Beni Suef University
Faculty of Veterinary Medicine
Department of Cytology and Histology

Program Specification for Master Degree of Cytology and Histology
2017-2018

A-Basic information:

1- Program title: *MVSC.,*
2- Program type: *Single*
3- Department offering program: Cytology and Histology
4-Academic year: *2017-2018*
5-Approval date of Department Council:
6-Approval date of Faculty Council:
7-External evaluator:

B-Professional information:

1- Overall aims of the program:

1- Use efficiently the most recent techniques and improve the skills of cytology and histology scientific research.

2- Collect, manage and analyze the scientific data in cytology and histology.

3- Develop communication skills and improve scientific co-operation in research groups within the related fields.

4- Provide graduate with the knowledge of light and electron microscopic structure of cells and tissues as well as biostatistics.

5- Write the dissertation, scientific papers and apply for scientific projects in the field of histology.

2- Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

On successful completion of this program the graduate should be able to :

a1- Acquire the advanced concepts in histology

a2- Describe advanced research techniques used in the field of cytology and histology

a3- Recognize up to date cytology and histology researches.

a4- Describe the light and electron microscopic structures of the different cell types in a special point .

a5- Characterize quality principles and basics in cytology and histology professional practice.

b- Intellectual skills:

On successful completion of master program the graduate should be able to:

b1- Critically evaluate their own research data and develop new approach to solving their research questions

b2- - Identify , summarize and evaluate prior researches finding in a specific area

b3- Integrate different knowledge to describe the microscopic structure of organs and tissue.

b4- Design a scientific research plan.

b5 develop creative approaches to solve technical problems associate with running and research project.

b6- Plan for enhancing histological technique performance.

c- Professional and practical skills:

On successful completion of this program the graduate should be able to:

c1- Apply the principles of good experimental design and analysis to their own research project .

c2- Select and perform relevant statistical analysis on data obtained for their own research .

c3- Use histological and histochemical and immunohistochemical techniques for examination of the collected tissue samples by LM & EM .

c4- Write and evaluate the histological reports.

c5- Evaluate the available and required material, tools and equipment in histological research projects.

c6- Write efficiently scientific paper and dissertation.

d- General and transferable skills:

On successful completion of this program the graduate should be able to:

d1- Communicate effectively and use of information technology in the development ofveterinary professional practice.

d2- Own Self-evaluation and need assessment.

d3- Utilize different available resources for efficient obtaining of knowledge and information.

d4- Issue the regulations and indicators for performance evaluation.

d5- Mange time efficiently and work in research groups.

d6- Lead a team work in different professional practice.

3- Academic standers:

* The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are inline with the department and the faculty mission.
* Postgraduates NARS (March 2009) Master degree chapter issued by national authority for quality assurance and accreditation of education (NAQAAE) and Veterinary medicine post graduate academic standards (ARS) for the faculty of veterinary medicine, Beni-Suef University, Beni-Suef, Egypt are selected to confirm the appropriateness of the academic standards .

4- Program Structure and Contents

A- Program duration: At least two academic years from the approval of registration by the Faculty Council and maximum four years. The faculty council has the right to give the applicant another period not exceed two years according to the supervisor request
The first year for preliminary courses study, while the second year for researches and preparation of the Master Thesis.

B- Program structure: Hours/ week:

Basic course:-

Theoretical	4	Practical	7	Total	11

Subsidiary courses:-

Theoretical	4-8	Practical	6-8	Total	10-16

Master Thesis: completed during the second academic year.

C- Program courses:

1- basic courses

Code	Course title	Hours /week		Academic year	Teaching duration
		theoritical	practical		
	Master Principal course	3	4	Preliminary year	36 weeks
	Research methods	1	3	Preliminary year	36 weeks

2-subsidiary courses

Code	Course title	Hours /week		Academic year	Semester
		theoritical	Practical		
	Selected (3-5) courses depending on the thesis title from the various Faculty Master courses other than specialty of the Master.	5-6	6-9	Preliminary year	36 weeks

D- Courses contents

See master courses specification

5- Program Admission Requirements

a- According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have BVSc., from an Egyptian University or equivalent degree from any approved university, with at least general grade (Good) and (Very Good) in the specialized subject.

b- Also if the student has postgraduate diploma in one specialization of total (3 hours) at least with general grade (Good) and (Very good) in the specialized subject.

c- According to Beni-Suef University requirements, all applicants for postgraduate studies should fulfill preliminary courses on the following subjects:

I- English language (Toefl or equivalent degree)

d- Admission to the program is open during March and September annually after at least one year from the BVSc degree.

6. Regulations for Progression and Program Completion

After finishing the preliminary courses, the graduate student will be eligible to sit

for the examination according to the following roles:

No. of course teaching hours/ week	Allowed time for written exam.	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

- It is mandatory to pass all the courses each chance except biostatic (212)
-The passing mark in each exam is ⩾ 60%.
-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

Qualification grades:

Excellent	≥ 90
Very good	From 80 to89
Good	From 70 to79
Pass	From 60to 69
Failed	45 to less than 60 weak
	Less than 45 Very weak

-After passing, the graduate starts research for Master Thesis at the beginning of the second year.
-The candidate will receive his degree after evaluating and approving the thesis by a committee according to University regulations.
-The applicant should publish at least one scientific papers from the thesis in local or international journals

7-Graduate student assessment

A: Assessment Tools

According the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate, students should be assessed at the end of preliminary year and the thesis should be evaluated and approved by a committee according to University regulations.

