

1. Scientific knowledge and skills essential for the practice of human anatomy and embryology according to the international standards.
2. Skills necessary for proper for applying anatomy and embryology for detecting different problems and diseases.
3. Ethical principles related to the practice in this speciality
4. Active participation in the community needs assessment and problems solving.
5. Maintenance of learning abilities necessary for continuous medical education
6. Maintenance of research interest and abilities.

2. Attributes of the post graduate: Master degree

1. Mastering the basics of scientific research methodologies.
2. The application of the analytical method and used in the field of anatomy.
3. The application of specialized knowledge and integrate it with the relevant knowledge in practice.
4. Be aware of the problems and has modern visions in the field of anatomy.
5. Identify problems in the field of anatomy and find solutions to them.
6. Mastery of professional skills in this specialty and use of the appropriate recent technologies supporting these skills.
7. Communicate effectively and the ability to lead work teams.
8. Decision-making in his professional contexts.
9. To employ and preserve the available resources to achieve the highest benefit
10. Awareness of his role in the community development and preservation of the environment at the lights of both international and regional variables.



Program specification of Master Degree in Human Anatomy and Embryology

Sohag University

Faculty of Medicine

A. Basic Information

1. Program title: Master Degree of Human anatomy and Embryology
2. Program type: single
3. Faculty: Faculty of Medicine
4. Department: Human Anatomy and Embryology
5. Coordinator: Dr. Mohamed Al-Badry.
6. Assistant Coordinator: Ahlam Wageh Mohammed
7. External evaluator: Pr. Dr. Omer Gaber
8. Last date of program specifications approval Faculty council No. "317", decree No. "1533" dated 17/12/2018.

B. Professional Information

1. Program aims

The aim of the program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of anatomy and embryology and necessary to gain further training and practice in the field of anatomy and embryology through providing

1. Scientific knowledge and skills essential for the practice of human anatomy and embryology according to the international standards.
2. Skills necessary for proper for applying anatomy and embryology for detecting different problems and diseases.
3. Ethical principles related to the practice in this speciality
4. Active participation in the community needs assessment and problems solving.
5. Maintenance of learning abilities necessary for continuous medical education
6. Maintenance of research interest and abilities.

2. Attributes of the post graduate: Master degree

1. Mastering the basics of scientific research methodologies.
2. The application of the analytical method and used in the field of anatomy.
3. The application of specialized knowledge and integrate it with the relevant knowledge in practice.
4. Be aware of the problems and has modern visions in the field of anatomy.
5. Identify problems in the field of anatomy and find solutions to them.
6. Mastery of professional skills in this specialty and use of the appropriate recent technologies supporting these skills.
7. Communicate effectively and the ability to lead work teams.
8. Decision-making in his professional contexts.
9. To employ and preserve the available resources to achieve the highest benefit.
10. Awareness of his role in the community development and preservation of the environment at the lights of both international and regional variables.

11. Reflects the commitment to act with integrity and credibility, responsibility and commitment to rules of the profession.
12. Academic and professional self development and be capable of continuous learning.

3. Intended learning outcomes (ILOs)

a) Knowledge and understanding

By the end of the study of master program in Human Anatomy and Embryology the Graduate should be able to :

- a1. Mention the normal structure and function of the different parts of the human body.
- a2. Mention the normal growth and development of different parts the human body.
- a3. Mention the function of the different systems in relation to their structure.
- a4. List the abnormalities in the development of different parts of human body.
- a5. Enumerate the applied anatomy of different parts of the human body.
- a6. Enumerate scientific developments in the field of Human Anatomy and Embryology.
- a7. Enumerate the mutual influence between professional practice and its impacts on the environment
- a8. Mention the ethical and legal principles of professional practice in the field of Human Anatomy and Embryology
- a9. List The principles and fundamentals of quality in professional practice in the field of Human Anatomy and Embryology.
- a10. List the basics and ethics of scientific research.

Optional ILOs:

- a11. List sufficient knowledge of the histological structure of the different body tissues and organs.
- a12. List the different methods for tissue examination
- a13. Enumerate general histological stains.
- a14. Enumerate sufficient know ledges of types and uses of electron microscopes..
- a15. Describe sufficient know ledges of tissue preparations for electron microscopy.
- a16. Enumerate sufficient know ledges of tissue examination by electron microscopy.

b) Intellectual skills

By the end of the study of master program in Human Anatomy and Embryology the Graduate should be able to:

- b1. Interpret data acquired through bones and cadavers to understand the normal function and structure of different parts of the human body.
- b2. Interpret data acquired through normal development to understand the causes of different congenital anomalies of different parts of the human body.
- b3. Select from different tools the one that can help in reaching final solving of the anatomical problems.
- b4. Link between knowledge for Professional problems' solving.
- b5. Conduct a research study and / or write a scientific study on a research problem.
- b6. Assess risk in professional practices in the field of Human Anatomy and Embryology.
- b7. Planning to improve performance in the field of Human Anatomy and Embryology.

- b8. Identify anatomical and embryological problems and find a solution.
- b9. Analyze researches and issues related to the Human Anatomy and Embryology.

Optional ILOs:

- b10. Understand the use of different general histological stains

c) professional and practical skills

By the end of the study of master program in Human Anatomy and Embryology the Graduate should be able to:

- c1. Master the basic and modern professional skills in the area of Human Anatomy and Embryology.
- c2. Write and evaluate of anatomical reports.
- c3. Assess methods and tools existing in the area of Human Anatomy and Embryology.

Optional ILOs:

- c4. Master the basic and modern professional skills in histology and electron microscope

d) General and Transferable skills

By the end of the study of master program in Human Anatomy and Embryology the Graduate should be able to :

- d1. Communicate effectively by all types of effective communication.
- d2. Use information technology to serve the development of professional practice.
- d3. Assess himself and identify personal learning needs.
- d4. Use different sources to obtain information and knowledge.
- d5. Develop rules and indicators for assessing the performance of others.
- d6. Work in a team, and team's leadership in various professional contexts.
- d7. Manage time effectively.
- d8. Learn himself continuously.

