



## **Course Specifications (First year)** **Histology (A)**

**Benha University**

**Faculty of Veterinary Medicine**

Program on which the course is given: **Bachelor of Veterinary Medical Sciences**

Department offering the course: **Department of Histology & Cytology**

Academic year / Level: **1<sup>st</sup> year**

Date of specification approval: Ministerial Decree No 921, on 15/9/1987

Date of Dept approval: **9/1/2011**

### **A- Basic Information**

**Title: Cytology and General Histology**

**Code: Vet 00613a**

**No of Hours:**

**Lecture: 1 hr**

**Practical: 3 hr**

**Total: 4 hr**

### **B- Professional Information**

#### **1 – Overall Aims of Course:**

The aim of the course is providing the structure of different types of microscope and acquiring the basic biological information about the cells. Understanding mechanism of action of the different organelles. Identification and differentiation between the different tissue parts.

#### **2 – Intended Learning Outcomes of Course (ILOs)**

##### **a- Knowledge and Understanding:**

After successful completion of the course, the students should be able to:

- a.1. Identify the basic knowledge about cytology and general histology .
- a.2. Define the basic knowledge about cytogenetic and cytochemistry.
- a.3. Know the basic information about different body tissues.
- a.4 Recognize the different types of the microscope.

##### **b- Intellectual Skills**

After successful completion of the course, the students should be able to:

- b.1. Recognize different type of cells.
- b.2. Choose the suitable techniques for identification of different cells.
- b3. Judge the tissue identifications.
- b.4. Determinate the difference between types of microscope.



### c- Professional and Practical Skills

After successful completion of the course, the students should be able to:

- c.1. Skills of staining.
- c.2. Skills of tissue differentiation.
- c.3. Skills of tissue classification and identification.

### d- General and Transferable Skills

After successful completion of the course, the students should be able to:

- d.1.- Work as functioning member in Histology team.
- d.2.- Make final & accurate identification of the tissue.
- d.3.- Make final & accurate identification of the organs.

### 3- Contents

Topic	No. of hours	Lecture	Practical
Cytology	16	4	12
Cytochemistry	4	1	3
Epithelium Tissue	16	4	12
C.T	24	6	18
<b>Total</b>	<b>60</b>	<b>15</b>	<b>45</b>

### 4- Content-ILOs matrix

Content	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Cytology	a1, a2, a4	b1, b3, b4	c1, c2, c3	d1,d2
Cytochemistry	a2, a3	b2, b4	c2, c3	d1, d3
Epithelium Tissue	a1, a4	b1, b2,b3	c1, c3	d2,d3
Connective tissue	a1, a2, a3, a4	b2, b3, b4	c1,c2,c3	d1,d2,d3

### 5- Assessment-ILOS matrix

Assessment	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
M.C.q	a1,a2,a3	b1,b2	c1,c2,c3	



examination				
Mid-term	a1,a2,a3,a4	b1,b2,b3	c1,c3	
Practical examination	a1,a2	b2,b3	c2,c3	
Oral examination	a2,a3	b1,b3,b4	c1	d1,d2,d3
Final term examination	a1,a2,a3,a4	b1,b2,b3,b4	c1,c2,c3	

## 6- Teaching and Learning Methods

Lectures and lab sessions in which the following facilities are used:

- 6.1- Slides
- 6.2- CD's
- 6.3- Panorama slides
- 6.4- 3 D Demonstrator
- 6.5- Microscopes.

## 7- Student Assessment Methods

- 7.1- MCq to assess understanding and intellectual skills.
- 7.2- Practical examinations to assess professional of practical skills.
- 7.3- Written examinations to assess knowledge of drawing.
- 7.4- Oral to assess intellectual and transferable skills.
- 7.5- Mid-term exam.

## Assessment Schedule

Assessment 1: M.C.q	week 4, and 12
Assessment 2: Mid-term	week 8
Assessment 3: Practical examination	week 13
Assessment 4: Written examination	week 15
Assessment 5: Oral examination	week 15

## Weighting of Assessments

M.C.q examination	5 %
Practical examination	25 %
Final term examination	50 %
Oral examination	15 %
Mid-term	5 %



Total

100 %

## 8- List of References

### 8.1- Course Notes

- Fundamental veterinary histology. Edited by Staff members.
- Essential Laboratory Histology. Edit by Staff members.

