

PROGRAMME SPECIFICATIONS

Programme Specification

University: Beni-suef

Faculty: Veterinary medicine

A- Administrative Information

1. Programme title: Diploma of Vet. Med. Sciences (Toxicology and forensic medicine)
2. Award/degree: Diploma
3. Department responsible: Toxicology and forensic medicine.
4. Coordinator:
5. External evaluator(s)
6. Date of most recent approval of programme specification by the Faculty Council:

B- Professional Information

Programme aims: The Diploma programme support the postgraduate student ability to: understand the medico-legal investigation steps, to know how dealing with sampling and laboratory analysis. Also how to write a medico-legal report. To identify the potential harmful effects of poisons and to provide their prevention and treatment.

2. Intended learning outcomes (ILOs) for programme

a- Knowledge and understanding:

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

- a1- Know the working of the medico-legal team
- a2- Understand the medico-legal investigation steps
- a3- Be aware to dealing with sampling and biochemical analysis
- a4- Recognize the pathological report
- a5- Understanding the different toxicological concepts
- a6- Know the different classification of poison
- a7- Recognize the different toxicity testing and the animal models requirements
- a8- Realize the toxicological biotransformation and different mechanisms of actions
- a9- Be aware to collect the suspected samples and detect the expected poison
- a10- Emphasize the toxicokinetic and toxicodynamic of drug
- a11- Recognize the different methods for diagnosis and treatment of poisoning
- a12- Be aware with the toxic effects in different organs and how dealing with the toxicity

b- Intellectual skills

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

- b1- Appraise the role of each members of medico-legal team

- b2- Weigh up the expected samples that submitted to the laboratory analysis
- b3- Interpretate the obtained result of analysis
- b4- connect between the circumstances evidence of the case and the laboratory findings
- b5- Weigh up the expected acute and chronic hazards
- b6- Appraise the basis and mechanistic pathways of actions
- b7- Assess the toxicological impacts of different poisons on different organs of body
- b8- Estimate the socio-economic for ideal poisoning treatment

c- Professional and practical skills

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

- c1- Follow the medico-legal investigation team guidelines
- c2- Describe the crime scene
- c3- Perform the best way for examination of carcasses
- c4- Carry out the suitable way for taking, preservation and storage of samples
- c5- Monitor the interpretation of analytical results of the different samples
- c6- write the medico-legal reports by the correct manner
- c7- carry out the best evidence at the court
- c8. Follow the NIH and WHO guidelines of safety.
- c9. Carry out sampling, labeling, transport and preservation of suspected samples.
- c10- Efficiently make use of laboratory facilities and tools
- c11. Perform different methods of poison detection.
- c12. Monitor the main organ target for toxicants.
- c13. Treat the different expected poisoning cases in animals.

d- General and transferable skills

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

- d1. Work effectively as part of a team, demonstrating decision making and time management.
- d2. Efficiently make use of library facilities.
- d3. Explore appropriate computer / keyboard skills including word processing, spreadsheets, presentation packages and graph plotting.
- d4. Undertake written assignments and oral presentations.

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, BeniSuef University, BeniSuef, 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:

Time/ week	Topics	No. of hours	Credit hours/week	
1	الطب الشرعى والسموم	6	3	3
2	كيمياء التحاليل الطبية الشرعية	3	2	1
3	باثولوجيا	4	2	2
4	الأدوية البيطرية	3	2	1
Total		16	9	7

5- Programme – course ILOS Matrix

Title	a1	a2	a3	b1	b2	b3	c1	c2	c3	d1	d2	d3
1-		x		x				x		x	x	x
2-	x		x			x					x	x
3-		x			x		x		x	x		
4-	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 ex. and 50 % for practice 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 weak
	Less than 45 very weak

The programme specification should have attached to it all course specifications listed in the matrix.

Programme coordinator:

NameDr.Walaa Moselhy...

Signature..... **Date**

Head of the Department

Name: Prof.Dr. Khaled Abbas Helmy

Signature..... **Date** ,



Course Specification of Postgraduate

1-Basic information

Course Code:	D17
Course title :	Veterinary Forensic Medicine & Toxicology
Program title:	Diploma of animal toxicology and forensic medicine
Contact hours/ week	6 hours/ week, (3 Lect./week, 3 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

The aim of course is to understand the medico-legal investigation steps, to know how dealing with sampling and laboratory analysis. Also how to write a medico-legal report. To identify the potential harmful effects of poisons and to provide their prevention and treatment.

