Beni-Suef University

Faculty of Veterinary Medicine

Department of Animal and poultry Management and Wealth Development

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DIPLOMA PROGRAMME SPECIFICATION
2017-2018

University: Beni- Suef
Faculty: Veterinary medicine
A- Administrative Information
1. Programme title: Diploma of Vet. Med. Sciences (laboratory animals)
2. Award/degree: Diploma
3. Department responsible: Department of Animal and poultry Management and Wealth Development

4. Coordinator: **FatmaHanafySayed Khalil**
5-Date of approval of programme specification by the Faculty Council:

B- Professional Information
1. Programme aims: The Diplomaprogramme supports the postgraduate student ability to improve his skills related to:1-management,breeding, anatomy and histology of different species of laboratory animals. 2-identification of different types of bacteria and parasites that harms to laboratory animals.3-Diagnoses and treatment laboratory animals.
2. Intended learning outcomes (ILOs) for programme
Knowledge and understanding:
By the end of the Diploma program, the postgraduate must be able to:

al- write different methods used for laboratory animal housing, breeding and management.
a2-list methods of collecting samples from laboratory animals for bacterial, parasitical and histopthologicalexaminations.
a3-Enumarate differentbacterial and parasitic diseases.
a4-define anatomical structure oflaboratory animals.

b- Intellectual skills
By the end of the Diploma program, the postgraduate must be able to:
bl- identifyinternal and external parasitic diseases of laboratory animals.
b2-report laboratory animalsbehaviours.
b3- make a decision based on his surgical and medicinal information of laboratory animal.
b4-identify different organs of laboratory animals.
b5-describe different histopathological lesions of laboratory animal tissue.

c- Professional and practical skills
By the end of the diploma program, the postgraduate must be able to:
cl-apply ethical guidelines of management, handling, securing,anesthesia, sampling and euthanasia of animals.
c2-practice of distinguished veterinary professional skills to diagnose diseases and abnormal behaviorsoflaboratory animals.
c3-use professional skills in dissection of different laboratory animals species to collect samples for histopathological and bacterial examination.
c4-practice collecting blood samples and analyze different blood parameters.
c5-interpret the abnormal level of blood parameters.

d- General and transferable skills
By the end of the Diploma program, the postgraduate must be able to:
dl- demonstrate information retrieval and library skills.
d2- demonstrate interpersonal skills and team working ability by the successful completion of collaborative learn assignment and the honors researches projects.
d3- present research finding in oral and written from using arrange of appropriate soft ware (e.g., power point , word , excel and data base).

3- Academic standards
* 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 (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: 1years

5.2) Programme structure:

Title	Lecture	Practical	Total
1-Management of laboratory animals	2	2	4
2-Microbiology of laboratory animals	1	1	2
3-Parasites of laboratory animals	1	1	2
4-Pathology of laboratory animal	2	2	4
5-Clinical pathology of laboratory animals	1	1	2
6-Anatomy	1	1	2
7-Histology	1	1	2
8-Experimental surgery	1	2	3
9-Internal medicine	2	1	3
Total	12	12	24

5- Programme – course ILOS Matrix

Title	a 1	a 2	a 3	a 4	b 1	b 2	b 3	b 4	b5	c 1	c 2	c 3	c 4	c 5	d 1	d 2	d 3
1-Management of laboratory animals	x					x				x	x				x	x	x
2-Microbiology of laboratory animals		x	x									x			x	x	x
3-Parasites of laboratory animals		x	x		x			x							x	x	x
4-Pathology of laboratory animal		x							x			x			x	x	x
5-Clinical pathology								x					x	x	x	x	x
6-Anatomy				x				x				x			x	x	x
7-Histology									x			x			x	x	x
8-Experimental Surgery							x			x			x		x	x	x
9-Internal medicine					x		x				x				x	x	x

ILOS	Program aims		
	improve his skills related to management,breeding, anatomy and histology of different species of laboratory animals	identify different types of bacteria and parasites and their harms to laboratory animals	Diagnose and treat laboratory animals
al- write different methods used for laboratory animal housing, breeding and management. a2-list methods of collecting samples from laboratory animals for bacterial, parasitical and histopthological examinations. a3-Enumarate different bacterial and parasitic diseases. a4- define anatomical structure of laboratory animals.	x x x x	x x	
bl- identify internal and external parasitic diseases of laboratory animals. b2- report laboratory animals behaviours. b3- make a decision based on his surgical and medicinal information of laboratory animal.	x	x	x

b4-identify different organs of laboratory animals. b5-describe different histopathological lesions of laboratory animal tissue.	x x		
c2-practice of distinguished veterinary professional skills to diagnose diseases and abnormal behaviorsof laboratory animals. c3-use professional skills in dissection of different laboratory animals species to collect samples for histopathological and bacterial examination. c4-practice collecting blood samples and analyze different blood parameters. c5- interpret the abnormal level of blood parameters and diagnose diseases	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 ex. and 50 % for practical and oral ex.

9-Grades of graduation are as follow:

Excellent	**≥ 90**
Very good	**≥80**
Good	**≥70**
Pass	**≥60**
Failed	**45 to less than 60 week**
	Less than 45 very week

The programme specification should have attached to it all course specifications listed in the matrix.
Programme coordinator:
Name.....
Signature..... Date

Head of the Department ……..
Name: ……
Signature..... Date,

Beni-Suef University
Faculty of Veterinary Medicine

Course specification

1-Basic information

Course Code:	
Course title :	Histology for diploma of laboratory animals
Academic year:	
Program title:	Diploma of laboratory animals
Contact hours/ week	Lecture: 1hrs/week Practical: 1hrs/week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1- Gain first-hand experience of scientific research.

2- Provide graduates the opportunity to develop research skills..

3- Provide graduate with the knowledge of microscopic structure of different organs of bird

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 lab animals.a.3. Critically apply their knowledge of lab animals histology research methods by evaluating the utility of those techniques to specific research questions.

b-Intellectual skills

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

b.1. develop creative approaches to solving technical problems or issues associate with running and researches project.

b.2. identify , summarize and evaluate prior researches finding in a specific area

b.3. 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 new technology in practical portion

d- General and transferable skills

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

Course specification

d.1.Demonstrate information retrieval and library skills.d.2. Demonstrate interpersonal skills and team working ability by the successful completion of collaborative learn assignment and the honors researches projects. d.3. present research nding in oral and written from using arrange of appropriate soft ware (e.g., power point , word , excel and data base).
d.4. use all types of communications skills.

4-Topics and contents

Week	Topic	Total (hr)	Lectures (hr)	Practical (hr)
	Histology of lab animal			
- 1st w- 9th w	- General structure of digestive system	18	9	9
- 10th w- 18th w	- General structure of respiratory system	18	9	9
- 19th w- 27th w	- General structure of urogenital system	18	9	9
- 28th w- 36th w	- General structure of lymphatic system	18	9	9

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 faculty library)
5.3- Practical (models, samples of stainrd tissues and data show).