### 8.2- Essential Books (Text Books)

- **Junqueira, L. C. and Carneiro J. (2003):** Basic histology. Tenth Edition. McGraw-Hill. New York Chicago San Francisco Lisbon London Madrid Mexico city New Delhi San Juan Seoul Singapore Sydney Toronto.
- **Eroschenko, V. P. (2005):** difiore's Atlas of histology. 10<sup>th</sup> Ed. Philadelphia Baltimore New York London Buenos Aires Hong Kong Sydney Tokyo.
- **Young, B. and Heath, J. (2000):-**Wheater's functional histology. A text and color atlas. 4<sup>th</sup> Ed. Edinburgh London, New York Philadelphia. Stlouis. Sydney Toronto.
- **William, J. Banks (1993):-** Applied Veterinary Histology, 3<sup>rd</sup> Ed., Mosby year book. St. Louis Baltimore Boston Chicago London Philadelphia Sydney Toronto.

### 8.3- Recommended Books

- **Cormack, D. H. (1993):** Essential histology. First Edition. J. B. Lippincott Company. Philadelphia.
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- **Drury R. A. B. and Wallington E. A. (1980):-** Carleton's Histological technique. 4<sup>th</sup> ED., Oxford Unvi., Press. London, New York, Toronto

### 8.4- Periodicals, Web Sites, ... etc

*periodicals*

## Quality Assurance Unit

وحدة ضمان الجودة بكلية الطب البيطرى



- Journal of Anatomy.
- Journal of Cell Ultrastructure.
- American Journal of Anatomy.
- Cell tissue Research.
- Anatomia Histologia Embryologia.

*Web sites:-*

- <http://www.drihab1.com>
- <http://www.vt.com>

### **9- Facilities Required for Teaching and Learning**

- Laboratory.
- Tissue processing & staining.
- Immunohistochemistry kits.

**Course Coordinator:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

**Head of Department:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

**Date:**

**9/1/2011**



## **Histology B (First year)**

**Benha University**

**Faculty of Veterinary Medicine**

Program on which the course is given: **Bachelor of Veterinary Medical Sciences**

Department offering the course: **Department of Histology & Cytology**

Academic year / Level: **1<sup>st</sup> year**

Date of specification approval: Ministerial Decree No 921, on 15/9/1987

Date of Dept approval: **9/1/2011**

### **A- Basic Information**

**Title: Histology and Poultry**

**Code: Vet 00613b**

No of Hours:

**Lecture: 1 hr**

**Practical: 3 hr**

**Total: 4 hr**

### **B- Professional Information**

#### **1 – Overall Aims of Course:**

- Basic knowledge about histological structure of the different body tissue.
- Understand the fine structure of different body organs.
- Differentiate between different body organs (microscopically).

#### **2 – Intended Learning Outcomes of Course (ILOs)**

##### **a-Knowledge and Understanding:**

After successful completion of the course, the students should be able to:

- a.1. Basic knowledge about poultry histology .
- a.2. Basic knowledge about organ in different birds.
- a.3. Basic information about different body tissues.

##### **b-Intellectual Skills**

After successful completion of the course, the students should be able to:

- b.1. Recognize different bird organs.
- b.2. Choose the suitable techniques for identification of bird organs.
- b.3. Judge the tissue identifications.

##### **c- Professional and Practical Skills**

After successful completion of the course, the students should be able to:

- c.1. Skills of staining.
- c.2. Skills of tissue differentiation.



c.3. Skills of organs classification and identification.

#### **d-General and Transferable Skills**

After successful completion of the course, the students should be able to:

d.1. Be good member of Histologist team.

d.2. Make final & accurate identification of the tissue and organs.

