وحدة ضمان الجودة

Quality Assurance Unit (QAU)

Program Specifications of MS degree in Histology,
Qena Faculty of Medicine,
South Valley University

كود البرنامج : HIS200

N.	Courses	Code	Coordinator Name	Coordinator Signature	Head of the department Name	Head of the department Signature
1	Pathology	HIS205	Dr\Mohamed Ebrahim		Dr\sabah fadel	
2	biochemistry	HIS204	Dr\doha abdelrhim		Dr\mohammed hosny	
3	Embryology	HIS201	Dr\maha abdelbaky		Dr/ dorria zaghlol	
4	Physiology	HIS203	Dr\haitham mohamed		Dr\omyma galal	
5	Microbiology	HIS207	Dr \ mostafa esmaeel		Dr\mohammed el feky	
6	Genetics	HIS204	Dr\ Eman Ahmed		Dr\ Amal Taha	
7	Applied biostatics	HIS209	Dr\amal omar		Dr\Ahmed El hany	
8	Histology	HIS202	Dr\Eman Ahmed		Dr\ Amal Taha	

Program Coordinator
Dr/ Eman Ahmed Abd-Elrahim

Head of Histology department
Dr/Amal Taha Abou-Elghit

رؤية كلية طب قنا : الريادة فى التعليم والبحث العلمي الطبي لخدمة إقليم الجامعة والشراكة الفاعلة فى الإرتقاء بالمنظومة الطبية محلياً و دولياً.

رسالة كلية طب قنا : تلتزم كلية طب قنا – جامعة جنوب الوادي بتخريج أطباء قادرين على تلبية الإحتياجات الطبية الإقليمية وإعداد باحثين قادرين على تطوير المنظومة الصحية بمستوى بحثى عالي تنافسي وتقديم خدمات متميزة فى إطار الحفاظ على ضوابط وأخلاقيات المهنة والقيم المجتمعية من خلال تطوير البحث العلمي والبرامج التعليمية وآليات التعليم الطبي المستمر.

Qena Faculty of medicine **South Valley University**

Course Specification for MS Degree in Histology

Program Specification for Master Degree in Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

A- Basic Information

1. Program title: Master Degree of Histology and Cell Biology
2. Program type: single
3. Faculty: Faculty of Medicine
4. Departments: Histology and Cell Biology Department
5. Coordinator : Dr. Eman Ahmed Abdel Rahim
6. External evaluator:- Prof. Dr Amal Taha Abou El ghait Taha

B- Professional Information:

1. **Program aims:**

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

1- Scientific knowledge essential for practice of Histology according to the international standards.

2- Skills necessary for proper practice in the field of Histology including diagnostic, problem solving and decision making skills.

3- Ethical principles related to the practice in this specialty.

4- Active participation in community needs assessment and problem solving.

5- Maintenance of learning abilities necessary for continuous medical education.

6- Maintenance of research interest and abilities.

2. **Attributes of the post graduate:**

1. Mastering the basics of scientific research methodologies.
2. The application of the analytical method and used in the field of Histology.
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 Histology.
5. Identify problems in the field of Histology 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 program the student should be able to:

A1**.** Illustrate the histological structure of the different body tissues and organs.

A2**.** Explain scientific developments in the field of Histology.

A3**.** Describe the function of the different organs in relation to their structure.

. **a**4**.** List the different methods for tissue examination.

A5**.** List general histological stains.

A6**.** Mention the ethical and mental principles of professional practice in the field of Histology.

A7**.** Mention the different methods of detection the presence of protein, carbohydrate and lipids in the tissue.

A8**.** Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work.

A9**.** List the principles and fundamentals of quality of professional practice in the field of Histology.

A10**.** Define the basis, and ethics of scientific research.

b) Intellectual Skills:

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

b1. Interpret data acquired in the field of Histology.

B2. Analyze the contents and identify histological slide.

B3. Link between knowledge for professional problems solving in the field of Histology.

B4. Conduct research study and-or write a scientific study on a research problem.

B5. Assess risk in professional practices in the field of Histology.

B6. Plan to improve performance in the field of Histology.

B7. Identify Histological problems and find solutions for them.

B8. Analyze researches and issues related to Histology.

c) Professional and Practical Skills:

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

C1. Master of the basic and modern professional skills in the area of Histology.

C2. Write and evaluate of Histological reports.

C3. Prepare solutions used for micro techniques and different stains perfectly and independently.

C4. Deal with lab animals.

C5. Perform the steps of micro technique for paraffin section preparation perfectly and independently.

C6. Perform tissue preparations like spreading, filming, smearing and grinding perfectly and independently.

C7. Perform general histological stains Hx &E and c.t. fibers perfectly and independently.

C8. Perform some histochemical reactions; proteins, lipids, carbohydrates, enzymes perfectly and independently.

C9. Observe the steps of tissue preparation for E.M. under supervision.

C10. Observe the steps of immunohistochemistery under supervision.

C11. Perform some basic experiments in the basic sciences to be utilized in the research work.

d) General and Transferable Skills:

By the end of the program the student should have the ability 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 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 Efficiently.

D8. Learn himself Continuously.

5**. Curriculum structure and contents:**

5a- Program duration: 4 semesters .

5.b- Program structure:

5.b.i- Number of hours per week:

	hours /week		
Subject	Lectures	Practical	Clinical
First Part:			
١. Pathology	9	8	
٢. Biochemistry	9	8	
٣. Physiology	9	8	
٤. Embryology	9	8	
٥. Microbiology	9	8	
٦. Medical Genetics	9	8	
٧. biostatistics& computer and research methodology	1	2	
Second Part:			
Histology	7,4	6,6	

code	Item		No	%
b.i	Total credit hours	Compulsory	٧١	47
		Elective	١	1
		Optional	٣١	62
b.iii	credit hours of basic sciences courses		٣١	62
b.iv	credit hours of courses of social sciences and humanities		١	1
b.v	credit hours of specialized courses:		٧٣	47
b.vi	credit hours of other course		2	4
b.vii	Practical/Field Training		5	11
b.viii	Program Levels (in credit-hours system): Level 1: 1st part Level 2: 2nd Part Level 3 Thesis		 51 42 6	 13 3 84 21

٦. Program Courses

١,٦- Level of program:

First part... (1 Semester)

Course title	No of credit hours	Program ILOs. covered		
a. Optional: one course of the following		Lect.	Lab.	
Pathology	31	9	8	,a6 a١١,b١,b٢,b٣,b٤,c١١,c١١ ,d١,d٢,d٣,d٤,d٥,d٦,d٧,d٨
Medical Biochemistry	31	9	8	a٥,a٦,a١١,b١,b٣,b٤,c١١,d١, d٢,d٣,d٤,d٥,d٦,d٧,d٨
Medical Physiology	31	9	8	a٢,a٦,a١١,b١,b٣,b٤,c١١,d١, d٢,d٣,d٤,d٥,d٦,d٧,d٨
Embryology	31	9	8	a٦,a١١,b١,b٣,b٤,c٤,c١١,d١, d٢,d٣,d٤,d٥,d٦,d٧,d٨
Microbiology	31	9	8	a٦,a١١,b١,b٣,b٤,c١١,d١,d٢, d٣,d٤,d٥,d٦,d٧,d٨
Medical Genetics	31	9	8	a٦,a١١,b١,b٣,b٤,b٦,c١,c٥,c ١١,d١,d٢,d٣,d٤,d٥,d٦,d٧,d٨
b.Compulsory Biostatistics and research methodology	2	1	2	b٥,c٦,d٢,d٥

Second part..(3 semesters)

a. Compulsory

Course title	No of credit hours	Program ILOs. covered		
		Lect.	Lab.	
Histology and Cell Biology	42	7,4	6,6	a١,a٣,a٤,a٧,a٨,a٩,a١١,b١,b٢,b٣,b٤,b٥,b٦ ,b٧,b٨,c١,c٢,c٣,c٤,c٥,c٦,c٧,c٨,c٩,c١١,d١ ,d٢,d٣,d٤,d٥,d٦,d٧,d٨

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 ٢١ months in one of the known hospitals.
4. Follow postgraduate bylaw Regulatory rules of Qena Faculty of Medicine approved by the ministerial decree No. (٤٦), dated ٢٠١٠\١\٦

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 Histology Course too.

B- Candidate should know how to speak &write English well.

C-Candidate should have computer skills.

٨. Regulations for Progression and Program Completion

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

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

- Program-related basic & clinical sciences & research Methodology, Ethics & medical reports, 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 15٪ 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 16٪ (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 ≥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.

١. 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.

٢. Accepting the thesis is enough to pass this part.

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

- Program related specialized sciences of Histology 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 in the department of histology.

- The students should pass the ١st 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 ≥57٪ of its mark) is a prerequisite for candidates to be assessed and undertake part ١ and part ٢ examinations; the credit hours of the logbook are calculated as following:
  - Each Cr. Hr.= 16 working Hrs.
  - Logbook= 5 Cr. Hr. X 16 working Hrs = 113 Working Hrs.
  - Collection of working Hrs. is as following:

Activity	Hrs
Grand rounds	6
Training courses	21/ **day**
Conference attendance	21/**day** 81/**day**
Thesis discussion	6
Workshops	21/**day**
Journal club	6
Seminars	6
Morbidity and Mortality conference	6
Self education program	6

- Two sets of exams: 1st in October - 2nd in April.
- At least 15٪ 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 16٪ (Level D) in each course is needed.