1-Preliminary year

Assessments methods for each course	practical exam	Oral exam	Written exam
Time of Assessments	during December	during December	during December
Marks	25%	25%	50%

2-Master Thesis:

All master-degree students should prepare a thesis in cytology and histology The department council must approve the protocol (plan) of the research. The thesis is supervised by one or more staff members and may include other specialties according to the nature of the research. The thesis should be evaluated and approved by a committee according to University regulations.The applicant should publish at least one scientific paper from the thesis in local or international journals

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
written exam	a1,a3,a4,,a6	b1,b2,b4	c1,c3,c4,	
Practical exam		b1,b2,b4	c1,c2,c5	d1,d2
Oral exam	a1,a2,a3,a4,a5	b1,b2,b3	c1,c2	d1,d3,d4,5,

B- Matrix alignment of the measured ILOs

Master Program Specification Matrix (Program Courses with ILOS)

Program ILOs		Courses
Knowledge and understanding	a1	M-12to M-22+principle course
	a2	Thesis
	a3	M-12to M-22 and thesis
	a4	M-1, M-12 and thesis
	a5	M-12to M-22 and thesis
Intellectual skills	b1	thesis
	b2	M-12to M-22 and thesis
	b3	M-12to M-22+principle course
	b4	thesis
	b5	Thesis
	B6	thesis
Professional and practical skills	c1	thesis
	c2	thesis
	c3	M-12to M-22 and thesis+M-1
	c4	M-12to M-22 and thesis +M-1
	c5	Thesis
	C6	Thesis
General and transferable skills	**d1**	M-12to M-22 and thesis
	d2	M-12to M-22 and thesis
	d3	M-12to M-22 and thesis
	d4	M-12to M-22 and thesis
	d5	M-12to M-22 and thesis
	d6	M-12to M-22 and thesis

Program aims – ILOS Matrix for the Master Degree

مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

Program ILOS		Program aims				
		1- Use efficiently the most recent techniques and improve the skills of cytology and histology scientific research.	2- Collect, manage and analyze the scientific data in cytology and histology.	3- Develop communication skills and improve scientific co-operation in research groups within the related fields.	4- Provide graduate with the knowledge of light and electron microscopic structure of cells and tissues as well as biostatistics.	5- Write the dissertation, scientific papers and apply for scientific projects in the field of histology.
Knowledge and understanding	a1- Acquire the advanced concepts in histology	√			√	
	a2- Describe advanced research techniques used in the field of cytology and histology	√				
	a3- Recognize up to date cytology and histology researches.	√		√		
	a4- Describe the light and electron microscopic structures of the different cell types in a special point .		√		√	
	a5- Characterize quality principles and basics in cytology and histology professional practice.	√				√
Intellectual skills	b1- Critically evaluate their own research data and develop new approach to solving their research questions		√			√
	b2- - Identify , summarize and evaluate prior researches finding in a specific area		√			√
	b3- Integrate different knowledge to describe the microscopic structure of organs and tissue.			√	√	
	b4- Design a scientific research plan.					√
	b5 develop creative approaches to solve technical problems associate with running and research project.			√		
	b6- Plan for enhancing histological technique performance.	√		√		

Program ILOS		Program aims				
		1- Use efficiently the most recent techniques and improve the skills of cytology and histology scientific research.	2- Collect, manage and analyze the scientific data in cytology and histology.	3- Develop communication skills and improve scientific co-operation in research groups within the related fields.	4- Provide graduate with the knowledge of light and electron microscopic structure of cells and tissues as well as biostatistics.	5- Write the dissertation, scientific papers and apply for scientific projects in the field of histology.
Practical and professional skills	c1- Apply the principles of good experimental design and analysis to their own research project .	√				√
	c2- Select and perform relevant statistical analysis on data for their own research .		√			√
	c3- Use histological and histochemical and immunohistochemical techniques for examination of the collected tissue samples by LM & EM .	√			√	
	c4- Write and evaluate the histological reports		√		√	
	c5- Evaluate the available and required material, tools and equipment in histological research projects			√		√
	c6- Write efficiently scientific paper and dissertation.		√			√
general and transferable skills	d1- Communicate effectively and use of information technology in the development ofveterinary professional practice.			√	√	
	d2- Own Self-evaluation and need assessment.	√			√	
	d3- Issue the regulations and indicators for performance evaluation.		√			√
	d4- Mange time efficiently and work in research groups.			√		
	d5- Lead a team work in different professional practice.	√		√		

Master Program Specification Matrix (Program ILOS with Academic standers ARS)

Academic standers **Program ILOs**		**Knowledge and understanding**						**Intellectual skills**							**Professional and practical skills**						**General and transferable skills**						
		a1	a2	**a 3**	**a 4**	**a5**	**a6**	**b1**	**b 2**	**b 3**	**b4**	**b 5**	**b6**	**b 7**	**c1**	**c2**	**c3**	**c4**			**d 1**	**d 2**	**d 3**	**d 4**	**d5**	**d6**	**d7**
Knowledge and understanding	a1	√																									
	a2		√																								
	a3			√																							
	a4				√									√													
	a5					√																					
Intellectual skills	b1							√																			
	b2								√																		
	b3									√																	
	b4										√																
	b5											√															
	b6												√														
Professional and practical skills	c1														√												
	c2															√											
	c3																√										
	c4																	√									
	c5																√										
	c6														√												
General and transferable skills	**d1**																				√						
	d2																					√					
	d3																						√				

	d4																							√			
	d5																								√		
	d6																								√		√

Course coordinator **Head of the Department**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**MBC-HIST**
Course title :	Basic histology course
Program title:	**Master degree In Veterinary Medical Sciences**
Contact hours/ week	3h/week lecture 4h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Describe the normal microscopic structure of all body tissues and organs by light and electron microscope

2- Differentiate between the different body tissues and cells.

