

## **DIPLOMA PROGRAMME SPECIFICATION**

**University: Beni- Suef**

**Faculty: Veterinary medicine**

### **A- Administrative Information**

1. Programme title: Diploma of Veterinary medicine science (Clinical Pathology)
2. Award/degree: Diploma
3. Department responsible: Clinical pathology
4. Coordinator: **Walaa Mohamed Sayed Ahmed**
5. External evaluator (s): Prof.Dr./ Amira Hassan Mohamed
6. Date of approval of programme specification by the Faculty Council:

### **B- Professional Information**

**1. Programme aims:** The Diploma programme supports the postgraduate student ability to improve his skills related to clinical pathology. Moreover, they will be able to identify different related topics of microbiology, parasitology, biochemistry and histopathology.

#### **2. Intended learning outcomes (ILOs) for programme**

##### **Knowledge and understanding:**

By the end of the Diploma programme, the postgraduate must be able to:

- a 1- Outline specialized theories and knowledge in the field of clinical pathology and related sciences.
- a 2- List methods of collecting samples from different animals for hematological, biochemical, microbiological, immunological parasitological and histopathological examinations.
- a 3- Specify the different quality management systems in clinical pathology practices.
- a 4- Understand the role of their professional practices in community development and environmental conservation.
- a5- Recognize clinical pathology professional practice regulations and ethics.

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

By the end of the Diploma programme, the postgraduate must be able to:

- b1- Identify and analyze problems of clinical pathology and arrange them according to their priorities.
- b2- Recognize the appropriate solutions for problems related to clinical pathology.
- b3- Make scientific reading and analysis of research papers and topics related to clinical pathology.
- b4- Evaluate different risk factors for each practice related to clinical pathology.
- b5- Correlate the abnormal changes resulted from causative agents (bacteria, parasite and viral) with clinicopathological findings.

b6- Interpret correctly the pathological data obtained by hematological, biochemical, histopathological, bacteriological and parasitological examination to reach proper diagnosis.

**c- Professional and practical skills**

By the end of the diploma programme, the postgraduate must be able to:

- c1- Apply different professional skills and techniques in the field of clinical pathology.
- c2- Evaluate specialized reports related to clinical pathology.
- c3- Use professional skills to collect and process different samples for laboratory examination
- c4- Collect proper samples for bacteriological, parasitological and histopathological examination.
- c5- Compare between the different diseases by obtained laboratory data.

**d- General and transferable skills**

By the end of the Diploma programme, the postgraduate must be able to:

- d1- Utilize the information technology in the development of veterinary clinical pathology professional practice
- d2- Demonstrate information retrieval and library skills.
- d3- Manage time and work in research group .
- d4- Own continuous and self-learning.

**3- Academic standards**

\* The faculty mission, vision and strategic objective are confirmed to the academic standard. The learning outcomes are in line with the department and the faculty mission.

\* Postgraduates NARS (February 2009) Diploma degree chapter issued by national authority for quality assurance and accreditation of education (NAQAAE) and Veterinary medicine post graduate academic standards (ARS) for the faculty of veterinary medicine, Beni-Suef University, Beni-Suef, Egypt are selected to confirm the appropriateness of the academic standards .

**4 – Curriculum structure and content**

5.1) Programme duration: 1 year

5.2) Programme structure:

Course Title	Lecture	Practical	Total
1-Clinical pathology	2	2	4
2-General pathology	2	2	4
3-Microbiology	1	1	2
4-Parasitology	1	1	2
5-Immunology	1	1	2
6-Biochemistry	2	2	4
Total	9	9	18

## 5- Programme – course ILOS Matrix

Title	a 1	a 2	a 3	a 4	a 5	b 1	b 2	b 3	b 4	b 5	b 6	c 1	c 2	c 3	c 4	c 5	d 1	d 2	d 3	d 4	
1- Clinical pathology	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x
2- General pathology		x							x	x				x	x	x	x	x	x	x	x
3- Microbiology		x							x	x	x			x	x	x	x	x	x	x	x
4- Parasitology		x							x	x	x			x	x	x	x	x	x	x	x
5- Immunology		x							x	x				x		x	x	x	x	x	x
6- Biochemistry		x							x	x	x			x		x	x	x	x	x	x

## 6- Programme admission requirement

- 1- Obtaining a bachelor degree in veterinary medicine sciences from one of the Egyptian universities or equivalent degree from another recognized scientific institute with any grade.
- 2- The bachelor degree must be obtained at least one year prior to registration
- 3- The applicant must have regular attendance in his courses according to the schedule of the faculty.
- 4- Registration will be during September of each year.

## 7 - Regulations for progression and programme completion.

- 1- Registration period is one year for diploma and the applicant not exceed a period of registration for two year.
- 2- The examinations of the diploma are 2 times / year in December & April.
- 3- The faculty council has the right to deprive the applicant from the exam if his attendance courses are less than 75%.
- 4- In case of failure, the exams will be hold 2 times / year and reexamination in all courses each time.

## 8-System of examination for postgraduate studies as follow:

- Time of written exams, 3 hours for each curriculum have 3 hours or more for theoretical / practical hours/ week. If the curriculum less than 3 hours / week, the time of ex. is 2 hours only.
- The final degree of each curriculum which have 3 hours (theoretical & practical) per week is 100 & less than 3 hours 50 degree & divided into 50 % for written exam. and 50 % for practical and oral exam.