4. Academic standards

Sohag faculty of medicine adopted the general national academic reference standards (NARS) provided by the national authority for quality assurance and accreditation of education (NAQAAE) for postgraduate programs. This was approved by the faculty council degree No 6854, in its session No.177. Date 18-5-2009. Based on these NARS; Academic References standard (ARS) were suggested for this program. These ARS were approved by faculty council degree No 7528, in its session No.191. Date 15-3-2010. The adoption of NARS and the suggested ARS were approved by University council degree No 587, in its session No.60. Dated 26-12-2011

5. Curriculum Structure and Contents

5.a Program duration...6 semesters (3 years).

5.bi Program structure

Subject	hours /week		
	Lectures	Practical	-----
First Part:			
<u>Opt –Biostatistics and computer and research methodology</u>	1	2	-----
<u>Opt optional courses: one of the followings:</u>			
1-Embryology	9	9	
2-Histology and electron microscope	9	9	-----
Second Part:			

-Gross anatomy of all the regions of the body - Clinical anatomy: applied aspects of each region. - Embryology	4.7	6.6	----
--	------------	------------	------

code	Item	No	%	
b.i	Total credit hours	Compulsory	37	74
		Elective	•	•
		Optional	13	26
b.iii	credit hours of basic sciences courses	13	26	
b.iv	credit hours of courses of social sciences and humanities	•	•	
b.v	credit hours of specialized courses:	24	48	
b.vi	credit hours of other course	2	4	
b.vii	Practical/Field Training	•	•	
b.viii	Program Levels (in credit-hours system):			
	Level 1: 1 st part	10	30	
	Level 2: 2 nd Part	24	48	
	Level 3: Thesis	6	12	

6. Program Course:

2 Compulsory courses + 1 of 2 optional courses

6.1- Level/Year of Program1

First part

1st part

Semester 1

a- Compulsory

Course Title	No. of credit hours	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Exer.	
<u>-Biostatistics and computer and research methodology</u>	2	1	2		a2,a4,b2,b4,c1 d2,d4,d7,d8

c- Optional – number required

Course Title	No. of hours	No. of hours /week			Programme ILOs Covered (By No.)
		Lect.	Lab.	Exer.	
Embryology	13	9	9		a2,a4,b2,b4,c1,d2,d4,d7,d8
Histology and electron microscope	13	9	9		a11,a12,a13,a14,a15,a16 b10,c4,d2,d4,d7,d8
Medical biostatistics & research methodology	2	1	1	1	a8,b1,b4,b5,b7,c1,c3,d1,d2, d3,d4,d6,d7,d8

2nd part

Semester 2

a. Compulsory

Course Title	No. of hours	No. of hours /week			Program ILOs Covered (By No.)
		Lect.	Lab.	Exer.	
Gross anatomy of all the regions of the body - Clinical anatomy: applied aspects of each region. - Embryology	24h	4.7h	6.6h		a1,a2,a3,a4,a5,a6,a7,a8,a9,a10 b 1,b2,b3,b4,b5,b6,b7,b8,b9,c 1,c2,c3,d1,d2,d3,d4,d5,d6,d7,d8

7. Program Admission Requirements

I. General Requirements.

1. Candidate should have either:
 - i. MBBCh degree from any Egyptian Faculty of Medicine or
 - ii. Equivalent degree from Medical Schools abroad approved by the ministry of high Education.
2. Candidate should pass the house office training year.
3. Those who are not university hospital residents should pass a training for at least 12 months in one of the known hospitals.
4. Follow postgraduate bylaw Regulatory rules of Sohag Faculty of Medicine approved by the ministerial decree No. (44), dated 6/1/2010.

II. Specific Requirements:

- A. Candidates graduated from Egyptian Universities should have at least “Good Rank” in their final year examination, and grade “Good Rank” in human anatomy and embryology Course too.
- B. Candidate should know how to speak & write English well.
- C. Candidate should know have computer skills.

8. Regulations for Progression and Program Completion

Duration of program is 50 credit hours (≥ 4 semesters ≥ 3 years), starting from registration till 2nd part exam; divided to:

First Part: (15 Credit hours ≥ 6 months ≥ 1 semester):

- Program-related basic & clinical sciences & research Methodology, Biostatistics and computer.
- At least six months after registration should pass before the student can ask for examination in the 1st part.
- Two sets of exams: 1st in October — 2nd in April.
- At least 50% of the written exam is needed to pass in each course.
- For the student to pass the first part exam, a score of at least 60% (Level D) in each course is needed.
- Those who fail in one course need to re-exam it only for the next time only, and if re-fail, should register for the course from the start.

Thesis/Essay(6 Credit hours \geq 6 months=1 semester):

- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the **Thesis/Essay** subject.
- Should be completed, defended and accepted after passing the 1st part examination, and at least one month before allowing to enter 2nd part final examination.
- Accepting the thesis is enough to pass this part.