By completion of the course, students should be able to:

- To know the working of the medico-legal team
- How to dealing with crime scene and carcass at the scene
- Taking, identify and storage of samples
- Review and asses the interpretation of results
- Develop approaches for the medico-legal report writing
- Application of the different laboratory investigations
- Identify and to characterize adverse effects of poisons
- Elucidate mechanisms of action at the cell and biochemical levels
- Review and asses safety data generated for poisons
- Estimate the probability of the occurrence of adverse effects
- Develop approaches for, diagnosis, treatment and prevention of toxicity

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a1- Know the working of the medico-legal team
- a2- Understand the medico-legal investigation steps
- a3- Be aware to dealing with sampling and laboratory analysis
- a4- Recognize the medico-legal report
- a5- Understanding the different toxicological concepts
- a6- Know the different classification of poison
- a7- Recognize the different toxicity testing and the animal models requirements
- a8- Realize the toxicological biotransformation and different mechanisms of actions
- a9- Be aware to collect the suspected samples and detect the expected poison
- a10- Emphasize the toxicokinetic and toxicodynamic of poison
- a11- Recognize the different methods for diagnosis and treatment of poisoning
- a12- Be aware with the toxic effects in different organs and how dealing with the toxicity

b-Intellectual skills



Course Specification of Postgraduate

The students will be able to:

- b1- Appraise the role of each members of medico-legal team
- b2- Weigh up the expected samples that submitted to the laboratory analysis
- b3- Interpretate the obtained result of analysis
- b4- connect between the circumstances evidence of the case and the laboratory findings
- b5- Weigh up the expected acute and chronic hazards
- b6- Appraise the basis and mechanistic pathways of actions
- b7- Assess the toxicological impacts of different poisons on different organs of body
- b8- Estimate the socio-economic for ideal poisoning treatment

C- Professional and practical skills

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

- c1- Follow the medico-legal investigation team guidelines
- c2- Describe the crime scene
- c3- Perform the best way for examination of carcasses
- c4- Carry out the suitable way for taking, preservation and storage of samples
- c5- Monitor the interpretation of analytical results of the different samples
- c6- write the medico-legal reports by the correct manner
- c7- carry out the best evidence at the court
- c8. Follow the NIH and WHO guidelines of safety.
- c9. Carry out sampling, labeling, transport and preservation of suspected samples.
- c10- Efficiently make use of laboratory facilities and tools
- c11. Perform different methods of poison detection.
- c12. Monitor the main organ target for toxicants.
- c13. Treat the different expected poisoning cases in animals.

d- General and transferable skills

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

- d1. Work effectively as part of a team, demonstrating decision making and time management.
- d2. Efficiently make use of library facilities.
- d3. Explore appropriate computer / keyboard skills including word processing, spreadsheets, presentation packages and graph plotting.
- d4. Undertake written assignments and oral presentations.

4-Topics and contents

Time/ week	Topics	No. of hours	Credit hours/week	
1	Medico-legal investigation team	6	3	
	PM examination of different types of death in lab. animals (Case-1)		-	3
2	Examination of crime scene	6	3	-
	PM examination of different types of death in lab. animals (Case-2)		-	3
3	Examination of carcasses at the scene	6	3	-
	PM examination of different types of death in lab. animals (Case-3)		-	3



Course Specification of Postgraduate

4	Autopsy picture	6	3	-
	PM examination of internal organs (1)		-	3
5	Internal examination (1)	6	3	-
	PM examination of internal organs (2)		-	3
6	Internal examination (2)	6	3	-
	PM examination of internal organs (3)		-	3
7	Sampling	6	3	-
	Different tools, containers and labels of samples		-	3
8	Preservation of samples	6	3	-
	Examination of stomach content		-	3
9	Laboratory investigations (1)	6	3	-
	Urine analysis		-	3
10	Laboratory investigations (2)	6	3	-
	Blood analysis		-	3
11	Factors affecting the laboratory findings	6	3	-
	Milk analysis		-	3
12	Interpretation of laboratory findings	6	3	-
	Hair analysis		-	3
13	Medico-legal report	6	3	-
	Food and water analysis		-	3
14	Medico-legal evidence of the court	6	3	-
	A case for writing a medico-legal report		-	3
15	Toxicological concepts and terminology	6	3	-
	Toxicity tests (1)		-	3
16	Classification of poisons and toxic effects	6	3	-
	Toxicity tests (2)		-	3
17	Common causes of animal poisoning	6	3	-
	Proper sampling for toxicological assessment		-	3
18	Factors affecting toxicological action of poisons	6	3	-
	Toxicological samples handling and shipping for analysis		-	3
19	Metabolism of poisons (1- Absorption – Transport)	6	3	-
	Preservatives for toxicological samples		-	3
20	Metabolism of poisons (2- Distribution- Excretion)	6	3	-
	Optimum storage methods for toxicological samples		-	3
21	Metabolism of poisons (3- Biotransformation – Bioactivation)	6	3	-
	Instrumentation used for toxicological assessments		-	3
22	Mechanisms of actions	6	3	-
	Analytical methods used for toxicological assessments (1)		-	3
23	Diagnosis of poisoning	6	3	-
	Analytical methods used for toxicological assessments (2)		-	3
24	Treatment of poisoning	6	3	-