**9-Grades of graduation are as follow:**

Excellent	$\geq 90$
Very good	$\geq 80$ and $< 90$
Good	$\geq 70$ and $< 80$
Pass	$\geq 60$ and $< 70$
Failed	45 to less than 60 weak Less than 45 very weak

**Programme coordinator:**

**Name: Dr./ Walaa Mohamed sayed**

Signature \_\_\_\_\_ Date \_\_\_\_\_

**Head of the Department**

**Name: Dr./ Hamdy Helmy Kamel**

Signature \_\_\_\_\_ Date \_\_\_\_\_



**University:** Beni-Suef University, Egypt.

**Faculty:** Faculty of Veterinary Medicine.

**Departments:** Bacteriology, Mycology and Immunology.

## Course specification

### A- Administrative Information:

<b>Course Code:</b>	
<b>Course title :</b>	Immunology
<b>Program title:</b>	Diploma of clinical pathology
<b>Contact hours/ week</b>	2 hours per week (1hr theoretical and 1hr practical).
<b>Date of course approval:</b>	

### B-Professional information

#### 1- Overall aims of course:

**Overall aims of course:**

**This course aims to:**

- 1- Acquire knowledge, skills and practical experience about Physiology of immunity.
- 3- Conclude structure and development of the immune system,
- 4- Conclude different serological tests used in diagnosis of different microbial diseases.

#### 2- Intended learning outcomes of course (ILOs)

**a-Knowledge and understanding:**

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

- a.1. Conclude the nature, the types and the mechanisms of immunity against different diseases.
- a.2. List Cells cooperation for humeral and cell mediated immunity.
- a.3. Describe the humeral immunity and mechanism of antibody production as well as types, structure and role of each Immunoglobulin in the immunity.
- a.4. List extensively updated immunologic laboratory tests and new methods aid in rapid clinical diagnosis.
- a.5. Recognize the molecular genetic which describes the key molecular biological methods used for clinical analysis of the immune system.

**b-Intellectual skills:**

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

- b1- Analyze different types of immunity.
- B2- Suggest the solutions of the problems concerning with different veterinary microbial affections.



### **c-Professional and practical skills**

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

- c1- Perform clinical laboratory methods for detection of humeral and cellular immunity.
- c2- Assess molecular genetic techniques for clinical analysis of the immune system.
- c3- Assess Immunohaematology.
- c4- Evaluate the immune competence in the Laboratory.

### **d-General and transferable skills**

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

- d1- Work in a teamwork and manage time.
- d2- use the internet to get information.
- d3- Exhibits the sense of beauty and neatness.

## 3-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
Immunology 2hours/week (Lec. 1hr/wk, Pr 1hr/wk) 1-General Immunology	-Tissues,organs and cells of the immune system.	16	6	6
	-Types and mechanisms of immunity.	16	6	6
	-Antigen and Immunogenicity.	12	4	4
	-Immunoglobulins	20	6	6
	-Immunostimulants and immunosuppression.	10	5	5
Immunology 2hours/week (Lec. 1hr/wk, Pr 1hr/wk) 2- Advanced	-Monoclonal Antibodies.	12	4	4
	- Serological tests.	10	5	5
<b>Total</b>		<b>72</b>	<b>36</b>	<b>36</b>

## 4-Teaching and learning methods

**5.1- Lectures (brain storming, discussion) using board and data shows.**

**5.2- Self learning** Electronic learning, Presentations, Essays or Seminarsby scientific search on related websites, international, national and local journals, related books in faculty library.

**5.3- Practical sections.**

Practice different immunological and serological tests in the laboratory

**5.4- Field visits:**Visits to diagnostic and reference labs.



## 5-Student assessment

### 5.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Writing Exam	a1 to a5(all)	b1to b2 (all)	c1 toc4 (all)	d3
Practical Exam	a1, a2, a3	b1to b2 (all)	c1 toc4 (all)	
Oral Exam	a1 to a5 (all)	b1 tob2 (all)	c1 toc4 (all)	

### 5.2. Assessment schedules/semester:

Method	Week(s)
Practical exam	45-48
Writing exam	45-48
Oral Exam	45-48

### 5.3. Weight of assessments:

Assessment	Weight of assessment
writing exam	50%
practical exam	25%
Final exam	25%

## 6- List of references

### 6.1. Notes and books:

Departmental notes on:

- 6.1.1- Bacteriology, Mycology and Immunology.
- 6.1.2- Practical Bacteriology, Mycology and Immunology.

### 6.2. Essential books:

- 6.2.1- Experimental immunology 3rd ed. by Burrell and Mascoll (2010)
- 6.2.2- Veterinary Immunology: An Introduction by Ian R. Tizard (2008)
- 6.2.3- Immunology, 1986 D. M. Weir.
- 6.2.4- Medical Immunology, 1977, Malcolm S. Thaler, M. D. and Richard D.