Second Part: (24 Credit hours \geq 18 months= 3 semesters):

- Program related specialized sciences of Human anatomy and embryology Courses.
- Completion of the 1st part credit hours and passing the exams are pre requisites for documentation of the 2nd part courses.
- After passing at least:
 - Practical training for 36 months in Human anatomy and embryology department.
- The students should pass the 1st part before asking for examination in the 2nd part.
- Fulfillment of the requirements in each course as described in the template and registered in the log book (5 Credit hours; with obtaining \geq 75% of its mark) is a prerequisite for candidates to be assessed and undertake part 1 and part 2 examinations; the credit hours of the logbook are calculated as following:
 - Each Cr. Hr.= 60 working Hrs.
 - Logbook= 5 Cr. Hr. X 60 working Hrs = 300 Working Hrs.
 - Collection of working Hrs. is as following:

Activity		Hrs
Grand rounds	اجتماع علمى موسع	٦
Training courses	دورات تدريبية	12/ day
Conference attendance	حضور مؤتمرات علمية داخلي خارجة	١٢/day 18/day
Thesis discussion	حضور مناقشات رسائل	٦
Workshops	حضور ورش عمل	١٢/day
Journal club	ندوة الدوريات الحديثة	٦
Seminars	لقاء علمى موسع	٦
Morbidity and Mortality conference	ندوة تحليل المخاطر المرضية أو الوفاة	٦
Self education program	برنامج التعليم الذاتى	٦

- Two sets of exams: 1st in October - 2nd in April.
- At least 50% of the written exam is needed to pass in each course.
- For the student to pass the 2nd part exam, a score of at least 60% (Level D) in each course is needed.

9. Methods of student assessments:

Method of assessment	weight	The assessed ILOs
1-Activities		- General transferable skills, intellectual skills
2-Written Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	50%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills
3-OSCE/ OSPE	50%	-Practical skills, intellectual skills, general transferable skills
4-Structured Oral Exams		- Knowledge, Intellectual skills, General transferable skills

Assessment schedule:

Part I:

- **Optional courses:** Written Exam (3 hours) + structured oral Exam + OSPE.
- Biostatistics & Computer and Research Methodology: Written Exam (2 hours) + Structured oral Exam+ OSPE

Part II:

- Human Anatomy and embryology: Two Written Exams (3 hours for each) + OSPE + Structured oral Exam.

10. Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1- Senior students	Questionnaire	3
2- Alumni	Questionnaire	3
3- Stakeholders (Employers)	Questionnaire	30
4-External Evaluator(s) (External Examiner(s))	Report	1
5- Other		

Course Specification of Human Anatomy & Embryology For master Of Human Anatomy & Embryology

Sohag University

Faculty of Medicine

1. Program on which the course is given: master Human Anatomy & Embryology.
2. Minor or major element of the program: minor.
3. Department offering the program: Human Anatomy & Embryology
4. Department offering the course: Human Anatomy & Embryology
5. Academic year / Level: (1st part).
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of Human Embryology For master of Human Anatomy & Embryology.

CODE: ANA. 0512.200

Total hours

lectures	practical	Tutorial	Total hour	Credit hour
135	135	-	270	13

B. Professional Information

1. Program aims

The aim of the program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of embryology and necessary to gain further training and practice in the field of embryology through providing

1. Scientific knowledge and skills essential for the practice of human embryology according to the international standards.
2. Skills necessary for proper for applying embryology for detecting different problems and diseases.
3. Ethical principles related to the practice in this speciality

2. Intended learning outcomes (ILOs):

a) **Knowledge and Understanding:**

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

- a1. Enumerate the normal growth and development of different parts the human body.
- a2. List the abnormalities in the development of different parts of human body.

b) **Intellectual Skills:**

By the end of the course the student should have the ability to:

- b1. Interpret data acquired through normal development to understand the causes of different congenital anomalies of different parts of the human body.
- b2. Link between knowledge for Professional problems' solving.

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

- c1. Master the basic and modern professional skills in the area of Human Embryology.

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

- d1. Use appropriate computer program packages.
d2. Use of different sources for information and knowledge.
d3. Manage time effectively.
d4. -Learn himself continuously

3. Contents

Topic	No. of hours	lectures	practical
General Embryology: Anatomy of the genital system Ovulation Fertilization Implantation Folding Changes each week Later on changes	45	22.5	22.5
Cardiovascular system: Heart tube Formation of ventricles Formation of atria Vessels formation anomalies	45	22.5	22.5
Urogenital system: Development of the kidneys Development of the male genital system Development of the female genital system anomalies	45	22.5	22.5
<i>Gastrointestinal system:</i> Derivatives of foregut Derivatives of midgut Derivatives of hindgut anomalies	45	22.5	22.5
Musculoskeletal system Development of vertebral column Development of skull Development of the muscles anomalies	45	22.5	22.5

Nervous system: Development of the brain Development of the spinal cord anomalies	45	22.5	22.5
Total	270	135	135
Credit hours	13	9	4

4. Teaching and Learning Methods

1. Lectures.
2. practical lessons.
3. Attending and participating in scientific conferences, workshops and thesis discussion to acquire the general and transferable skills needed.

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.4-OSPE	-Practical skills, intellectual skills

Assessment Schedule

Assessment of the candidate is at the end of the course (1st part exam)

Assessment 1	Final written exam (1 paper)	week 24
Assessment 2	Final Structured Oral Exam	week 24
Assessment 3	Final OSPE	week 24

Weighting of Assessments

Final-term written examination	50%
Structured Oral Exam	30%
OSPE	20%
Total	100%

6. List of References

6.2- Essential Books (Text Books):

Williams,P.L.(2016):Gray's Anatomy,the anatomical bases of Medicine and Surgery,Cgurchill, Livingstone, Britain.

6.3- Recommended Books

- McMinn R.M.H. (2017): Lasts anatomy regional and applied chapter 14th edition, edited by Longman group UK.
- Longman Human Embryology

6.4- Web Sites:

www.yahoo.com
www.pubmed.com
http://www.innerbody.com

6.5-Periodicals:

- Egyptian J of Anatomy
- Acta Anatomica

- International J of Experimental Research
- Science

7. Facilities Required for Teaching and Learning

1. Adequate infrastructure includes teaching places(teaching class, teaching halls, teaching laboratory)comfortable desks, good source of aeration, bathrooms, good illumination and safety and security tools.
2. Teaching tools: includes screens, computers cd (r-w) data shows, projectors, flip charts, white boards, video players, digital video scanners, copier, color and laser printers
3. Computer programs: for designing and evaluating MCQS.