٩. Methods of student assessments:

Method of assessment	weight	The assessed ILOs
١-Activities		- General transferable skills, intellectual skills
٢-Written Exams: -Short essay: 14% -structured questions: 52٪ -MCQs: 12٪ -Commentary, Problem solving: 51٪	15%	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills
3-OSCE/ OSPE	15%	-Practical skills, intellectual skills, general transferable skills
4-Structured Oral Exams		- Knowledge, Intellectual skills, General transferable skills

Assessment schedule:

Part I:

- Written Exam (3 hours): for one of the optional courses + Structured oral Exam + OSPE.
- Biostatistics & Computer and Research Methodology: Written Exam (2 hours) + Structured oral Exam+ OSPE

Part II:

- Two Written Exams (3hours for each): for histology + structured oral Exam + OSPE.

11. **Program evaluation:**

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

Course Specifications of Pathology for Master Degree in Histology

Qena Faculty of medicine **South Valley University**

1. Program on which the course is given: Master Degree in Histology and Cell Biology
2. Minor element of program
3. Department offering the program: Histology and Cell Biology Department
4. Department offering the course: Pathology Department
5. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Pathology**

Code: HIS205

Total Hours

Lectures	practical	Total hours	Credit hours
٥٣١	121	552	31

B- Professional Information

1. **Overall Aims of Course**

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

1- Scientific knowledge essential for practice of Pathology according to the international standards.

2- Skills necessary for proper practice in the field of Pathology including diagnostic, problem solving and decision making skills.

3- Ethical principles related to the practice in this specialty.

4- Active participation in 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 of Course (ILOs):**

A)Knowledge and Understanding:

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

A1**.** Define the basic knowledge of general pathology.

A2**.** Illustrate the etiology, pathogenesis and pathologic manifestation of diseases.

A3**.** Correlate gross and histopathology with the clinical basis of diseases.

A4**.** List the basics, and ethics of scientific research.

a) Intellectual Skills:

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

B1. Interpret a pathology report in a professional manner.
B2. Identify and analyze the contents any pathological slide.
B3. Link between the signs of inflammation, degeneration, necrosis and apoptosis to identify variable tissue injuries.
B4. Conduct research study and-or write a scientific study on a research problem.

b) Professional and Practical Skills:

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

C1. Perform the steps of immunohistochemistery under supervision

C2. Perform some macroscopic and microscopic slides of the altered structure in different organs.

c) General and Transferable Skills:

By the end of the course the student should 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 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 Efficiently .

D8. Learn himself Continuously.

3**. Course contents:**

Topics	N. of hours	Lectures	Practical
1-General pathology:			
1,1. Introduction	11	11	-
2,1. Inflammation	11	5	5
3,1. Repair	11	5	5
4,1. Cell injury and cell death	11	5	5
5,1. Circulatory disturbances	11	5	5
6,1. Immunopathology	11	5	5
7,1. Infectious diseases	11	5	5

8,1. Disturbances of growth	11	5	5
9,1. Neoplasia	11	5	5

11,1. Environmental and nutritional diseases	51	5	5
2- Systematic pathology:			
1,2 Cardiovascular diseases	11	5	5
2,2. Respiratory diseases	11	5	5
3,2. Gastrointestinal diseases	11	5	5
4,2. Diseases of hepatobiliary system	11	5	5
5,2. Diseases of exocrine pancreas and peritoneum	11	5	5
6,2. Diseases of the urinary system	11	5	5
7,2. Diseases of the male genital system	11	5	5
8,2. Diseases of the female genital system	51	11	5

2,4- Practical sessions including practical assignments.

3,4- Assignments

4,4- attending and participating in scientific conferences, seminars ,work shops and thesis discussion to acquire the general and transferable skills needed.

5**. Student Assessment Methods**

Method of assessment	The assessed ILOs
1,5- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
2,5-Written Exam: -Short essay: ٪١٤ -structured questions: 52٪ -MCQs: 12٪ -Commentary, Problem solving: 51٪	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
3,5-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills

4,5-OSPE	-Practical skills, intellectual skills
5,5 Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment 1	Final written exam	Week 42
Assessment 2	Final Structured Oral Exam	Week 42
Assessment 3	Final OSPE	Week 42
Assessment 4	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	15 **%**
Structured Oral Exam	13 **%**
OSPE	٪12
Total	٪111

Formative only assessments: attendance and absenteeism

6**. List of References**

1,6 **Essential Books (Text Books):**

Muir's text book of pathology.

Robbins pathologic basis of diseases.

2,6-**Web Sites:**

http://www.ncbi.nlm.nih.gov/pubmed/

7**. Facilities Required for Teaching and Learning**

1. Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of areation,bathroom,good illumination and security and safety.
2. Teaching tools: including screen, computers, data show, slide projector, flip chart, white board, video player, digital camera, scanner and colored and lazer printers.
3. Computer programs: for designing and evaluating MCQs.

Course Specifications of Medical Biochemistry for Master Degree in Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

١. Program on which the course is given: Master Degree in Histology and Cell Biology

٢. Minor element of program

٣. Department offering the program: Histology and Cell Biology Department

٤. Department offering the course: Medical Biochemistry Department

٥. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Medical Biochemistry**

Code: HIS204

Total Hours

Lectures	practical	Total hours	credit hours
531	121	552	31

B- Professional Information

1**. Overall Aims of Course**

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

1- Scientific knowledge essential for practice of Biochemistry according to the international standards.

2- Skills necessary for proper practice in the field of Biochemistry including diagnostic, problem solving and decision making skills.

3- Ethical principles related to the practice in this specialty.

4- Active participation in 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 of Course (ILOs)**

a) Knowledge and Understanding:

By the end of the course the post graduate students should be able to :

A1. Mention the different methods of detecting the presence of protein, carbohydrate, enzymes and lipids in the tissue.

A2. Explain the mechanisms and regulation of cellular metabolic activities.

A3. Describe the biochemistery of hormones, minerals, enzymes and vitamin metabolism.

A4. Illustrate the strucure of different types of Immnoglobulines.

A5. Explain the pathways of free radicals.

A6. Define the Biochemistry of muscular activity.

A7. List the chemistry of nervous tissue and factors of nerve impulse transmission.

A8. Define the Porphyrin metabolism and heam biosynthesis and catabolism

A9. List the basics, and ethics of scientific research.

b) Intellectual Skills

By the end of the course the post graduate students should be able to:

B1. Integrate basic biochemical and physiological facts with the cellular ultrastructure.

B2. Conclude the molecular structure with the biomedical activities of cells in different tissue types

B3. Analyse the affected biochemical deficiencies which affect the physiological activities of the cell.

B4. Evaluate the regulatory mechanisms and their biomedical activities of different cellular activities.

B5. Conduct research study and-or write a scientific study on a research problem.

c) Professional and Practical Skills

By the end of the course the post graduate students should be able to:

C1. Perform some laboratory tests to demonstrate the tissue proteins.

C2. Do some laboratory tests to demonstrate the tissue carbohydrates.

C3. Train laboratory tests to demonstrate the tissue enzymes.

C4. Teach some laboratory tests to demonstrate the tissue fats.

C5. Apply some laboratory tests to demonstrate the tissue hormones.

C6. Conduct some laboratory tests to demonstrate the cellular nucleic acids.

d) General and Transferable Skills

By the end of the course the post graduate students 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 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 efficiently.

D8. Learn himself Continuously.

3**. Contents**

Topics	N. of hours	Lectures	Practical
(1)Biological oxidations include: -General consideration. -Electron transport. -ATP-synthesis. -Translocations. -Superoxide dismutase.	52	52	1
(2) Glycolysis and citric acid cycle: - General consideration. -Enzyme structure and reaction mechanisms. -Regulation mechanisms and biomedical importance.	13	11	12
(3) Other Pathways Carbohydrate Metabolism: a- Pentose -phosphate pathway and Gluconeogenesis. -General considerations -Enzyme reaction mechanisms. -Regulation mechanisms -Genetic diseases. B-Glycogen Metabolism: - General considerations - Glycogen Synthetase and phosphorylase: structure and catalytic activities. -Regulation -Genetic diseases C-Metabolism of other hexoses and biosynthesis of mucopolysaccharides. Etails	52	11	51
(٤) Fat metabolism: General considerations. -Fatty acid oxidation and fatty acid biosynthesis. - Enzymes and reaction mechanisms for biosynthesis of cholesterol and related derivatives, phospholipids, glycolipids and related compounds. -Eicosanoids metabolism. -Adipose tissue metabolism. -Lipid transport in plasma: Lipoproteins: assembly and degradation, biomedical importance. -Genetic diseases.	13	11	12
(٥)Protein metabolism: -General consideration -Amino acids degradation: General reaction, nitrogen disposal and ammonia disposal. -Nitrogen fixation. -One carbon metabolism.	13	11	12

-Individual amino acids metabolism.			
6 Integration of metabolism: - Mechanisms and regulation	51	51	1
(7) Metabolism of nucleotides : -General considerations -Purin and pyrimidine biosynthesis. -Ribonucleotide reductase -thioredoxin and Glutaredoxin, Thymidylate synthase and dihydrofolate reductase -Uric acid -Genetic diseases.	11	5	5
8) Porphyrin metabolism and heam biosynthesis and catabolism (9) Mineral metabolism Tissue chemistry	12	11	11
(11) Eukaryotic chromosomes Gene Expression : -Nucleosome and chromatin. -Mitochondrial DNA. -DNA structure :replication and repair: -Structure. -Nucleases and ligases. -DNA topology and topoisomerases. -DNA polymerases. -Origin and direction of replication.	12	11	11
(11_)Hormones -Classification, mechanisms of actions. -Pituitary and hypothalamic hormones. -Thyroid and parathyroid hormones. -Hormones of the adrenal cortex and medulla. -Hormones of the Gonads. -Hormones of the pancreas and G.I.T tract.Biochemistry of osteoporosis	13	12	11
(12)Minerals: (calcium.phosphate,Na,k,mg,Cu,iron,zinc,iodine ,mercury,Cd,florid,lead ,and others trace elements . (13)Immnoglobulines (14)Free radicals (15)Enzymes: -kinetics -Mechanism of action Regulation - (16)Vitamin: -Water soluble vitamin. Fat soluble vitamin (17) Biochemistry of muscular activity. (18)Chemistry of nervous tissue and factors of nerve impulse transmission.	12	11	11
TOTAL	552	531	121
Credit	31	9	4

4**. Teaching and Learning Methods**

1,4Lectures in the form of discussions.