### **3- Contents**

<b>Topic</b>	<b>No. of hours</b>	<b>Lecture</b>	<b>Practical</b>
Muscular Tissue	4	1	3
Nervous Tissue	4	1	3
Lymphatic tissue and system	8	2	6
Digestive system	12	3	9
Respiratory System	8	2	6
Urinary System	4	1	3
Male and Female Genital	8	2	6
Endocrine System	4	1	3
Lymphatic System	4	1	3
Feather and Skin	4	1	3
<b>Total</b>	<b>60</b>	<b>15</b>	<b>45</b>

### **4- content-ILOs matrix**

<b>Content</b>	<b>ILOs</b>			
	<b>Knowledge and understanding</b>	<b>Intellectual</b>	<b>Professional and practical</b>	<b>General and transferable</b>
Muscular Tissue	a1,a2	b1,b2	c1, c2	d1,d2
Nervous Tissue	a2,a3	b1,2,3	c2,c3	d1,d2
Lymphatic tissue and system	a1,a2,a3	b1,b2,b3	c1,c3	d1,d2
Digestive system	a2,a3	b2,b3	c1,c2	d1,d2
Respiratory System	a1,a2	b2,b3	c1,c3	d1,d2
Urinary System	a1,a3	b1,b3	c1,c2,c3	d1,d2



Male and Female Genital	a1,a2	b1,b2	c1,c2,c3	d1,d2
Endocrine System	a1,a3	b2,b3	c2,c3	d1,d2
Lymphatic System	a1,a2	b1,b2	c1,c2,c3	d1,d2
Feather and Skin	a1,a3	b1,b2	c1,c2,c3	d1,d2

### 5- Assessment-ILOS matrix

Assessment	ILOS			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Mcq-Exam	a1,a2	b1,b3	c1,c2	
Mid-Term	a2,a3	b1,b3	c2,c3	
Practical exam	a1,a2	b2,b3	c1,c3	
Oral exam	a1,a2	b2,b3	c2,c3	d1,d2
Final term exam	a1,a2,a3	b1,b2,b3	c1,c2,c3	

### 6- Teaching and Learning Methods

6.1- Slides

6.2- CD's

6.3- Panorama slides

6.4- 3 D Demonstrator

6.5- Microscopes.

### 7- Student Assessment Methods

7.1- MCq to assess understanding and intellectual skills.

7.2- Practical examinations to assess professional of practical skills.

7.3- Written examinations to assess knowledge of drawing.

7.4- Oral to assess intellectual and transferable skills.

### Assessment Schedule

Assessment 1: M.C.q

week 4, and 12





Assessment 2: Mid-term	week	8
Assessment 3: Practical examination	week	13
Assessment 4: Written examination	week	15
Assessment 5: Oral examination	week	15

#### **Weighting of Assessments**

M.C.q examination	5 %
Practical examination	25 %
Final term examination	50 %
Oral examination	15 %
Mid-term	5 %
Total	100 %

### **8- List of References**

#### **8.1- Course Notes**

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- **Eroschenko, V. P. (2005):** difiore's Atlas of histology. 10<sup>th</sup> Ed. Philadelphia Baltimore New York London Buenos Aires Hong Kong Sydney Tokyo.
- **Young, B. and Heath, J. (2000):-**Wheater's functional histology. A text and color atlas. 4<sup>th</sup> Ed. Edinburgh London, New York Philadelphia. Stlouis. Sydney Toronto.
- **William, J. Banks (1993):-** Applied Veterinary Histology, 3<sup>rd</sup> Ed., Mosby year book. St. Louis Baltimore Boston Chicago London Philadelphia Sydney Toronto.

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- **Dellamann, H. D. and Eurell. J. (1998):** Text book of Veterinary Histology, 5<sup>th</sup> Ed., Williams and Wilkins A waverly company. Baltimore Philadelphia London Paris Bangkok Buenos Aires Hong Kong Munich Sydney Tokyo Wroclaw.
- **Drury R. A. B. and Wallington E. A. (1980):-** Carleton's Histological technique. 4<sup>th</sup> ED., Oxford Unvi., Press. London, New York, Toronto

#### **8.4- Periodicals, Web Sites, ... etc**

##### *periodicals*

- Journal of Anatomy.
- Journal of Cell Ultrastructure.
- American Journal of Anatomy.
- Cell tissue Research.
- Anatomia Histologia Embryologia.

##### *Web sites:-*

- <http://www.drihab1.com>
- <http://www.vt.com>

#### **9- Facilities Required for Teaching and Learning**

- Laboratory.
- Tissue processing & staining.
- Immunohistochemistry kits.