Course Coordinator: Dr . Mohamed Al-Badry

Head of Department: Dr. Mohamed Al-Badry

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018

Course Specification of Histology and Electron Microscope for master Of Human Anatomy &Embryology

Sohag University

Faculty of Medicine

1. Program on which the course is given: master Human Anatomy &Embryology.
2. Minor or major element of the program: minor.
3. Department offering the program: Human Anatomy &Embryology
4. Department offering the course: Histology and Cell Biology
5. Academic year / Level: (1st part).
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Histology and electron microscope For master Of Human Anatomy &Embryology

CODE: HIS. 0512.200

Total hours

Lectures	Practical	Tutorial	Total hour	Credit hour
135	135	-	270	13

B. Professional Information

1. Overall Aims of Course

Our aim is to graduate competent anatomitist mastering the:

1. Scientific knowledges and skills essential for the practice and research work of Histology.
2. Having the ability to engage in further following researches and training in any branch of applied clinical Histology.

2. Intended learning outcomes (ILOs):

a) **Knowledge and Understanding:**

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

- a1. Describe sufficient knowledge of the histological structure of the different body tissues and organs.
- a2. Enumerate the function of the different organs in relation to their structure .
- a3. List the different methods for tissue examination.
- a4. List general histological stains.
- a5. Have sufficient knowledge to detect the presence of protien, carbohydrate and lipids in the tissue.

b) **Intellectual Skills:**

By the end of the course the student should have the ability to:

- b1. Differentiate between histological stains for detection of the cytoplasmic content.
- b2. Identify the different histological slides.
- b3. Analyze the contents of any histological slide.
- b4. Use self learning skills in problem solving.
- b5. Identify the histological structure of the body organs.

b6. Interpret some of the medical importance of the histological structure.

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

- c1. Prepare solutions used for micro techniques and different stains perfectly and independently.
- c2. Deal with lab animals.
- c3. Perform the steps of micro technique for paraffin section preparation perfectly and independently.
- c4. Perform general histological stains ;Hx&E and c.t. fibers perfectly and independently.
- c5. Perform some histochemical reactions; proteins, lipids, carbohydrates, enzymes perfectly and independently.

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

- d1. Use the computer to enter histological web sites.
- d2. Collect scientific data from the computer.
- d3. Work in groups, as a leader or as a college.

3. Contents

Topic	No. of hours	practical	Lectures
<p style="text-align: center;">1-Microscopy</p> <ul style="list-style-type: none"> -types of microscope -light microscope and the resolving power -electron microscope; types, resolving power and terms used - the idea and function of fluorescent microscope -the idea and function of phase contrast microscope -the idea and function of polarizing microscope 	8	4	4
<p style="text-align: center;">2-Micro technique</p> <ul style="list-style-type: none"> -preparation of paraffin blocks -filming -smearing -Grinding -Spreading -E.M. preparations 	17	13	4
<p style="text-align: center;">3-Histological stains</p> <ul style="list-style-type: none"> -HX&E -Stains for collagen fibers -Stains for elastic fibers -Stains for reticular fibers -Stains for proteins -Stains for carbohydrates -Stains for lipids 	17	13	4
<p style="text-align: center;">4-Nucleus and Cytogenitics</p> <ul style="list-style-type: none"> -L.M. &E.M. of the nucleus -DNA &RNA -cell cycle &cell division -abnormalities of cell division -Chromosome structure 	7	3	4

<p style="text-align: center;">5-Cytoplasm</p> <ul style="list-style-type: none"> -cell membrane ;L.M.,E.M. and molecular structure -cytoplasmic organelles ;structure and function -cytoplasmic inclusions 	7	3	4
<p>Epithelial tissue</p> <p>6- - general characters of epithelium</p> <ul style="list-style-type: none"> - covering and lining epithelium -glandular epithelium -germinal epithelium -neuroepithelium 	7	3	4
<p>7-Connecctive tissue</p> <ul style="list-style-type: none"> - general characteristics of c.t. proper. - components of c.t.; matrix, fibers and cells. - intercellular substances; chemical composition and staining properties. -types and sites of c.t. proper. 	11	5	6
<p>8-Cartilage</p> <ul style="list-style-type: none"> -Histological features of cartilage. -cartilage cells. -histological features, stains and sites of hyaline cartilage. -histological features, stains and sites of elastic cartilage. -histological features, stains and sites of fibro cartilage. - growth and nutrition of cartilage. 	10	4	6
<p>9-Bone</p> <ul style="list-style-type: none"> -Histological features of bone. -bone cells. -bone matrix. - bone ossification. - growth and nutrition of bone. -healing of fractures. 	11	5	6
<p style="text-align: center;">10-Blood and Hemopoietic Tissue</p> <ul style="list-style-type: none"> - blood components. -erythrocytes:structure,normal count,life span,function, diameter and colour ,abnormalities with reference to some blood diseases. - leucocytes: classieication and structure, normal count, life span,function and diameter for each type. -plateletes: structure, function, normal and abnormal count. -bone marrow: types and structure. -haemopoiesis: development of different blood elements. 	10	4	6