Course Specification of Postgraduate

	Interpretation of analytical results		-	3
25	Toxic hazards of metals (1)	6	3	-
	Detection of irritant poisons (1)		-	3
26	Toxic hazards of metals (2)	6	3	-
	Detection of irritant poisons (2)		-	3
27	Toxic hazards of pesticides (1)	6	3	-
	Detection of pesticides poisons (1)		-	3
28	Toxic hazards of pesticides (2)	6	3	-
	Detection of pesticides poisons (2)		-	3
29	Toxic hazards of mycotoxins	6	3	-
	Detection of mycotoxins poisons		-	3
30	Hazards of toxic plants (1)	6	3	-
	Detection of active principals in toxic plants (1)		-	3
31	Hazards of toxic plants (2)	6	3	-
	Detection of active principals in toxic plants (2)		-	3
32	Hazard of animal poisons	6	3	-
	Slides for animal poisons		-	3
33	Hazards of corrosives (1)	6	3	-
	Using of laboratory animals for diagnosis of poisons (1)		-	3
34	Hazards of corrosives (2)	6	3	-
	Using of laboratory animals for diagnosis of poisons (2)		-	3
35	Mutagenesis	6	3	-
	Slides for chromosomal and numerical aberrations		-	3
36	Carcinogenesis	6	3	-
	Case study for carcinogenic poisons		-	3
Total		216		

5-Teaching and learning methods

5.1- Lecture using PowerPoint presentations.

5.2- Learning through tutorials.

5.3- Independent reading throughout basic Text books and research papers.

6-Student assessment

6.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	IS	P&P.S	G.S
Final Exam	a1-a12	b1-b8	c1-c13	d2-d4



Course Specification of Postgraduate

Practical Exam	a3, a4, a7 & a9	b2, b3, b4 & b8	c3: c6, c9: c11 & c13	d1
Oral Exam	al-a12	bl-b8	cl-c13	d3

6.2. Assessment schedules

Method	Week(s)
Practical exams	During the last month
Final exams	During the last month
Oral Exam	During the last month

6.3. Weight of assessments

Assessment	Weight of assessment
Practical exams	25%
Final exams	50 %
Oral Exam	25 %
total	100 %

7- List of references

7.1. Notes and books

Course Notes: Prepared by departments' staff

- Notebook: Forensic Medicine and Veterinary regulation

7.2. Essential books:

- **Forensic Medicine and Law**
- Casarett and Doull's Toxicology. The Basic Science of Poisons Klaassen. C.D., McGraw-Hill, New York. 7 th ed.. 2008.
- **Forensic Science Advances and their Application in the Judiciary System** Edited by Danielle Sapse, Lawrence Kobilinsky
- **"Forensic Applications of High Performance Liquid Chromatography**
By Shirley Bayne, Michelle Carlin

Introduction to toxicology, Timbrell, J., 3rd., Taylor & Francis, USA
2003.

7.3. Recommended texts:

- Principles and Methods of Toxicology: Hayes, A.W., 5th ed.. CRC Press. New York, 2007.
- Handbook of Toxicology: Derelanko, M.J. and Hollinger. M.A.. 2nd ed.. CRC Press , Boca Raton, 2002.
- **Web Sites, ... etc**
 - Forensic Medicine J
 - Toxicol. Appl. Pharmacol.
 - Toxicol. In vitro.



Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

- American J For. Med
<http://www.toxicology.org/>
- <http://www.ivis.org/advanccs/Beaslcy/>
- <http://www.sciencedirect.com/>

Course Coordinators

Dr. Nour El Houda Yassein

Head of Department

Prof. Dr. Khaled Abdou



Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Medico-legal investigation team	1	1	1	1,2	1
2	Examination of crime scene	2	2,10	1,2	2	2
3	Examination of carcasses at the scene	3	2,3	1,2	8	2
4	Autopsy picture	4	3	1	10	1,2
5	Internal examination (1)	5	11	2	1,7	3,4
6	Internal examination (2)	6	2	3	2	1
7	Sampling	7	3	1	1,2	2
8	Preservation of samples	8	2,3	6	2	3
9	Laboratory investigations (1)	9	3	1,2	11	2
10	Laboratory investigations (2)	10	3	5	2	1
11	Factors affecting the laboratory findings	11	11	1,2	1,2	1
12	Interpretation of laboratory findings	12	2,3	7	1,3	1
13	Medico-legal report	13	2	1,2	2	2,4
14	Medico-legal evidence of the court	14	5	1,2	2	1
15	Toxicological concepts and terminology	15	3	1,2	11	1,3
16	Classification of poisons and toxic effects	16	8	3,4	5	4
17	Common causes of animal poisoning	17	3,4	5	6	
18	Factors affecting toxicological action of poisons	18	3,6	1,4	13	2
19	Metabolism of poisons (1- Absorption – Transport)	19	12	3,5	7	3



Beni Suef University
Faculty of Veterinary Medicine

Course specification

20	Metabolism of poisons (2- Distribution-Excretion)	20	6	3	3,5	2,4
21	Metabolism of poisons (3- Biotransformation – Bioactivation)	21	7	2	3	1,3
22	Mechanisms of actions	22	9	5	2	2,4
23	Diagnosis of poisoning	23	5,7	3,4	6	3
24	Treatment of poisoning	24	3,8	1,3	5	1
25	Toxic hazards of metals (1)	25	1,8	5	3	3
26	Toxic hazards of metals (2)	26	6,8	4	8	4
27	Toxic hazards of pesticides (1)	27	10	3	4	2,4
28	Toxic hazards of pesticides (2)	28	9	8	12	3
29	Toxic hazards of mycotoxins	29	7	3,7	1,5	2
30	Hazards of toxic plants (1)	30	7,8	5	3,5	1
31	Hazards of toxic plants (2)	31	4	3,2	2,3	3
32	Hazard of animal poisons	32	2,8	5	10	4
33	Hazards of corrosives (1)	33	11	3	2	2
34	Hazards of corrosives (2)	34	3,5	1	5	4
35	Mutagenesis	35	12	5	3	1,2
36	Carcinogenesis	36	8	3,4,5	1	3



Beni Suef University
Faculty of Veterinary Medicine

University: Beni-Suef University, Egypt.

