



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

Program Specification for Ph Degree Cytology and Histology
2017-2018

A-Basic information:

- 1- **Course title:** *PhD VSC. Specialty:- Cytology and Histology*
- 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- Work continuously for increasing knowledge in cytology and histology professional practice.
- 2- Master the various methods of data collection and application of analytical and critical approach in the field of histology.
- 3- Develop the appropriate use of advanced techniques and applications as immunohistochemistry and immunocytometry for mastering a wide range of histology professional skills.
- 4- Develop the communication and IT skills effectively and leading the team.
- 5- Utilize efficiently the available resources and improving as well as offering new resources in the field of histology.

2- Intended learning outcomes of course (ILOs):

a- Knowledge and understanding:

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

- a1- Acquire up to date concepts in histology and cytology practice and other career related sciences.

a2 Recognize all theories , principles and basics of his/her area of learning and other related sciences .

a3- Connect up to date histological and cytological professional practice regulations and ethics.

a4- Describe advanced research techniques used in the field of cytology and histology

a5- Describe stem cells and their sources and recognize their advantages and disadvantages.

b- Intellectual capacity:

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

b1- Analyze and evaluate relevant histological information for standardization and conclusion.

b2- design the role of stem cells in regenerative medicine.

b3- Edit scientific papers with high impact factor (reputable journals).

b4- Plan for the improvement of histology performance.

b5- Make a decision in variable professional histology practices.

b6- Do open discussion based on evidence in the field of histology.

c- Professional and practical skills:

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

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

c2- Plan a research project in the field of histology with a consideration to technical, ethical and safety issues and associated costs.

c3- Utilize the up to date recent histological techniques.

c4- Write and assess the histological reports.

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

d- General and transferable skills:

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

d1- Communicate effectively and utilize the advanced information technology in the improvement of histological practice.

d2- Utilize the resources to obtain knowledge and information.

d3- Manage the scientific meetings and discussions.

d4- Manage the time efficiently.

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 (NAQAEE) 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 .

ARS (National Academic Reference Standards) prepared by NAQAAE.

4- Curriculum Structure and Contents

a-Program duration: 3 years at least

b- Correculum duration : 48 weeks

b-Program structure: 3-5 preliminary courses

Hours/ week:

Theoretical Practical Total

Preliminary courses

Code	Course title	Hours /week		Academic year	Teaching duration
		theoretical	practical		
According to selected courses	Selected (3-5) PhDcourses from the various Faculty Departments programs depending on the thesis title.	5-8	6-8	Preliminary year	36 weeks

D- Courses contents

See courses specification

5- Program Admission Requirements

* According to the Faculty of Veterinary Medicine, Beni-Suef University Bylaws for Post Graduate Programs, applicants should have a master degree in the specialization subject he will register in one of the Egyptian Universities or an equivalent degree from any approved university or another recognized scientific institute.

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

1-English language (Toefl or equivalent degree)

* Admission to the program is open during March and September annually.

*The faculty council has the right to suspend the student enrolment for a certain period if he has acceptable excuse preventing him from continuing his study or research.

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 written examined time	Degree	
		Theoretical	Practical and oral exam
≥ 3 hours	3 hours	50	50
≤ 3 hours	2 hours	25	25

-The faculty council has the right to deprive the applicant from entering the exams if his attendance courses is less than 75% .

-Failure or depriving from entering one or more course did not requires reexamination of successful passed courses.

-The applicant should submit a seminar within 2years after registration about his research and specialization subject filed that accepted by a committee of professors and assistant professors(3 in number).

-the applicant should submit the thesis that accepted by the judging committee in an open discussion and the following polices should be met:

-pass all preliminary curriculums successfully.

-acceptance of the seminar presented by the applicant.

-The applicant should publish at least two scientific papers from the thesis in local or international journals

Qualification grades:

Excellent	≥ 90
Very good	From 80 to 89
Good	From 70 to 79
Pass	From 60 to 69

Failed	45 to less than 60 weak
	Less than 45 Very weak

After passing, the graduate starts research for Ph.D. 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.

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 after at least three years from registration date according to University regulations.

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

Ph.D. Thesis:

The Ph.D. students should prepare a thesis in the field of cytology and histology. The department and the ethical committees must approve the protocol of the research. The thesis includes a review part with a practical part. The thesis is supervised by two 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.