2,4- Practical sessions including practical assignments.

3,4- Assignments

4,4- attending and participating in scientific conferences, seminars, work shops and thesis discussion to acquire the general and transferable skills needed

5**. Student Assessment Methods**

Method of assessment	The assessed ILOs
1,5- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
2,5-Written Exam: -Short essay: 14% -structured questions: 52٪ -MCQs: 12٪ -Commentary, Problem solving: 51٪	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
3,5-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
4,5-OSPE	-Practical skills, intellectual skills
5,5Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment 1	Final written exam	Week 42
Assessment 2	Final Structured Oral Exam	Week 42
Assessment 3	Final OSPE	Week 42
Assessment 4	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	١٥ **%**
Structured Oral Exam	١٣ **%**
OSPE	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦**. List of References**

١,٦**- Essential Books (Text Books)**

١. Text book of medical biochemistry with clinical Devlin, JM ٤٩٩١

٢. Harper's biochemistry, Murray, RK ٥١١٢

٢,٦**- Recommended Books**

١. Lectures notes on clinical biochemistry, Whitby et al ٣٩٩١

٢. Lippincott's illustrated reviews biochemistry, Champe, PC, Harvey, RA, ٥١١٢

٣,٦**- Periodicals, Web Sites, … etc**

http://www.ncbi.nlm.gov/

http://www.vlib.org/
www.genome.ad.jp/kegg/regulation.
Findarticle.com
Freemedicaljournals.com

٧. Facilities Required for Teaching and Learning

١. Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of aireation, bathroom, good illumination and security and safety.

٢. Teaching tools: including screen, computers, data show, slide projector, flip chart, white board, video player, digital camera, scanner and colored and lazer printers.

٣. Computer programs: for designing and evaluating MCQs.

Course Specifications of Medical Physiology for Master Degree in Histology

Qena Faculty of medicine **South Valley University**

١. Program on which the course is given: Master Degree in Histology and Cell Biology

٢. Minor element of program

٣. Department offering the program: Histology and Cell Biology Department

٤. Department offering the course: Medical Physiology Department

٥. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Physiology**

code: HIS 203

Total Hours

Lectures	practical	Total hours	credit hours
٥٣١	١٢١	٥٥٢	٣١

B- Professional Information

١. Overall Aims of Course

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

١- Scientific knowledge essential for practice of Physiology according to the international standards.

٢- Skills necessary for proper practice in the field of Physiology including diagnostic, problem solving and decision making skills.

٣- Ethical principles related to the practice in this specialty.

٤- Active participation in community needs assessment and problems solving.

٥- Maintenance of learning abilities necessary for continuous medical education. ٦- Maintenance of research interest and abilities.

٢. Intended Learning Outcomes of Course (ILOs):

a) Knowledge and Understanding:

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

a١. Describe the function of the different organs in relation to their structure.

a٢. Identify the structure, function and the relationship of various body organs. **a٣.** Describe the chemical composition and function of body fluids

a٤. Explain the knowledge and understanding of the basic physiology of the cell. **a٥.**

List the basics, and ethics of scientific research.

b) Intellectual Skills:-

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

b١. Interpret the relation between physiological variables

b٢. Integrate of many parts of the total motor control system.

b٣. Measure the activity of the baro receptors on sympathetic and parasympathetic nervous system.

b٤. Calculate one physiological variable when relevant information is given, e.g. how to estimate blood volume or the glomerular filtration rate

b٥. Conduct research study and-or write a scientific study on a research problem.

c) Professional and Practical Skills:

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

c١. Examine the blood group and bleeding time.

c٢. Assess hearing tests and audiometer.

c٣. Examine the visual field and visual acuity

c٤. Perform the pulmonary function tests in experimental animal.

d) General and Transferable Skills:

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

d١. Communicate effectively by all types of effective communication.

d٢. Use information technology to serve the development of professional practice.

d٣. Assess himself and identify learning needs.

d٤. Use different sources to obtain information and knowledge

d٥. Develop rules and indicators for assessing the performance of others. d٦.

Work in a team, and team's leadership in various professional contexts. d٧.

Manage time Efficiently .

d٨. Learn himself Continuously.

٣. Contents:

Topic	N. of hours	Lectures	Practical
١- the cell and general physiology a- Functional Organization of the Human Body and Control of the "Internal Environment" -"Homeostatic" Mechanisms of the -Major Functional Systems Control Systems of the Body -Automaticity of the Body b-The Cell and Its Functions Organization of the Cell Physical Structure of the Cell -Comparison of the Animal Cell with Precellular Forms of Life -Functional systems of the Cell -Genetic Control of Protein Synthesis,	٥٢	٥١	١١

cell Function, and cell reproduction -Genes In the Cell Nucleus -The Process of Transcription -Control of Gene Function and biochemical activity in cells -The DNA-Genetic System Also Controls Cell Differentiation and Apoptosis			
٢- Membrane and Physiology -Transport of Substances Through the Cell Membrane -The Lipid Barrier of the Cell Membrane, and Cell Membrane Transport Proteins -Basic Physics of Membrane Potentials. -Measuring the Membrane Potential -Resting Membrane Potential of Nerves -Origin of the Normal Resting Membrane Action Potential -Special Characteristics of Signal Transmission in Nerve Trunks ٢- Muscular tissue:- Contraction of Skeletal Muscle -Physiologic Anatomy of Skeletal Muscle -Skeletal Muscle Fiber, Molecular Characteristics of the Contractile Filaments -Effect of amount of actin and myosin filament overlap on tension developed -Mechanics of skeletal muscle contraction -Remodeling of muscle to multifunction -Excitation of Skeletal Muscle: Neuromuscular Transmission and Excitation-Contraction Coupling -Transmission of Impulses from Nerve Endings to Skeletal Muscle Fibers: The Neuromuscular Junction -Secretion of Acetylcholine by the Nerve Terminals Molecular Biology of Acetylcholine Formation and Release Drugs That Enhance or Block Transmission at the Neuromuscular Junction -Spread of the Action Potential to the Interior of the Muscle Fiber by Way of "Transverse Tubules. Release of Calcium Ions by the Sarcoplasmic Reticulum	٥٢	٥١	١١
٣- Contraction and Excitation of Smooth Muscle -Types of Smooth Muscle Contractile -Mechanism in Smooth Muscle Regulation of Contraction by Calcium Ions - Nervous and Hormonal Control - Muscle Membrane Potentials and Action Potentials in Smooth Muscle -Effect of Local Tissue Factors and Hormones to Cause Smooth Muscle Contraction Without Action Potentials	٥٢	٥١	١١

٤- Urinary system -Glomerular filtration, renal blood flow and their control -Physiologic anatomy of the kidney Renal blood flow -Tubular processing of the glomerular filtrate -Osmoreceptor ADH feedback system	٥٢	١١	٥١
٥- Blood cells, immunity and blood clotting -Red blood cells, anemia and polycythemia -Resistance of body to infection Leucocytes, monocyte macrophage system -Blood type transfusion tissue and organ transplantation -Rh antigen -ABO system	٥٢	١١	٥١
٦- Respiration -Diffusion of gases through the respiratory membrane -Transport of oxygen and carbon dioxide in blood and tissue fluids	٥٢	٥١	١١
٧-Eye -Photochemistery of vision Color vision -Neural function of the retina -Visual pathway	٥٢	٥١	١١
٨-The ear -Tympanic membrane and osicular system -Cochlea -Central auditory mechanisms	١٢	١١	١١
٩- Nervous system -Central nervous system synapses -Sensory receptors, neural circuits for processing information -Somatic sensations: general organization, the tactile and position senses - Detection and transmission of tactile sensations - Sensory pathways for transmitting somatic signals into the central nervous system -Transmission in the dorsal column medical lemniscal system - Dual pathways for transmission of pain signals into central nervous system Motor cortex and corticospinal tract -Role of brain system in controlling motor function -Vestibular sensations and maintenance of equilibrium -Functions of brain stem nuclei in controlling subcononscious movement -Cerebellum and its motor functions -Basal ganglia their motor functions -Integration of many parts of the total motor control System -Cerebral cortex -Functions of specific cortical areas -Function of the brain in communication with the limbic system and the hypothalamus	١٣	١٢	١١

١١ -Functional anatomy of the limbic system -Hypothalamus -Specific functions of the other parts of the limbic system -The autonomic nervous system and the adrenal medulla -General organization of the autonomic nervous system -Basic characteristics of sympathetic and parasympathetic function	١٣	٥١	٥١
TOTAL	٥٥٢	٥٣١	١٢١
Credit	٣١	٩	٤

٤. Teaching and Learning Methods

١,٤- Lectures in the form of discussions.

٢,٤- Practical sessions including practical assignments.

٣,٤- Assignments

٤,٤- attending and participating in scientific conferences, seminars,work shops and thesis discussion to acquire the general and transferable skills needed

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥-Written Exam: -Short essay: ٪١٤ -structured questions: ٪٥٢ -MCQs: ٪١٢ -Commentary, Problem solving: ٪٥١	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
٣,٥-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
٤,٥-OSPE	-Practical skills, intellectual skills
٥,٥ Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment ١	Final written exam	Week ٤٢
Assessment ٢	Final Structured Oral Exam	Week ٤٢
Assessment ٣	Final OSPE	Week
Assessment ٤	٤٢	

Weighting of Assessments attendance & absenteeism throughout the course

Final Written Examination	١٥ **%**
Structured Oral Exam	١٣ **%**
OSPE	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦. List of References

١,٦ Essential Books

Gyton textbook of medical physiology (last edition).