<p>11-Muscular tissue -general structure and types. -Skeletal muscle(L.M&E.M.): General features and types of sk. Muscle fibers. Organization of skeletal muscle as an organ. Functional ultrastructure of myofibrils and sarcomere. Molecular structure of actin and myosin. Sliding filament theory of muscle contraction. The role of tubular system in muscle contraction. Sensory and motor innervation of skeletal muscles. -Cardiac Muscle(L.M&E.M.): General structure and functional relations Intercalated discs. conducting system of the heart. -smooth muscle(L.M.&E.M.): General structure. Interrelation of fibers and bundles. -comparative study of the three types of muscles. Growth and regeneration of muscles.</p>	18	8	10
<p>12-Nervous tissue: Neuron structure;L.M.&E.M. Types of nerve cells. Types and structure of nerve fibers. The organization of nerve fibers. Myelination. Structure of ganglia and types. Degeneration and regeneration of neurons. Neuroglia and their functions Types and structure of nerve endings. Blood brain barriers. Neuroglia Nerve terminal</p>	15	7	8
<p>13-Cardiovascular system : General structure of the heart wall. General structure of the wall of blood vessels. Arteries (large + medium sized) Viens (large + medium sized) Structure of special types of arteries and veins. Arteriovenus connection; capillaries, sinusoids and arteriovenous anastomosis.</p>	9	4	5

<p>14-Lymphatic and immune system: Structure of lymph vessels. Structure and function of lymphatic organs: Lymph nodes. Spleen thymus Tonsils</p>	7	3	4
<p>15- Integumentary system Structure and function of the skin. Different types of cells in the epidermis. Skin types and their sites. Sweat glands;eccrine,apocrine. Hairs and hair follicles. Sebaceous glands and erector pili muscles.</p>	9	4	5
<p>16-Digestive system Oral cavity: Lip Tongue. Salivary glands. Digestive tract: General structure og GIT. Oesophagus. Stomach;fundus,cardiac and pyloerus. Small intestine;duodenum,jejenum and ileum. Large intestine and appendix. Pancreas: Exocrine portion and pancreatic secretion. Endocrine portion. Liver: Internal organization ang hepatic lobulation. Hepatocytes;LM&EM. Bile canaliculi. Blood supply. Space of Disse. Structure and function of gall bladder.</p>	21	10	11

<p>17-Respiratory system</p> <p>-Structure and function of conducting portion of the respiratory system: Nasal cavity. Olfactory area. Trachea and tracheobronchial epithelium. Bronchial tree. Bronchioles.</p> <p>-structure and function of the respiratory portion: Respiratory bronchioles. Alveolar ducts and alveolar sacs. Alveoli and alveolar epithelium;types and function of cells. Lung lobules. Structure of the pleura.</p>	16	8	8
<p>18-Endocrine system : Main components of endocrine system.</p> <p>Pituitary gland: Development and general organization. Anterior lobe and its relation to the hypothalamus. Posterior lobe and its rlation to the hypothalamus.</p> <p>Thyroid gland: Development. Microscopic structure;LM.&EM. Characteristic properties.</p> <p>Parathyroid gland: Development,site and its relation to the thyroid. Chief and oxyphil cells;structure and function.</p> <p>Suprarenal gland Development (cortex and medulla). Adrenal cortex;zona glomerulosa,zona fasciculata,zona reticularis. Adrenal medulla;chromaffin cells and ganglion cells. Adrenal hormones. Blood supply of the adrenal gland and its significance.</p>	23	11	12

<p>19-Urinary system</p> <p>Kidney General structure;cortex and medulla. Nephron structure;renal corpuscle,proximal tubules,loop of Henle and distal tubules. Juxtaglomerular apparatus. Collecting tubules. Renal blood supply;glomerular and non glomerular blood.</p> <p>Urinary passages Ureter. Urinary bladder Male and female urethra.</p>	12	6	6
<p>20-Male reproductive system</p> <p>Testis: Capsule and outlines of internal structure. Seminiferous tubules. Spermatogenic cells. Sertoli cells and blood testicular barrier. Interstitial cells of Leydig.</p> <p>Male genital ducts;structure and function: Accessory male genital tracts;structure and function: Seminal vesicles. Prostate. Bulbo urethral gland.</p>	12	6	6
<p>21-Female reproductive system:</p> <p>Ovary;structure and function: Ovarian follicles. Uterine(fallopian tubes) structure and function. Uterus;structure and function. Cervix. Fertilization and preimplantation development. External genitalia;structure and function. Mammary gland: Structural organization in different physiological states.</p>	8	4	4

22-CNS Anatomical consideration of bthe CNS. Meninges,CSF.,blood brain barrier. Spinal cord: Grey matter. White matter;ascending and descending tracts. Different sgments of the spinal cord. Brain stem: Medulla oblongata ;closed and open and spinomedullary transition. Pons;superior ,middle and inferior levels and medullary pontine junction. Midbrain;superior and inferior levels. Cerebellum;cortex,medulla,nuclei,connection. Diencephalon; thalamus,medial and lateral geniculate bodies,internal capsule and corpus striatum. Cerebral cortex.	15	7	8
Total	270	135	135
Credit hours	13	9	4

4. Teaching and Learning Methods

- 4.1- lectures.
- 4.2- practical lessons.
- 4.3- continuous supervision.

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.3-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.4-OSPE	-Practical skills, intellectual skills

Assessment Schedule

- Assessment of the candidate is at the end of the course(2nd part exam)
- Assessment 1 Final written exam(2 papers)
 - Assessment 2 OSPE
 - Assessment 3 Final Structured Oral Exam
 - Assessment 4 Evaluation of practical assignments.

Weighting of Assessments

- Final written Examination 50%
- Structured Oral Exam. 30%
- OSPE 20%

6. List of References

6.1-Laboratory manual authorized by the department

6.2- Essential Books (Text Books)

- Junqueira, Carneino and Kelly (2018): Basic Histology, 15th ed.Librairie du liban and lang buruit,London,New York.
- Fawcett(1997):A Text Book of Histology,12th ed.Chapman and Hall,New York,London.
- Drury,R.A.B. and Walington,E.A.(1980): Histological techniques,5th ed.Oxford university press,New York.

-Pears,A.G.E.(1985): Histochemistry theoretical and applied,4th ed.Churchill Livingstone,Melbourne and New York.