#### **Course Coordinator:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

#### **Head of Department:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

#### **Date:**

**9/1/2011**



## **Histology (A) (Second Year)**

**Benha University**

**Faculty of Veterinary Medicine**

Program on which the course is given: **Bachelor of Veterinary Medical Sciences**

Department offering the course: **Department of Histology & Cytology.**

Academic year / Level: **2<sup>nd</sup> year**

Date of specification approval: Ministerial Decree No 921, on 15/9/1987

Date of Dept approval: **9/1/2011**

### **A- Basic Information**

**Title: Special Histology**

**Code: Vet 00621 a**

No of Hours:

**Lecture: 2 hr**

**Practical: 4 hr**

**Total: 6 hr**

### **B- Professional Information**

#### **1 – Overall Aims of Course:**

- Understand the basic histological structure of different tissues.
- Know the organs structure.
- Identify and differentiate between different body organs.

#### **2 – Intended Learning Outcomes of Course (ILOs)**

##### **a-Knowledge and Understanding:**

After successful completion of the course, the students should be able to:

- a.1. Mention and Describe basics about special histology .
- a.2. Describe organ morphogenesis .
- a.3. Basic information about organs identification.

##### **b-Intellectual Skills**

After successful completion of the course, the students should be able to:

- b.1. Recognize different body organs & systems .
- b.2. Differentiate between types of organs & tissues.
- b.3. Choose the suitable methods for preparing and staining of different organs and tissues.



### c-Professional and Practical Skills

After successful completion of the course, the students should be able to:

- c.1. using microscope and stained slides in tissue and organ identification.
- c.2. tissue differentiation.
- c.3. organs identification.

### d-General and Transferable Skills

After successful completion of the course, the students should be able to:

- d.1. Good member of Histologist team
- d.2. Ability to make accurate identification of the different tissues & organs.

### 3- Contents

Topic	No. of hours	Lecture	Practical
Digestive system	46	10	36
Cardiovascular system	12	4	8
Respiratory system	8	4	4
Nervous system	12	8	4
Skin	12	4	8
<b>Total</b>	<b>90</b>	<b>30</b>	<b>60</b>

### 4- content-ILOs matrix

Content	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Digestive system	a1, a3	b1,b2	c1,c2	d1
Cardiovascular system	a2,a3	b1,b3	c2,c3	d2,d3
Respiratory system	a1,a2	b2,b3	c1,c3	d1,d3
Nervous system	a2,a3	b1	c1,c2	d3
Skin	a3	b1,b2	c2,c3	d2,d3

### 5- Assessment-ILOS matrix

Assessment	ILOs			
	Knowledge and understanding	Intellectual	Professional and practical	General and transferable
Mcq- Exam	a1,a2	b2,b3	c3	



Mid -Term	a2,a3	b1,b3	c2,c3	
Practical exam	a1,a2	b2,b3	c1,c3	
Oral exam	a1,a3	b3	c1,c2	d1,d2
Final Term exam	a3	b1,b2	c2,c3	

## 6- Teaching and Learning Methods

- 6.1- Slides
- 6.2- CD's
- 6.3- Panorama slides
- 6.4- 3 D Demonstrator
- 6.5- Microscopes.

## 7- Student Assessment Methods

- 7.1- MCq to assess understanding and intellectual skills.
- 7.2- Practical examinations to assess professional of practical skills.
- 7.3- Written examinations to assess knowledge of drawing.
- 7.4- Oral to assess intellectual and transferable skills.

## Assessment Schedule

Assessment 1: M.C.q	week 4, and 12
Assessment 2: Mid-term	week 8
Assessment 3: Practical examination	week 13
Assessment 4: Written examination	week 15
Assessment 5: Oral examination	week 15

## Weighting of Assessments

M.C.q examination	5 %
Practical examination	25 %
Final term examination	50 %
Oral examination	15 %
Mid-term	5 %
Total	100 %



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### 8.4- Periodicals, Web Sites, ... etc

#### *periodicals*

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- Journal of Cell Ultrastructure.



- American Journal of Anatomy.
- Cell tissue Research.
- Anatomia Histologia Embryologia.

*Web sites:-*

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**9- Facilities Required for Teaching and Learning**

- Laboratory.
- Tissue processing & staining.
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**Head of Department:**

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**Date:**

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## **Histology (B) (Second Year)**

**Benha University**

**Faculty of Veterinary Medicine**

Program on which the course is given: **Bachelor of Veterinary Medical Sciences**

Department offering the course: **Department of Histology & Cytology.**

Academic year / Level : **2<sup>nd</sup> year**

Date of specification approval: Ministerial Decree No 921, on 15/9/1987

Date of Dept approval: **9/1/2011**

### **A- Basic Information**

**Title: Special Histology and fish histology**

**Code: Vet 00621 b**

No of Hours:

**Lecture: 2 hr**

**Practical: 4 hr**

**Total: 6 hr**

### **B- Professional Information**

#### **1- Overall Aims:**

- Understand the basic histological structure of different tissues.
- Know the organs structure.
- Identify and differentiate between different body organs.