٢,٦- Recommended Books

Ganonn, s textbook of medical physiology (last edition)

٣,٦- Periodicals, Web Sites, … etc

www.medicalstudent com.

www.the-aps org

www.mhhe.com

٧. <u>Facilities Required for Teaching and Learning</u>

١. Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of aireation, bathroom, good illumination and security and safety.

٢. Teaching tools: including screen, computers ,data show, slide projector, flip chart, white board, video player, digital camera, scanned and colored and lazer printers.

٣. Computer programs: for designing and evaluating MCQs.

Course Specifications of Embryology for Master Degree in Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

١. Program on which the course is given: Master Degree in Histology and Cell Biology

٢. Minor element of program

٣. Department offering the program: Histology and Cell Biology Department

٤. Department offering the course: Human Anatomy and Embryology Department

٥. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Embryology**

Code: HIS201

Total Hours

Lectures	practical	Total hours	credit hour
٥٣١	١٢١	٥٥٢	٣١

B- Professional Information

١. Overall Aims of Course

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

١- Scientific knowledge essential for practice of Embryology according to the international standards.

٢- Skills necessary for proper practice in the field of Embryology including diagnostic, problem solving and decision making skills.

٣- Ethical principles related to the practice in this specialty.

٤- Active participation in community needs assessment and problems solving.

٥- Maintenance of learning abilities necessary for continuous medical education. ٦- Maintenance of research interest and abilities.

٢. Intended Learning Outcomes of Course (ILOs):

a) Knowledge and Understanding:

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

a١. Define the normal human development.

a٢. Define the congenital abnormalities in human development.

a٣. List the basics, and ethics of scientific research

b) Intellectual Skills:

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

b١. Correlate the anatomical structure with the function of every part of human body.

b٢. Utilize embryology to understand the congenital anomalies.

b٣. Conduct research study and-or write a scientific study on a research problem.

c) Professional and Practical Skills:

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

c١. Determine the prenatal age of an embryo by different methods.

c٢. Recognize the time of ovulation and mechanism of fertilization either in vivo or in vitro.

d) General and Transferable Skills:

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

d١. Communicate effectively by all types of effective communication.

d٢. Use information technology to serve the development of professional practice.

d٣. Assess himself and identify learning needs.

d٤. Use different sources to obtain information and knowledge

d٥. Develop rules and indicators for assessing the performance of others. d٦.

Work in a team, and team's leadership in various professional contexts. d٧.

Manage time Efficiently.

d٨. Learn himself Continuously.

٣. Contents

Topic	N. of hours	Lecture	Practical
Gametogenesis Conversion of germ cells into male and female gametes	١٢	١٢	١
-Fertilization: *Ovulation. *Spermation *Mechanism of fertilization. *In vitro fertilization.	١٢	٥١	٥
First week of development *implantation	١٢	١١	١١
Second week of development Bilaminar germ disc	١٢	١١	١١
Third week of development *trilaminar germ disc	١٢	٥	٥١
Fourth to eight weeks of development *The embryonic period	١٢	١٢	١

Third month to birth: *the fetus and placenta	١٢	٥	٥١
Skeletal system Muscular system	١٢	٥	٥١
Respiratory system Cardiovascular system	١٢	٥	٥١
Digestive system	١٣	١١	١٢
Head and neck Central nervous system	٢١	٦	٦
Ear Eye	١١	٦	٥
Integumentary system	١١	٦	٥
Urogenital system	١١	٨	٣
Total	٥٥٢	٥٣١	١٢١
Credit	٣١	٩	٤

٤. Teaching and Learning Methods

١,٤- Lectures in the form of discussions.

٢,٤- Practical sessions including practical assignments.

٣,٤- Assignments

٤,٤- attending and participating in scientific conferences, seminars,work shops and thesis discussion to acquire the general and transferable skills needed

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥-Written Exam: -Short essay: ٪١٤ -structured questions: ٪٥٢ -MCQs: ٪١٢ -Commentary, Problem solving: ٪٥١	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
٣,٥-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
٤,٥-OSPE	-Practical skills, intellectual skills
٥,٥ Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment ١	Final written exam	Week ٤٢
Assessment ٢	Final Structured Oral Exam	Week ٥٢
Assessment ٣	Final OSPE	Week ٥٢
Assessment ٤	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	١٥ **%**
Structured Oral Exam	١٣ **%**
OSPE	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦. List of References

١,٦- Essential Books (Text Books)

Snell's Medical Emberyology.

Langman's Medical Emberyology.

٢,٦- Recommended Books

Develping human (edited by Keith Moore).

Last's text of Anatomy.

٣,٦- Periodicals and Web Sites:

American society of anatomy.

http://www.Nomina anatomy

Freemedical journals.com

٧. Facilities Required for Teaching and Learning

١,٧-Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of areation,bathroom,good illumination and security and safety.

٢,٧- Teaching tools: including screen,computers,data show,slide projector, flip chart, white board, video player, digital camera,scanne and colored and lazer printers.

٣,٧- Computer programs :for designing and evaluating MCQs.

Course Coordinator:

Course Specifications of Medical Microbiology and Immunology for Master Degree in Histology

Sohag University **Faculty of Medicine**

١. Program on which the course is given: Master Degree in Histology and Cell Biology

٢. Minor element of program

٣. Department offering the program: Histology and Cell Biology Department

٤. Department offering the course: Medical Microbiology & Immunology

٥. Department.

٦. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Medical Microbiology and Immunology**

Code: **HIS207**

Total Hours

lectures	practical	Total hours	credit hours
٥٣١	١٢١	٥٥٢	٣١

B- Professional Information

١. Overall Aims of Course

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

١- Scientific knowledge essential for practice of microbiology according to the international standards.

٢- Skills necessary for proper practice in the field of microbiology including diagnostic, problem solving and decision making skills.

٣- Ethical principles related to the practice in this specialty.

٤- Active participation in community needs assessment and problems solving.

٥- Maintenance of learning abilities necessary for continuous medical education.

٦- Maintenance of research interest and abilities.

٢. Intended Learning Outcomes of Course (ILOs):

a) **Knowledge and Understanding**:

By the end of the course the student is expected to:

a١. List the microorganisms affecting human beings all over the world and particularly in Egypt.

a٢. Describe the metabolism and genetics of organisms.

a٣. Define the laboratory tests needed for diagnosis of microbial organism.

a٤. Describe some infection control methods

a٥. Describe the structure and function of immune system

a٦. List the basics, and ethics of scientific research.

b) Intellectual Skills:

By the end of the course the student is expected to:

b١. Interpret the results of microbial tests to aid in diagnosis-

b٢. Differentiate between the different microorganisms (Bacteria, viruses and fungi)

b٣. Differentiate between the different types of disease causing microbes

b٤. Link between a wide variety of tests and cross correlate with other clinical data

b٥. Conduct research study and-or write a scientific study on a research **problem.**

c) Professional and Practical Skills:

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

c١. Recognize micro-organisms on morphological bases.

c٢. Perform some methods of staining, culturing and biochemical reactions

c٣. Perform some serological tests used in diagnosis.

c٤. Collect samples.

c٥. Preserve samples.

d) General and Transferable Skills:

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

d١. Communicate effectively by all types of effective communication.

d٢. Use information technology to serve the development of professional practice.

d٣. Assess himself and identify learning needs.

d٤. Use different sources to obtain information and knowledge

d٥. Develop rules and indicators for assessing the performance of others. d٦.

Work in a team, and team's leadership in various professional contexts. d٧.

Manage time Efficiently.

d٨. Learn himself Continuously.

٣. Contents

Topics	N. of hours	Lectures	Practical
General Bacteriology Bacterial anatomy & Physiology Bacterial genetics Recombinant DNA technology Antibiotics Sterilization & Disinfection	٥١	٥١	١
Systematic Bacteriology Gram +ve cocci Gram -ve cocci Gram +ve bacilli Gram -ve bacilli(١)	٥١	٥١	١
General virology	٤	٤	١
Systematic Virology RNA viruses DNA viruses	١١	١١	١
Mycology Fungal classifications Opportunistic mycosis& Antifungal drugs	١١	١١	١
Immunology Congenital & Acquired Immunity Immunological Cells Hypersensitivity Transplantation Tumor Immunology Immunodeficiency	٦١	٦١	١
Applied Microbiology Laboratory tests Nosocomiology	١٢	١٢	١
Bacterial Cultures	١١	١	١١
Bacterial Isolation & Identification	١١	١	١١
Diagnostic Molecular Biology Methods	١١	١	١١
Antibiotic Sensitivity Tests	١١	١	١١
Sterilization & Disinfection	١١	١	١١
Immunology(Antigen Antibody Reactions) ١	١١	١	١١
Immunology(Antigen Antibody Reactions) ٢	١١	٥	٥
Staphylococci	٥	١	٥
Streptococci & Pneumococci	١١	١	١١
Neisseria	١١	٥	٥
Corynebacterium	٥	١	٥
Mycobacterium	٥	١	٥
Enterobacteria	١١	٥	٥

Pseudomonas & Yersinia	١١	٥	٥
Bacillus	١١	٥	٥
Clostridium	١١	٥	٥
Vibrios & Brucella	١١	٥	٥
Spirochaetes & Mycology	١١	٥	٥
TOTAL	٥٥٢	٥٣١	١٢١
Credit	٣١	٩	٤

٤. <u>Teaching and Learning Methods</u>

١,٤- Lectures in the form of discussions.