3- Identify special cellular and tissue constituents according to its staining affinity and immunohistochemistry.

4- Specify cellular constituents and mention their role in the cell

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Outline the microscopic and ultra structure of the different cell types.

a.2. Describe the ultrastructure of all body tissues and organs in different animal species.

a.3. Recognize the structure of the cells in correlation to their functions.

a.4. Recall their knowledge and understanding of the histological structure of different body organs to the critical analysis and discussion of the scientific literature

b-Intellectual skills

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

b.1. Identify and describe the microscopic structure of animal organs and tissues.

b.2. Compare between the normal histological structure of different organs

b.3. Interpret the normal structure with the function

C- Professional and practical skills

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

c.1. Preparation of histological specimens including processing and staining

c.2. Perform microscopic examination and description of the examined specimens histologically.

c.3. Examine the tissue and organs microscopically in different animal species

c.4. use the histological and histochemical techniques.

c.5. Employ all the gained knowledge and understanding in clinical practice in skillful pattern.

d- General and transferable skills

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

Course specification of postgraduate

d.1- Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2- Own Self-evaluation and need assessment.

d.3- Utilize different available resources for efficient obtaining of knowledge and information.

d.4- Issue the regulations and indicators for performance evaluation.

d.5- Mange time efficiently and work in research groups.

d.6- Lead a team work in different professional practice.

d.7- Have continuous and self-learning.

4-Topics and contents

Course	Topic	weeks	No. of hours	Lectures	Practical
(Lec.3 h./week, Pract 4h./week)	**Course description** - **Cytology** structure of cytoplasmic organelles, inclusions and nucleus	1st and 2nd	12	6	6
	General Histology - Epithelial tissue Types of special epithelium Surface modifications of epithelial cells.	3rd and 4th	12	6	6
	- Connective tissue Types of C.T. cells and tissue Supportive tissue	5th to 8th	24	12	12
	- Blood Blood and hematopiotic tissue	9th and 10th	12	6	6
	- Muscular tissue	11th and 12th	12	6	6
	- Nervous tissue	13th and 14th	12	6	6
	Nervous system Central nervous system Peripheral nervous system	15th and 16th	12	6	6

Course specification of postgraduate

	Lymphatic tissue and organs	17th and 18th	18	6	12
	Systemic Histology - Respiratory system	19th	9	3	6
	- Urinary system	20th	9	3	6
	- Male genital system Testis and ducts Accessory genital glands and penis	21th to24th	24	12	12
	- Female genital system	25th and 26th	12	6	6
	- Digestive system Oral cavity and oesophagus Alimentary tract Liver, pancrease and salivary gland	27th to 30th	40	12	24
	- Endocrine system Pituitary gland, thyroid gland, parathyroid, adrenal gland	31th and 32th	18	6	12
	- Skin and mammary gland	33th	9	3	6
	- Sense organs	34th	9	3	6
	- Cardiovascular system	35th and 36th	12	6	6
	Total		252	108	144

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows
5.2- Self learning by preparing essays and presentations (computer researches and library)
5.3- Practical (models, samples of stainrd tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Written Exam	a1- a2- a3- a4	b1- b2- b3-	c3-c4-c5	
Practical Exam		b2- b3-	c1- c2- c3- c4-c5	
Oral Exam	a1- a2- a3-a4	b1- b3-	c5	d1 -d3-d4- d5- d7

7.2. Assessment schedules

Method	Week(s)

Course specification of postgraduate

Writing exam	**managed by the faculty**
Practical exam	**managed by the department**
Oral exam	**managed by the department**

7.3. Weight of assessments

Assessment	Weight of assessment
Written exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	**----------**
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Dr/Taghreed M. Nabil Prof.Dr./Khaled M. Mazher

Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Cytology	1st and 2nd	1,2,3,4	1,2,3,	1,2,3,4,5	1,3,4,5,7
2	Epithelial tissue	3rd and 4th	1,2,3	1,3	1,2,3,4,5	1,3,4,5, 7
3	Connective tissue	5th to 8th	1,2	1,2,3	1,2,3	1,2,3,4,5, 7
4	Blood	9th and 10th	1,2	1,2,3	1,2,3	1,3,4,5
5	Muscular tissue	11th and 12th	1,2,3	1,2,3	1,2,3,4	1, 3,4,5
6	Nervous tissue	13th and 14th	1,2,3	1,3	1,2,3,4	1, 3,4,5
7	Lymphatic system	15th and 16th	1,2	1,2,3	1,2,3	1,3,4,5
8	Cardiovascular system	17th and 18th	1,2	1,2,3	1,2,3	1,3,4,5
9	Respiratory system	19th	1,2,3	1,2,3	1,2,3,4	1,3,4,5
10	Urinary system	20th	1,2,3	1,3	1,2,3,4	1,3,4,5,7
11	Male genital system	21th to24th	1,2	1,2,3	1,2,3	1,3,4,5,6
12	Female genital system	25th and 26th	1,2	1,2,3	1,2,3	1,3,4,5
13	Digestive system	27th to 30th	1,2,3	1,2,3	1,2,3,4	1,2,3,4,5
14	Endocrine system	31th and 32th	1,2,3	1,3	1,2,3,4	1,2,3,4,5
15	Skin and mammary gland	33th	1,2	1,2,3	1,2,3	1,2,3,4,5
16	Nervous system	34th	1,2	1,2,3	1,2,3	1,2,3,4,5
17	Sense organs	35th and 36th	1,2,3	1,2,3	1,2,3,4	1,2,3,4,5