6-Teaching and learning methodsfor the students with disabilities

Office hours and special meeting

7-Student assessment

7.1. Assessments methods:

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

Course specification

Oral Exam	a1- a2- a3-	b1- b2- b3-		d1-d2-d3-d4

7.2. Assessment schedules/semester:

Method	Week(s)
Writing exam	**53th w-56th w**
Practical exam	**52th w**
Oral exam	**53th w-56th w**

7.3. Weight of assessments/semester

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

8- List of references

8.1. Notes and books

Departmental notes on:

-Text book of veterinary histology part I:-Prof.Dr.Khaled Mazher, Dr.TaghreedNabil,Dr. Usama Kamal and Dr.Abdel-RazekHashem. 2015/ I.S.B.N. 27221/2015

-Text book of veterinary histology part II:-Prof.Dr.KhaledMazher, Dr.TaghreedNabil,Dr. Usama Kamal and Dr.Abdel-RazekHashem. 2015/ I.S.B.N. 27219/2015

8.2. Essential books:

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

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

8.3. Recommended texts

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

8.4. Journals, Websites ……..etc

Journals:

- American Journal of anatomy

Course specification

-AnatomiaHistologiaEmbryologia
-Anatomical record
-Egyptian journal of Histology

Websites:

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

Course Coordinators **Head of Department**

Dr. Taghreed Mohamed Nabil

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Histology of lab animal		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	General structure of digestive system	1st w- 9th w	1,2,3	1,2,3	1,2,3,4	1,2,3,4,5
2	- General structure of respiratory system	10th w- 18th w	1,2,3	1,3	1,2,3,4	1,2,3,4,5
3	- General structure of urogenital system	19th w- 27th w	1,2	1,2,3	1,2,3	1,2,3,4,5
4	- General structure of lymphatic system	28th w- 36th w	1,2	1,2,3	1,2,3	1,2,3,4,5

University
Faculty of Veterinary Medicine

University: Beni-Suef University, Egypt.

Faculty: Faculty of Veterinary Medicine.

Departments: Department of Animal and poultry Management and Wealth Development

Course specification

A- Administrative Information:

Course Code:	**D2**
Course title :	**Management of Laboratory animals**
Academic year:	Postgraduate students.
Program title:	Diploma of Vet. Med. Sciences (laboratory animals).
Degree:	Diploma.
Contact hours/ week	4 hours per week (2hr theoretical and 2 hr practical).
Course coordinator:	Dr. FatmaHanafySayed.
Date of course approval:	

B-Professional information

1- Overall aims of course:

This course aims to:

After completing the postgraduate course in **management** of laboratory animals (rats, mice, rabbits, guinea pigs and hamsters), the postgraduate student will be able to understand andinterpret normal and abnormal behaviourof laboratory animals. Also the student will understandthe breeding programs suitable for each lab animal

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. Define the different species of laboratory animals and their breeding programs applied in animal house.
a. 2. Identify the suitable type of housing for each species.
a. 3. Identify normal behavior of laboratory animals
a. 4. List ethical guidelines of different laboratory animal species handling and rearing.
a. 5. List causes of abnormal behavioral patterns performed by laboratory animals.
a. 6. Define special managerial methods for each laboratory animals species .

b-Intellectual skills:

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

b1. Analyze behaviour of different laboratory animals
b2. Identify the different methods marking and identification of laboratory animals.
b3.Differentiatespecial behaviour in each species of laboratory animal.
b4. Predict effect bad management on different laboratory species.
b5. Differentiate between males and females of laboratory animals..
b6.Estimate the causes of abnormal behaviors.

c-Professional and practical skills

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

c.1.Practice the skills of animal approach and handling,securing
c.2. Demonstrate the different routes used for animal inoculations.
c.3. Illustrate the suitable breeding programs for each animal species.
c.4. Analyze behaviors of laboratory animals.
c.5. Interpret behaviors of laboratory animals.
c.6. Solve welfare problems of different laboratory animals.

d- General and transferable skills

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

d1. Appreciate the team working and time management.
d2. Value the ethics and respect to all individuals inside and outside the dissecting room and pay appropriate respect to the animal's cadavers.
d3. Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other colleagues.
d4. Maintain a professional image concerning behavior, dress and speech.
d5. Be responsible toward work.
d6. Communicate effectively with public, colleagues and appropriate authorities.
d7. Achieve computer skills necessary to make use of medical databases and use the internet for communication.
d8. Prepare a scientific paper and essay.

3-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Practh./week)	- Housing of lab animals.	16	8	8
	- Types of lab animals.	16	8	8
	- Behaviour of lab animals.	18	9	9
	- Management of lab animals.	18	9	9
	- Breeding programs.	32	16	16
	- Handling of lab animals.	18	9	9
	- Marking	16	8	8
	- Animal health management	6	3	3
	- Inoculation	4	2	2
	Total	144	72	72

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. Laboratoryanimal models.

5.1.3. Illustrations behavior of laboratory animals' behavior and handling 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.Laboratory animal house accompanied to department.

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. 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
Final Exam	a1,a2, a3, a4, a5, a6	b1, b2,b3, b4, b5, b6, b7, b8, b9, b10,	c3, c5, c6	d1
Practical Exam	a1, a3, a4, a5	b1, b2, b3, b9, b10,	c1, c2, c3, c4, c5, c6, c7, c8, c9	d1, d2, d3, d4, d5,d6, d7, d8
Oral Exam	a1,a2, a3, a4, a5, a6	b1, b2,b3, b4, b5, b6, b7, b8, b9, b10	c1, c2, c4, c5, c6, c8, c9, c10	d1,d2,d3,d4, d5, d6

5.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	Managed by department administration
Final 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%
Final exams	50%
Total	100%

6- List of references

8.1. Notes and books:

- Textbook of Poultry &Animal Management and Behaviour (part2)
- Practical Note of Animal & Poultry Behaviour and Management (part1)
-Practical Note of Animal & Poultry Behaviour and Management (part2)

8.2. Essential books:

8.2.3. Exploring Animal Behaviour. Sherman, P.W. and Alcock, J.
8.2.3. Exploring Animal Behaviour in Laboratory and Field .Ploger, B.J. and Yasukawa, K.

8.3. Recommended textbooks:

The 1996 guide for the care and use of laboratory animals

http://ilarjournal.oxfordjournals.org/content/38/1/41.short

Guide for the care and use of laboratory animals

https://books.google.com.eg/books?hl=ar&lr=&id=NzcrAAAAYAAJ&oi=fnd&pg=PA1&dq=laboratory+animals+journal&ots=69JHEwNPdJ&sig=mgeTV3NT9O9wOljttpIsZRwOZpw&redir_esc=y#v=onepage&q=laboratory%20animals%20journal&f=false

Handbook of laboratory animal management and welfare

https://books.google.com.eg/books?hl=ar&lr=&id=xVqjrZ7yQ2cC&oi=fnd&pg=PR7&dq=laboratory+animals+management++journal&ots=1hrYzaRm5L&sig=lmgXRbDp0Y4NwKE1f_UW-2bme90&redir_esc=y#v=onepage&q=laboratory%20animals%20management%20%20journal&f=false

- Hand book of laboratory animal scince,volume 1,3rdedition:essential principles and practices JannHauand Steven Schapiro.
- Animal intelligence from individual to social cognition.ZhannaReznikova
-Scientific assesment and management of animal pain,technical series vol.10,2008. D.Mellor,P.Thomber,D.Bayvel&S.Kahn.
-Vibrational communication in animals.Peggy S.M. Hill.
- Field and laboratory exercise in animal behaviour.Chadwick Tillberg.
- Observing animal behaviour.Marian Stamp Dawkins.