٢,٤- Practical sessions including practical assignments.

٣,٤- Assignments

٤,٤- attending and participating in scientific conferences, seminars,work shops and thesis discussion to acquire the general and transferable skills needed

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥-Written Exam: -Short essay: ٪١٤ -structured questions: ٪٥٢ -MCQs: ٪١٢ -Commentary, Problem solving: ٪٥١	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
٣,٥-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
٤,٥-OSPE	-Practical skills, intellectual skills
٥,٥ Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment ١	Final written exam	Week ٤٢
Assessment ٢	Final Structured Oral Exam	Week ٤٢
Assessment ٣	Final -OSPE	Week
Assessment ٤	٤٢	
	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	١٥ **%**
Structured Oral Exam	١٣ **%**
-OSPE	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦. List of References

١,٦- Course Notes

Lecture notes prepared by the staff members in the department.

٢,٦- Essential Books (Text Books)

Jawetz Medical Microbiology.

Roitt Essential Immunology.

Abbas Clinical Immunology

Alberts Molecular Biology

٣,٦- Recommended Books

A coloured Atlas of Microbiology.

Topley and Wilson, Microbiology

٤,٦- Periodicals, Web Sites, etc

Microbiology Journal

Immunology Journal

http://mic.sgmjournals.org/

٧. Facilities Required for Teaching and Learning

١,٧-Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of areation,bathroom,good illumination and security and safety.

٢,٧- Teaching tools: including screen,computers,data show,slide projector, flip chart, white board, video player, digital camera,scanne and colored and lazer printers.

٣,٧- Computer programs :for designing and evaluating MCQs.

Course Coordinator:

Course Specifications of Genetics for Master Degree in Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

١. Program on which the course is given: Master Degree in Histology and Cell Biology

٢. Minor element of program

٣. Department offering the program: Histology and Cell Biology Department

٤. Department offering the course: Departments of Histology and Cell Biology

٥. Academic year: Post graduate, Master Degree in Histology and Cell Biology

A- Basic Information

Title: **Genetics**

Code:HIS204

Total Hours

lectures	practical	Total hours	credit hour
٥٣١	١٢١	٥٥٢	٣١

B- Professional Information

١. **Overall Aims of Course**

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

١- Scientific knowledge essential for practice of Genetics according to the international standards.

٢- Skills necessary for proper practice in the field of Genetics including diagnostic, problem solving and decision making skills.

٣- Ethical principles related to the practice in this specialty.

٤- Active participation in community needs assessment and problems solving.

٥- Maintenance of learning abilities necessary for continuous medical education. ٦- Maintenance of research interest and abilities.

٢. **Intended Learning Outcomes of Course (ILOs):**

a) Knowledge and understanding:

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

a١. Define the chemical nature of genetic material (DNA & RNA)the basic knowledge of medical genetics

a٢. Identify how the DNA is organized to serve as genetic materials (gene and genome) which affect all the character of the human body.

a٣. Mention how the genetic information transferred to RNA during the process of transcription.

a٤. list and identify the stages of mitosis and meiosis, as well as the cell cycle, and explain the significance of each in scientific researches.

a٥. List the translation of genetic information on mRNA into polypeptide chains **a٦.** List the normal chromosome (structure & number).

a٧. List the basics, and ethics of scientific research.

b) Intellectual Skills:

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

b١. Integrate and evaluate genetic information and data from a variety of sources in order to gain a coherent understanding of theory and practice.

b٢. Find and evaluate new solutions to many kinds of Genetic problems.

b٣. Conduct research study and-or write a scientific study on a research problem.

b٤. Interpret different methods for DNA fragmentation and significance of cloning.

c) Professional and Practical Skills:

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

c١. Identify the sex of a person by determining the presence of y chromosome.

c٢. Demonstrate a microteqnice for reliable chromosomal analysis of leucocytes obtained from peripheral blood.

c٣. Use karyotyping to make observation and analyze chromosomal errors.

d) General and Transferable Skills:

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

d١. Communicate effectively by all types of effective communication.

d٢. Use information technology to serve the development of professional practice.

d٣. Assess himself and identify learning needs.

d٤. Use different sources to obtain information and knowledge

d٥. Develop rules and indicators for assessing the performance of others. d٦. Work in a team, and team's leadership in various professional contexts. d٧. Manage time Efficiently.

d٨. Learn himself Continuously**.**

٣. **Course Contents:**

Topics	N. of hours	Lectures	Practical
A. Biochemistry department			
DNA,RNA, and proteins : heredity at the molecular level	٤	٤	١
Composition and structure of DNA	٤١	٤	١١
DNA, as the genetic code	٤	٤	١
Replication of DNA	٤١	٨	٦
Transcription	٤١	٤	١١
From genes to proteins	٩	٤	٥
Gene splicing	٩	٤	٥
Translation	٩	٤	٥
B.Histology department			
Chromosomes	٤	٤	١
X Inactivation	٤	٤	١
Karyotyping	٤٣	٤	١٣
Chromosome aberrations and associated diseases, Polyploidy Aneuploidy Sex chromosome aneuploidy Abnormalities of chromosome structure histology Deletions Inversions Translocations	٦	٦	١
C. Microbiology department			
Organization of Genes Replication	٤	٤	١
Transfer of DNA	٢	٢	١
Mutation & Gene Rearrangement	٢	٢	١
Gene Expression	٤	٤	١

Genetic Engineering	٤	٤	١
Microbiology separation of DNA Fragments With Restriction Enzymes	٢٣	٢	١٣
Physical Separation of Differently sized DNA Fragments Cloning of DNA Restriction fragments	٧١	١١	٧
Characterization of Cloned DNA	٤١	١١	٣
Site- Directed Mutagenesis	٩	٩	١
Analysis With Cloned DNA: Hybridization probes	٤١	١١	٣
Manipulation of Cloned DNA	٤١	١١	٣
Recombinant strains in the Environment	٤١	١١	٣
TOTAL	٥٥٢	٥٣١	١٢١
Credit	٣١	٩	٤

٤. Teaching and Learning Methods

١,٤- Lectures in the form of discussions.

٢,٤- Practical sessions including practical assignments.

٣,٤- Assignments

٤,٤- attending and participating in scientific conferences,seminars, work shops and thesis discussion to acquire the general and transferable skills needed

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥-Written Exam: -Short essay: ٪١٤ -structured questions: ٪٥٢ -MCQs: ٪١٢ -Commentary, Problem solving: ٪٥١	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
٣,٥-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
٤,٥-OSPE	-Practical skills, intellectual skills
٥,٥ Computer search assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment ١	Final written exam	Week ٤٢
Assessment ٢	Final Structured Oral Exam	Week ٤٢
Assessment ٣	Final OSPE	Week ٤٢
Assessment ٤	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	١٥ **%**
Structured Oral Exam	١٣ **%**
OSPE	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦. List of References

١,٦- Course Notes

Lecture notes prepared by the staff members in the department.

٢,٦- Essential Books (Text Books)

١. Genetics: from Genes to Genomes, Hartwell L, Hood L, Goldberg ML et al. (١١١٢) Boston: McGraw Hill

٢. Molecular biology of the gene, Waston J.D.٤١١٢.. Pearson education, Inc.,

٣,٦- Recommended Books

Discovering Genomics, Proteomics and Bioinformatics ٢nd edition

Essentials of Medical Genetics ٣١th edition-by AlanE.H.Emery. Churchill Livingstone, ٧١١٢.

٤,٦- Periodicals:

Genetica	BMC Genetics
Journal of Genetics	Current genetics
	Genetics

٧. Facilities Required for Teaching and Learning

١,٧-Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of areation,bathroom,good illumination and security and safety.

٢,٧- Teaching tools: including screen,computers,data show,slide projector, flip chart, white board, video player, digital camera,scanne and colored and lazer printers.

٣,٧- Computer programs :for designing and evaluating MCQs.

Course Specifications of Applied biostatistics (with computer use) and Research Methodology in Master degree of Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

١. Program title : Master degree in Histology and Cell Biology

٢. Major/minor element of the program : Minor

٣. Department offering the course: Community Medicine and public Health Dep.

٤. Department offering the program: Histology and Cell Biology

٥. Academic year /level : ١st part

A. Basic Information

Title: Master degree in Histology and Cell Biology Biostatistics and Computer use for health services **and Research Methodology**

Code: HIS209

Total Hours:

Title	Lectures	Practical/ surgical	Total	credit
Applied biostatistics and computers & Research methodology	٥١	١٣	٥٤	٢

B. Professional Information

Applied Biostatistics Module:

١. **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:

١. **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:

١. Recent scientific knowledge essential for the mastery of practice of Public Health and Community Medicine according to the international standards.

٢. Skills necessary for preparing for proper diagnosis and management of community problems, skills for conducting and supervising researches on basic scientific methodology.
٣. Ethical principles related to the practice in this specialty.
٤. Active participation in community needs assessment and problems identification.
٥. Maintenance of learning abilities necessary for continuous medical education.
٦. Upgrading research interest and abilities.

٢. 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:

a١. Mention different programs of analysis of data and statistical packages
a٢. Define the recent advances of sources of data and methods of collection.
a٣. Summarize data, construct tables and graphs
a٤. Calculate measures of central tendency and measures of dispersion
a٥. Describe the normal curves and its uses
a٦. Illustrate selected tests of significance and the inferences obtained from such tests
a٧. Illustrate selected tests of significance for parametric and non parametric inferences
a٨. Identify factor analysis and discrimination analysis.

b) Intellectual Skills

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

b١. Mention how to collect and verify data from different sources
b٢. Interpret data to diagnose prevalent problems clinical pathology

c) Professional and Practical Skills:

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

c١.Perform recent advanced technological methods in collection, analysis and interpretation of data and in management of prevalent problems in clinical pathology

d) General and Transferable Skills:

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

d١.Use appropriate computer program packages.
d٢.Use of different sources for information and knowledge about biostatistics.