Faculty: Faculty of Veterinary Medicine.

Departments: Pathology

Course specification

A- Administrative Information:

Course Code:	
Course title :	Pathology
Academic year:	Postgraduate students.
Program title:	Diploma of Vet. Med. Sciences (Animal toxicology).
Degree:	Diploma.
Contact hours/ week	4 hours per week (2hr theoretical and 2hr practical).
Course coordinator:	Dr. El-Shimaa nabil.
External evaluator(s)	Prof. Dr. Sary Khalil
Date of course approval:	

B-Professional information

1- Overall aims of course:

This course aims to:

Acquire knowledge on different aspects and mechanism of toxicity with reference to environmental toxicants and pathogenesis of infectious pollutants. Identify the pathological lesions and pathogenesis and tissue reaction to infectious pollutants. Understand Mechanism, by which the disease developed, progressed and squealed. aware with tissue specimens preparations and full description to macroscopic and microscopic pathological changes

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 toxic agent.
- a.2. Outline the relationship between causes and tissue/organ changes.
- a.3. Describe the macroscopic & microscopic tissue changes of the toxic agents.
- a.4. Recognize Knowledge about typing and classification of different tissue/organ changes.
- a5. Illustrate the pathogenesis of the toxic agents.

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. Di erentiate between the di erent 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

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. Toxins, xenobiotics, and toxicity and Mechanism of toxic cell injury	16	8	8
	4. Environmental pollutants (gases, chemicals, particulates) and pneumonconiosis)	16	8	8
	5. Toxicologic pathology of relevant optional system (mechanism – response – lesion)	12	6	6
	6. Teratogenic effect - Cardiac and neurotoxic effect	16	8	8
	7. Hepatotoxicity - Nephrotoxicity	16	8	8
	8. Pathogenesis and tissue reaction to infectious pollutants (viral, bacterial, mycotic, parasitic).	16	8	8
	9-Activities	16	8	8
	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. 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
Final Exam	a1,a2, a3,a4	B1, b2, b3,b4, b5,	c1, c2, c3, c4,c5	d1
Practical Exam	a1, a2, a3 ,a5	b1, b2, b3, b4, b5	c1, c2, c3, c4, c5	d1, d2, d3 ,d4
Oral Exam	a1-a5	b1-b5	c1, c2c3, c4, c5	d1,d2, d3,d5

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:

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, Websitesetc

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

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

[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.cvmbs.colostate.edu/vetneuro/](http://www.cvmbs.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>

www.asvp.asn.au.com

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

www.altcancer.com

Course Coordinator

Dr. El-Shimaa Nabil

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)
Postgraduate students	Pathology 2 hours / week (Lec. 1hr/wk - Pract. 1hr/wk)	1. Introduction in pathology and histopathological techniques	1-3	1,3,4	1,2,3,4,5	1, 2,3,5	1-5
		2- General bases of pathological alterations (dist. In cell metabolism, Cell death, dist. In circulation, inflammation and healing and general tumors)	4-9	1,2,3,4,5	1,2,3,4,5	1, 2,3,4	
		3.Toxins, xenobiotics, and toxicity and Mechanism of toxic cell injury	10-13	1,2,3,4,5	1,2,3,4,5	1, 2,3,4	
		4. Environmental pollutants (gases, chemicals, particulates) and pneumonconiosis	14-17	1,2,3,4,5	1,2,3,4,5	1, 2,3,4,5	
		5. Toxicologic pathology of relevant optional system (mechanism – response – lesion)	18-20	1,2,3,4	1,2,3,4,5	1, 2,3,4	
		6. Teratogenic effect - Cardiac and neurotoxic effect	21-24	1,2,3,5	1,2,3,4,5	1, 2,3,4,5	
		7. Hepatotoxicity - Nephrotoxicity	25-28	1,2,3	1,2,3,4,5	1, 2,3,4,5	
		8. Pathogenesis and tissue reaction to infectious pollutants (viral, bacterial, mycotic, parasitic).	29-32	1,2,3,5	1,2,3,4,5	1, 2,3,4,5	
		9-Activities	33-36	1,2,3,5	1,2,3,4,5	1, 2,3,4,5	



Course Specification of Postgraduate

1-Basic information

Course Code:	D17-D
Course title :	Veterinary Pharmacology
Program title:	Diploma of Veterinary Toxicology
Contact hours/ week	4 hours/ week, (2 Lect./week, 2 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

This course aims to:

- a1-Prepare qualified graduates for the requirements of the veterinary pharmacology.
- a2-Identify quality principles and basics in veterinary pharmacology.
- a3- Develop the information technology skills of veterinary pharmacology .
- a4-Acquire specific Knowledge about Chemotherapy and Clinical pharmacology.
- a5- Acquire specific Knowledge about Drug toxicology and Fish pharmacology.