8.4. Journals, Websites ……..etc

Laboratory Animals

lan.sagepub.com/

Laboratory Animal Journals and Newsletters

*dels.nas.edu/global/ilar/Links-**Journals***

Related Journals | Animal Welfare Information Center

*https://awic.nal.usda.gov/research-**animals**/related-**journals***

Course Coordinator **Head of the department**

Course specification Matrix

	Topics	Wk	Knowledge and Understanding	Intellectual Skills	Practical and Professional Skills	General & Transferable Skills
1	- **Housing of lab animals.**	**1-8**	a.1			**d.1- d.7**
2	- **Types of lab animals.**	**9-16**	a.1			**d.1- d.7**
3	- **Behaviour of lab animals.**	**17-25**	a.1,a5	b.2,	C4,c5	**d.1- d.7**
4	- **Management of lab animals.**	**25-34**	a.3,a5, a6	b.3, b.4,b5,b6,	c.1, c.2 ,c6	**d.1- d.7**
5	- **Breeding programs.**	**1-16**	a.1			**d.1- d.7**
6	**- Handling of lab animals.**	**17-32**			c.2	**d.1- d.7**
7	**- Marking**	**1-8**	a.2			**d.1- d.7**
8	**- Animal health management**	**9-16**		b.2		**d.1- d.7**
9	**- Inoculation**	**17-25**	a.1		c.2	**d.1- d.7**
10	**- Anesthesia**	**25-34**	a.1	b 4		**d.1- d.7**
11	**- Euthanasia**	**35-36**	a.1			**d.1- d.7**

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	
Course title :	Microbiology of laboratory animals
Program title:	Diploma of Vet. Med. Sciences (laboratory animals)
Contact hours/ week	2 hours per week (1hr theoretical and 1hr practical).
Approval Date	

2-Professional information

Overall aims of course:

This course aims to provide the postgraduates with the knowledge, skills and attitudes that allow them to deal with bacterial and viral diseases could affect laboratory animals.

3- Intended learning outcomes of course (ILOs)

Knowledge and understanding:

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

a1- Conclude the nature and structure of bacterial and their classification.

a2-Describe physico-chemical and biological properties of viruses infecting laboratory animals and their taxonomy .

a3- Recognize the nutritional and environmental requirements for growth and reproduction of bacteria and viruses.

a4- Recognize the factors associated with the virulence of the microorganisms, its exaltation and attenuation.

a5- Enumerate the by-products of pathogenic microorganisms.

b-Intellectual skills

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

b1- Diagnose different bacterial and viral diseases infecting laboratory animals.

b2- Assess the infective potential of environmental materials to prevent the spread of the infection in the community.

b3- Suggest the solutions of the problems concerning with different bacterial and viral diseases infecting laboratory animals.

C- Professional and practical skills

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

c1- Collect the suitable specimens at the suitable time from laboratory animals.

c2- Identify the causative microorganism depending on morphological, cultural and biochemical characters as well as serology.

c3- 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.

d2- use the internet to get information.

Course specification of postgraduate

d3- Own continuous and self-learning.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 1h./week, Pract 1h./week)	General bacteriology	8	8	-
	Gram positive bacteria infecting laboratory animals.	8	8	-
	Gram negative bacteria infecting laboratory animals.	8	8	-
	General virology	6	6	
	Systemic virology	6	6	
	–Bacterial Motility	1	-	1
	–Sterilization and disinfection.	2	-	2
	–In-vitro antimicrobial sensitivity.	2	-	2
	–Staining of bacteria.	3	-	3
	–Bacteriological culture media.	2	-	2
	–Cultivation and isolation of pure culture of bacteria.	2	-	2
	–Tests for the identification of bacteria.	3	-	3
	–Serological tests.	3	-	3
	Serological tests for diagnostic virology	4		4
	Laboratory host system for virus isolation	4		4
	Molecular diagnostic virology	4		4
Total				

5-Teaching and learning methods

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

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

Course specification of postgraduate

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

7.2. Assessment schedules

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

7.3. Weight of assessments

Assessment	Weight of assessment
Writing exam	**50%**
Practical exam	**30%**
Oral exam	**20%**
total	100%

8- List of references

8.1. Notes and books:

Departmental notes on:

8.1.1- Notes on Bacteriology, Mycology and Immunology.

8.1.2- Notes on Practical Bacteriology, Mycology and Immunology.

8.1.3- Notes on Veterinary Microbiology.

8.1.4-Nots on Bases of veterinary virology

8.2. Essential books:

8.2.1- Bergey's Manual of Systematic Bacteriology, 4th Edition Noel R. Krieg, John G. Holt, and Murray R. G. E. 1984.

8.2.2- Prescott, Harley and Klein's Microbiology. J. M. Willey, L. M. Sherwood, and C. J. Woolverton – 17th Edition, International Edition, 2008, Mc Graw Hill

8.2.3- Bergey's Manual of Determinative Bacteriology, 9th Edition John G. Holt, 1993

8.2.4- Diagnostic Microbiology, 2nd Edition 2000 Connie R. Mahon and George Manuselis.

8.3. Recommended text books:

8.3.1- Clinical Veterinary Microbiology, P.J. Quinn, M.E. Carter, B. Markey and G.R. Carter, 6th Edition 2004

8.3.2- Veterinary Microbiology, Dwight C. Hirsh and Yuan Ghung Zee, 1999

Course specification of postgraduate

8.3.3- Medical Microbiology, R. Cruickshank 1986.

8.3.4- 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)

8.3.5- Medical Mycology, 1992 K. J. Kwon-Chung and John E. Bennett.

8.3.6- Introductory Mycology, 3rd Edition 1979, C.J. Alexopoulos and C.W. Mims.

8.3.7- Topley & Wilson microbiology and microbial infections, 9 th edition

8.3.8-Field on virology .