6.3- Recommended Books

- Cormack,H.D.(2001): A text book of Histology,second edition,Lippincott,J.B. Company,Philadelphia.
- Williams,P.L.(2015):Gray's Anatomy,the anatomical bases of Medicine and Surgery,41th ed.,Cgurchill,Livingstone,Britain.

6.4- Web Sites:

<http://www.histology-world.com>

<http://histo.life.illinois.edu/histo/atlas/slides.php>

6.5-Periodicals:

- Egyptian J of Histology
- Egyptian J of Anatomy
- Acta Anatomica
- International J of Experimental Research
- Science
- Cell and Tissue Research

7. Facilities Required for Teaching and Learning

- An appropriate teaching microscope with a screen.
- Discussion Microscope.
- Good equipments essential for preparation of histological slides in the preparation room.
- Staining set.
- Data show

Course Coordinator: Dr. Eman Khalefa Ahmed

Head of Department: Dr Hekmat O. Abd El-Aziz

Date: 18/12/2011, **Revised:**1/9/2012, **Revised:**1/12/2013, **Revised:**1/12/2018

**Course Specifications of Applied biostatistics (with computer use)
and Research Methodology in Master degree of Human Anatomy &
Embryology**

Sohag University

Faculty of Medicine

1. Program title : Master degree in Human Anatomy & Embryology
2. Major/minor element of the program : Minor
3. Department offering the course: Community Medicine and public Health Dep.
4. Department offering the program: Human Anatomy & Embryology
5. Academic year /level : 1st part
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Master degree in Human Anatomy & Embryology Biostatistics and Computer use for health services **and Research Methodology**

Code: COM 0512-200

Total Hours:

Title	Lectures	Practical/ surgical	Total	credit
Applied biostatistics and computers & Research methodology	15	30	45	2

B. Professional Information

Applied Biostatistics Module:

1. Overall Aims of Course

- a. To influence the students to adopt an analytical thinking for evidence based medicine.
- b. To use precisely the research methodology in researches and computer programs SPSS, Epi Info and Excel in data analysis.

Research Methodology Module:

1. Overall Aims of Course

The aim of this course is to provide the postgraduate student with the advanced medical knowledge and skills essential for the mastery of practice of specialty and necessary to provide further training and practice in the field of Public health and Community Medicine through providing:

1. Recent scientific knowledge essential for the mastery of practice of Public Health and Community Medicine according to the international standards.
2. Skills necessary for preparing for proper diagnosis and management of community problems, skills for conducting and supervising researches on basic scientific methodology.
3. Ethical principles related to the practice in this specialty.
4. Active participation in community needs assessment and problems identification.
5. Maintenance of learning abilities necessary for continuous medical education.
6. Upgrading research interest and abilities.

2. Intended Learning Outcomes of Courses (ILOs)

Applied Biostatistics Module:

a) **Knowledge and understanding:**

By the end of the course, the student is expected to be able to:

- a1. Mention different programs of analysis of data and statistical packages
- a2. Define the recent advances of sources of data and methods of collection.
- a3. Summarize data, construct tables and graphs
- a4. Calculate measures of central tendency and measures of dispersion
- a5. Describe the normal curves and its uses
- a6. Illustrate selected tests of significance and the inferences obtained from such tests
- a7. Illustrate selected tests of significance for parametric and non parametric inferences
- a8. Identify factor analysis and discrimination analysis.

b) **Intellectual Skills**

By the end of the course, the student is expected to be allowed to:

- b1. Mention how to collect and verify data from different sources
- b2. Interpret data to diagnose prevalent problems Human Anatomy & Embryology

c) **Professional and Practical Skills:**

By the end of the course, the student is expected to practice the following:

- c1. Perform recent advanced technological methods in collection, analysis and interpretation of data and in management of prevalent problems in Human Anatomy & Embryology

d) **General and Transferable Skills:**

By the end of the course, the student is expected to be able to:

- d1. Use appropriate computer program packages.
- d2. Use of different sources for information and knowledge about biostatistics.

Research Methodology Module:

2. Intended Learning Outcomes of Courses (ILOs)

a) **Knowledge and understanding:**

By the end of the course, the student is expected to be able to:

- a1. Define the recent advances of screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests.
- a2. Explain the usefulness of screening tests, and calculate sensitivity, specificity, and predictive values.
- a3. Describe the study design, uses, and limitations.
- a4. Mention the recent advances of principles, methodologies, tools and ethics of scientific research.
- a5. Explain the strategies and design of researches.
- a6. Describe bias and confounding.
- a7. Describe sampling techniques and list advantages of sampling
- a8. Identify principles of evidence based medicine.

b) Intellectual Skills

By the end of the course, the student is expected to be able to:

- b1. Conduct research studies that add to knowledge.
- b2. Formulate scientific papers in the area of public health and community medicine
- b3. Innovate and create researches to find solutions to prevalent community health problems
- b4. Criticize researches related to public health and community medicine

c) Professional and Practical Skills:

By the end of the course, the student is expected to be able to:

- c1. Enumerate the basic and modern professional skills in conducting researches in the area of public health and community medicine.
- c2. Design new methods, tools and ways of conducting researches. .

d) General and Transferable Skills:

By the end of the course, the student is expected to be able to:

- d1. Use of different sources for information and knowledge to serve research.
- d2. Work coherently and successfully as a part of a team and team's leadership in conducting researches and field studies.

3. Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Applied Biostatistics Module:			
Recent advances in collection, analysis and interpretation of data	3	1	2
-Details of Tests of significance: Proportion test	3	1	2
-Chi-square test	1.5	0.5	1
-Student T test	1.5	0.5	1
-Paired T test	1.5	0.5	1
-Correlation	1.5	0.5	1
-Regression	2	1	1
-ANOVA test	3	1	2
-Discrimination analysis	3	1	2
-Factor analysis	3	1	2
-Parametric and non parametric tests	4.5	0.5	4

Research Methodology Module:			
Details of epidemiological studies (case control, cohort and cross sectional)	3	1	2
Clinical trials, Quasi experimental study	3	1	2
Bias and errors	2	1	1
Setting a hypothesis	1.5	0.5	1
Recent advances in screening	1.5	0.5	1
- Evidence – based Medicine: Concept and examples Applicability Scientific writing: A protocol A curriculum	3	1	2
Setting an objective - Critical thinking	2	1	1
Formulation of papers	1.5	0.5	1
Total hours	45	15	30
Total Credit hours	2	1	1

4. Teaching and Learning Methods

- 4.1- Lectures
- 4.2- Practical sessions
- 4.3- Computer search assignments
- 4.4- Computer application

5. Student Assessment Methods

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2-Written Exams: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills, - Practical skills, intellectual skills
5.3-Structured Oral Exams	- Knowledge
5.4Computer search assignment	- general transferable skills, intellectual skills

Assessment Schedule

- Assessment 1....Final written exam Week: 24
- Assessment 2.....Final oral exam Week: 24
- Assessment 3 Attendance and absenteeism throughout the course
- Assessment 4 Computer search assignment performance throughout the course

Weighting of Assessments

Final-term written examination	50%
Final oral Examination	50%
Total	100%

Formative only assessments: attendance and absenteeism and Computer search assignments performance.

6. List of References

Applied Biostatistics Module:

6.1- Essential Books (Text Books)

1-Maxy-Rosenau Public health and preventive medicine, 2008.,Robert Wallace, publisher McGraw-Hill Medical; 15 edition.

6.2- Recommended Books

1- Dimensions of Community Based projects in Health Care, 2018. Arxer, Steven L., Murphy, John W.; 1st edition.

2- Parks Text Book of Preventive & Social Medicine. 2017., K. Park. BanarsidasBhanot Publishers; 23 edition.

3- Clinical Epidemiology: The Essentials, 2013, Robert F., Suzanne W. Fletcher, Grant S., publisher Lippincott Williams & Wilkins; 5 edition.

6.3- Periodicals, Web Sites, ...etc

1-American Journal of Epidemiology

2-British Journal of Epidemiology and Community Health

3- WWW. CDC and WHO sites

Research Methodology Module:

6.1- Essential Books (Text Books)

1-Maxy-Rosenau Public health and preventive medicine, 2008.,Robert Wallace, publisher McGraw-Hill Medical; 15 edition.

6.2- Recommended Books

1- Dimensions of Community Based projects in Health Care, 2018. Arxer, Steven L., Murphy, John W.; 1st edition.

2- Parks Text Book of Preventive & Social Medicine. 2017., K. Park. BanarsidasBhanot Publishers; 23 edition.

3- Clinical Epidemiology: The Essentials, 2013, Robert F., Suzanne W. Fletcher, Grant S., publisher Lippincott Williams & Wilkins; 5 edition.

6.3- Periodicals, Web Sites, ...etc

1-American Journal of Epidemiology

2-British Journal of Epidemiology and Community Health

3- WWW. CDC and WHO sites

7. Facilities Required for Teaching and Learning:

Applied Biostatistics Module:

- Adequate conditioned space for staff and assistants.

- Adequate conditioned teaching facilities.
- Audiovisual Aids: Data show, overhead and slide projectors and their requirements.

Research Methodology Module:

- ADEQUATE INFRASTRUCTURE: including teaching places (teaching class, teaching halls, teaching laboratory), comfortable desks, good source of aeration, bathrooms, good illumination, and safety & security tools.
- TEACHING TOOLS: including screens, computers including cd (rw), data shows, projectors, flip charts, white boards, video player, digital video camera, scanner, copier, color and laser printers.

Course Coordinator: Dr/ Rasha Abd- El-Hameed

Head of Department: Dr/ Ahmed Fathy Hammed

Date: 18/12/2011, **Revised:**1/9/2012, **Revised:**1/12/2013, **Revised:**1/12/2018

Course Specification of Human Anatomy and Embryology for master Of Human Anatomy & Embryology

Sohag University

Faculty of Medicine

1. Program on which the course is given: MD. Human Anatomy & Embryology.
2. Minor or major element of the program: major.
3. Department offering the program: Human Anatomy & Embryology
4. Department offering the course: Human Anatomy & Embryology
5. Academic year / Level: (2nd part).
6. Date of specification approval: Faculty council No. "317", decree No. "1533" dated 17/12/2018

A. Basic Information

Title: Course Specification of human anatomy and Embryology For master of Human Anatomy & Embryology.

CODE: ANA. 0512.200

Total hours

Lectures	Practical	Tutorial	Total hour	Credit hour
215	300	-	515	24

B. Professional Information

1. Program aims

The aim of the program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of anatomy and embryology and necessary to gain further training and practice in the field of anatomy and embryology through providing

1. Scientific knowledge and skills essential for the practice of human anatomy and embryology according to the international standards.
2. Skills necessary for proper for applying anatomy and embryology for detecting different problems and diseases.
3. Ethical principles related to the practice in this speciality.
4. Active participation in the community needs assessment and problems solving.
5. Maintenance of learning abilities necessary for continuous medical education
6. Maintenance of research interest and abilities.

2. Intended learning outcomes (ILOs):

a) **Knowledge and Understanding:**

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

- a1. Mention the normal structure and function of the different parts of human body .
- a2. Describe the normal growth and development of different parts the human body.
- a3. Mention the function of the different systems in relation to their structure.
- a4. List the abnormalities in the development of different parts of human body.
- a5. Enumerate the applied anatomy of different parts of the human body.