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-12**
Course title :	Cytology & Cytochemistry
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course

This course aims to:

1- Use efficiently the most recent techniques and improve the skills of scientific research in cytology.

2- Collect, manage and analyze the scientific data in cytology and cytochemistry.

3- Be aware about his role in community development and environment protection, regarding the national and international changes.

4- Provide graduate with the knowledge of cell structure

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Distinguish advanced research techniques used in the field of cytology.

a.2. Describe the microscopic structure of cell organelles

a.3 classify the cell types in the body and describe each of them .

a.4. Recall their knowledge and understanding of the cell structure and cytochemistry to the critical analysis and discussion of the scientific literature.

b-Intellectual skills

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

b.1. Evaluate analytically the cytological constituents.

b.2. differentiate between different cell organelles.

b.3. Integrate different knowledge to describe different cell types.

b.4. Design a scientific research plan in the field of cytology.

C- Professional and practical skills

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

c.1- prepare histological samples for staining.

c.2- stain the obtained sample with different stains.

c.3- examine the stained sample and write a histological report

c.4. Write efficiently scientific paper and dissertation.

Course specification of postgraduate

d- General and transferable skills

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

d.1. Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	General structure of the cell	36	18	18
	Electron microscopic examination of the different cell types	36	18	18
	Cell modification	36	18	18
	Cell biochemistry	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1- a2- a3- a4	b1- b2- b3-b4	c3-c4	
Practical Exam		b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-	c4	d1-d2-d3-d4

Course specification of postgraduate

7.2. Assessment schedules

Method	Time
Written exam	**During December**
Practical exam	**During December**
Oral exam	**During December**
student activities	**along the academic year**

7.3. Weight of assessments

Assessment	Weight of assessment
Written exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators — **Head of Department**

Dr./Taghreed M. Nabil — Prof.Dr./Khaled M.Mazher

Course specification of postgraduate

Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Cytology and cytochemistry		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	General structure of the cell	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4
2	Electron microscopic examination of the different cell types	10th w- 18th w	1,2,3	1,3,4	1,2,3,4	1,2,3,4
3	Cell modification	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4
4	Cell biochemistry	28th w- 36th w	1,2	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-13**
Course title :	General histology
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2hrs/week theoretical 2hrs/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Provide graduate with skills in interpretation of the published literature about the histology of general tissues

2- Provide graduate with the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of different tissues

3- Be aware of current new techniques regarding general histology.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Describe advanced research techniques used in the field of histology.

a.2. Describe the microscopic structure of different body tissues

a.3. mention the deferent body tissues and characters of each tissue

a.4. list the different parts of each body tissue

b-Intellectual skills

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

b.1. Evaluate analytically the different body tissues histology information for problem solving.

b.2. Integrate knowledge of different body tissues histology to solve veterinary professional problems.

b.3. Design a scientific research plan in different body tissues histology.

C- Professional and practical skills

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

c.1. Preparing of the sections from the collected samples

c.2. Staining the sections by different histological stains

c.3. examination of the stained sections by the LM & EM

c.4. using the immunohistochemical technique in practical portion

d- General and transferable skills

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

d.1- Communicate effectively and utilize the advanced information technology in the improvement of veterinary professional practice.

d.2- Educate the others and evaluate their performance.

Course specification of postgraduate

d.3- Own self-evaluation and discipline with continuous learning.
d.4- Utilize the resources to obtain knowledge and information.
d.5- Work in research group and lead a team work in different veterinary professional and research practice.
d.6- Manage the scientific meetings and discussions.
d.7- Manage the time efficiently.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	-structure of epithelial tissue - modifications in the epithelial tissue cells	36	18	18
	- structure of connective tissue cells and their functions - supportive tissue structure	36	18	18
	- structure of muscular tissue - mechanism of contractions	36	18	18
	- Microscopical structure of nervous tissue - Synapse	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows
5.2- Self learning by preparing essays and presentations (computer researches and library)
5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3	c3-c4	
Practical Exam	a2- a3	b2- b3	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3		d1-d2-d3- d4- d5- d6- d7

Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
Writing exam	**During December**
Practical exam	**During December**
Oral exam	**During December**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	**------**
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	General histology		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	-structure of epithelial tissue - modifications in the epithelial tissue cells	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4,5,6,7
2	- structure of connective tissue cells and their functions - supportive tissue structure	10th w- 18th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	- structure of muscular tissue - mechanism of contractions	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	- Microscopical structure of nervous tissue - Synapse	28th w- 36th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-14**
Course title :	Histology and histochemistry of blood, lymph vessels and blood vessels
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Use efficiently the most recent techniques and improve the skills of scientific research.