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a1- Acquire specialized principles, theories and hypotheses in the veterinary pharmacology.
- a2- Be aware about the pharmacokinetics and pharmacodynamics of drugs.
- a3- Acquire specialized knowledge about drugs affecting ANS, CNS, Reproductive system (Autacoids and reproductive Hormones), Urinary system, Respiratory system, Digestive system, Cardiovascular system, Skin and eye and Metabolism, Clinical pharmacology and Fish pharmacology.
- a4- Recognize therapeutic uses, side effects and toxicity of different drugs.

b-Intellectual skills

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

- b1- Select the appropriate methods for determination of the drug actions, mechanism of action, kinetics, side effects and toxicity.
- b2- Differentiate between the effects of different drugs act on body systems.
- b3- Prepare the student to deal pharmacologically with certain cases suffering from veterinary diseases.
- b4- Creates a good planning technique for performing and analysis of drug bioassays.

C- Professional and practical skills

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

- c1-Prepare the postgraduate for injection of living laboratory animals with different drugs.
- c2- Prepare the postgraduate to make the drug forms necessary for treatment certain diseases.
- c3- Write efficiently prescriptions for treating diseases.
- c4- Analyze factors that leads to failure of drug treatments.
- c5- Assess pharmacological effects of drugs on laboratory animals as well as isolated tissue preparations.



Course Specification of Postgraduate

d- General and transferable skills

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

- d1- Practice self-evaluation and need assessment.
- d2- Utilize different available resources for efficient obtaining of knowledge and information.
- d3- Own continuous and self-learning of programs of computer related to pharmacology such as (R-strip, Micromath, Scientific software, USA).
- d4- Lead a team work in a certain professional task.
- d5- Own continuous connection with drug companies, pharmacists and the friends in the career.

4-Topics and contents

Course	Topic	No. of hours	Lectures	Practical
(Lec. h./week, Pract h./week) Diploma of veterinary pharmacology	*General pharmacology	12	6	6
	*Autonomic N.S.	12	6	6
	*Central N.S.	38	8	30
	*Reproductive S.	2	2	-
	*Skin and Eye	2	2	-
	*Urinary S.	2	2	-
	*Cardiovascular S.	2	2	-
	*Respiratory S.	2	2	-
	*Digestive S.	2	2	-
	*Drugs affecting metabolism	2	2	-
	*Antibiotics	36	6	30
	*Sulfonamides	2	2	-
	*Other antimicrobials	2	2	-
	*Anthelmintics	4	4	-
	*Antifungal	1	1	-
	*Antiprotozoals	4	4	-
	*Hormones	2	2	-
	*Disinfectants and antiseptics	2	2	-
	*Antivirals	1	1	-
	*Antitubercular	1	1	-
	*Antitumor	1	1	-
	* Clinical pharmacology	4	4	-
	*Drug toxicology	4	4	-
*Fish pharmacology	4	4	-	
	Total	144	72	72



Course Specification of Postgraduate

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.....).

7-Student assessment

7.1. Assessments methods:

Method	Matrix alignment of the measured ILOs/ Assessments methods			
	K&U	LS	P&P.S	G.S
Final Exam	a1-a4	b1-b4		d1-d5
Practical Exam	a1-a4		c1-c4	d1-d4
Oral Exam	a1,a4	b1-b4		d1-d4

7.2. Assessment schedules

Method	Week(s)
Practical exams	During the last month
Final exams	During the last month
Oral Exam	During the last month

7.3. Weight of assessments

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

8- List of references

8.1. Notes and books

Departmental notes on:

* Basis of pharmacology by Prof. Dr. Mohamed Abd Allah Tohamy (2015/25136).

*Textbook of practical pharmacology

8.2. Essential books:

- *(Present in library of Faculty of Veterinary Medicine, Beni-Suef University)*

*Walker, D.G.; Renwick, A.G. and Hillier, K. (2001):

Medical pharmacology and therapeutics.

First Ed. University of Southampton printed in Spain

8.3. Recommended texts:

-- *(Present in library of Faculty of Veterinary Medicine, Beni-Suef University)*

*Nicholas H. Booth and E. McDonald (2005):

5th Edition, Jones Veterinary Pharmacology and Therapeutics (2005)

*Goodman, L.S. and Gilman, A. (2006):



Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

The pharmacological basis of therapeutics 8th Ed. Iowa State University Press USA

***Robert L. Bill (2006):**

3rd Edition, Clinical Pharmacology and Therapeutics for the Veterinary Technician

***Satish K. Garg (2006):** 1st Edition-Reprint, Veterinary Toxicology

Norman Holland and Michael Patrick Adams (2007):

2nd Edition, Core Concepts In Pharmacology

8.4. Journals, Websitesetc

Journals:

*Journal of Veterinary Pharmacology and Therapeutics

*The Science and Practice of Pharmacy

*The Pharmacological Basis of Therapeutics

*Journal of Antimicrobial Chemotherapy

*Journal of Antibiotics

*British Journal of Pharmacology

*International Journal of Antimicrobial Agents

Websites:

[http://www.sciencedirect.com/science?...](http://www.sciencedirect.com/science?)