8.4. Journals, Websites ……..etc

Journal of Bacteriology
Microbiology
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.Veterinary Microbiology

Course Coordinator
Dr. Hala Sayed Hassan salam
Ass. Prof. of Bacteriology, Mycology and Immunology, Faculty of Veterinary Medicine, Beni-Suef University

Head of the department
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 of postgraduate

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)
Lectures 1h/week	General bacteriology	1st w- 6th w	1,2,3	1,2,3	1,2,3,4	1,2,3,4,5
	Gram positive bacteria infecting laboratory animals.	7th w- 12th w	1,2,3	1,3	1,2,3,4	1,2,3,4,5
	Gram negative bacteria infecting laboratory animals.	13th w- 18th w	1,2	1,2,3	1,2,3	1,2,3,4,5
Practical 1h/week	–Bacterial Motility	1st w	1,2	1,3	1	1,2,3,4,5
	–Sterilization and disinfection.	2nd w – 3rd w	7	2,3	-	1,2,3,4,5
	–In-vitro antimicrobial sensitivity.	4th w- 5th w	7	2,3	3	1,2,3,4,5
	–Staining of bacteria.	6th w- 8th w	1,2	1,3	1	1,2,3,4,5
	–Bacteriological culture media.	9th w- 10th w	1,2,3	1,3	1	1,2,3,4,5
	–Cultivation and isolation of pure culture of bacteria.	11th w- 12th w	1,2,3	1,3	1	1,2,3,4,5
	–Tests for the identification of bacteria.	13th w- 15th w	4,5	1,3	1	1,2,3,4,5
	–Serological tests.	16th w-18th w	-	1,3,4	1,2	1,2,3,4,5

Beni-Suef University
Faculty of Veterinary Medicine
Pathology Department

University: Beni-Suef University, Egypt.

Faculty: Faculty of Veterinary Medicine.

Departments: Pathology

Course specification

A- Administrative Information:

Course Code:	D2
Course title :	Pathology of the laboratory animals.
Academic year:	Postgraduate students.
Program title:	Diploma of Vet. Med. Sciences (laboratory animals).
Degree:	Diploma.
Contact hours/ week	4 hours per week (2hr theoretical and 2hr practical).
Course coordinator:	Dr. EL-Shaymaa Nabil EL-Nahass
External evaluator(s)	Prof. Dr. Sary Khalil
Date of course approval:	September ,2017

B-Professional information

1- Overall aims of course:

This course aims to:

At the end of this course, the student should be able to acquire knowledge and skills related to induction of pathological affection , planning for an experiment in the field of pathology and evaluation of results.

2- Intended learning outcomes of course (ILOs)

a-Knowledge and understanding:

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

a1- Define the aim of the scientific experiment.

a2- Drawthe scheme of an experiment.

a3- Describe the gross and histopathological lesions associated with experimental infection.

a.4- Recognize aquatic professional practice, regulation and asics

b-Intellectual skills:

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

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

b1- Analyze the available data to reach the accurate judgment of the experiment.

b**2-** Infer a report regarding the results of the experiment.

b3- Summarize the findings on the base of morphological and pathological alterations.

b4- Manage his/her own learning and research and conduct independent and effective study.

b5- Develop observational skills in associating molecular and cellular events relevant to experimental pathology.
b6- Be able to devise and evaluate suitable experimental methods for the investigation of experimental pathology.

c-Professional and practical skills

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

C1- Collect the tissue specimens of the affected parts.
C2. Prepare a pathology report describing changes associated with the experiment.
C3- Perform the various histological techniques.
C4- Use the microscope to categorize the histopathological changes associated with the experiment.

d-General and transferable skills

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

d1.Design data bases.
d2. Simplify the results based on the statistical analysis of the data.
d3- Manipulate the new technology and communications.
d4- Collect the scientific information from the text books and internet
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- own continouse and self learninig

3-Topics and contents

Course	Topic	Total no. of hours	Lect.	Pract.
Postgraduate students Pathology of laboratory animals 4 hours / weak (Lec. 2hr/wk - Pract. 2hr/wk)	1. Introduction in pathology and histopathological techniques	4	2	2
	2- General bases of pathological alterations(dist. In cell metabolism, Cell death, dist. In circulation, inflammation and healing and general tumors)	16	8	8
	3. Pathology of rabbit diseases.	4	2	2
	4. Pathology of mouse diseases	4	2	2
	5.Pathology of hamster and rat diseases	4	2	2
	6.Pathology of genia pig	4	2	2
	7. Postmortem examination (sampling schedule for pathology – sacrifice schedule – necropsy, organ weights, collection of tissue and organ specimens for micro-scopic examination.)	4	2	2
	8-Evaluation of results (pathological alterations– physiopathological alterations – factors affecting evaluation and	8	4	4

	interpretation of results)			
	9-.Activities	**4**	**2**	**2**
	Total	**52**	**26**	**26**

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. Whiteboard and data-show presentations.

5.1.2.Educational animal models, bones and 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. Freshly died cadavers of laboratory animals.

5.2.3. Educational models.

5.2.4. Prepared bones from euthanatized animals.

5.2.5. Demonstrating formalin preserved cadavers.

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 bones and 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,	B2, b3,b4, b6,	-	d1,d3,d4
Practical Exam		b1, b2, b3, b4, b6	c1, c2, c3, c4	d2, ,d5.d6.d7
Oral Exam	a1-a3	b1-b6	c1, c2, c4,	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, 6th ed. San Diego, New York
- Jones, T.C., Hunt, R.D. and King, N.W (2008) Veterinary pathology , 8th 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 , 6th 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. *1st. 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) 2nd 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
- Pathologia Veterinaria
- 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 searchwww.google.com
Sciencedirecthttp://www.sciencedirect.com.
Pubmed http://www.Pubmed.
Colorado State university onlinehttp://www.online.colostate.edu/courses/VS/VS333.dot
The university of adelaidehttps://www.adelaide.edu.au/course-outlines/104377/1/sem-1/
VET Veterinary Educational Toolshttp://www.cvmbs.colostate.edu/vetneuro/
Education platformhttp://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm
http/cms.nelc.edu.eg
www.asvp.asn.au.com

www.geneng news.com
www.altcancer.com

Course Coordinator

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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)
Postgraduate students pathology of laboratory animals 2 hours / weak (Lec. 1hr/wk - Pract. 1hr/wk)	1. Introduction in pathology and histopathological techniques	1-2	1,3	1,3	-	
	2- General bases of pathological alterations(dist. In cell metabolism, Cell death, dist. In circulation, inflammation and healing and general tumors)	3-10	3	1,3,4	1, 2,3,4	1-7
	3. Pathology of rabbit diseases.	11-12	1,3	1,2,3,4,5,6	1, 2,3,4	
	4. Pathology of mouse diseases	13-14	1,3	1,2,3,4,5,6	1, 2,3,4	
	5.Pathology of hamster and rat diseases	15-16	1,3	1,2,3,4,5,6	1, 2,3,4	
	6.Pathology of guinea pig	17-18	1,3	1,2,3,4,5,6	1, 2,3,4	
	7. Postmortem examination (sampling schedule for pathology – sacrifice schedule – necropsy, organ weights, collection of tissue and organ specimens for microscopic examination.)	19-20	1,2,3,4	1,2,3,5,6	2,4	
	8-Evaluation of results (pathological alterations– physiopathological alterations – factors affecting evaluation and interpretation of results)	21-24	1,3	1,2,3,5,6	1, 2,3,4	
	9-.Activities	25-26	2,3,4	1,2,3,5,6	1, 2,3,4	