2- Collect, manage and analyze the scientific data in blood vessels histology.

3- Provide graduate with the knowledge of microscopic structure of different organs of lymphatic system and different blood cells.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1List the different layers of blood vessel.

a.2. Describe the microscopic structure of blood, blood vessels and lymph vessels

a.3. Define the lymph vessels

a.4. Describe the microscopical structure of lymph vessels

b-Intellectual skills

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

b.1. Evaluate analytically the histological information of blood , blood vessels and lymph vessels for problem solving.

b.2. Integrate different knowledge in blood and blood vessels histology.

b.3. Interpret the normal microscopic structure of blood cells in correlation to their function .

C- Professional and practical skills

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

c.1- Perform masterly the recent histological professional practice.

c.2- Examination of the stained sections by the LM & EM

c.3- Evaluate the available and required material, tools and equipment in histological research projects.

d- General and transferable skills

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

Course specification of postgraduate

d.1- Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	General structure of blood cells	36	18	18
	Origin and development of blood cellular elements	36	18	18
	General structure of wall of blood vessels	36	18	18
	General structure of wall of lymph vessels	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1- a2- a3-	b1- b2- b3	c2- c3	
Practical Exam	a2- a3	b2- b3	c1- c2- c3	
Oral Exam	a1- a2- a3-	b1- b2- b3		d1-d2-d3-

7.2. Assessment schedules

Method	Week(s)
Writing exam	During December
Practical exam	During December
Oral exam	During December

Course specification of postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of blood		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	General structure of blood cells	1^{st} w- 9^{th} w	1,2,3,4	1,2,3	1,2,3	1,2,3,4
2	Origin and development of blood cellular elements	10^{th} w- 18^{th} w	1,2,3,4	1,3	1,2,3	1,2,3,4
3	General structure of wall of blood vessels	19^{th} w- 27^{th} w	1,2	1,2,3	1,2,3	1,2,3,4
4	General structure of wall of lymph vessels	28^{th} w- 36^{th} w	1,2	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-15**
Course title :	Histology and histochemisty of respiratory system
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Use efficiently the most recent techniques and improve the skills of histology of respiratory system.

2- Collect, manage and analyze the scientific data in histology of respiratory system.

3- Provide graduate with the knowledge of microscopic structure of respiratory organs

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Mention the different components of respiratory system.

a.2. Describe the microscopic structure of respiratory organs

a.3. list the different parts of blood air barrier .

a.4. Recall their knowledge and understanding of respiratory organs

b-Intellectual skills

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

b.1. Evaluate analytically the respiratory organs histology information for problem solving.

b.2. Integrate knowledge of respiratory organs histology to solve veterinary professional problems.

b.3. Design a scientific research plan in respiratory organs histology.

C- Professional and practical skills

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

c.1- Perform the recent histological practice.

c.2- Examination of the stained sections by the LM & EM

c.3- Evaluate the available and required material, tools and equipment in histology projects.

d- General and transferable skills

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

d.1- Communicate effectively and use of information technology in the development of

Course specification of postgraduate

veterinary professional practice.

d.2. Own Self-evaluation and need assessment.
d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	**Classification of respiratory organs**	36	18	18
	Microscopic structure of upper respiratory portion	36	18	18
	Microscopic structure of lower respiratory portion	36	18	18
	functional correlates of respiratory organs	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows
5.2- Self learning by preparing essays and presentations (computer researches and library)
5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Final Exam	a1- a2- a3- a4	b1- b2- b3	c1- c3	
Practical Exam	a2- a3	b2- b3	c1- c2- c3	
Oral Exam	a1- a2- a3	b2- b3		d1-d2-d3-d4

7.2. Assessment schedules

Method	Week(s)
Writing exam	During december
Practical exam	During december
Oral exam	During december

Course specification of postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology and histochemisty of respiratory system		**K and U (a)**	**I.S (b)**	**P. P.S. (c)**	**G.T.S (d)**
1	**Classification of respiratory organs**	1^{st} w- 9^{th} w	1,2,3	1,2,3	1,2,3	1,2,3,4
2	**Microscopic structure of upper respiratory portion**	10^{th} w- 18^{th} w	1,2,3	1,3	1,2,3	1,2,3,4
3	**Microscopic structure of lower respiratory portion**	19^{th} w- 27^{th} w	1,2	1,2,3	1,2,3	1,2,3,4
4	**functional correlates of respiratory organs**	28^{th} w- 36^{th} w	1,2	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-16**
Course title :	Histology and histochemistry of digestive system
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Use efficiently the most recent techniques to prepare histological sample.

2- Collect, manage and analyze the scientific data in regarding the histology of digestive tract.

3- Provide graduate with the knowledge of microscopic structure of different organs of digestive system.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. list the different parts of GIT and how it can work.

a.2. Describe the microscopic structure of digestive system

a.3. Recall the knowledge of digestive system histology research methods by evaluating the utility of those techniques to specific research questions .

a.4. Recall their knowledge and understanding of digestive system histology to the critical analysis and discussion of the scientific literature.

b-Intellectual skills

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

b.1. Describe the microscopic structure of the digestive system in reloation to their functions

b.2. Integrate knowledge of digestive system histology to solve veterinary professional problems.

b.3. Design a scientific research plan in digestive system histology.

C- Professional and practical skills

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

c.1- Perform recent histological practice.

c.2- Examination of the stained sections of digestive organs by the LM & EM

c.3- Evaluate the available and required material, tools and equipment in veterinary research projects.