Assessments methods	Matrix alignment of the measured ILOs			
	K&U (a)	I.S (b)	P&P. S (c)	G&T. S (d)
Written exam	1,2,3,4,5	1,3,6		-----
Practical exam		3,4,5,6,	1.2.3.4.6.	1.2.3.4
Oral exam	1,2,3,4,5	1,2,4,5,6,	1.7	1,2,3,4

B- Matrix alignment of the measured ILOs

8- Evaluation of Program Intended Learning Outcomes

Evaluator	Tool	Sample
1. Post graduate Students	Questionnaire at the end of the program	All the PG students
4. External Evaluators	Review program and courses Attending the final exam	Once before implementation annual report
5. College Quality Assurance committee	Annual program reviewer	

Course coordinator

Head of the Department

Dr/Taghreed M.Nabil

Prof.Dr/Khaled M.Mazher

PhD Program Specification Matrix (Program Courses with ILOS)

Program ILOs		Courses
Knowledge and understanding	a1	Ph-12 to Ph-22 and the thesis
	a2	Thesis
	a3	Thesis
	a4	Ph-12 to Ph-22 and the thesis
	a5	Ph-12 and thesis
Intellectual skills	b1	Ph-12 to Ph-22 and the thesis
	b2	Ph-12 and thesis
	b3	Ph-12 to Ph-22 and the thesis
	b4	Ph-12 to Ph-22 and the thesis
	b5	Thesis
	b6	Thesis
Professional and practical skills	c1	Thesis
	c2	Thesis
	c3	Ph-12 to Ph-22 and the thesis
	c4	Ph-12 to Ph-22 and the thesis
	c5	Thesis
General and transferable skills	d1	Ph-12 to Ph-22 and the thesis
	d2	Ph-12 to Ph-22 and the thesis
	d3	Ph-12 to Ph-22 and the thesis

d4

Ph-12 to Ph-22 and the thesis

Program aims – ILOS Matrix for the Ph. Degree

مصفوفة اهداف البرنامج مع مخرجات التعلم المستهدفة

Program ILOS		Program aims				
		1- Work continuously for increasing knowledge in cytology and histology and professional practice.	2- Master the various methods of data collection and application of analytical and critical approach in the field of histology.	3- Develop the appropriate use of advanced techniques and applications as immunohistochemistry and immunocytometry for mastering a wide range of histology professional skills.	4- Develop the communication and IT skills effectively and leading the team.	5- Utilize efficiently the available resources and improving as well as offering new resources in the field of histology.
Knowledge and understanding	a1- Acquire up to date concepts in histology and cytology practice and other career related sciences.	√		√		√
	a2 Recognize all theories , principles and basics of his/her area of learning and other related sciences .	√		√		
	a3- Connect up to date histological and cytological professional practice regulations and ethics.	√	√		√	
	a4- Describe advanced research techniques used in the field of cytology and histology	√		√	√	
	a5- Describe stem cells and their sources and recognize their advantages and disadvantages.	√				√
Intellectual skills	b1- Analyze and evaluate relevant histological information for standardization and conclusion.		√	√		
	b2- design the role of stem cells in regenerative medicine.	√	√			
	b3- Edit scientific papers with high impact factor (reputable journals).		√			
	b4- Plan for the improvement of histology performance.				√	√
	b5- Make a decision in variable professional histology practices.		√			√
	b6- Do open discussion based on		√		√	

Program ILOS		Program aims				
		1- Work continuously for increasing knowledge in cytology and histology professional practice.	2- Master the various methods of data collection and application of analytical and critical approach in the field of histology.	3- Develop the appropriate use of advanced techniques and applications as immunohistochemistry and immunocytometry for mastering a wide range of histology professional skills.	4- Develop the communication and IT skills effectively and leading the team.	5- Utilize efficiently the available resources and improving as well as offering new resources in the field of histology.
	evidence 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- Plan a research project in the field of histology with a consideration to technical, ethical and safety issues and associated cost		√		√	√
	c3-Utilize the up to date recent histological techniques.	√			√	
	c4- Write and assess the histological reports.					√
	c5- Evaluate and improve the available and required material, tools and equipment in histology research projects.			√	√	√
general and transferable skills	d1- Communicate effectively and utilize the advanced information technology in the improvement of histological practice					
	d2- Utilize the resources to obtain knowledge and information.	√				√
	d3- Manage the scientific meetings and discussions.				√	
	d4- Manage the time efficiently.				√	

PhD 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	a3	a4	a5	b1	b2	b3	b4	b5	b6	b7	b8	b9	c1	c2	c3	c4	c5	d1	d2	d3	d4	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																		√								
General and transferable skills	d1																			√	√						√
	d2																				√			√			
	d3																					√	√		√		
	d4																						√				



Beni-Suef University
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Course specification of postgraduate

1-Basic information

Course Code:	Ph-12	
Course title :	Cytology & Cytochemistry	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of cell organelles
- 2- Develop the appropriate use of modern techniques and applications for mastering a wide range of veterinary professional skills.