Research Methodology Module:

٢. Intended Learning Outcomes of Courses (ILOs)

a) Knowledge and understanding:

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

a١. Define the recent advances of screening tests pertinent to selected diseases and the at-risk approach in the application of screening tests.
a٢. Explain the usefulness of screening tests, and calculate sensitivity, specificity, and predictive values.
a٣. Describe the study design, uses, and limitations.

a٤. Mention the recent advances of principles, methodologies, tools and ethics of scientific research.

a٥. Explain the strategies and design of researches.

a٦. Describe bias and confounding.

a٧. Describe sampling techniques and list advantages of sampling

a٨. Identify principles of evidence based medicine.

b) Intellectual Skills

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

b١. Conduct research studies that adds to knowledge.

b٢. Formulate scientific papers in the area of public health and community medicine

b٣. Innovate and create researches to find solutions to prevalent community health problems

b٤. 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:

c١. Enumerate the basic and modern professional skills in conducting researches in the area of public health and community medicine.

c٢. 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:

d١. Use of different sources for information and knowledge to serve research.

d٢. Work coherently and successfully as a part of a team and team's leadership in conducting researches and field studies.

٣. Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Applied Biostatistics Module:			
Recent advances in collection, analysis and interpretation of data	٣	١	٢
-Details of Tests of significance: Proportion test	٣	١	٢
-Chi-square test	٥,١	.٥	١
-Student T test	٥,١	.٥	١
-Paired T test	٥,١	.٥	١
-Correlation	٥,١	.٥	١
-Regression	٢	١	١
-ANOVA test	٣	١	٢
-Discrimination analysis	٣	١	٢
-Factor analysis	٣	١	٢
-Parametric and non parametric tests	٥,٤	.٥	٤
Research Methodology Module:			
Details of epidemiological studies (case control, cohort and cross sectional)	٣	١	٢
Clinical trials, Quasi experimental study	٣	١	٢
Bias and errors	٢	١	١

Setting a hypothesis	٥,١	.٥	١
Recent advances in screening	٥,١	.٥	١
- Evidence - based Medicine: Concept and examples Applicability Scientific writing: A protocol A curriculum	٣	١	٢
Setting an objective - Critical thinking	٢	١	١
Formulation of papers	٥,١	.٥	١
Total hours	٥٤	٥١	١٣
Total Credit hours	٢	١	١

٤. Teaching and Learning Methods

١,٤- Lectures
٢,٤- Practical sessions
٣,٤- Computer search assignments
٤,٤- Computer application

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥-Written Exams:	- Knowledge
-Short essay: ٪١٤	- Knowledge
-structured questions: ٪٥٢	- Knowledge, intellectual skills
-MCQs: ٪١٢	- Intellectual skills, General transferable skills,
-Commentary, Problem solving: ٪٥١	- Practical skills, intellectual skills
٣,٥-Structured Oral Exams	- Knowledge
٤,٥Computer search assignment	- general transferable skills, intellectual skills

Assessment Schedule

Assessment ١….Final written exam Week: ٤٢
Assessment ٢…..Final oral exam Week: ٤٢
Assessment ٣ Attendance and absenteeism throughout the course
Assessment ٤ Computer search assignment performance throughout the course

Weighting of Assessments

Final-term written examination	٪١٥
Final oral Examination	٪١٥
Total	٪١١١

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

٦. List of References

Applied Biostatistics Module:

١,٦- Essential Books (Text Books)

١-Maxy-Rosenau Public health and preventive medicine, Prentice - Hall International Inc

٢,٦- Recommended Books

١- Dimensions of Community Health, Boston Burr Ridge Dubuque. ٢- Short Textbook of preventive & social Medicine Prentice-Hall International Inc.

٣-Epidemiology in medical practice, ٥thed Churchill Livingstone New York, London and Tokyo

٣,٦- Periodicals, Web Sites, etc

١-American Journal of Epidemiology

٢-British Journal of Epidemiology and Community Health

٣- WWW. CDC and WHO sites

Research Methodology Module:

١,٦- Essential Books (Text Books)

١-Maxy-Rosenau Public health and preventive medicine, Prentice - Hall International Inc

٢,٦- Recommended Books

١- Dimensions of Community Health, Boston Burr Ridge Dubuque. ٢- Short Textbook of preventive & social Medicine Prentice-Hall International Inc.

٣- Epidemiology in medical practice, ٥th edition. Churchill Livingstone. New York, London and Tokyo

٣,٦- Periodicals, Web Sites, etc

١-American Journal of Epidemiology

٢-British Journal of Epidemiology and Community Health

٣-WWW. CDC and WHO sites

٧. 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 Specifications of Histology for Master degree Of Histology and Cell Biology

Qena Faculty of medicine **South Valley University**

١. Program on which the course is given: master degree in Histology and Cell Biology

٢. Major element of program.

٣. Department offering the program: **Histology and Cell Biology**

٤. Department offering the course: **Histology and Cell Biology**

٥. Academic year / Level: graduates, passed ٢nd part, registered MSc. **Histology and Cell Biology** (٢nd part).

A- Basic Information

Title: Histology

Code:**HIS202**

Total Hours

Lectures	practical	Total hours	credit hours
٥١٢	١١٣	٥١٥	٤٢

B- Professional Information

١. **Overall Aims of Course**

The aim of this program is to provide the postgraduate student with the medical knowledge and skills essential for the practice of specialty and necessary to gain

١- Scientific knowledge essential for practice of Histology according to the international standards.

٢- Skills necessary for proper practice in the field of Histology including diagnostic, problem solving and decision making skills.

٣- Ethical principles related to the practice in this specialty.

٤- Active participation in community needs assessment and problems solving.

٥- Maintenance of learning abilities necessary for continuous medical education. ٦- Maintenance of research interest and abilities.

٢. **Intended Learning Outcomes of Course (ILOs)**

a) Knowledge and Understanding:

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

a١.Illustrate the histological structure of the different body tissues and organs.

a٢.List the different methods for tissue examination.

a٣.Define general histological stains.

a٤.Explain scientific developments in the field of Histology.

a٥.Mention the ethical and mental principles of professional practice in the field of Histology.

a٦.Mention the principles and fundamentals of quality of professional practice in the field of Histology.

a٧.List the basics, and ethics of scientific research.

b) Intellectual Skills:

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

b١. Interpret the medical importance of the histological structure at molecular level.

b٢. Analyze the contents of any histological slide.

b٣. Link between any abnormalities in the histological structure of the cells in different organs and related illness.

b٤. Conduct research study and-or write a scientific study on a research problem.

b٥. Plan to improve performance in the field of Histology.

b٦. Identify Histological problems and find solutions for them.

b٧. Analyze researches and issues related to Histology.

c) Professional and Practical Skills:

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

c١. Master of the basic and modern professional skills in the area of Histology.

c٢. Write and evaluate of Histological reports.

c٣. Prepare solutions used for micro techniques and different stains perfectly and independently.

c٤. Deal with lab animals.

c٥. Perform the steps of micro technique for paraffin section preparation perfectly and independently.

c٦. Perform tissue preparations like spreading, filming, smearing and grinding perfectly and independently.

c٧. Perform general histological stains ;Hx&E and c.t. fibers perfectly and independently.

c٨. Perform some histochemical reactions; proteins, lipids, carbohydrates, enzymes perfectly and independently.

c٩. Observe the steps of tissue preparation for E.M. under supervision.

c١١. Observe the steps of immunohistochemistery under supervision.

d) General and Transferable Skills:

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

d١. Communicate effectively by all types of effective communication.

d٢. Use information technology to serve the development of professional practice.

d٣. Assess himself and identify learning needs.

d٤. Use different sources to obtain information and knowledge

d٥. Develop rules and indicators for assessing the performance of others. d٦. Work in a team, and team's leadership in various professional contexts. d٧. Manage time Efficiently .

d٨. Learn himself Continuously.

٣. Contents

Topics	N. of hours	Lectures	Practical
Microscopy -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	١٢	٥١	٥
Micro technique -preparation of paraffin blocks -filming -smearing -Grinding -Spreading -E.M. preparations	١٢	٥١	٥
Histological stains -HX&E -Stains for collagen fibers -Stains for elastic fibers -Stains for reticular fibers -Stains for proteins -Stains for carbohydrates -Stains for lipids -immunostains	١٢	٥١	٥

Nucleus and Cytogenitics -L.M. &E.M. of the nucleus -DNA &RNA -Cell cycle &cell division -Abnormalities of cell division -Chromosome structure -Karyotyping -Chromosomal abnormalities	١٢	٥١	٥
Cytoplasm -Cell membrane ;L.M.,E.M. and molecular structure -Cytoplasmic organelles ;structure and function -Cytoplasmic inclusions	١٢	٥	٥١
Epithelial tissue - General characters of epithelium - Covering and lining epithelium -Glandular epithelium -Germinal epithelium -Neuroepithelium	١٢	٥	٥١
Connecctive tissue - 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.	١٢	٥١	٥
Cartilage -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.	١٢	١١	١١
Bone -Histological features of bone. -Bone cells. -Bone matrix. - Bone ossification. - Growth and nutrition of bone. -Healing of fractures.	١٢	١١	١١
Blood and Hemopoietic Tissue - 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.	١٢	١١	١١

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.	٥٢	١١	١٢
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	١٢	٥	٥١
Cardiovascular system : General structure of the heart wall. General structure of the wall of blood vessels. Arteries (large+medium sized) Veins (large+medium sized) Structure of special types of ateries and veins. Arteriovenus connection;capillaries,sinusoids and arteriovenous anastomosis.	١٢	٥	٥١