#### **2- Intended Learning Outcomes (ILOs):**

##### **a-Knowledge and understanding :**

After successful completion of this course the students should have the ability to:-

- a.1. Mention and Describe basics information about fish histology .
- a.2. Mention and Describe basics and General information about organ in different types of fish.
- a.3. Basic information about different body tissues.

##### **b-Intellectual skills :**

After successful completion of this course, the students should have the ability to:-

- b.1. Recognize different fish organs.





b.2. Choose the suitable technique for preparing and staining of fish organs.

b.3. Identify different tissues and organs (microscopically).

**c- Professional and practical skills :**

After successful completion of this course the students should have the ability to:-

c.1. apply staining.

c.2. using microscopes in tissue identification and differentiation.

c.3. organs classification and identification (microscopically).

**d- General and transferable skills :**

After successful completion of this course the students should have the ability to:-

d.1. Team work.

d.2. Ability to make final & accurate judge & identification of the tissue & organs.

**3- Contents**

Topic	No. of hours	Lecture	Practical
Endocrine system (Special)	14	6	8
Urogenital system (Special)	22	10	12
Sense organ (Special)	3	1	2
Digestive system (Fish)	14	4	10
Respiratory system (Fish)	8	2	6
Urinary system (Fish)	8	2	6
Male and female Genital (Fish)	14	2	12
Endocrine system (Fish)	4	2	2
Lymphatic system and Skin (Fish)	3	1	2
<b>Total</b>	<b>90</b>	<b>30</b>	<b>60</b>

**4- Content-ILOs matrix**

Content	ILOs			
	Knowle dge and	Intellectual	Profession al and	General and



	<b>understanding</b>		<b>practical</b>	<b>transferable</b>
Endocrine system (Special)	<b>A2,a3</b>	<b>B1,b2</b>	<b>C1,c2</b>	<b>D1</b>
Urogenital system (Special)	a1,a2	b2,b3	c1	d1,d2
Sense organ (Special)	a1,a3	b1,b3	c2,c3	d2
Digestive system (Fish)	a2	b3	c1,c3	d1,d2
Respiratory system (Fish)	a1,a2	b1,b2	c3	d2
Urinary system (Fish)	a2,a3	b1	c2,c3	d1
Male and female Genital (Fish)	a1,a3	b2,b3	c1,c2	d1,d2
Endocrine system (Fish)	a3	b2	c2	d2
Lymphatic system and Skin (Fish)	a1,a3	b1,b2	c2,c3	d1

### 5- Assessment-ILOS matrix

<b>Assessment</b>	<b>ILOs</b>			
	<b>Knowledge and understanding</b>	<b>Intellectual</b>	<b>Professional and practical</b>	<b>General and transferable</b>
Mcq - Exam	a1,a2	b2,b3	c1,c2	
Mid - Term	a2,a3	b1,b2	c2,c3	
Practical exam	a1,a2	b1,b3	c1,c3	
Oral exam	a1,a3	b3	c1,c2	d1,d2
Final Term exam	a3	b2,b3	c3	

### 6- Teaching and Learning Methods

- 6.1- Slides
- 6.2- CD's
- 6.3- Panorama slides
- 6.4- 3 D Demonstrator
- 6.5- Microscopes.

### 7- Student Assessment Methods

- 7.1- MCq to assess understanding and intellectual skills.
- 7.2- Practical examinations to assess professional of practical skills.



7.3- Written examinations to assess knowledge of drawing.

7.4- Oral to assess intellectual and transferable skills.

### Assessment Schedule

Assessment 1: M.C.q	week 4, and 12
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### Weighting of Assessments

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#### **9- Facilities Required for Teaching and Learning**

- Laboratory.
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- Immunohistochemistry kits.

#### **Course Coordinator:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

#### **Head of Department:**

**Prof. Dr/ Ihab Mahmoud Abd El-Aal EL-Zoghby**

**Date:**

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