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 cytology and cytochemistry.
- a.2. Describe the microscopic structure of different organelles
- a.3. Critically apply their knowledge of cytology and cytochemistry research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of cytology and cytochemistry on the base of light and electron microscopic structure 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 with relation to their functions
- b.2. develop creative approaches in cytology and cytochemistry to solving technical problems.
- b.3. interpret the cytological and cytochemical findings to solving technical problems.
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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

- c.1. . Prepar of the sections from the collected samples
- c.2. Stain the sections by different histological stains
- c.3. examine the stained sections by the LM & EM
- c.4. apply the immunohistochemical technique in practical portion

d- General and transferable skills



Course specification of postgraduate

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.
- 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 the cell organelles	36	18	18
	Electron microscopic examination of the different cell types	36	18	18
	Tissue culture and cytogenetic	36	18	18
	Clinical application of the medical cell biology and biotechnology	36	18	18
	Total			

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	LS	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3-b4	c1- c2- c3- c4	
Practical Exam	a1- a2- a3	b1- b2- b3-	c1- c2- c3- c4	



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Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6- d7
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7.2. Assessment schedules

Method	Week(s)
Writing exam	
Practical exam	
Oral exam	

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
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, Websitesetc

Journals:

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

Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience

Course Coordinators

Head of Department



Beni-Suef University
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Course specification of postgraduate



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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	Structure of the cell organelles	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Electron microscopic examination of the different cell types	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	Tissue culture and cytogenetic	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	Clinical application of the medical cell biology and biotechnology	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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Course specification of postgraduate

1-Basic information

Course Code:	Ph-13	
Course title :	General histology	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of different body tissues
- 2- Develop the appropriate use of modern techniques and applications in histology for mastering a wide range of veterinary professional skills.

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 general histology.
- a.2. Describe the light microscopic and ultrastructure of different body tissues
- a.3. Critically apply their knowledge of body tissues research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of body tissues on the base of light, immunohistochemical and electron microscopic structure of general histology

b-Intellectual skills

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

- b.1. evaluate their own research data and develop new approach in tissues structure to solving their research questions
- b.2. develop creative approaches to solving technical problems in histology
- b.3. identify , summarize and evaluate prior researches finding in light, immunohistochemical and electron microscopic structure of different body tissues in a specific area
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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

- c.1. Prepare of the sections from the collected samples
- c.2. Stain the sections by different histological stains
- c.3. examine of the stained sections of different tissues by the LM & EM



Course specification of postgraduate

c.4. apply 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.

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 especial epithelial tissue - modifications in the epithelial tissue cells	36	18	18
	- ultrastructure of connective tissue cells and their functions - supportive tissue structure	36	18	18
	- ultrastructure 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
Written Exam	a1- a2- a3- a4	b2- b3-b4		



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Practical Exam		b3-b4	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-a4	b2- b3-	c3-c4	d1-d2-d3- d4- d5- d6- d7

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%
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, Websitesetc

Journals:

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

Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com



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Course specification of postgraduate

WWW.wellyinterscience

Course Coordinators

Head of Department



Beni Suef University
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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)
	General histology					
1	-structure of especial epithelial tissue - modifications in the epithelial tissue cells	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	- ultrastructure of connective tissue cells and their functions - supportive tissue structure	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	- ultrastructure of muscular tissue - mechanism of contractions	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	- Microscopical structure of nervous tissue - Synapse	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-14
Course title :	Histology and histochemistry of blood, lymph vessels and blood vessels
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of blood cells
- 2- Develop the appropriate use of modern techniques and applications for mastering a wide range of histology professional skills.