Lymphatic and immune system: Structure of lymph vessels. Distribution and structure of lymphoid tissue. structure and function of lymphatic nodule lymphocytes and immune cells reaction of B&T lymphocytes to antigens. Common mucosal immune system. Structur and function of lymphatic orgasns: Lymph nodes. Spleen thymus Tonsils Mononuclear phagocytic system. Antigen presenting cells. Stains to identify member of immune cells.	١٢	٥	٥١
Integumentary system Structure and function of the skin. Different types of cells in the epidermis. Skin types and their sites. Keratinization of skin. Pigmentation of nskin. Immune responses of the skin. Sweat glands;eccrine,apocrine. Hairs and hair follicles. Sebaceous glands and erector pili muscles. Nails. Sensory receptors of he skin.	١٢	٥	٥١

Digestive system Oral cavity: Lip Tongue. Cheek. Teeth and gingiva. Salivary glands: Classification;major and minor. Parotid gland Submandibular gland. Sublingual gland. Differences between different glands. Palate and pharynx: Hard and soft palate. Pharynx;structure and funvction. Pharangeal and palatine tonsil. Digestive tract: General structure og GIT. Oesophagus. Stomach;fundus,cardiac and pyloerus. Small intestine;duodenum,jejunum and ileum. Large intestine and appendix. Cell renewal in GIT. Junctions;gastro-oesophageal,pylorodudenal and rectoanal. 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.	١٣	١١	١٢

Respiratory system -Structure and function of conducting portion of the respiratory system: Nasal cavity. Nasal concha. Olfactory area. Paranasal sinuses. Nasopharynx and pharangeal tonsil. Larynx and epiglottis. Trachea and tracheobronchial epithelium. Bronchial tree. Bronchioles. -structure and function of the respiratory portion: Respiratory bronchioles. Alveolar ducts and alveolar sacs. Alveoli and alveolar epithelium;types and function of cells. Surfactant and its function. Respiratory barriers. Lung lobules. Structure of the pleura. Structure of the fetal lungs. Blood supply, lymphatics and smooth muscle. Innervations of the lung. Non respiratory function of the lung. Bbronchus-associated lymphatic tissue.	١٢	٥	٥١

Endocrine system : Main components of endocrine system. Pituitary gland: Development and general organization. Anterior lobe and its relation to the hypothalamus. Posterior lobe and its relation to the hypothalamus. Thyroid gland: Development. Microscopic structure; LM& EM. Characteristic properties. Function and mechanism of secretion. Hypo and hyperfunction and its relation to the structure. Parathyroid gland: Development,site and its relation to the thyroid. Chief and oxyphil cells;structure and function. Suprarenal gland Development (cortex and medulla). Adrenal cortex;zona glomerulosa,zona fasiculata,zona reticularis. Adrenal medulla;chromaffin cells and ganglion cells. Adrenal hormones. Blood supply of the adrenal gland and its significance. Paraganglia: Structure and function. Relation to supra renal medulla. Pineal gland: Development. Structure and function. Pinealocytes structure and function.	١٢	٥	٥١

Urinary system Kidney General structure;cortex and medulla. Nephron structure;renal corpuscle,proximal tubules,loop of Henle and distal tubules. Filteration barrier. Juxtaglomerular apparatus. Collecting tubules. Renal blood supply;glomerular and non glomerular blood. Renal interstitium. Urinary passeges Ureter. Urinary bladder Male and female urethra.	١٢	٥	٥١
Male reproductive system Testis: Capsule and outlines of internal structure. Seminiferous tubules. Spermatogenic cells. Spermatogenesis;spermatocytogenesis and spermiogenesis. Sperm,atozoa. Sertoli cells and blood testicular barrier. Interstial cells of Leydig. Hormonal basis of testicular function. Male genital ducts;structure and function: Tubuli recti. Rete testes. Ductuli efferentia. Ductus epididymis. Ejaculatory duct. Accessory male genital tracts;structure anfd function: Seminal vesicles. Prostate. Bulbo urethral gland. Penis: Structure and mechanism of erection. Male urethra. Semen.	١٢	٥	٥١

Female reproductive system: Ovary;structure and function: Ovarian follicles. Ovulation. Ovarian hormones and ovarian cycle. Uterine(fallopian tubes) structure and function. Uterus;structure and function:. Menstrual cycle. Cervix. Fertilization and preimplantation development. Palacenta: Development,structure and function. Placental circulation and placental barrier. Vagina;structure and function. External genetalia;structure and function. Mammary gland: Structural organization in different physiological states.	٥٢	١١	٥١
The eye Wall of the eye;structure and function of each component. Lens;structure and function. Chambers of the eye. Vitreous body. Accessory structures of the eye: Conjunctiva Eye lids Lacrimal glands	٥٢	١١	٥١
The ear External ear. Middle ear. Inner ear. Neuroepithelial structure in the ear and thjeir function.	١٢	٥	٥١
CNS Anatomical consideration of the 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.	٥٣	٥١	١٢
Molecular biology and its significance in Histology	١١	١١	١
Total	٥١٥	٥١٢	١١٣
Credit	٤٢	٤١	١١

٤. Teaching and Learning Methods

١,٤-lectures.

٢,٤-practical lessons.

٣,٤- Assignments.

٤,٤- attending and participating in scientific conferences, work shops and thesis discussion to acquire the general and transferable skills needed

٥. Student Assessment Methods

Method of assessment	The assessed ILOs
١,٥- Observation of attendance and absenteeism.	- General transferable skills, intellectual skills
٢,٥- Log book	- General transferable skills
٣,٥-Written Exam: -Short essay: ٪١٤ -structured questions: ٪٥٢ -MCQs: ٪١٢ -Commentary, Problem solving: ٪٥١	 - Knowledge - Knowledge - Knowledge, intellectual skills - Intellectual skills, General transferable skills,
٤,٥-Structured Oral Exam	- Knowledge, Intellectual skills, General transferable skills
٥,٥-OSPE	-Practical skills, intellectual skills
٦,٥ assignment	-General transferable skills, intellectual skills

Assessment Schedule

By the end of the course:

Assessment ١	Final written exam	Week ٢٧
Assessment ٢	Final oral exam	Week ٣٧
Assessment ٣	Final Practical exam	Week ٣٧
Assessment ٤	attendance & absenteeism throughout the course	

Weighting of Assessments

Final Written Examination	١٥ **%**
Oral Examination	١٣ **%**
Practical Examination	٪١٢
Total	٪١١١

Formative only assessments: attendance and absenteeism

٦. List of References

١,٦-Laboratory manual authorized by the department

٢,٦- Essential Books (Text Books)

-Junqueira, Carneino and Kelly (٨١١٢): Basic Histology, ١١th ed.Librairrie du liban and lang buruit,London,New York.

-Fawcett(٧٩٩١):A Text Book of Histology,٢١th ed.Chapman and Hall,New York,London.

- Drury,R.A.B. and Walington,E.A.(١٨٩١): Histological techniques,٥th ed.Oxford university press,New York.

-Pears,A.G.E.(٥٨٩١): Histochemistery theoretical and applied,٤th ed.Churchill Livingstone,Melbourne and New York.

٣,٦- **Recommended Books**

- Cormack,H.D.(٧٨٩١): A text book of Histology,٩th edition,Lippincott,J.B. Company,Philadelphia.

- Williams,P.L.(٥٩٩١):Gray's Anatomy,the anatomical bases of Medicine and Surgery,٨٣th ed.,Cgurchill,Livingstone,Britain.

٤,٦- **Web Sites:**

http://www.histology-world.com

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

٥,٦-**Periodicals:**

-Egyptian J of Histology

-Egyptian J of Anatomy

- Acta Anatomica

- International J of Experimental Research

- Science

- Cell and Tissue Research

٧. <u>Facilities Required for Teaching and Learning</u>

١. Adequate infrastructure: including teaching places; hall and laboratory, comfortable desks, good source of areation,bathroom,good illumination and security and safety.

٢. Teaching tools: including screen,computers,data show,slide projector, flip chart, white board, video player, digital camera,scanne and colored and lazer printers.

٣. Computer programs :for designing and evaluating MCQs.

Matrices of Histology Master program

I- Program graduate attributes Vs NAQAEE graduate attributes

Program ILOs	Post graduate NARS
مواصفات الخريج	
1- Efficient in carrying out the basics and methodologies of scientific research in Histology .	**1.1-** إتقان أساسيات ومنهجيات البحث العلمي
2- The continuous working to add new knowledge in his field	2.1- العمل المستمر علي الإضافة للمعارف في مجال التخصص
3- Applying the analytical course and critical appraisal of the knowledge in his specialty and related fields	3.1- تطبيق المنهج التحليلي والناقد للمعارف في مجال التخصص والمجالات ذات العلاقة
4- Merging the specialized knowledge with the other related knowledge with conclusion and developing the relationships in between them.	4.1- دمج المعارف المتخصصة مع المعارف ذات العلاقة مستنبطا ومطورا للعلاقات البينية بينها
5- Showing a deep awareness with the ongoing problems, theories, and advanced sciences in his specialty.	**5.1-** إظهار وعيا عميقا بالمشاكل الجارية والنظريات الحديثة في مجال التخصص
6- Determination of the professional problems and creating solutions for them.	**6.1-** .تحديد المشكلات المهنية و إيجاد حلولا مبتكرة لحله
7- Efficient in carrying out the professional skills in his specialty.	**7.1-** إتقان نطاقا واسعا من المهارات المهنية في مجال التخصص
8- Using advanced suitable technologies which serves his practice	**8.1-** التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية
	9.1- استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية
9- Efficient communication and leadership of team work in his specialty.	10.1- التواصل بفاعلية و قيادة فريق عمل في سياقات مهنية مختلفة.
10- Decision making through the available information.	11.1- تخاذ القرار في ظل المعلومات المتاحة.
11- Using the available resources efficiently and working to find new resources.	12.1- توظيف الموارد المتاحة بكفاءة وتنميتها والعمل على إيجاد موارد جديدة.
12- Awareness with his role in the development of the society and preserve environment.	13.1- الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة
13- Behaving in a way which reflects his credibility, accountability, and responsibility.	14.1- التصرف بما يعكس الالتزام بالنزاهة والمصداقية وقواعد المهنة.
14- Keeping continuous self-development and transfer his experiences and knowledge to others.	15.1- الالتزام بالتنمية الذاتية المستمرة ونقل علمه و خبراته للآخرين