### 6.4. Journals, Websites .....etc

[Microbiology and Immunology](#)  
[Journal of Microbiology, Immunology and Infection](#)

#### Websites

<http://www.sciencedirect.com>.  
<http://www.Pubmed>.  
<http://www.AltaVista>.  
<http://www.cellsalive.com>.  
<http://www.textbookofbacteriology.net>.  
[http://www.ourfood.com/General\\_bacteriology.html](http://www.ourfood.com/General_bacteriology.html)  
[http://www.Veterinary\\_Microbiology](http://www.Veterinary_Microbiology)  
[http://www.Immunology\\_and\\_Immunopathology](http://www.Immunology_and_Immunopathology)

Course Coordinator

Head of the department



University  
Faculty of Veterinary Medicine



**Dr. Hala Sayed Hassan**

Ass. Prof. of Bacteriology, Mycology and Immunology, Faculty of Veterinary Medicine, Beni-Suef University

**Prof. Dr. Ismail Abd El-Hafeez Radwan**

Professor and Head of Bacteriology, Mycology and Immunology department, Faculty of Veterinary Medicine, Beni-Suef University



**Course specification Matrix**

Topic		Week	Intended learning outcomes of course (ILOs)			
			K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
1-General Bacteriology	-Tissues, organs and cells of the immune system.	1 <sup>st</sup> W-6 <sup>th</sup> W	1,2	1	3	1,2,3
	-Types and mechanisms of immunity.	6 <sup>th</sup> W-12 <sup>th</sup> W	1,2,3,5	1	2,3	
	-Antigen and Immunogenicity.	13 <sup>th</sup> W-20 <sup>th</sup> W	2,3	-	1	
	-Immunoglobulins	21 <sup>st</sup> W-25 <sup>th</sup> W	2,3	1,2	1,3	
2-Bacterial genetics	-Monoclonal Antibodies.	26 <sup>th</sup> W-31 <sup>st</sup> W	4	-		1,2,3
	- Serological tests.	32 <sup>nd</sup> W-36 <sup>th</sup> W	2,3,4	1,2	1,3,4	



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	
<b>Course title :</b>	Clinical Parasitology
<b>Program title:</b>	Diploma of Clinical Pathology
<b>Contact hours/ week</b>	2 hours per week (1hr theoretical and 1hr practical)
<b>Approval Date</b>	

### 2-Professional information

#### Overall aims of course:

- 1- Define parasites affecting animals.
- 2-Identify the different diagnostic stages of different parasites in different hosts.
- 3- Describe suitable diagnostic technique for each appropriate parasite.
- 4- Perform fecal examination and blood examination.
- 5- Understand different techniques for external parasites examination and PM examination.

### 3- Intended learning outcomes of course (ILOs)

#### a- Knowledge and understanding:

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

- a1. Describe parasites affecting animals.
- a2. Identify the diagnostic stages of different parasites.
- a3. Write about bases of diagnostic techniques and their field applications
- a4. Illustrate the suitable diagnostic technique for each appropriate parasite.
- a5. Summarize different methods of fecal examination, blood examination, and different techniques for external parasites examination and PM examination.

#### b. Intellectual skills

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

- b1. Differentiate the diagnostic stages of different parasites
- b2. Relate suitable diagnostic technique for each appropriate parasite.
- b 3. Compare flies producing myiasis. Types of mites and ticks.
- b 4. Interpret P.M examination

#### C- Professional and practical skills

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

- c1. Obtain samples for different parasitological diagnostic purposes at individual and herd levels.
- c2. Perform samples preservation and staining for immediate or further examination.
- c3. Employ direct smear, flotation techniques, sedimentation techniques, MacMaster techniques.
- c4. Advice thin and thick films, Microhematocrite technique, Knott's methods, Millipore filter, different Serological tests, I/D tests



## Course specification of postgraduate

- c5. Implement traditional diagnostic techniques of PM examination.  
c6. Perform skin scraping test.

### **d- General and transferable skills**

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

- d1. Work effectively in a team.  
d2. Use efficiently the library facilities, computer, lab. equipment.  
d3. Gain experience to public speaking and scientific reporting, presentation and discussion.  
d4. Identify and diagnostically approach to parasite-borne.

### 4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec.2h./week)	<b>Introduction for clinical parasitology</b> (the parasites affecting animals, different diagnostic stages of different parasites in different host and its methods of examination, bases of diagnostic techniques and their field applications, suitable diagnostic technique for each appropriate parasite).	2	2	-
(Lec. 1h./week, Pract 1h./week)	<b>Fecal examination</b> Sampling at individual and herd levels. Direct smear, Flotation techniques, Sedimentation techniques, MacMaster techniques Helminths identification	20	10	10
(Lec. 1h./week, Pract 1h./week)	<b>Blood examination</b> Thin and thick films Microhematocrite technique, Knott's methods, Millipore filter Serological tests, I/D tests, Staining by different stains (Giemsa ...etc)	20	10	10
(Lec. 1h./week, Pract 1h./week)	<b>External parasites</b> Samples collection and transportation, Skin scraping, Flies producing myiasis. Types of mites and ticks.	18	9	9
(Lec. 1h./week, Pract 1h./week)	<b>PM examination</b> Samples selection and handling for traditional diagnostic techniques.	12	5	7
	Total	72	36	36

### 5-Teaching and learning methods



## Course specification of postgraduate

- 5.1- Lectures (brain storm, discussion) using board, data shows
- 5.2- Self learning by preparing essays and presentations (computer researches and faculty library)
- 5.3- Practical (models, samples of.....).
- 5.4- video movies for students of special needs.

### 6-Student assessment

#### 6.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1,a2, a4, a5	b1, b2,b3, b4	c1, c2, c3, c4, c5	d1- d3
Practical Exam	a1, a2, a3, a4, a5	b1, b2, b3, b4	c1, c2, c3, c4, c5, c6	d1- d3
Oral Exam	a1-a5	b1-b2, b3, b4,	c1, c2, c4, c5, c6,	d1- d3

#### 6.2. Assessment schedules

Method	Week(s)
Written exams	Managed by department administration
Final exams	Managed by faculty administration
Oral Exam	Managed by department administration

#### 6.3. Weight of assessments

Assessment	Weight of assessment
Written exams	25%
Final exams	50%
Oral Exam	25%
Total	100%

### 7- List of references

#### 7.1. Notes and books

#### 7.2. Essential books:

Laboratory manual of diagnostic parasitology, Diagnostic Parasitology

#### 7.3. Recommended texts

Clinical Parasitology, Veterinary Clinical Parasitology.