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	
Course title :	Clinical pathology
Program title:	Diploma of Vet. Med. Science (laboratory animals)
Contact hours/ week	Lecture: 1h/ week practical: 1 h/week Total:2 hr/ week
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

1-Acquire the necessary background and awareness in clinical pathology with an emphasis on laboratory animals.
2-Identify different laboratory diagnostic techniques in lab animals.
3-Acquire experience in samples collection from laboratory animals.
4- Understanding the basis for differential laboratory diagnosis of laboratory animals.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Define the different types of blood cells and their functions in different laboratory animals.
a.2. Explain the laboratory diagnosis of different hematological and clinical biochemical disorders in laboratory animals.
a.3. Discuss the laboratory data results.
a.4. Review the reason for each test and the significance of the obtained results.

b-Intellectual skills

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

b.1. predict pathophysiologic syndromes, diseases or other conditions that should be considered when results of clinical laboratory assays are abnormal.
b.2. Take decisions regarding differential diagnosis of diseases.
b.3. Manage the pathologic and non-pathologic (physiologic, procedural) processes that result in abnormal laboratory data.

C- Professional and practical skills

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

c.1. Apply safety and infection control measures during practice.
c.2. Describe the clinical laboratory assays that are used to detect, define, or evaluate pathologies in laboratory animals.
c.3. Practice sample collection and processing according to standard procedures.
c.4. Perform complete hematological and biochemical investigations in laboratory animals.
c.5. Recognize blood diseases on morphological bases of blood films from laboratory animals.

d- General and transferable skills

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

Course specification of postgraduate

d.1. Demonstrate problem solving.
d.2. Utilize group working.
d.3. Use the computer and internet to gather scientific information.
d.4. Use data analysis and communication skills.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 1 h./week, Pract 2 h./week)	Types of anemia and erythrocytosis in laboratory animals	6	3	3
	Leucocytic disorders in laboratory animals	6	3	3
	Hemostasis	6	3	3
	Enzymology	4	2	2
	Bile pigments and acids abnormalities	6	3	3
	Acid-base balance	8	4	4
	Hepatic diseases in laboratory animals	6	3	3
	Renal diseases in laboratory animals	6	3	3
	Metabolic disorders in laboratory animals	8	4	4
	Gastrointestinal and pancreatic diseases in laboratory animals	6	3	3
	Endocrinopathies in laboratory animals	6	3	3
	Total	68	34	34

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 and data show).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Final Exam	a1- a2- a3- a4	b1- b2- b3	c1- c2- c3-c4-c5	
Practical Exam		b1- b2- b3	c1- c2- c3-c4-c5	
Oral Exam	a1- a2- a3- a4	b1- b2- b3		d1-d2-d3-d4

Course specification of postgraduate

7.2. Assessment schedules

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

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:

- Clinical Biochemistry of Demostic Animals (By Jerry Kaneko, Harvarry and Bruss 5th Edition 1997 Academic press).
- Veterinary Laboratory Medicine –Clinical Pathology, Duncan, J.R et al., 2nd edition, Ames IO:- Iowa state university press, 1994.
- Veterinary clinical pathology (Coles 2000).

8.3. Recommended texts

- Introduction to clinical biochemistry, interpreting blood results, Dr. Graham Basten.
- Veterinary laboratory medicine, clinical biochemistry and hematology, 2nd edition. Morag G. Kerr.
-A-Z of hematology, Barbara J. Bain and Rajeev Gupta.)

Journals:

-International Journal of Molecular diagnostic and laboratory and medicine htt:// int. clichem.
-International Journal of veterinary medicine.

Websites:

http://www.sciencedirect.com

https://scholar.google.com

https://openlibrary.org/publishers/a.welly_interscience

Course Coordinators	Head of Department
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	Types of anemia and erythrocytosis in laboratory animals	1st-3rd w	1, 2 , 3, 4	1, 2, 3	1, 2, 3, 4, 5	1,2,3,4
2	Leucocytic disorders in laboratory animals	4th -6th w	1, 2 , 3, 4	1, 2, 3	1, 2, 3, 4, 5	1,2,3,4
3	Hemostasis	7th –9th w	1, 2 , 3, 4	1, 2, 3	1, 2, 3, 4, 5	1,2,3,4
4	Enzymology	10th -11th w	2, 3,4	1, 2, 3	2, 4, 5	1,2,3,4
5	Bile pigments and acids abnormalities	12th - 14th w	2, 3,4	1, 2, 3	1, 3, 4, 5	1,2,3,4
6	Acid-base balance	15th – 18th w	2, 3,4	1, 2, 3	3, 4, 5	1,2,3,4
7	Hepatic diseases in laboratory animals	19th- 21th w	2, 3,4	1, 2, 3	1, 2, 3, 4, 5	1,2,3,4
8	Renal diseases in laboratory animals	22th – 24th w	2, 3,42, 3,4	1, 2, 3	1, 2, 3, 4, 5	1,2,3,4
9	Metabolic disorders in laboratory animals	25th – 28th w	2, 3,4	1, 2, 3	4, 5, 6	1,2,3,4
10	Gastrointestinal and pancreatic diseases in laboratory animals	29th- 31th w	2, 3,4	1, 2, 3	3, 4, 5	1,2,3,4
11	Endocrinopathies in laboratory animals	32th – 34th w	2, 3,4	1, 2, 3	3, 4, 5	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	**Diploma-167**	
Course title :	**Experimental Surgery**	
Program title:	**Diploma degree In Veterinary Medical Sciences (Surgery)**	
Contact hours/ week	**Lecture: 1 h / week**	**Practical: 1 h / week**
Approval Date		

2-Professional information

Overall aims of course:

This course aims to:

1. Acquired the academic background and practical experience in the field of experimental surgery.
2. Have experience about experimental designs.

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 strategy of animal selection and types of experimental animals

a.2. Recognize the line of sampling

a.3. List the common experimental surgical techniques.

a.4. Recognize The animal euthanasia.

B-Intellectual skills

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

b.1. Discriminate and analysis of clinical and laboratory findings to reach the accurate diagnosis.

b.2. Interpret and predict the prognosis and sequllae of general surgical affections.

b.3. Score of suitability of using defined Surgical techniques.

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. Assess experience in clinical and laboratory diagnosis of surgical affections

c.2. Perform different surgical techniques.

c.3. using the new technology in practical portion.

c.4.follow up the treated cases and control of postoperative complications.

D- General and transferable skills

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

d.1 Demonstrate information retrieval and library skills

d.2 Demonstrate interpersonal skills and team working ability by the successful completion of collaborative learn assignment and the honors researches projects

d.3. present research finding in oral and written from using arrange of appropriate software (e.g., power point , word , excel and data base).