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 blood cells and lymphatic and blood vessels
- a.3. Describe advanced research techniques used in demonstration of different blood cells in addition to the use of in vitro techniques of white blood cells.
- a.4. apply their knowledge and understanding of blood and lymphatic and blood vessels structure on the base of light and electron microscopic structure 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 their own research data and develop new approach in microscopic and ultrastructure in addition to immunohistochemistry of blood cells to solving research questions
- b.2. develop creative approaches to solving technical problems or issues associate with running and researches project.
- b.3. identify , summarize and evaluate prior researches finding in blood and lymphatic and blood vessels structure on the base of light and electron microscopic structure
- b.4. master areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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

- c.1. Prepare of the sections from the collected samples



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- c.2. Stain the sections by special histological stains
- c.3. Examine of the stained sections by the LM & EM
- c.4. Use 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.
- 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 white blood cells and their functions	36	18	18
	Origin and development of blood cellular elements and the histochemical reactions of the different blood cells	36	18	18
	Structure of wall of blood vessels and their functional relationship	36	18	18
	Structure of means of communications between arteries and veins	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:



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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-		
Practical Exam		b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-b4		d1-d2-d3- d4-d5-d6- d7

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%
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, Websitesetc

Journals:

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

Websites:



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Course specification of postgraduate

WWW.Science direct

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) interscience

Course Coordinators

Head of Department



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	Structure of white blood cells and their functions	1 st w- 9 th w	1,2,3,4	1,2,3	1,2,3,4	1,2,3,4,5,6,7
2	Origin and development of blood cellular elements and the histochemical reactions of the different blood cells	10 th w- 18 th w	1,2,3	1,3,4	1,2,3,4	1,2,3,4,5
3	Structure of wall of blood and lymph vessels and their functional relationship	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5
4	Structure of means of communications between arteries and veins	28 th w- 36 th w	1,2	1,2,3	1,2,3	1,2,3,4,5



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Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-15	
Course title :	Histology and histochemisty of respiratory system	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of respiratory system
- 2- Master the identification of problems and finding solutions based on sound scientific research concepts in respiratory system structure.
- 3- Develop the appropriate use of modern techniques and applications for mastering a wide range of histological professional skills.

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 light microscopic structure and ultrastructure of different respiratory organs in different animals
- a.3. Critically apply their knowledge of ultrastructure of respiratory organs to evaluate the utility of those structures to specific research questions .
- a.4. apply their knowledge and understanding of respiratory system on the base of light and electron microscopic structure 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. critically evaluate their own research data and develop new approach to solving their research questions
- b.2. develop creative approaches to solving technical problems or issues associate with running and researches project.
- b.3. identify , summarize and evaluate prior researches finding in light microscopic structure and ultrastructure of different respiratory organs in different animals
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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



Course specification of postgraduate

- 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.
- 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)	Classification of respiratory organs	36	18	18
	ultrastructure of upper respiratory portion	36	18	18
	ultrastructure of lung and their cellular elements	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
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Course specification of postgraduate

	K&U	LS	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3-b4	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

7.2. Assessment schedules

Method	Week(s)
Writing exam	
Practical exam	
Oral exam	

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
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, Websitesetc

Journals:

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

Websites:

WWW.Science direct



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Course specification of postgraduate

WWW. Pubmed.com

WWW.Scholar google.com

WWW.welly interscience

Course Coordinators

Head of Department



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	Classification of respiratory organs	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	ultrastructure of upper respiratory portion	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	ultrastructure of lung and their cellular elements	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	functional correlates of respiratory organs	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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Course specification of postgraduate

1-Basic information

Course Code:	Ph-16	
Course title :	Histology and histochemistry of digestive system	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of digestive system.
- 2- Master the identification of problems and finding solutions based on sound scientific research concepts.
- 3- Develop the appropriate use of modern techniques and applications for mastering a wide range of veterinary professional skills.

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 of digestive system.
- a.2. Describe the microscopic structure and ultrastructure of different digestive organs in different animal species
- a.3. Critically apply their knowledge of histology of digestive organs in research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of histology of digestive organs on the base of light, immunohistochemical and electron microscopic structure 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. critically evaluate their own research data and develop new approach to solving their research questions
- b.2. develop creative approaches to solving technical problems histology of digestive organs.
- b.3. identify , summarize and evaluate prior researches finding in digestive organs on the base of light, immunohistochemical and electron microscopic structure
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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

- c.1. . Prepare of the sections from the collected samples
- c.2. Stain the sections by different histological stains