- a6. Enumerate Scientific developments in the field of Human Anatomy and Embryology
- a7. Enumerate the mutual influence between professional practice and its impacts on the environment
- a8. Mention the ethical and legal principles of professional practice in the field of Human Anatomy and Embryology
- a9. List the principles and fundamentals of quality in professional practice in the field of Human Anatomy and Embryology.
- a10. Describe the basics and ethics of scientific research.

b) Intellectual Skills:

By the end of the course the student should have the ability to:

- b1. Interpret data acquired through bones and cadavers to understand the normal function and structure of different parts of the human body.
- b2. Interpret data acquired through normal development to understand the causes of different congenital anomalies of different parts of the human body.
- b3. Select from different tools the one that can help in reaching final solving of the anatomical problems.
- b4. Link between knowledge for Professional problems' solving.
- b5. Conduct a research study and / or write a scientific study on a research problem.
- b6. Assess risk in professional practices in the field of Human Anatomy and Embryology.
- b7. Planning to improve performance in the field of Human Anatomy and Embryology.
- b8. Identify anatomical and embryological problems and find a solution.
- b9. Analyze researches and issues related to the Human Anatomy and Embryology.

c) Professional and Practical Skills:

By the end of the course the student should have the ability to:

- c1. Master the basic and modern professional skills in the area of Human Anatomy and Embryology.
- c2. Write and evaluate of anatomical reports.
- c3. Assess methods and tools existing in the area of Human Anatomy and Embryology.

d) General and Transferable Skills:

By the end of the course the student should have the ability to:

- d1. Communicate effectively by all types of effective communication.
- d2. Use appropriate computer program packages.
- d3. Assess himself and identify personal learning needs.
- d4. Use different sources to obtain information and knowledge.
- d5. Develop rules and indicators for assessing the performance of others.
- d6. Work in a team, and team's leadership in various professional contexts.
- d7. Manage time effectively.
- d8. Learn himself continuously

3. Contents

Topic	No. of hours (lectures)	Lectures	Practical
1-Introduction Anatomical position and lines	20	10	10
2-Upper limb: Bones Muscles Vessels and nerves Applies anatomy	65	25	40
3-lower limb: Bones Muscles Vessels and nerves Applies anatomy.	70	30	40
4-Abdomen: Bones Muscles Vessels and nerves Applies anatomy	70	30	40
5-pelvis: Bones Muscles Vessels and nerves Applies anatomy	70	30	40
6-Thorax: Bones Muscles Vessels and nerves Applies anatomy	60	20	40
7-Head and neck: Bones Muscles Vessels and nerves Applies anatomy	70	30	40
8-General Embryology: Anatomy of the genital system Ovulation Fertilization Implantation Folding Changes each week Later on changes	20	10	10
9-Special Embryology: Cardiovascular system: Urogenital system <i>Gastrointestinal system:</i> Musculoskeletal system Nervous system: Anomalies of each system	70	30	40
Total	515	215	300
Credit hours	24	14	10

4. **Teaching and Learning Methods**

- 4.1- lectures.
- 4.2- practical lessons.
- 4.3- attending and participating in scientific conferences, workshops and thesis discussion to acquire the general and transferable skills needed.
- 4.4- Assignments.

5. **Student Assessment Methods:**

Method of assessment	The assessed ILOs
5.1- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
5.2- Log book	- General transferable skills
5.3-Written Exam: -Short essay: 40% -structured questions: 25% -MCQs: 20% -Commentary, Problem solving: 15%	- Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
5.4-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
5.5-OSPE	-Practical skills, intellectual skills
5.6 assignment	-General transferable skills, intellectual skills

Assessment Schedule

Assessment of the candidate is at the end of the course	
Assessment 1 Review	Week 28-30.
Assessment 2 Review.	Week 30-60
Assessment 3 Log book	Week 60-80
Assessment 4 Final Structured Oral Exam	96
Assessment 5 OSPE	96

Weighting of Assessments

Final written Examination	50%
Structured Oral Exam	30%
OSPE	20%
Total	100%

Formative only assessments simple research assignment, log book, attendance and absence.

6. **List of References**

6.1- Course Notes

Lectures notes prepared by the staff members in the department

6.2- Essential Books (Text Books)

- Fitzgerald M.J.T. (2016): The anatomical basis of medicine and surgery. By Standing s., ELIS H., Healy J. C., Johnson D. and Williams A. Gray's Anatomy. Elsevier; London, New York. Sydney. Toronto.

6.3- Recommended Books

- Stevens A. and Lowe J. S. (2015): Human histology; 5th edition; edited by Elsevier Mosby
- Colored Atlas of anatomy.

- Martini F. H., Timmons M. J. and McKinley M.P. (2015): Human anatomy; 10th edition.
- Tortora G. J. and Nielson M.T. (2016): Principles of human anatomy 14th edition; Edited by John Wiley and Sons ; United states.
- McMinn R.M.H. (2017): Lasts anatomy regional and applied chapter 14th edition, edited by Longman group UK.

6.4- Web Sites:

<http://www.innerbody.com>
www.yahoo.com
www.pubmed.com

6.5-Periodicals:

- Egyptian J of Anatomy
- Acta Anatomica
- International J of Experimental Research
- Science

7. Facilities Required for Teaching and Learning.

1. Adequate infrastructure includes teaching places(teaching class, teaching halls, teaching laboratory)comfortable desks, good source of aeration, bathrooms, good illumination and safety and security tools.
2. Teaching tools: includes screens, computers cd(r-w) data shows, projectors, flip charts, white boards, video players, digital video scanners, copier, colourer and laser printers
3. Computer programs: for designing and evaluating MCQS.

Course Coordinator: Dr . Mohamed Al-Badry

Head of Department: Dr. Mohamed Al-Badry

Date: 18/12/2011, Revised:1/9/2012, Revised:1/12/2013, Revised:1/12/2018