Course specification of postgraduate

d- General and transferable skills

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

d.1- Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, 2Pract h./week)	structure of the oral cavity	36	18	18
	Microscopic and ultrastructure of stomach in different animals	36	18	18
	microscopic structure of small and large intestine	36	18	18
	Histology of liver pancreas and salivary glands	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1- a2- a3- a4	b1- b2- b3	c1- c3	
Practical Exam		b2- b3	c1- c2- c3-	
Oral Exam	a1- a2- a3-	b1- b2- b3		d1-d2-d3-d4

Course specification of postgraduate

Method	Week(s)
Written exam	**during december**
Practical exam	**during december**
Oral exam	**during december**
student activities	along the academic year

7.2. Assessment schedules

7.3. Weight of assessments

Assessment	Weight of assessment
Written exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Dr./Taghreed M.Nabil Prof Dr./Khaled M.Mazher

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of digestive system		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	structure of the oral cavity	1st w- 9th w	1,2,3	1,2,3	1,2,3	1,2,3,4
2	Microscopic and ultrastructure of stomach in different animals	10th w- 18th w	1,2,3,4	1,3,4	1,2,3,	1,2,3,4
3	Electromicroscopic structure of small and large intestine	19th w- 27th w	1,2,4	1,2,3	1,2,3	1,2,3,4
4	Ultrastructure of liver pancreas and salivary glands	28th w- 36th w	1,2,4	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-17**
Course title :	Histology and histochemistry of urogenital system
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Use efficiently the most recent techniques and improve the skills of urogenital histology.

2- Collect, manage and analyze the scientific data of histology of urogenital system .

3- Be aware about his role in community development and environment protection, regarding the national and international changes.

4- Provide graduate with the knowledge of microscopic structure of theurinary, male and female genital system

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Distinguish advanced research techniques used in the field of histology.

a.2. Describe the microscopic structure of urinary, male and female genital systems

a.3 mention the different components of urinary, male and female genital systems

a.4. Recall their knowledge and understanding of urinary, male and female genital systems

b-Intellectual skills

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

b.1. Evaluate analytically the microscopic structure of urinary, male and female genital systems information for problem solving.

b.2. Integrate knowledge of microscopic structure of urinary, male and female genital systems to solve veterinary professional problems.

b.3. Design a scientific research plan in microscopic structure of urinary, male and female genital systems.

C- Professional and practical skills

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

c.1- Perform recent histological practice.

c.2- Staining the sections by different histological stains and examination of the stained sections by the LM & EM

Course specification of postgraduate

c.3- Evaluate the available and required material, tools and equipment in veterinary research projects.

c.4. Write efficiently scientific paper and dissertation.

d- General and transferable skills

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

d.1. Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	**General structure urinay system** Structure of kidney Structure of urinary passages	36	18	18
	Microscopic structure of male genital system Structure of the testis Structure of accessory genital gland Structure of male duct system	72	36	36
	Microscopic structure of female genital system Structure of the ovary Structure of uterus	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Final Exam	a1- a2- a3-a4	b1- b2- b3	c1- c3	
Practical Exam	a2- a3	b2- b3	c1- c2- c3c4	
Oral Exam	a1- a2- a3-	b1- b2- b3		d1-d2-d3-

Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
Writing exam	During december
Practical exam	During december
Oral exam	During december

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activiyies	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

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Journals:

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Websites:

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WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology uro-genital system		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	**General structure urinay system** Structure of kidney Structure of urinary passages	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4
2	**Microscopic structure of male genital system** Structure of the testis Structure of accessory genital gland Structure of male duct system	10th w- 18th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4
3	**Microscopic structure of female genital system** Structure of the ovary Structure of uterus	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-18**
Course title :	Histology and histochemistry of nervous and endocrine system
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course

This course aims to:

1- Use efficiently the most recent techniques and improve the skills in histology of nervous system.

2- Collect, manage and analyze the scientific data in microscopic structure of nervous system.

3- Provide graduate with the knowledge of microscopic structure of the nervous and endocrine organs

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Distinguish advanced research techniques used in the field of histology.

a.2. Describe the microscopic structure of nervous and endocrine organs.

a.3. List the components of nervous system and endocrine glands

a.4. Recall their knowledge and understanding of histology of nervous and endocrine glands

b-Intellectual skills

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

b.1. Evaluate analytically the microscopic structure of nervous and endocrine organs

b.2. Interpret the normal microscopic structure of nervous system and endocrine glands in correlation to their function.

b.3. Integrate knowledge of microscopic structure of nervous and endocrine organs to solve veterinary professional problems.

b.4. Design a scientific research plan in microscopic structure of nervous and endocrine organs.

C- Professional and practical skills

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

c.1- Perform masterly the recent histological practice.

c.2- Stain the sections by different histological stains

Course specification of postgraduate

c.3- Examine the given samples of nervous and endocrine glands

c.4. Write efficiently scientific report of the examined sample.

d- General and transferable skills

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

d.1. Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	**General structure of central nervous system** Structure of brain Structure of spinal cord	36	18	18
	General structure of peripheral nervous system Structure of nerve fibers Structure of nerve endings	72	36	36
	Light and electron microscopic structure of different endocrine glands	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	**I.S**	**P&P.S**	**G.S**
Final Exam	a1- a2- a3- a4	b1- b2- b3-	c1- c3	
Practical Exam	a2- a3	b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3-

Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
Writing exam	**During December**
Practical exam	**During December**
Oral exam	**During December**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activites	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of nervous and endocrine		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	**General structure of central nervopus system** Structure of brain Structure of spinal cord	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4
2	**General structure of peripheral nervous system** Structure of nerve fibers Structure of nerve endings	10th w- 18th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4
3	**Light and electron microscopic structure of different endocrine glands**	19th w- 27th w	1,2,4	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-19**
Course title :	Histology and histochemistry of skin and its appendages
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Use efficiently the most recent techniques and improve the skills of histology.