#### 7.4. Journals, Websites .....etc

**Journals:** Experimental Parasitology.

Egyptian Veterinary Medical Society of Parasitology Journal.



Beni-Suef University  
Faculty of Veterinary Medicine

## **Course specification of postgraduate**

### **Websites:**

<http://www.journals.elsevier.com/veterinary-parasitology/>

**Course Coordinators**

**Head of Department**



## 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	Introduction for clinical parasitology (the parasites affecting animals ,different diagnostic stages of different parasites in different host and its methods of examination, bases of diagnostic techniques and their field applications, suitable diagnostic technique for each appropriate parasite).	1	a1,a2, a4, a5, a6			d1
2	<b>Fecal examination;</b> Sampling at individual and herd levels. Direct smear, flotation techniques, Sedimentation techniques, MacMaster techniques Helminths identification	10	a1,a2, a4, a5, a6	b1, b2,b3, b4	c1, c2, c3, c4, c5	d1, d2
3	<b>Blood examination</b> Thin and thick films Microhematocrit technique, Knott's methods, Millipore filter, Serological tests, I/D tests, Staining by different stains (Giemsa ...etc)	10	a1,a2, a4, a5, a6	b1, b2,b3, b4	c1, c2, c3, c4, c5	d1, d2, d3
4	<b>External parasites</b> Samples collection and transportation, Skin scraping, Flies producing myiasis. Types of Mites, Types of ticks	9	a1,a2, a4, a5, a6	b1, b2,b3, b4	c1, c2, c3, c4, c5	d1, d2, d3
5	<b>PM examination</b> Samples selection and handling for traditional diagnostic techniques.	6	a1,a2, a4, a5, a6	b1, b2,b3, b4	c1, c2, c3, c4, c5	d1, d2, d3



Beni Suef University  
Faculty of Veterinary Medicine



## Course specification of postgraduate

### 1-Basic information

<b>Course Code:</b>	
<b>Course title :</b>	Clinical microbiology
<b>Program title:</b>	Diploma of clinical pathology.
<b>Contact hours/ week</b>	2 hours per week (1hr theoretical and 1hr practical).
<b>Approval Date</b>	

### 2-Professional information

**Overall aims of course:**

**This course aims to:**

This course aims to provide the postgraduates with the basic knowledge, skills and attitudes that allow them to deal with bacterial and viral diseases could affect large animal and poultry.

### 3- Intended learning outcomes of course (ILOs)

**a- Knowledge and understanding:**

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

By the end of the course, students will be able to:

- a.1- Distinguish microbial causes of diseases affecting large animal and poultry
- a.2- Identify the morphology, culture, antigenic structure and virulence factors of microorganisms affecting large animal and poultry
- a.3- Recognize the basics of antimicrobial uses and resistance

**b-Intellectual skills**

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

- b.1- Diagnose different bacterial and viral diseases infecting large animal and poultry
- 2.2- Detect the danger of handling and use of infectious agents on community and environment as a part of their ethical heritage
- b.3- Analyze scientific as well as clinical information, conflicting data and hypotheses
- b.4- Suggest the solutions of the problems concerning with different bacterial and viral diseases infecting large animal and poultry.

**C- Professional and practical skills**

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

- C.1- Collect the suitable specimens at the suitable time from large animal and poultry.
- C.2. Interpret results of microbiological tests and reports.
- C.3- Determine the sensitivities of the causative microorganism to suggested drugs

**d- General and transferable skills**

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

- d1- Work in a teamwork and manage time.
- d.2- Manage change effectively and respond to changing demands.
- 4.3- Create responsibility for personal and professional learning and development (Personal Development Planning).
- d.4- use the internet to get information.





## Course specification of postgraduate

### III- Contents

#### 4-Topics and contents

course	Topic	No. of hours	Lectures	Practical
1- General and Systemic bacteriology	Gram positive bacteria infecting large animal and poultry and their antimicrobial sensitivity.	12	6	6
	Gram negative bacteria infecting large animal and poultry and their antimicrobial sensitivity.	12	6	6
	Gram positive bacteria infecting large animal and poultry and their antimicrobial sensitivity.	12	6	6
	Gram negative bacteria infecting large animal and poultry and their antimicrobial sensitivity.	12	6	6
2- General and diagnostic virology	Systemic virology (picornaviruses – orthomyxoviruses-paramyxoviruses-coronaviruses-Birnaviruses-Reoviruses-Rhabdoviruses -Herpesviruses-Bunyaviruses Poxviruses-Adenoviruses)	12	12	-
	Diagnostic virology	12	-	12
	Total	72	36	36

#### 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 (examining samples of stained bacterial films)

#### 6-Student assessment

##### 6.1. Assessments methods:

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

##### 6.2. Assessment schedules

Method	Week(s)
--------	---------



## Course specification of postgraduate

Writing exam	45-48
Practical exam	45-48
Oral exam	45-48

### 6.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	<b>50%</b>
Practical exam	<b>25%</b>
Oral exam	<b>25%</b>
total	100%

## 7- List of references

### 7.1. Notes and books:

Departmental notes on:

- 7.1.1- Bacteriology, Mycology and Immunology.
- 7.1.2- Practical Bacteriology, Mycology and Immunology.