[ncbi.nlm.nih.gov/entrez/query.fcgi?...](http://ncbi.nlm.nih.gov/entrez/query.fcgi?)

[http://www.sciencedirect.com/science?...](http://www.sciencedirect.com/science?)

[ncbi.nlm.nih.gov/entrez/query.fcgi?...](http://ncbi.nlm.nih.gov/entrez/query.fcgi?)

Course Coordinators

Dr. Abeer Mohamed Radi

Head of Department

Prof. Dr. Mohamed Abd Allah Tohamy



Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	*General pharmacology	1,2,3	1,2	1	1	1
2	*Autonomic N.S.	4,5,6	3	1	5	1
3	*Central N.S.	7,8,9,10,11,12,13,14,15,16	3	1	5	1
4	*Reproductive S.	16	3,4	1	5	1
5	*Skin and Eye	17	3,4	2,3	3,4	1
6	*Urinary S.	17	3,4	2,3	3,4	1
7	*Cardiovascular S.	18	3,4	2,3	3,4	1
8	*Respiratory S.	18	3,4	2,3	3,4	1
9	*Digestive S.	19	3,4	2,3	3,4	1
10	*Drugs affecting metabolism	19	3,4	2,3	3,4	1
11	*Antibiotics	20,21,22,23,24,25,26,27,28	2,4	1,4	1,2,3	3,5
12	*Sulfonamides	29	2,4	1,4	1,2,3	3,5
13	*Other antimicrobials	29	2,4	1,4	1,2,3	3,5
14	*Anthelmintics	30	2,4	1,4	1,2,3	3,5
15	*Antifungal	31	2,4	1,4	1,2,3	3,5
16	*Antiprotozoals	31,32	2,4	1,4	1,2,3	3,5
17	*Hormones	32	3	3	4	5
18	*Disinfectants and antiseptics	32,33	3	3	4	5
19	*Antivirals	33	2,4	1,4	1,2,3	3,5
20	*Antitubercular	33	2,4	1,4	1,2,3	3,5
21	*Antitumor	33	2,4	1,4	1,2,3	3,5



Beni Suef University
Faculty of Veterinary Medicine

Course specification

22	* Clinical pharmacology	34	2,4	1,4	1,2,3	2,4
23	*Drug toxicology	35	2,4	1,4	1,2,3	2,4
24	*Fish pharmacology	36	2,4	1,4	1,2,3	2,4



Beni Suef University
Faculty of Veterinary Medicine



Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

1-Basic information

Course Code:	
Course title :	Forensic Chemistry
Program title:	Diploma of animal toxicology and forensic medicine
Contact hours/ week	3 hours/ week, (1 Lect./week, 2 Practical/week)
Approval Date	

2-Professional information

Overall aims of course:

The course will aim to produce professional forensic scientists with highly adaptable and practical scientific basic and skills, provided with a detailed knowledge concerning the selection and collection of case materials, as well as understanding the analytical techniques used in forensic biochemistry laboratories for the isolation and identification of poisons.

By completion of the course, students should have an understanding of:

- The scope of forensic chemistry, its origins and current practice
- Legislation controlling the use of poisons when used in therapy
- Toxicokinetics and toxicodynamics of toxins
- Specific types of poisons, their toxicity and risk assessment
- Biochemical investigation, the analytical techniques used and their standards
- Interpretation of results: importance of chemical and legal aspects
- Application of theory to case studies

3- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

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

- a1. Understand the forensic biochemistry concepts and terminology
- a2. Be aware of the different techniques and instrumentation used for forensic biochemistry
- a3. Recognize the different screening and analysis methods used for the most common poisons



Course Specification of Postgraduate

- a4. Realize the biochemical analysis methods for metals and pesticides toxicity.
- a5. Be able to collect suspected samples and detect the expected toxicants.
- a6. Emphasize the methods used for mycotoxin analysis.
- a7. Recognize the different methods for forensic analysis in hair and saliva.
- a8. Be aware with the recent application of immunoassays and electrophoresis in forensic toxicology.

b-Intellectual skills

The students will be able to:

- b1. Carry out the analysis of stomach content, urine, blood ,food & water
- b2. Detect the metals and mycotoxin in the suspected samples.
- B3. Appraise the ideal instrumentation and technique for forensic analysis.
- B4. Assess the toxicological impacts in different biological samples as hair and saliva.
- b5. Utilize the quality control measures and assessment

C- Professional and practical skills

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

- c1. Follow the international guidelines and protocols for biochemical analysis.
- c2. Carry out sampling, labeling, transport and preservation of suspected samples.
- c3. Perform different methods of biochemical analysis.
- c4. Monitor the levels of metals, pesticides and mycotoxins in different samples.
- c5. Familiar with different biochemical analysis techniques.

d- General and transferable skills

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

- d1. Work effectively as part of a team, demonstrating decision making and time management.
- d2. Efficiently make use of library facilities and tools.
- d3. Explore appropriate computer / keyboard skills including word processing, spreadsheets, presentation packages and graph plotting.
- d4. Undertake written assignments and oral presentations.