Course specification of postgraduate

d.4. use all types of communications skills.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. 2h./week, Pract. 2h./week)	- Types of experimental animals	12	6	6
	- Strategy of animal selection for experimental surgery	16	8	8
	- Sampling	16	8	8
	- Animal control	16	8	8
	- Animal euthanasia	16	8	8
	- Pathological sampling artifacts.	20	10	10
	- Some experimental surgery technique	48	24	24

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 application of advanced surgical technique (models, samples of tissues and data show).
5.4- Self learning by preparing essays and presentations (computer researches and library)

7-Student assessment

7.1. Assessments methods:

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

7.2. Assessment schedules

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

Course specification of postgraduate

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

-Veterinary surgery. D.Knech. R.AIIen. 1987

8.2. Essential books:

-Farm Animal Surgery. Susane Fubini. 1987

8.3. Recommended texts

- Atlas of general small animal surgery. Caywood. Lipowitz. 1989
- Complications in small animal surgery. Alan.J. lipowitz 2015

8.4. Journals, Websites ……..etc

Journals: Veterinary surgery, Veterinary Clinics of North America.

Websites:

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

Program coordinator
Name: Dr. Mohamed Zaki Fathy
Signature..... Date

Head of the Department
Name: Prof.Dr. Gamal Abdel Nasser
Signature..... Date

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
	Experimental Surgery		K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	-Types of experimental animals	- 1st w- 3th w	1,2,3	1,2,3	1,2,4	1,2,3
2	- Strategy of animal selection for experimental surgery	- 4th w- 7th w	1,2,3	1,3	1,2,3,4	1,2,3,4
3	- Sampling	- 8th w- 11th w	1,2	1,2,3	1,2,3	1,2,3,4
4	- Animal control	- 12th w- 15th w	1,2	1,2,3	1, 3	1,2,3,4
5	- Animal euthanasia	- 16st w- 19th w	1,2,3	1,2,3	1,2,4	1,2,3
6	-Pathological sampling artifacts.	- 20th w- 24th w	1,3	1,4	1,3,4	1,2,4
7	- Some experimental surgery techniques	- 25th w- 36th w	1,2	1,2,3	1,2,3	1,2,3,4

Beni-Suef University
Faculty of Veterinary Medicine

University: Beni-Suef University, Egypt.

Faculty: Faculty of Veterinary Medicine.

Departments: Anatomy and Embryology

Course specification

A- Administrative Information:

Course Code:	
Course title :	Anatomy of the laboratory animals.
Academic year:	Postgraduate students.
Program title:	Diploma of Vet. Med. Sciences (laboratory animals).
Degree:	Diploma.
Contact hours/ week	2 hours per week (1hr theoretical and 1hr practical).
Course coordinator:	Dr. Mohamed Gomaa Tawfiek.
External evaluator(s)	Prof. Dr. Essam Mohamed Moustafa El-Gindy
Date of course approval:	

B-Professional information

1- Overall aims of course:

This course aims to:

After completing the postgraduate course in anatomy of laboratory animals (rats, mice, rabbits, guinea pigs and hamsters), the postgraduate student will be able to recognize the fundamentals of their gross, comparative and applied anatomy.

2- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

a1. Distinguish the principle component of the locomotor system with special references to the thoracic limb, pelvic limb and thorax of laboratory animals.

a2. Conclude the typical structure of the digestive, nervous, lymphatic, urogenital, respiratory and circulatory systems of the laboratory animals.

a3. Ascertain the surface landmarks of the underlying bones, muscles, tendons and internal structures (main nerves, vessels and viscera).

a4. Set the correlation of the anatomical facts to the clinical problems.

a5. Recall the correct anatomical terms when giving topographical description of directional or positional anatomical detail.

a6. Elicit the nomenclature for the planes used in anatomical presentation of specimens.

a7. Recognize a comprehensive knowledge about the gross anatomy of the digestive, urinary, male genital, female genital, nervous and lymphatic system of laboratory animals.

a8. Conclude the typical structures of the central nervous system, peripheral nervous system, autonomic nervous system and sense organs.

a9. Mention the topographical position, afferent and efferent lymph drainage in laboratory animals.
a10. Set the comparative points of the various visceral organs in laboratory animals with special reference to their clinical significances.

b- Intellectual skills:

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

b1. Analyze the diversity of knowledge in the term of gross anatomical characteristics of each organ and/or structure.
b2. Identify the different surface markings of the animal's limbs and thorax.
b3. Identify isolated bones of the limbs of the laboratory animals.
b4. Differentiate the bones and joints of limbs for laboratory animals.
b5. Predict the effect on limb stance and locomotion caused by paralysis of specific nerves or muscle tendon rupture.
b6. Differentiate between the normal and abnormal position and deviated movements and malformations of the different joint in both limbs of laboratory animals.
b7. Distinguish with evidence and confidence characteristic features of each organ and/or structure in each animal class.
b8. Compare between the respiratory, digestive, urinary, male and female organs in laboratory animals.
b9. Relate structure-functions relation of those organs system components.
b10. Explain the interrelationships within and between anatomical and physiological systems of the animal's body.
b11. Correlate the anatomical facts to the clinical problems.
b12. Analyze the gained anatomical facts of importance in the field of practice.
b13. Distinguish the site of origin of the different peripheral nerves.
b14. Analyze the diversity of knowledge in the term of gross anatomical characteristics of each organ and/or structure.
b15. Estimate the problems related to the visceral organs in different animals based on the gained knowledge about their normal anatomy and position.

c-Professional and practical skills

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

c1. Detect the shape and position of isolated and assembled bones of laboratory animals.
c2. Coordinate the radiographic anatomy of the bones and thorax to clarify some field problems.
c3. Interpret graphs of anatomical and physiological data
c4. Differentiate between isolated organs of laboratory animals.
c5. Apply the anatomy facts in solving and explanation of different clinical problems.
c6. Perform postmortem dissection of laboratory animals.
c7. Interpret on clinical findings inside laboratory animals based on known normal anatomy background.
c8. Dissect probably different regions of animal's body.
c9. Use correctly the surgical instrumentation to carry out cadaver dissection.

d- General and transferable skills

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

d1. Appreciate the team working and time management.

d2. Value the ethics and respect to all individuals inside and outside the dissecting room and pay appropriate respect to the animal's cadavers.

d3. Recognize the scope and limits of their role as students as well as the necessity to seek and apply collaboration with other colleagues.

d4. Maintain a professional image concerning behavior, dress and speech.

d5. Be responsible toward work.

d6. Communicate effectively with public, colleagues and appropriate authorities.

d7. Achieve computer skills necessary to make use of medical databases and use the internet for communication.

d8. Prepare a scientific paper and essay.