2- Collect, manage and analyze the scientific data in skin histology.

3- Provide graduate with the knowledge of microscopic structure of different organs of different blood cells.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Describe the microscopic structure of skin and its appendages

a.2. list the different layers of thick and thin skin .

a.4. Describe the microscopic structure of different parts of skin and its appendages

b-Intellectual skills

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

b.1. Evaluate analytically the microscopic structure of skin and its appendages information for problem solving.

b.2. Interpret the normal microscopic structure of skin in correlation to its function.

b.3. Integrate knowledge of microscopic structure of skin and its appendages to solve veterinary professional problems.

C- Professional and practical skills

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

c.1- Perform masterly the recent histological practice.

c.2- Examination of the stained sections by the LM & EM

c.3- Evaluate the available and required material, tools and equipment in veterinary research projects.

c.4- Write efficiently scientific paper and dissertation.

Course specification of postgraduate

d- General and transferable skills

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

d.1- Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	structure of thin and thick skin	36	18	18
	structure of sweat and sebaceous glands and hair follicles	36	18	18
	structure of hair, nails and hoof	36	18	18
	General structure mammary gland	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1- a2- a3-	b1- b2- b3-	c1- c2- c3- c4	
Practical Exam	a1- a2- a3	b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3-d4

Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
Writing exam	**During December**
Practical exam	**During December**
Oral exam	**During December**

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activities	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of lab animal		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	structure of thin and thick skin	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4
2	structure of sweat and sebaceous glands and hair follicles	10th w- 18th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4
3	structure of hair, nails and hoof	19th w- 27th w	1,2,4	1,2,3,4	1,2,3	1,2,3,4
4	General structure mammary gland	28th w- 36th w	1,2	1,2,3,4	1,2,3	1,2,3,4

Beni Suef University
Faculty of Veterinary Medicine

Course specification

1-Basic information

Course Code:	**M-20**
Course title :	Avian histology
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to provide the student with information about:

1- The microscopic structure of the avian tissue and organs .

1- The anatomical features of different parts of birds.

2- Collection of histological samples from birds.

3- Correlate the structure of different parts of birds to its function

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. list the most characteristic features of different organs of birds.

a.2. Mention the microscopic structure of different organs of birds

a.3. Describe the histological pictures of avian organs

a.4. List the most important functions of different organs

b-Intellectual skills

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

b.1. Evaluate analytically the microscopic structure of different organs of birds information for problem solving.

b.2. Differentiate between the different organs of birds .

b.3. Integrate knowledge of microscopic structure of different organs of birds to solve veterinary professional problems.

b.4. Interpret microscopic structure of different organs of birds in relation to their functions.

C- Professional and practical skills

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

c.1- Prepare histological samples from bird organ.

c.2- examine the hiostological slides from birds and write a histological report.

c.3- Evaluate the available and required material, tools and equipment in histological technique

d- General and transferable skills

Course specification

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

d.1. Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec.2 h./week, Pract 2h./week)	- General structure of digestive system	36	18	18
	- General structure of respiratory system	18	9	9
	- General structure of urogenital system	36	18	18
	- General structure of skin and endocrine system	18	9	9
	- General structure of lymphatic system	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1- a2- a3- a4	b1- b2- b3-b4	c1- c3	
Practical Exam		b1- b2- b3-	c1- c2- c3	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3-

7.2. Assessment schedules

Method	Week(s)
Written exam	**managed by the faculty**
Practical exam	**managed by the department**
Oral exam	managed by the department

Course specification

7.3. Weight of assessments

Assessment	Weight of assessment
Written exam	**50%**
Practical exam	**25%**
student activities	---------
Oral exam	**25%**
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators
Dr./Taghreed M. Nabil

Head of Department
Prof.Dr./Khaled M. Mazher

Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Avian Histology		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	- General structure of digestive system	1st w- 9th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4,
2	- General structure of respiratory system ,skin and endocrine system	10th w- 18th w	1,2,3	1,3,4	1,2,3,4	1,2,3,4
3	- General structure of urogenital system	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4
4	- General structure of lymphatic system	28th w- 36th w	1,2	1,2,3,4	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-21**
Course title :	Histology and histochemistry of cardiovascular and immune systems
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	2h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course

This course aims to:

1- Provide the student with the knowledge about the microscopic and ultra structure of the cardiovascular system .

2- provide the students with the modern techniques in the field of histology.