4-Topics and contents

Time/ Week	Topics	No. of hours	Credit Hours/week	
			T	P
1	Quality control and assessment		1	-----



Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

	Spectrophotometry & fluorometry	3	-----	2
2	Statistics for forensic biochemistry	3	1	-----
	Biochemical determination of poisons in plasma or urine Spectrophotometrically		-----	2
3	Sampling: tissues,organs, body fluid & excreta	3	1	-----
	Biochemical determination of Carboxyhemoglobin (COHb) in whole blood using spectrophotometer		-----	2
4	Sample transport and storage	3	1	-----
	Biochemical determination of cyanide in whole blood by microdiffusion.		-----	2
5	Sample preparation for the biochemical analysis	3	1	-----
	Colorimetric measurement of poisons.		-----	2
6	Color tests	3	1	-----
	Fluorescence and phosphorescence.		-----	2
7	Theoretical aspects of chromatography	3	1	-----
	Applications of gas chromatography in analytical biochemistry		-----	2
8	Thin-Layer Chromatography	3	1	-----
	Use of HPLC in analytical biochemistry		-----	2
9	Gas chromatography: Principles & injectors	3	1	-----
	Preliminary screening tests for pesticides.		-----	2
10	Gas chromatography: detectors	3	1	-----
	Biochemical analysis of organochlorine insecticides		-----	2
11	Gas chromatography: columns	3	1	-----
	Biochemical analysis of organophosphorus insecticides		-----	2
12	Derivatization for GC	3	1	-----
	Biochemical analysis of carbamate insecticides		-----	2
13	HPLC: general considerations	3	1	-----
	Biochemical analysis of Fungicides		-----	2
14	Detection in HPLC	3	1	-----
	Biochemical analysis of Herbicides		-----	2
15	Columns for HPLC	3	1	-----
	Biochemical analysis of rodenticides		-----	2
16	Modes of HPLC	3	1	-----
	Biochemical analytical methods for volatile substances		-----	2
17	Mass Spectrometry- Instrumentation	3	1	-----
	Forensic biochemical analysis of cannabis		-----	2
18	Gas chromatography-mass spectrometry	3	1	-----
	Forensic biochemical analysis hallucinogens		-----	2
19	Liquid chromatography-mass spectrometry	3	1	-----
	Forensic biochemical analysis of cocaine		-----	2



Course Specification of Postgraduate

20	Interpretation & Quantitative mass spectrometer	3	1	-----
	Forensic biochemical analysis of opium		-----	2
21	Trace Elements and Toxic Metals-sampling	3	1	-----
	Forensic biochemical analysis of amphetamines		-----	2
22	Atomic absorption spectrometry	3	1	-----
	Analysis of metals (1) Al, Sb, As, Cd		-----	2
23	Atomic emission and atomic fluorescence spectrometry	3	1	-----
	Biochemical analysis of metals (2) Pb, Hg, Se, Li, Fe.		-----	2
24	Inductively coupled plasma-mass spectrometry	3	1	-----
	Biochemical analysis of anions: CN, F, P., NO ₄		-----	2
25	Doping (1)	3	1	-----
	Hair analysis for drugs, toxicants and doping agents		-----	2
26	Doping (2)	3	1	-----
	Analysis of saliva for drugs and toxicants		-----	2
27	Basic principles of immunoassay	3	1	-----
	Biochemical analysis of aflatoxins		-----	2
28	Radioimmunoassay	3	1	-----
	Biochemical analysis of ochratoxins		-----	2
29	Enzyme immunoassay	3	1	-----
	Forensic biochemical analysis of physical agents associated with combustions		-----	2
30	Chemiluminescence immunoassay	3	1	-----
	Forensic biochemical analysis of paints and ink.		-----	2
31	Ultraviolet, Visible and Fluorescence Spectrophotometry	3	1	-----
	Forensic biochemical analysis of paper, fibers and polymers		-----	2
32	Infra-red and near-infrared spectroscopy	3	1	-----
	Biochemical analysis of dioxins		-----	2
33	Raman Spectroscopy	3	1	-----
	Polychlorinated biphenyls (PCBs)		-----	2
34	Nuclear Magnetic Resonance Spectroscopy	3	1	-----
	Measurement of unbound plasma concentrations of drugs		-----	2
35	Electrophoresis: Types and principles	3	1	-----
	Applications of electrophoresis in toxicology		-----	2
36	Capillary electrophoresis	3	1	-----
	Applications of capillary electrophoresis in toxicology		-----	2
Total		108		

5-Teaching and learning methods

5.1- Lecture using PowerPoint presentations.



Course Specification of Postgraduate

5.2- Learning through tutorials.

5.3- Independent reading throughout basic Text books and research papers.