### 7.2. Essential books:

- 7.2.1- Bergey's Manual of Systematic Bacteriology, 4th Edition Noel R. Krieg, John G. Holt, and Murray R. G. E. 1984.
- 7.2.2- Prescott, Harley and Klein's Microbiology. J. M. Willey, L. M. Sherwood, and C. J. Woolverton – 17<sup>th</sup> Edition, International Edition, 2008, Mc Graw Hill
- 7.2.3- Bergey's Manual of Determinative Bacteriology, 9th Edition John G. Holt, 1993
- 7.2.4- Diagnostic Microbiology, 2<sup>nd</sup> Edition 2000 Connie R. Mahon and George Manuselis.

### 7.3. Recommended text books:

- 7.3.1- Clinical Veterinary Microbiology, P.J. Quinn, M.E. Carter, B. Markey and G.R. Carter, 6<sup>th</sup> Editio2004
- 7.3.2- Veterinary Microbiology, Dwight C. Hirsh and Yuan Ghung Zee, 1999
- 7.3.3- Medical Microbiology, R. Cruickshank 1986.
- 7.3.4- Mackie and McCartney Medical Microbiology, 14th Edition 1992 (J. P. Duguid, B.P. Marmion and R. H. A. Swain). (The bock present in the faculty library)
- 7.3.5- Topley & Wilson microbiology and microbial infections, 9 th edition

### 7.4. Journals, Websites .....etc

- [Avian diseases](#)
- [Journal of Bacteriology](#)
- [Microbiology](#)
- [Microbiology and Immunology](#)
- [Journal of Microbiology, Immunology and Infection](#)



Beni-Suef University  
Faculty of Veterinary Medicine

## **Course specification of postgraduate**

[BMC Microbiology](#)

[Brazilian Journal of Microbiology](#)

[Microbiology and Molecular Biology Reviews](#)

[Internet Journal of Microbiology](#)

[Polish Journal of Microbiology](#)

[Journal of Microbiology and Biotechnology](#)

[African Journal of Microbiology Research](#)

[International Journal of Microbiology](#)

[Iranian Journal of Microbiology](#)

### **Websites**

<http://www.sciencedirect.com>.

<http://www.Pubmed>.

<http://www.Altavista>.

<http://www.cellsalive.com>.

<http://www.textbookofbacteriology.net>.

[http://www.ourfood.com/General\\_bacteriology.html](http://www.ourfood.com/General_bacteriology.html)

<http://www.Veterinary Microbiology>

### **Course Coordinators**

#### **Dr. Hala Sayed Hassan**

Ass. Prof. of Bacteriology, Mycology Immunology,  
Faculty of Veterinary Medicine,  
Beni-Suef University

#### **Dr. Ahmed Saad mostafa**

Ass. Prof. of Virology, Faculty of Veterinary  
Medicine, Beni-Suef University

### **Head of Department**

#### **Prof. Dr. Ismail Abd El-Hafeez Radwan**

Professor and Head of Bacteriology, Mycology and  
Immunology department, Faculty of Veterinary  
Medicine, Beni-Suef University

#### **Prof Dr. Sabry Mohamed Tamam**

Professor and Head of Virology department, Faculty of  
Veterinary Medicine, Beni-Suef University



## 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	Gram positive bacteria infecting large animal and poultry and their antimicrobial sensitivity.	1 <sup>th</sup> w- 6 <sup>th</sup> w	a1,a2,a3	b1,b2,b3,b4	c1,c2,c3	d1,d2,d3,d4
2	Gram negative bacteria infecting large animal and poultry and their antimicrobial sensitivity.	7 <sup>th</sup> w- 12 <sup>th</sup> w	a1,a2,a3	b1,b2,b3,b4	c1,c2,c3	d1,d2,d3,d4
3	Gram positive bacteria infecting large animal and poultry and their antimicrobial sensitivity.	13 <sup>th</sup> w- 18 <sup>th</sup> w	a1,a2,a3	b1,b2,b3,b4	c1,c2,c3	d1,d2,d3,d4
4	Gram negative bacteria infecting large animal and poultry and their antimicrobial sensitivity.	19 <sup>th</sup> w-24 <sup>th</sup> w	a1,a2,a3	b1,b2,b3,b4	c1,c2,c3	d1,d2,d3,d4
5	Systemic virology	25 <sup>th</sup> w-36 <sup>th</sup> w	a1,a2	b1,b2,b3,b4	c1,c2	d1,d2,d3,d4
6	Diagnostic virology	25 <sup>th</sup> w-36 <sup>th</sup> w	a1,a2	b1,b2,b3,b4	c1,c2	d1,d2,d3,d4



Beni Suef University  
Faculty of Veterinary Medicine



## Course specification of postgraduate

### 1-Basic information

Course Code:	D-CPAT
Course title :	Clinical Pathology
Program title:	Diploma of Vet. Med. Science (Clinical pathology)
Contact hours/ week	4 hours/week (2hr lecture and 2 hr practical)
Approval Date	

### 2-Professional information

#### Overall aims of course:

By the end of clinical pathology diploma program, the postgraduate should be able to understand the hematologic and biochemical pathophysiology and its relationship to hemogram and clinical chemistry interpretation.