3- Topics and contents

Course	Topic	Total no. of hours	Lect.	Pract.
Postgraduate students Anatomy of laboratory animals 2 hours / weak (Lec. 1hr/wk - Pract. 1hr/wk)	1. Surface anatomy and body regions of laboratory animals	3	2	1
	2. The muscular and skeletal systems of laboratory animals	4	2	2
	3. Digestive system of laboratory animals	10	5	5
	4. Nervous system of laboratory animals	5	2	3
	5. Urinary system of laboratory animals	4	2	2
	6. Male genital system of laboratory animals	4	2	2
	7. Female genital system of laboratory animals	3	1	2
	8. Respiratory system of laboratory animals	6	3	3
	9. The circulatory system of laboratory animals	6	3	3
	10. The lymphatic system of laboratory animals	4	2	2
	11. Special sense organs of laboratory animals	3	2	1
	Total	**52**	**26**	**26**

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 animal models, bones and 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. Freshly died cadavers of laboratory animals.

5.2.3. Educational models.

5.2.4. Prepared bones from euthanatized animals.

5.2.5. Demonstrating formalin preserved cadavers.

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 bones and 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
Final Exam	a1,a2, a4, a5, a6, a7, a8, a9, a10	b5, b6,b7, b8, b9, b10, b11, b12, b13, b14, b15	c1, c2, c3, c4, c5	d1
Practical Exam	a1, a2, a3, a4, a6, a7	b1, b2, b3, b4, b7, b8, b10, b11, b12	c1, c2, c3, c4, c5, c6, c7, c8, c9	d1, d2, d3, d4, d5,d6, d7, d8
Oral Exam	a1-a7	b1-b18	c1, c2, c4, c5, c6, c8, c9, c10	d1,d2, d3,d4, d5, d6

5.2. Assessment schedules/semester:

Method	Week(s)
Practical exams	Managed by department administration
Final 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%
Final exams	50%
Total	100%

6- List of references

8.1. <u>Notes and books:</u>

None

8.2. <u>Essential books:</u>

8.2.1. Atlas of rabbit anatomy, (R. Barone C Pavaux, PC Blin P. Cuq, 1973): Masson et Cie, Paris, Library of Congress Catalog Card number: 72-92999. ISBN: 2-225 35 5307.
This book is available online.

8.2.2. Laboratory anatomy of the white rat, (RB Chiasson, 1958), 4th edition. Wcb, Wm. C. Brown Company Publishers Dubuque, Iowa.
This book is available in the library of faculty of Veterinary Medicine, Beni-Suef Univ.

8.2.3. A Colour Atlas of Anatomy of Small Laboratory Animals, Volume 1: Rabbit, Guinea Pig, (P Popesko, V Rajtová & J Horák, 1992). Wolfe Publishing Ltd, ISBN: 0-7020-2699-9
This book is available in the library of faculty of Veterinary Medicine, Beni-Suef Univ.

8.3. Recommended textbooks:

8.3.1. Atlas of the rabbit brain and spinal cord, (J.W. Shek, G.Y. Wen, H.M. Wisniewski. 1986), National Library of Medicine, Cataloging in Publication, Shck, J.W.Basel; New York: Karger, Includes index. ISBN 3-8055-3814-6. ***This book is available online.***

8.3.2. Colour atlas of vertebrate anatomy, an integrated text and dissection guide, (GM King, DRN Custance, 1982) Blackwell Scientific Publishers, Bolsover Press. ***This book is available online.***

8.3.3. Small Animal Anatomy: The Essentials, (TO McCracken, RA Kainer, D Carlson 2008), Blackwell Publishing Professional 2121 State Avenue, Ames, Iowa 50014, USA. Blackwell Publishing. ***This book is available online.***

8.3.4. Ferrets, Rabbits, and Rodents Clinical Medicine and Surgery, (KE. Quesenberry and JW Carpenter, 2012), 3rd edition, ISBN: 978-1-4160-6621-73251, Riverport Lane St. Louis, Missouri 63043 Saunders, an imprint of Elsevier Inc. ***This book is available online.***

8.3.5. Rabbit Medicine and Surgery for Veterinary Nurses, (M Fraser, S Girling, 2009), ISBN: 978-1-4051-4706-4, Wiley-Blackwell. ***This book is available online.***

8.3.6. Biology and Diseases of the Ferret (JG Fox, RP Marini, 2014), 3rd edition, Wiley-Blackwell, ISBN: 978-0-470-96045-5. ***This book is available online.***

8.4. Journals, Websites ……..etc

Journals

Anatomia, Histologia, Embryologia - Wiley Online Library
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1439-0264
The Anatomical Record - Wiley Online Library
http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1932-8494
Journal of Anatomy- Wiley Online Library
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1469-7580
Annals of Anatomy - Journal-Elsevier
http://www.journals.elsevier.com/annals-of-anatomy/
Journal of Veterinary Anatomy
http://www.vetanat.com/
Indian Journal of Veterinary Anatomy
http://epubs.icar.org.in/ejournal/index.php/IJVA
International Journal of Animal Anatomy and Physiology
http://internationalscholarsjournals.org/journal/ijaap
Journal of Advanced Research in Veterinary Science and Technology
http://www.adrpublications.com/Journal-of-Advanced-Research-in-Veterinary-Science-and-Technology.html
Beni-Suef Veterinary Medical journal
http://www.bsuv.bsu.edu.eg/vetmed.aspx#

Websites

Google search www.google.com
Sciencedirect http://www.sciencedirect.com.
Pubmed http://www.Pubmed.
Colorado State university online http://www.online.colostate.edu/courses/VS/VS333.dot
The university of adelaide https://www.adelaide.edu.au/course-outlines/104377/1/sem-1/
Veterinary anatomy courses http://vanat.cvm.umn.edu/vanatCourses/CVM6100.html

Anatomy museum http://skeletonmuseum.com/
Animals skeletons -www.animalskeletons.net
VET Veterinary Educational Tools http://www.cvmbs.colostate.edu/vetneuro/
Education platform http://ivsascove.wix.com/eduplatform#!anatomy-hist-embr/ctsm
Veterinary anatomy http://vetmedicine.about.com/od/anatomy/
Online Veterinary Anatomy Museum http://www.onlineveterinaryanatomy.net/
Imaging Anatomy Website http://vetmed.illinois.edu/courses/imaging_anatomy/
Real 3D anatomy http://www.real3danatomy.com/
Interactive Programs for Canine Anatomy http://www.tabanat.com
Virtual Canine Anatomy http://www.cvmbs.colostate.edu/vetneuro/VCA3/vca.html
Veterinary anatomy museum http://vanat.cvm.umn.edu/museum/
Veterinary neurobiology laboratory preview/review http://vanat.cvm.umn.edu/neurolab/
Carnivore and developmental anatomy lectures http://vanat.cvm.umn.edu/TFFlect.html
Rooney's guide to the dissection of the horse http://www.vet.cornell.edu/oed/horsedissection/
Interactive drawings for veterinary anatomists http://www.images4u.com/
Veterinary anatomy: directions and planes http://vanat.cvm.umn.edu/anatDirections/
Canine planar anatomy http://vanat.cvm.umn.edu/planar/
Gaits: gait foot-fall patterns http://vanat.cvm.umn.edu/gaits/
Sheep brain dissection guide http://academic.uofs.edu/department/psych/sheep/
Anatomical Society of Great Britain and Ireland, http://www.anatsoc.org.uk/
Sheep brain atlas https://www.msu.edu/~brains/brains/sheep/index.html
Neuroanatomy correlation lab http://instruction.cvhs.okstate.edu/neurology/
Primate anatomy and physiology http://pin.primate.wisc.edu/aboutp/anat/
Functional anatomy of the horse foot
http://extension.missouri.edu/xplor/agguides/ansci/g02740.htm