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
Final Exam	a1-a8	b1-b5	c1- c15	d2-d4
Practical Exam	a2-a8	b1- b5	c1- c5	d1
Oral Exam	a1-a8	b1-b5	c1- c5	d3

6.2. Assessment schedules

Method	Week(s)
Practical exams	During the last month
Final exams	During the last month
Oral Exam	During the last month

6.3. Weight of assessments

Assessment	Weight of assessment
Practical exams	25%
Final exams	50 %
Oral Exam	25 %
total	100 %

7- List of references

7.1. Notes and books

Course Notes: Prepared by departments' staff
- Notebook: Forensic Toxicology

7.2. Essential books:

"**Forensic Science Advances and their Application in the Judiciary System** Edited by Danielle Sapse, Lawrence Kobilinsky
"**Forensic Applications of High Performance Liquid Chromatography**
By Shirley Bayne, Michelle Carlin

- **Veterinary Forensics: Animal Cruelty Investigation.** Merck, M.D., Wiley-Blackwell, USA, 2007.
- **Introduction to Veterinary and Comparative Forensic Medicine.** Cooper, J.E. and Cooper, M.E., Wiley-Blackwell, USA, 2007.
- **Animal Abuse and Unlawful Killing: Forensic veterinary pathology.** Munro, R. and Munro, H.M.C., Saunders Ltd, China, 2008.



Beni-Suef University
Faculty of Veterinary Medicine

Course Specification of Postgraduate

7.3. Recommended texts:

- Nonhuman DNA Typing: Theory and Casework Applications (Forensic Science Series). Coyle, H.M., CRC Press, Boca Raton, 2007.
- Forensic Entomology. The Utility of Arthropods in Legal Investigations. Byrd, J.H. and Castner, J.L., CRC Press, Boca Raton, 2009.
- Color Atlas of Forensic Medicine and Pathology. Catanese, C.A., CRC Press, Boca Raton, 2010.
- **Web Sites, ... etc**
 - Toxicol. Appl. Pharmacol.
 - Toxicol. In vitro.
 - American J Forn. Med.
 - Foren. Chem. J
 - <http://www.toxicology.org/>
 - <http://www.ivis.org/advances/Beasley/>
 - <http://www.sciencedirect.com/>

Course Coordinators

Dr. Nour El Houda Yassein

Head of Department

Prof. Dr. Khaled Abdou



Beni Suef University
Faculty of Veterinary Medicine

Course specification

	Topics	week	Intended learning outcomes of course (ILOs)			
			K and U (a)	I.S (b)	P. P.S. (c)	G.T.S (d)
1	Quality control and assessment	1	1	1	1,2	1
2	Statistics for forensic biochemistry	2	2	1,2	2	2
3	Sampling: tissues, organs, body fluid & excreta	3	2,3	1,2	2	2
4	Sample transport and storage	4	3	1	2	1,2
5	Sample preparation for the biochemical analysis	5	3	1	2	3,4
6	Color tests	6	2	1	2	1
7	Theoretical aspects of chromatography	7	2	1	1,2	2
8	Thin-Layer Chromatography	8	2,3	1,2	2	3
9	Gas chromatography: Principles & injectors	9	3	1,2	1,2	2
10	Gas chromatography: detectors	10	3	1,2	2	1
11	Gas chromatography: columns	11	2	1,2	1,2	1
12	Derivatization for GC	12	2,3	1,2	1,2	1
13	HPLC: general considerations	13	2	1,2	2	2,4
14	Biochemical analysis of Herbicides	14	3	1,2	2	1
15	Columns for HPLC	15	3	1,2	2	1,3



Beni Suef University
Faculty of Veterinary Medicine

Course specification

16	Modes of HPLC	16	8	3,4	5	4
17	Mass Spectrometry- Instrumentation	17	3,4	5	3	
18	Gas chromatography-mass spectrometry	18	24	1,4	2	2
19	Liquid chromatography-mass spectrometry	19	3	3,5	1	3
20	Interpretation & Quantitative mass spectrometer	20	6	3	3,5	2,4
21	Trace Elements and Toxic Metals-sampling	21	7	2	3	1,3
22	Atomic absorption spectrometry	22	4	5	2	2,4
23	Atomic emission and atomic fluorescence spectrometry	23	5,7	3,4	1	3
24	Inductively coupled plasma-mass spectrometry	24	3,8	1,3	5	1
25	Doping (1)	25	3,5	5	3	3
26	Doping (2)	26	6,8	4	2	4
27	Basic principles of immunoassay	27	4,7,8	3	4	2,4
28	Radioimmunoassay	28	5,7	1	2	3
29	Enzyme immunoassay	29	4,7	3	1,5	2
30	Chemiluminescence immunoassay	30	7,8	5	3,5	1
31	Ultraviolet, Visible and Fluorescence Spectrophotometry	31	4,7	3	2,3	3
32	Infra-red and near-infrared spectroscopy	32	2,8	5	4,5	4
33	Raman Spectroscopy	33	1,5	3	2	2
34	Nuclear Magnetic Resonance Spectroscopy	34	3,5	1	5	4
35	Electrophoresis: Types and principles	35	6,7	5	3	1,2
36	Capillary electrophoresis	36	2,6,8	3,4,5	1	3



Beni Suef University
Faculty of Veterinary Medicine

Course specification

--	--	--	--	--	--	--



Beni Suef University
Faculty of Veterinary Medicine