#### This course aims to:

- 1- Be aware of the impotence of study in the field of clinical pathology
- 1-2- Describe the role of clinical pathology in diagnosis of animal diseases.
- 3- Understanding the basis for differential laboratory diagnosis of different diseases.
- 2-4- Consider the need for self-development and engagement in continuous learning

### 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. Recognize the impotence of study in the field of clinical pathology.
- a.2.1. Identify the pathophysiology of the hematopoietic system, different types of blood cells and their functions.
- a.2. Describe the functional changes in body organs causing or caused by a disease.
- a.3. Understand the reasons for each laboratory test and the significance of the obtained results.
- a.4. Recognize the laboratory diagnosis of different hematological and clinical biochemical disorders.
- a.5. Discuss the laboratory data reports.

#### b-Intellectual skills

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

- b.1. Evaluate the working knowledge of the use of hematological investigation and their clinical interpretation.
- b.2. Take decisions regarding the principles of how causative agents lead to clinicopathological abnormalities.
- b.3. Judge the differential diagnosis for changes in test results
- b.4. Interpret the results of clinicopathological data.

#### C- Professional and practical skills

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

- c.1. Obtain experience in methods of sampling for different body samples.



## Course specification of postgraduate

- c.2. Acquire experiences in different laboratory diagnostic techniques.
- c.3. Interpret the results of different laboratory techniques for diagnosis.
- c.4. Prepare a diagnostic report.

### **d- General and transferable skills**

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

- d.1. Work in group teams.
- d.2. Properly use computer and internet.
- d.3. Properly communicate with the others.
- d.4. Manage scientific meetings and time.
- d.5. Enhance of his/her effective presentation skills.

### 4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
<b>Clinical pathology</b> 4hr/ week (Lec. 2h./week, Pract 2h./week)	Blood cells formation and hemoglobin synthesis	12	6	6
	Different types of anemia and polycythemia	20	10	10
	Leucocytes and leukocytic response to diseases	12	6	6
	Coagulation disorders	8	4	4
	Enzymology	16	8	8
	Jaundice & bile acids	12	6	6
	Renal function tests	12	6	6
	Pancreatic function tests	8	4	4
	Abnormalities in mineral metabolism	8	4	4
	Abnormalities in lipid and protein metabolism	16	8	8
	Disturbance in electrolytes	12	6	6
	Abnormalities of glucose metabolism	8	4	4
	<b>Total</b>		<b>144</b>	<b>72</b>

### 5-Teaching and learning methods

- 5.1- Lectures using board & data show, brain storming discussions.
- 5.2- Self learning by preparing essays and presentations (computer researches and library).
- 5.3- Practical (models, preparation of samples and data show).

### 6-Student assessment

#### **7.1. Assessment methods:**

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S



Beni-Suef University  
Faculty of Veterinary Medicine

## Course specification of postgraduate

Final Exam	a1- a2- a3- a4-a5	b1- b2- b3-b4	c3-c4	
Practical Exam	a1- a2- a3-a4-a5	b1- b3- b4	c1- c2- c3-c4	
Oral Exam	a1- a2- a3- a4-a5	b1- b2- b3		d1-d2-d3-d4

### 7.2. Assessment schedules

Method	Week(s)
Writing exam	During the 45 <sup>th</sup> week- 48 <sup>th</sup> week
Practical exam	During the 45 <sup>th</sup> week- 48 <sup>th</sup> week
Oral exam	During the 45 <sup>th</sup> week- 48 <sup>th</sup> week

### 7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	50%
Practical exam	25%
Oral exam	25%
Total	100%

## 7- List of references

### 8.1. Notes and books

#### 8.2. Essential books:

- Veterinary clinical pathology (Coles 2000).
- Veterinary hematology and clinical chemistry / edited by Mary Anna Thrall [et al.]. – 2nd ed. (2012).
- Schalm's veterinary hematology. – 6th ed. / editors, Douglas J. Weiss, K. Jane Wardrop.

#### Journals:

- International Journal of veterinary medicine.
- International Journal of Molecular diagnostic and laboratory and medicine [htt:// int.clichem](http://int.clichem).