Course specification of postgraduate

- c.3. examine of the stained sections by the LM & EM
c.4. use 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.
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 the lingual papillae	36	18	18
	Comparative study of stomach in different animals	36	18	18
	Ultrastructure of the stomach and intestinal glands and their histochemical reactions	36	18	18
	Structure of liver pancreas and salivary glands and their enzymatic contents	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
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Course specification of postgraduate

	K&U	LS	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3-b4		
Practical Exam		b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6- d7

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%
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, Websitesetc

Journals:

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

Websites:

WWW.Science direct



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Course specification of postgraduate

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) interscience

Course Coordinators

Head of Department



Beni Suef University
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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	structure of the lingual papillae	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Comparative study of stomach in different animals	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	Ultrastructure of the stomach and intestinal glands and their histochemical reactions	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	Structure of liver pancreas and salivary glands and their enzymatic contents	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



Beni Suef University
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Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-17	
Course title :	Histology and histochemistry of urogenital system	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of urinary, male and female genital systems
- 2- Master the identification of problems and finding solutions based on sound scientific research concepts in urinary, male and female genital systems structure.
- 3- Develop the appropriate use of modern techniques and applications in urinary, male and female genital systems structure for mastering a wide range of veterinary professional skills.

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 organs of urinary, male and female genital systems in different animal species
- a.3. Critically apply their knowledge of urinary, male and female genital systems research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of urinary, male and female genital systems on the base of light and electron microscopic structure 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. critically evaluate their own research data and develop new approach in urinary, male and female genital systems structure to solving their research questions
- b.2. develop creative approaches to solving technical problems in urinary, male and female genital systems structure
- b.3. identify , summarize and evaluate prior researches finding in urinary, male and female genital systems on the base of light and electron microscopic structure in different animal species.
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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



Course specification of postgraduate

- 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.
- 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)	General structure urinay system Structure of kidney Endocrine function of the kidney Structure of urinary passages	36	18	18
	Microscopic structure of male genital system Structure of the testis Structure of accessory genital gland Ultrastructure of the male sperm	72	36	36
	Microscopic structure of female genital system Structure of the ovary Structure of uterus Process of folliculogenesis	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).



Course specification of postgraduate

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		
Practical Exam		b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6- d7

7.2. Assessment schedules

Method	Week(s)
Writing exam	managed by faculty
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%
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, Websitesetc

Journals:

- American Journal of anatomy
- Anatomia Histologia Embryologia
- Anatomical record



Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

-Egyptian journal of Histology

Websites:

WWW.Science direct

WWW. Pubmed.com

[WWW.Scholar](#) google.com

[WWW.welly](#) interscience

Course Coordinators

Head of Department



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)
	Avian histology					
1	General structure urinay system Structure of kidney Endocrine function of the kidney Structure of urinary passages	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Microscopic structure of male genital system Structure of the testis Structure of accessory genital gland Ultrastructure of the male sperm	10 th w- 27 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	Microscopic structure of female genital system Structure of the ovary Structure of uterus Process of folliculogenesis	28 th w- 36 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7



Beni Suef University
Faculty of Veterinary Medicine



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Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-18
Course title :	Histology and histochemistry of nervous and endocrine system
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of nervous and endocrine system
- 2- Master the identification of problems and finding solutions based on sound scientific research concepts in nervous and endocrine system structure.
- 3- Develop the appropriate use of modern techniques and applications for mastering a wide range of histological professional skills.

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 light microscopic structure, ultrastructure and immunohistochemistry of nervous and endocrine organs in different animal species
- a.3. Critically apply their knowledge of nervous and endocrine system structure research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of nervous and endocrine system on the base of light and electron microscopic structure 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. critically evaluate their own research data and develop new approach in histology and histochemistry of nervous and endocrine system to solving their research questions
- b.2. develop creative approaches to solving technical problems in histology and histochemistry of nervous and endocrine system
- b.3. identify , summarize and evaluate prior researches finding in nervous and endocrine system on the base of light and electron microscopic structure
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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



Course specification of postgraduate

- c.1. . Prepare of the sections from the collected samples
- c.2. Stain the sections of nervous and endocrine system by different histological stains
- c.3. examine of the stained sections of nervous and endocrine system by the LM & EM
- c.4. use 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.
- 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)	Ultrastructure of central nervous system Structure of brain Structure of spinal cord	36	18	18
	Ultrastructure of peripheral nervous system Structure of nerve fibers Structure of nerve endings	36	18	18
	Electron microscopic structure and histochemical contents of different endocrine glands - neuroendocrine cells	72	36	36
	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).