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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)
Postgraduate students Anatomy of laboratory animals 2 hours / weak (Lec. 1hr/wk - Pract. 1hr/wk)	1. Surface anatomy and body regions of laboratory animals	1, 2	1,3,5,6,10	1,2,3,4	1, 2,6,7,8,9	1-8
	2. The muscular and skeletal systems of laboratory animals	2, 3, 4	1,3,4,5,6,10	1,2,3,4,5,6	1, 2,6,7,8,9	
	3. Digestive system of laboratory animals	5, 6, 7, 8, 9	1,2,4,6,7,10	7,8,9,10,11,12,14,15	3,4,6,7,8	
	4. Nervous system of laboratory animals	10, 11	2,4,6,7,8	7,13	7,8	
	5. Urinary system of laboratory animals	12, 13	2,4,5,6,7,10	7,8,9,10,11,12,14,15	3, 4,5,6,7,8	
	6. Male genital system of laboratory animals	14, 15	2,4,6,7,10	7,8,9,10,11,12,14,15	3, 4, 5,6,7,8	
	7. Female genital system of laboratory animals	15, 16	2,4,5,6,7,10	7,8,9,10,11,12,14,15	3, 4,5,6,7,8	
	8. Respiratory system of laboratory animals	16, 17, 18, 19	2,4,5,6,7,10	7,8,9,10,11,12,14,15	3, 4, 5,6,7,8	
	9. The circulatory system of laboratory animals	20, 21, 22	2,4,6,7,	7,8,9,10,11,12	5,6,7,8	
	10. The lymphatic system of laboratory animals	23, 24, 25	2,4,6,7, 9	12	6,7,8	
	11. Special sense organs of laboratory animals	25, 26	1,2	12	6,7,8	

Beni-Suef University
Faculty of Veterinary Medicine

Course specification of postgraduate

1-Basic information

Course Code:	
Course title :	Parasites of Laboratory animals
Program title:	Diploma of Laboratory animals
Contact hours/ week	2 hours per week (1hr theoretical and 1hr practical)
Approval Date	

2-Professional information

Overall aims of course:

- Illustrate the morphology of different helminths, arthropods and protozoa of laboratory animals.
- Understand the biology of different helminths, arthropods and protozoa of laboratory animals.
- Summarize the pathogenesis of different helminths, arthropods and protozoa of laboratory animals**.**
- Master special techniques to diagnose different parasites of laboratory animals**.**
- Manage the protection of laboratory animals against parasitic infections.

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 morphology and biology of helminths affecting laboratory animals.
a2. Recognize the pathogenesis of helminths affecting laboratory animals.
a3. Summarize the morphology and biology of arthropods affecting laboratory animals.
a4. Illustrate pathogenesis of arthropods affecting laboratory animals.
a5. Familiarize the protection of laboratory animals against parasitic infections.
a6. Recognize symptoms of parasitic infestations.

b. Intellectual skills

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

b1. Deal with symptoms of parasitic infestations.
b2. Differentiate morphologically between various parasites of laboratory animals.
b3.Relate the pathogenesis of helminths, arthropods and protozoa affecting laboratory animals.
b4. Interpret the biology of helminths, arthropods and protozoa affecting laboratory animals.
b5. Correlate the protection of laboratory animals against parasitic infections.
b6. Adapt the proper control measure.

C- Professional and practical skills

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

c1. Obtain samples for diagnostic purposes of parasitic affections.
c2. Implement samples staining and preservation for immediate or further examination.

Course specification of postgraduate

c3. Perform special techniques to diagnose different parasites of laboratory animals
c4. Write a report about parasitic affections and its diagnostic stages for each parasite.

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 different sources of knowledge.
d3. Able to transfer the experience to others.
d4. Characterize and differentiate various parasitic affections.

4-Topics and contents

Weeks	Topic	No. of hours	Lectures	Practical
1	Introduction to laboratory animal's parasites. (symptoms of parasitic infestations, protection of laboratory animals against parasitic infestations and control of parasitic infestations).	2	1	1
10	Different helminths of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	20	10	10
10	Different protozoa of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	20	10	10
10	Different arthropods of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	20	10	10
5	Special techniques to diagnose different parasites of laboratory animals (handling, collection, staining and preservation of samples, report about parasitic affections, diagnostic stages for each parasite).	10	5	5
	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 faculty library).
5.3- Practical (models, samples of……..).
5.4. Farm trip.
5.5. Video movies for students of special needs.

7-Student assessment

7.1. Assessments methods:

Course specification of postgraduate

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	I.S	P&P.S	G.S
Written Exam	a1,a2, a4, a5, a6	b1, b2,b3, b4, b5, b6	c1, c2, c3, c4	d1
Practical Exam	a1, a2, a3, a4, a5	b1, b2, b3, b4, b5	c1, c2, c3, c4	d1, d2, d3, d4, d5
Oral Exam	a1-a6	b1-b2, b3, b4,	c1, c2, c4	d1,d2, d3,d4, d5

7.2. Assessment schedules

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

7.3. Weight of assessments

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

8- List of references

8.1. Notes and books

8.2. Essential books:

Veterinary Parasitology, Laboratory manual of diagnostic parasitology, Parasites of Wild Life.

8.3. Recommended texts

Parasitology for Veterinarians, Foundation of Parasitology

8.4. Journals, Websites ……..etc

Journals: Veterinary Parasitology. Wild life Journal

Egyptian Veterinary Medical Society of Parasitology Journal.

Websites:

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

Course Coordinators **Head of Department**

Course specification of postgraduate

Course specification

	Topics	weks	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Introduction to laboratory animals parasites	1	a1,a2			d3
2	Different helminths of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	10	a1, a2, a3, a4, a5	b1, b2, b3, b4, b5,b6	c1, c2, c3, c4	d1, d2, d3, d4
3	Different protozoa of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	10	a1, a2, a3, a4, a5	b1, b2, b3, b4, b5,b6	c1, c2, c3, c4	d1, d2, d3, d4
4	Different arthropods of laboratory animals. Morphology, biology, pathogenesis and diagnosis.	10	a1, a2, a3, a4, a5	b1, b2, b3, b4, b5,b6	c1, c2, c3, c4	d1, d2, d3, d4
5	Special techniques to diagnose different parasites of laboratory animals (handling, collection, staining and preservation of samples, report about parasitic affections, diagnostic stages for each parasite).	5	a3, a4, a5	b1, b2, b3, b4, b5,b6	c1, c2, c3, c4	d1, d2, d3, d4