#### Websites:

- WWW.Science direct
- WWW. Pubmed.com
- WWW.Scholar google.com

**Course Coordinator**

**Head of Department**





Beni-Suef University  
Faculty of Veterinary Medicine

## **Course specification of postgraduate**

Dr./ Walaa Mohamed Sayed

Dr./ Hamdy Hemly Kamel



## 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	Blood formation and Erythrocytic and hemoglobin synthesis	1 <sup>st</sup> w- 3 <sup>th</sup> w	1,2,3,4,5	2	1,2,3	1,2,3,4,5
2	Different types of anemia and polycythemia	4 <sup>th</sup> w- 8 <sup>th</sup> w	2,3,4,5	1,2,3,4	1,2,3,4	1,2,3,4,5
3	Leucocytes and leukocytic response to diseases	9 <sup>th</sup> w- 11 <sup>th</sup> w	2,3,4,5	1,2,3,4	1,2,3,4	1,2,3,4,5
4	Coagulation disorders	12 <sup>th</sup> w- 13 <sup>th</sup> w	2,3,4,5	1,2,3,4	1,2,3,4	1,2,3,4,5
5	Enzymology	14 <sup>th</sup> w- 17 <sup>th</sup> w	2,3,4,5	3,4	1,2,3,4	1,2,3,4,5
6	Jaundice & bile acid	18 <sup>th</sup> w- 20 <sup>th</sup> w	2, 3,4,5	3,4	1,2,3,4	1,2,3,4,5
7	Renal function test	21 <sup>th</sup> w- 23 <sup>th</sup> w	2,3,4,5	2,3,4	1,2,3,4	1,2,3,4,5
8	Pancreatic function test	24 <sup>th</sup> w- 25 <sup>th</sup> w	2, 3,4,5	2,3,4	1,2,3,4	1,2,3,4,5
9	Abnormalities in mineral metabolism	26 <sup>th</sup> w- 27 <sup>th</sup> w	2, 3,4,5	3,4	1,2,3,4	1,2,3,4,5
10	Abnormalities in lipid and protein metabolism	28 <sup>th</sup> w- 31 <sup>th</sup> w	2, 3,4,5	3,4	1,2,3,4	1,2,3,4,5
11	Disturbance in electrolytes	32 <sup>th</sup> w- 34 <sup>th</sup> w	2, 3,4,5	3,4	1,2,3,4	1,2,3,4,5
12	Musclar function	35 <sup>th</sup> w- 36 <sup>th</sup> w	2, 3,4,5	2,3,4	1,2,3,4	1,2,3,4,5



Beni Suef University  
Faculty of Veterinary Medicine



## Course specification

### A- Administrative Information:

<b>Course Code:</b>	D9
<b>Course title :</b>	Clinical Pathology
<b>Academic year:</b>	Postgraduate students.
<b>Program title:</b>	Diploma of Vet. Med. Sciences (clinical pathology).
<b>Degree:</b>	Diploma.
<b>Contact hours/ week</b>	4 hours per week (2hr theoretical and 2hr practical).
<b>Course coordinator:</b>	Dr. EL-Shaymaa Nabil EL-Nahass
<b>External evaluator(s)</b>	Prof. Dr. Sary Khalil
<b>Date of course approval:</b>	September, 2017

### B-Professional information

#### 1- Overall aims of course:

**This course aims to:**

Acquire Mechanism, by which the disease developed, progressed and squealed and proper tissue samples.

#### 2- Intended learning outcomes of course (ILOs)

##### a- Knowledge and understanding:

**At the end of this course, the student must able to:**

- a.1. Recall Knowledge about the molecular and cellular response of the living body when exposed to injurious agent.
- a.2. Outline the relationship between causes and tissue/organ changes.
- a.3. Describe the macroscopic & microscopic tissue changes.
- a.4. Recognize Knowledge about typing and classification of different tissue/organ changes.
- a5. Illustrate the pathogenesis of the pathological lesion.

##### b. Intellectual skills:

**By the end of studying this course, the graduate should be able to:-**

- b1. Discriminate between tissue/organ appearance in health and diseased animal.
- b.2. Differentiate between the different pathological alterations
- b.3. Score the macroscopic and microscopic pathological lesions
- b.4. Interpret correctly the pathological data obtained the macroscopic and microscopic examination to reach final diagnosis.
- b5. Integrate the pathological alterations with injurious agents.

### **c. Professional and practical skills**

**By the end of studying this course, the graduate should be able to:-**

- c1. Select the necessary techniques for sample reception & processing according to the nature of specimen received.
- c.2. Examine and identify the macroscopic criteria of the pathological alterations.
- c.3. Examine and identify the microscopic criteria of the pathological alterations
- c.4. Perform diagnosis and full description for the pathological picture based on the gross and histopathological examination
- c.5. Write a report commenting on a pathological specimen

### **d- General and transferable skills**

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

- d1. Demonstrate the ability of problem definition.
- d.2. Utilize the computer, microscope and internet.
- d.3. Use data analysis and communication skills.
- d.4. Utilize various computer based instruction tools and E-learning of Pathology and utilize a variety of computer-based self assessment tools.
- d.5 Use the sources of biomedical information available to remain current with advances in knowledge and practice
- d.6 lead a teamwork in a certain professional task.
- d.7 owncontinouse and self learningig

## 3- Topics and contents

Course	Topic	Total no. of hours	Lect.	Pract.
Postgraduate students Pathology 4 hours / week (Lec. 2hr/wk - Pract. 2hr/wk)	1. Introduction in pathology and histopathological techniques	12	6	6
	2- General bases of pathological alterations (dist. In cell metabolism, Cell death, dist. In circulation, inflammation and healing and general tumors)	24	12	12
	3. Pathology of liver.	16	8	8
	4. Pathology of kidney and renal failure.	16	8	8
	5. pathology of toxicity.	12	6	6
	6. pathology of heart.	16	8	8
	7- Immunohistochemistry.	16	8	8
	8- correlation between pathological changes and biochemical abnormalities	16	8	8
	9-Activities	16	8	8
	<b>Total</b>	<b>144</b>	<b>72</b>	<b>72</b>

## 4-Teaching and learning methods

**5.1. Lectures (brain storming, discussion) in which one or more of the following facilities are used:**

- 5.1.1. White board and data-show presentations.
- 5.1.2. Educational preserved specimens.
- 5.1.3. Illustrations, anatomical charts, CD's, PowerPoint slides and recorded anatomy videos.

**5.2. Laboratory sessions in which one or more of the following facilities are used:**

- 5.2.1. Tutor presentation followed by students' small group sessions.
- 5.2.2. Educational models.
- 5.2.3. Demonstrating formalin preserved tissues.