Course specification of postgraduate

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-b4		
Practical Exam		b1- b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6- d7

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%
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, Websitesetc

Journals:

- American Journal of anatomy

-Anatomia Histologia Embryologia



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Course specification of postgraduate

- 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



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)
	Avian histology					
1	Ultrastructure of central nervous system Structure of brain Structure of spinal cord	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Ultrastructure of peripheral nervous system Structure of nerve fibers Structure of nerve endings	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	Electron microscopic structure and histochemical contents of different endocrine glands - neuroendocrine cells	19 th w- 36 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7



Beni Suef University
Faculty of Veterinary Medicine



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Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	Ph-19	
Course title :	Histology and histochemistry of skin and its appendages	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of skin and its appendages
- 2- Develop the appropriate use of modern techniques and applications for mastering a wide range of histological professional skills.

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 skin histology.
- a.2. Describe the microscopic structure of skin and its appendages
- a.3. Critically apply their knowledge of skin and its appendages research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of skin and its appendages on the base of light and electron microscopic structure 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. critically evaluate their own research data and develop new approach in skin and its appendages to solving their research questions
- b.2. develop creative approaches to solving technical problems in histology of skin and its appendages.
- b.3. identify , summarize and evaluate prior researches finding in skin and its appendages on the base of light and electron microscopic structure
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

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



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 utilize the advanced information technology in the improvement of veterinary professional practice.
- d.2- Educate the others and evaluate their performance.
- 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 thin and thick skin	36	18	18
	Ultrastructure of sweat, sebaceous glands and hair follicles and their histochemical reactions	36	18	18
	Ultrastructure of hair, nails and hoof	36	18	18
	Ultrastructure of 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- a4	b1- b2- b3-b4	c3-c4	
Practical Exam	a2- a3	b2- b3	c1- c2- c3-	



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			c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6- d7

7.2. Assessment schedules

Method	Week(s)
Writing exam	
Practical exam	
Oral exam	

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
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, Websitesetc

Journals:

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

Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience



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Course Coordinators

Head of Department



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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	Structure of thin and thick skin	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Ultrastructure of sweat, sebaceous glands and hair follicles and their histochemical reactions	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	Ultrastructure of hair, nails and hoof	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	Ultrastructure of mammary gland	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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Course specification of postgraduate

1-Basic information

Course Code:	Ph-20	
Course title :	Avian histology	
Program title:	Ph. D 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:

Provide graduate with the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of different organs of birds

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 organs of birds
- a.3. apply their knowledge of avian histology research methods by evaluating the utility of those techniques to specific research questions .
- a.4. Mention the histological picture of different organs in different avian species on the base of light and electron microscopic structure.

b-Intellectual skills

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

- b.1. evaluate the microscopic structure of different organs of different avian species to solving research questions
- b.2. develop creative approaches to solving technical problems in avian species
- b.3. identify , summarize and evaluate prior researches finding in histology of different organs in different avian species on the base of light and electron microscopic structure
- b.4. Interpret electron 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. . Preparing of the sections from the collected samples of birds
- c.2. Staining the sections by different histological stains
- c.3. examination of the stained sections of birds by the LM & EM
- c.4. using the immunohistochemical technique in practical portion of birds

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



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- improvement of veterinary professional practice.
- d.2- Educate the others and evaluate their performance.
 - 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)	- General structure of digestive system - ultrastructure of proventriculus	36	18	18
	- General structure of respiratory system - ultrastructure of air sacs	36	18	18
	- General structure of urogenital system	36	18	18
	- General structure of lymphatic system - ultrastructure of avian bursa	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-b4		
Practical Exam		b2- b3-	c1- c2- c3- c4	
Oral Exam	a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6-



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			d7
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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%
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, Websitesetc

Journals:

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- Anatomia Histologia Embryologia
- Anatomical record
- Egyptian journal of Histology

Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience

Course Coordinators

Head of Department



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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	- General structure of digestive system - ultrastructure of proventriculus	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	- General structure of respiratory system - ultrastructure of air sacs	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	- General structure of urogenital system	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	- General structure of lymphatic system - ultrastructure of avian bursa	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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Course specification of postgraduate

1-Basic information

Course Code:	Ph-21	
Course title :	Histology and histochemistry of cardiovascular and immune systems	
Program title:	Ph. D 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 the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of heart, blood vessels and immunity
- 2- Prepare the graduate to examine, prepare and interpret histological samples