4- Prepare the graduate to examine and prepare histological sample

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Mention the basic structure of the heart and blood vessels.

a.2. Describe the microscopic structure of immune cells and histology of heart and blood vessels

a.3. Recall the knowledge of histological research methods by evaluating the utility of those techniques to specific research questions .

a.4. Recall their knowledge and understanding of immunity and histology of heart and blood vessels to the critical analysis and discussion of the scientific literature.

b-Intellectual skills

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

b.1. Evaluate the microscopic structure of immune cells and histology of heart and blood vessels

b.2. Integrate knowledge of microscopic structure of immune cells and histology of heart and blood vessels to solve veterinary professional problems.

b.3. Correlate the microscopic structure of immune cells, heart and blood vessels in relation to their function

C- Professional and practical skills

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

c.1- Perform recent histological practice.

c.2- Stain the sections by different histological stains and examination of the stained sections by the LM & EM

Course specification of postgraduate

c.3- Evaluate the available and required material, tools and equipment in histological work.

c.4. Write efficiently scientific a histological report of a givin sample.

d- General and transferable skills

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

d.1. Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract 2h./week)	structure of the heart	36	18	18
	structure of arteries and veins	36	18	18
	Connections between arteries and veins	36	18	18
	Structure of immune organs	36	18	18
	Total	144	72	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1- a2- a3-4	b1- b2- b3	c1- c3	
Practical Exam		b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3	b1- b2- b3		d1-d2-d3d4

Course specification of postgraduate

7.2. Assessment schedules

Method	Week(s)
Written exam	**during december**
Practical exam	**during december**
Oral exam	**during december**

7.3. Weight of assessments

Assessment	Weight of assessment
Written exam	**50%**
Practical exam	**25%**
student activities	----------
Oral exam	**25%**
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

- **Headlines of Veterinary Histology**. Hany E. S. Marei. 5th ed. 2006. V II. Department of

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy
-Anatomia Histologia Embryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

WWW.Science direct
WWW. Pubmed.com
WWW.Scholar google.com
WWW.welly interscience

Course Coordinators
Dr./Taghreed M. Nabil

Head of Department
Prof.Dr./Khaled M. Mazher

Course specification of postgraduate

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of cardiovascular and immunity		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	structure of the heart	1st w- 9th w	1,2,3	1,2,3	1,2,3,4	1,2,3,4,5
2	structure of arteries and veins	10th w- 18th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5
3	Connections between arteries and veins	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4,5
4	Structure of immune organs	28th w- 36th w	1,2,4	1,2,3	1,2,3	1,2,3,4,5

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**M-22**
Course title :	Fish histology
Program title:	Master degree In Veterinary Medical Sciences
Contact hours/ week	1h/week lecture 2h/week practical
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Write the dissertation, scientific report about the different organs fish histology.

2- Use efficiently the most recent techniques and improve the skills of scientific research.

3- Collect, manage and analyze the scientific data in fish histology.

4- Provide graduate with the knowledge of microscopic structure of different organs of fish organs.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a.1. Distinguish advanced research techniques used in the field of fish histology.

a.2. Describe the microscopic structure of different organs of fish

a.3. Recall their knowledge of histology of different organs in fish research methods by evaluating the utility of those techniques to specific research questions .

a.4. List the different organs of fish in digestive . respiratory. Circulatory, lymphatic and urogenital systems

b-Intellectual skills

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

b.1. Evaluate analytically the histology of different organs in different fish species

b.2. Interpret the microscopic structure of fish organs in correlation to function.

b.3. Design a scientific research plan in fish histology.

C- Professional and practical skills

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

c.1- Perform recent histological practice in the field of fish.

c.2- Examination of the stained sections of fish organs by the LM & EM

c.3- Evaluate the available and required material, tools and equipment in fish histology

d- General and transferable skills

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

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

d.1- Communicate effectively and use of information technology in the development of veterinary professional practice.

d.2. Own Self-evaluation and need assessment.

d.3. Utilize different available resources for efficient obtaining of knowledge and information.

d.4. Issue the regulations and indicators for performance evaluation.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week)	- General structure of digestive system	27	9	18
	- General structure of respiratory system	27	9	18
	- General structure of urogenital system	27	9	18
	- General structure of lymphatic system	27	9	18
	Total	108	36	72

5-Teaching and learning methods

5.1- Lectures (brain storm, discussion) using board, data shows

5.2- Self learning by preparing essays and presentations (computer researches and library)

5.3- Practical (models, samples of stained tissues and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3-	c3	
Practical Exam	a2- a3	b2- b3-	c1- c2- c3	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3-

7.2. Assessment schedules

Method	Week(s)
Writing exam	**During December**
Practical exam	**During December**
Oral exam	**During December**

Course specification of postgraduate

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**25%**
Oral exam	**25%**
student activiyies	----------
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

- **Weather's Functional Histology (main reference book)**, a text and colour atlas. Fourth edition, by B.Young and J.W.Heath.

Cormack, D. H. (1987): Ham's Histology 9th Ed. J. B. Lippincott Company, Philadelphia, London, Mexico City, New York, St. Louis, Sao Paulo, Sydney

8.3. Recommended texts

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8.4. Journals, Websites ……..etc

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Websites:

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WWW.welly interscience

Course Coordinators **Head of Department**

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of fish		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	General structure of digestive system	1st w- 9th w	1,2,3,4	1,2,3	1,2,3	1,2,3,4
2	- General structure of respiratory system	10th w- 18th w	1,2,3	1,3	1,2,3	1,2,3,4
3	- General structure of urogenital system	19th w- 27th w	1,2,4	1,2,3	1,2,3	1,2,3,4
4	- General structure of lymphatic system	28th w- 36th w	1,2	1,2,3	1,2,3	1,2,3,4