**5.3. Independent (laboratory and home assignments supervised by tutor)**

- 5.3.1. Writing reports and assignments (computer researches and faculty library attendance).
- 5.3.2. Preparation of colored posters and slide presentation.
- 5.3.3. Preparation of preserving specimens.
- 5.3.4. Group discussion.

**5-Student assessment**

**5.1. 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, b5,	-	d1,d3,d4
Practical Exam	-	b1, b2, b3, b4, b5	c1, c2, c3, c4, c5	d2, ,d5.d6.d7
Oral Exam	a1-a5	b1-b5	c1, c2c3, c4, c5	d1,d5

**5.2. Assessment schedules/semester:**

Method	Week(s)
Practical exams	Managed by department administration
Written exams	Managed by faculty administration
Oral Exams	Managed by department administration

**5.3. Weight of assessments:**

Assessment	Weight of assessment
Practical and oral exams	50%
Written exams	50%
Total	100%

**6- List of references**

**8.1. Notes and books:**

None

**8.2. Essential books:**

- Jubb,K.V., P.C.Kennedy and N.Palmer (1993) Pathology of Domestic Animal, 6<sup>th</sup> ed. San Diego, New York
- Jones, T.C., Hunt, R.D. and King, N.W (2008) Veterinary pathology , 8<sup>th</sup> ed. Williams and wilkins, Waverly company (2008)
- Gallin, J. and Synder , R (2010), In ammation 3rd. ed. Lippincott Williams,Wilkins. Philadelphio
- Ramz-I S. and Kumar, V. and Collin, T. (1999) Pathological Basis of Disease , 6<sup>th</sup> ed .

*\*These book is available in the library of faculty of Veterinary Medicine, Beni-Suef Univ.*

### 8.3. Recommended textbooks:

8.3.1. R.S. Chauhan (2010) Text Book of veterinary pathology. 1<sup>st</sup>. ed. IBDC publishers *\*This book is available online.*

8.3.1 Jaap Van Dijk, Erik Gruys, and Johan Mouwen, COLOR ATLAS OF VETERINARY PATHOLOGY (2006) 2<sup>nd</sup> ed., Saunders Ltd

8.3.2. Richert, G and Epstein , M. ( international review of experimental pathology)

### 8.4. Journals, Websites .....etc

#### Journals

- Egyptian Journal of Comparative Pathology and Clinical Pathology
- PathologiaVeterinaria
- American Journal of Pathology
- Journal of Pathology and Bacteriology
- Archive of Pathology
- Veterinary Record
- Journal of Comparative Pathology
- Canadian Journal of comparative Medicine
- American Journal of veterinary research
- Research on veterinary Science
- Beni-Suef Veterinary Medical journal

<http://www.bsuv.bsu.edu.eg/vetmed.aspx#>

---

#### Websites

[Google search](http://www.google.com)[www.google.com](http://www.google.com)

[Sciencedirect](http://www.sciencedirect.com)[http://www.sciencedirect.com.](http://www.sciencedirect.com)

[Pubmed](http://www.Pubmed)[http://www.Pubmed.](http://www.Pubmed)

[Colorado State university online](http://www.online.colostate.edu/courses/VS/VS333.dot)<http://www.online.colostate.edu/courses/VS/VS333.dot>

[The university of adelaide](https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/)<https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/>

[VET Veterinary Educational Tools](http://www.cvmb.colostate.edu/vetneuro/)<http://www.cvmb.colostate.edu/vetneuro/>

[Education platform](http://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm)<http://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm>

[http/cms.nelc.edu.eg](http://cms.nelc.edu.eg)

[www.asvp.asn.au.com](http://www.asvp.asn.au.com)

[www.geneng news.com](http://www.genengnews.com)

[www.altcancer.com](http://www.altcancer.com)

---

#### **Course Coordinator**

**Dr. EL-Shaymaa Nabil EL-Nahass**

Lecturer of pathology

Faculty of Veterinary Medicine,

Beni-Suef University

#### **Head of the department**

**Prof. Dr. Khalid Ali El-Nesr**

Professor and Head of pathology department,

Faculty of Veterinary Medicine,

Beni-Suef University

**Course specification Matrix**

		Topic	Week	Intended learning outcomes of course (ILOs)			
				K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
<b>Postgraduate students Clinical Pathology 4 hours / week (Lec. 2hr/wk - Pract. 2hr/wk)</b>		<b>1. Introduction in pathology and histopathological techniques</b>		2,4,5	1,3,5	-	1-7
		<b>2- General bases of pathological alterations (dist. In cell metabolism, Cell death, dist. In circulation, inflammation and healing and general tumors)</b>		1,2,3,4,5	1,2,3,4,5	1, 2,3,4	
		<b>3. Pathology of liver.</b>		2,3,4,5	2,3,4,5	1, 2,3,4	
		<b>4. Pathology of kidney and renal failure.</b>		2,3,4,5	2,3,4,5	1, 2,3,4,5	
		<b>5. pathology of toxicity.</b>		1,2,3,4	2,3,4,5	1, 2,3,4	
		<b>6. pathology of heart.</b>		2,3,4,5	,2,3,4,5	1, 2,3,4,5	
		<b>7- Immunohistochemistry.</b>		1,2,3,5	3,4	1, 2,3,4,5	
		<b>8- correlation between pathological changes and biochemical abnormalities</b>		1,2,3,5	1,2,3,4,5	1, 2,3,4,5	
		<b>9-Activities</b>		1,2,3,5	1,2,3,4,5	1, 2,3,4,5	