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 ultra microscopic structure of heart, blood vessels and immune cells
- a.3. Critically apply their knowledge of immune cells research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of heart, blood vessels and immune cells on the base of light and electron microscopic structure 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. critically evaluate their own research data and develop new approach to cardiovascular histology
- b.2. develop creative approaches to solve technical problems or issues associate with running and researches project.
- b.3. identify , summarize and evaluate prior researches finding in heart, blood vessels and immune cells on the base of light and electron microscopic structure.
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

C- Professional and practical skills

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

- c.1. Prepare of the sections from the collected samples from cardiovascular system
- c.2. Staine the sections by different histological stains



Course specification of postgraduate

- c.3. examine the stained sections of cardiovascular system by the LM & EM
c.4. apply the immunohistochemical technique in practical portion in cardiovascular system

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.
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 the heart and the impulse conducting system	36	18	18
	Structure of arteries and veins Connections between arteries and veins	36	18	18
	ultrastructure of immune organs	36	18	18
	Histochemical differentiation between the T & B lymphocytes	36	18	18
	Total			

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-		
Practical Exam		b2- b3-	c1- c2- c3-	



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			c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4-d5-d6- d7

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%
total	100%

8- List of references

8.1. Notes and books

8.2. Essential books:

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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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- Anatomical record
- Egyptian journal of Histology

Websites:

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- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience



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Course Coordinators

Head of Department



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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	Structure of the heart and the impulse conducting system	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	Structure of arteries and veins Connections between arteries and veins	10 th w- 18 th w	1,2,3	1,3,4	1,2,3,4	1,2,3,4,5
3	Ultrastructure of immune organs	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5
4	Histochemical differentiation between the T & B lymphocytes	28 th w- 36 th w	1,2	1,2,3	1,2,3	1,2,3,4,5



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Course specification of postgraduate

1-Basic information

Course Code:	Ph-22	
Course title :	Fish histology	
Program title:	Ph. D degree In Veterinary Medical Sciences	
Contact hours/ week	1hr/week theoretical	2hrs/week practical
Approval Date		

2-Professional information

Overall aims of course:

This course aims to:

- 1- Provide graduate with the knowledge of microscopic and ultrastructure in addition to immunohistochemistry of different organs of fish
- 2- Develop the appropriate use of modern techniques and applications in fish histology for mastering a wide range of veterinary professional skills.

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 fish histology.
- a.2. Describe the light microscopic and ultrastructure of different organs of different fish species
- a.3. Critically apply their knowledge of fish histology research methods by evaluating the utility of those techniques to specific research questions .
- a.4. apply their knowledge and understanding of histology of different organs of different fish specimens the base of light and electron microscopic structure.

b-Intellectual skills

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

- b.1. critically evaluate their own research data and develop new approach to fish histology
- b.2. develop creative approaches to solving technical problems in fish histology
- b.3. identify , summarize and evaluate prior researches finding in histology of different organs of different fish species on the base of light and electron microscopic structure
- b.4. identify areas where further researches necessary and be aware of any which would be beyond current ethical codes.

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 fish samples
- c.2. Staining the sections by special 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



Course specification of postgraduate

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.
- 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)	- Ultrastructure of digestive organs	27	9	18
	- Ultrastructure of respiratory system	27	9	18
	- Ultrastructure of urogenital system	27	9	18
	- Ultrastructure 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	LS	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3-b4		
Practical Exam		b2- b3-	c1- c2- c3- c4	
Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3- d4- d5- d6-



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			d7
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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%
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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Journals:

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- Egyptian journal of Histology

Websites:

- WWW.Science direct
- WWW. Pubmed.com
- [WWW.Scholar](http://WWW.Scholar.google.com) google.com
- [WWW.welly](http://WWW.wellyinterscience.com) interscience

Course Coordinators

Head of Department



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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	- Ultrastructure of digestive organs	1 st w- 9 th w	1,2,3,4	1,2,3,4	1,2,3,4	1,2,3,4,5,6,7
2	- Ultrastructure of respiratory system	10 th w- 18 th w	1,2,3,4	1,3	1,2,3,4	1,2,3,4,5,6,7
3	- Ultrastructure of urogenital system	19 th w- 27 th w	1,2	1,2,3	1,2,3	1,2,3,4,5,6,7
4	- Ultrastructure of lymphatic system	28 th w- 36 th w	1,2	1,2,3,4	1,2,3	1,2,3,4,5,6,7



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