II- Program ILOs Vs NAQAEE general standard references

2-Program ILOs	NAQAEE general standard references
A- Knowledge and understanding المعرفة والفهم خريج برنامج الدكتوراه في أي تخصص يجب أن يكون قادرا على:	
A1. Illustrate the histological structure of the different body tissues and organs **A2.** Explain scientific developments in the field of Histology. **A3.** Describe the function of the different organs in relation to their structure. **A4.** List the different methods for tissue examination. **A5.** List general histological stains. **A7.** Mention the different methods of detection the presence of protein, carbohydrate and lipids in the tissue. **A8**. Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work.	1.1.2- النظريات والأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة
A10. Define the basis, and ethics of scientific research.	2.1.2- أساسيات ومنهجيات وأخلاقيات البحث العلمي وأدواته المختلفة
A6. Mention the ethical and mental principles of professional practice in the field of Histology	3.1.2- المبادئ الأخلاقية والقانونية للممارسة المهنية في مجال التخصص.
A.9- List the principles and fundamentals of quality of professional practice in the field of Histology..	4.1.2- مبادئ وأساسيات الجودة في الممارسة المهنية في مجال التخصص.
	5.1.2- المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها.
B- **Intellectual skills**	٢. ٢ المهارات الذهنية
B1. Interpret data acquired in the field of Histology **B2.** Analyze the contents and identify histological slide.	**1.2.2-** تحليل وتقييم المعلومات في مجال التخصص والقياس عليها والاستنباط منها.
B3. Link between knowledge for professional problems solving in the field of Histology.	**2.2.2-** حل المشاكل المتخصصة استنادا على المعطيات المتاحة

B4. Conduct research study and-or write a scientific study on a research problem **B7**. Identify Histological problems and find solutions for them.	
B8. Analyze researches and issues related to Histology.	**3.2.2-** إجراء دراسات بحثية تضيف إلى المعارف.
	4.2.2- صياغة أوراق علمية.
B5. Assess risk in professional practices in the field of Histology.	**5.2.2-** تقييم المخاطر في الممارسات المهنية.
B6. Plan to improve performance in the field of Histology.	**6.2.2-** التخطيط لتطوير الأداء في مجال التخصص.
	7.2.2 اتخاذ القرارات المهنية في سياقات مهنية مختلفة .
	8.2.2- .الإبداع/ الابتكار.
	9.2.2- الحوار والنقاش المبني على البراهين والأدلة.
C- Professional and practical skills	٢. ٣ المهارات المهنية
C1. Master of the basic and modern professional skills in the area of Histology. C3. Prepare solutions used for micro techniques and different stains perfectly and independently. C4. Deal with lab animals. C5. Perform the steps of micro technique for paraffin section preparation perfectly and independently. C6 Perform tissue preparations like spreading, filming, smearing and grinding perfectly and independently. C7. Perform general histological stains Hx &E and c.t. fibers perfectly and	**1.3.2-** إتقان المهارات المهنية الأساسية والحديثة في مجال التخصص.

independently. C8. Perform some histochemical reactions; proteins, lipids, carbohydrates, enzymes perfectly and independently. **C9.** Observe the steps of tissue preparation for E.M. under supervision. **C11.** Observe the steps of immunohistochemistery under supervision	
C2. Write and evaluate of Histological reports.	**2.3.2-** كتابة وتقييم التقارير المهنية.
	3.3.2- تقييم وتطوير الطرق والأدوات القائمة في مجال التخصص.
c.12- use computer soft wares to analyze slides (image analysis) or analyze research data.	**4.3.2-** استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية.
	5.3.2- التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين.
D- **General and transferable skills**	٢. ٤ المهارات العامة والمنتقلة
D1. Communicate effectively by all types of effective communication	**1.4.2-** التواصل الفعال بأنواعه المختلفة.
D2. Use information technology to serve the development of professional practice	**2.4.2-** استخدام تكنولوجيا المعلومات بما يخدم تطوير الممارسة المهنية.
D5. Develop rules and indicators for assessing the performance of others.	**3.4.2-** تعليم الآخرين وتقييم أداءهم.
D3. Assess himself and identify learning needs. **D8.** Learn himself Continuously	**4.4.2-** التقييم الذاتي والتعلم المستمر
D4. Use different sources to obtain information and knowledge	**5.4.2-** استخدام المصادر المختلفة للحصول على المعلومات والمعارف.

D6 Work in a team, and team's leadership in various professional contexts	**6.4.2-** العمل في فريق وقيادة فرق العمل.
D7. Manage time Efficiently**.**	**7.4.2-** ادارة اللقاءات العلمية والقدرة علي إدارة الوقت..

III- Program ILOs Versus Courses ILOs

	Courses	**Program ILOs**			
		A-Knowledge and understanding	**B-** Intellectual skills	**C-** Professional and Practical skills	**D-** General and Transferable skills
1	Pathology	A4**.** List the different methods for tissue examination. **A**8**.** Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work.	B6. Plan to improve performance in the field of Histology B8. Analyze researches and issues related to Histology B6. Plan to improve performance in the field of Histology	C3. Prepare solutions used formicro techniques and different stains perfectly and Independently C5.Perorm the steps of micro technique for paraffin section preparation perfectly and independently C6. Perform tissue preparations	D4. Use different sources to obtain information and knowledge

				like spreading, filming, smearing and grinding perfectly and independently.	
2	Biochemistry	. **A7.** Mention the different methods of detection the presence of protein, carbohydrate and lipids in the tissue **A8.** Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work.	B6. Plan to improve performance in the field of Histology	C3. Prepare solutions used for micro techniques and different stains perfectly and independently. C8.Perform some histochemical reactions; proteins, lipids, carbohydrate, enzymes perfectly and independently C10. Observe the steps of immunohisto chemistery under supervision	D4. Use different sources to obtain information and knowledge
3	Physiology	**A3.** Describe the function of the different organs in	B6. Plan to		D8.learnhim

		relation to their structure **A**8. Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work	improve performance in the field of Histology	C1. Master of the basic and modern professional skills in the area of Histology	self continuously
4	Applied Biostatics & research methodology	A9. List the principles and fundamentals of quality of professional practice in the field of Histology. A10. Define the basis, and ethics of scientific research **A**6. Mention the ethical and mental principles of professional practice in the field of Histology	B4. Conduct research study and-or write a scientific study on a research problem B8. Analyze researches and issues related to Histology B7. Identify Histological problems and find solutions for them	C2. Write and evaluate of Histological reports	D1. Communicate effectively by all types of effective communication. D2. Use information technology to serve the development of professional practice
5	Medical Microbiology	**A**8. Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry,	B6. Plan to improve performance in the field of Histology	C10. Observe the steps of immunohisto chemistery under	D4. Use different sources to obtain information

		microbiology, embryology or pathology to set them as a base for his/her future research work		supervision	and knowledge
6	Genetics	. **A**2. Explain scientific developments in the field of Histology **A**8. Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work . **A**9. List the principles and fundamentals of quality of professional practice in the field of Histology	B6. Plan to improve performance in the field of Histology B5. Assess risk in professional practices in the field of Histology	C1. Master of the basic and modern professional skills in the area of Histology	D4. Use different sources to obtain information and knowledge
	Embriology	**A**8. Define the basic knowledge of two of the sciences; genetics, physiology, biochemistry, embryology or pathology to set them as a base for his/her future research work.	B3. Link between knowledge for professional problems solving in the field of Histology	C1. Master of the basic and modern professional skills in the area of Histology C4. Deal with lab animals.	D4. Use different sources to obtain information and knowledge

7	Histology	A1. Illustrate the histological structure of the different body .tissues and organs A2. Explain scientific developments in the .field of Histology A3. Describe the function of the different organs in relation to their .structure a4. List the different methods for tissue .examination A5. List general .histological stains A6. Mention the ethical and mental principles of professional practice in the field of Histology.	b1. Interpret data acquired in the field of Histology. B2. Analyze the contents and identify histological slide. B3. Link between knowledge for professional problems solving in the field of Histology B5. Assess risk in professional practices in the field of Histology B6. Plan to improve performance in the field of Histology. B7. Identify Histological problems and	C5. Perform the steps of micro technique for paraffin section preparation perfectly and independently. C6. Perform tissue preparations like spreading, filming, smearing and grinding perfectly and independently. C7. Perform general histological stains Hx &E and c.t. fibers perfectly and independently. C8.Perform some histo chemical reactions; proteins, lipids carbohydrates, enzymes perfectly and independently. C9. Observe the steps of tissue preparation for	D1. Communicate effectively by all types of effective communicatio n. D2. Use information technology to serve the development of professional practice. D3. Assess himself and identify 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

			find solutions for them. B8. Analyze researches and issues related to Histology	E.M. under supervision. C10. Observe the steps of immunohistochemistery under supervision. C11. Perform some basic experiments in the basic sciences to be utilized in the research work.	professional contexts. D7. Manage time Efficiently. D8. Learn himself Continuously

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