

**University:** Damanhour  
**Department:** Veterinary Forensic Medicine and Toxicology

**Faculty:** Veterinary Medicine

## Veterinary Forensic Medicine and Toxicology Course Specifications (2010 - 2011)

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<b>Program(s) on which the course is given:</b>	BVSc	
<b>Department offering the program:</b>	-----	
<b>Department offering the course:</b>	Veterinary Forensic Medicine and Toxicology	
<b>Major or Minor element of programs:</b>	Major	
<b>Academic year /Level:</b>	4 <sup>th</sup> Year	2 Semesters
<b>Date of specification approval:</b>		

### A. BASIC INFORMATION

**Title:** Veterinary Forensic Medicine and Toxicology

**Code:** 4AFOR, 4BFOR

**Hours:**

**Lectures** 2 hrs/week

**Practical** 2 hrs/week

**Total** 120 hrs

### B. PROFESSIONAL INFORMATION

**1. Overall aims of the course:**

- **Knowledge:** about types and sources of different toxicants that might occur in animal and fish environments and the diseases caused by them.
- Knowledge about animal identification, signs and different causes of death.
- **Skills:** Diagnosis and treatment of poisoning in farm animals. Writing a medical report and solving forensic problems, interpretation of forensic and toxicological data.

**2. Intended Learning Outcomes (ILOs) of the Course:**

**a. Knowledge and Understanding:**

- a1** The graduate has the knowledge and understanding the principles of forensic medicine and toxicology.
- a2** The graduate has the knowledge of the types and sources of toxicants polluting the animal, avian and aquatic environments and the diseases caused by them
- a3** The graduate has the knowledge of the methods of animal identification, possible causes of death
- a4** The graduate has the knowledge of veterinary regulations and ethics relevant to veterinary practice.
- a5** The graduate has the knowledge and understanding of how to interpret from clinical signs, laboratory diagnosis, and history, the final diagnosis of forensic and toxicological problems and adapt the proper treatment for such cases.
- a6** The graduate must be aware of the importance of research for the extension of the knowledge base in veterinary practice.
- a7** The graduate must demonstrate good professional attitude, interpersonal skills and team working ability.

**b. Intellectual Skills:**

- b1** The graduate has the ability to analyze the clinical evidence relevant to toxicological diseases.
- b2** The graduate has the ability to choose and apply appropriate quantitative and qualitative methodologies requested for laboratory diagnosis.
- b3** The graduate should exhibit creativity or resource fullness in minimizing hazardous of toxicants in animals environments.
- b4** The graduate has the ability to recognize and evaluate toxicological and forensic problems, identification and solving measures.

**c. Professional and Practical Skills:**

- c1** Collection, preservation and transportation of AM and PM samples; performing standard practical laboratory techniques, interpreting laboratory results.
- c2** Recognize and outline initial treatment for poisoned animals with life-threatening conditions.
- c3** Interpreting forensic and toxicological data and solving forensic-based problems
- c4** Writing medico-legal report

**d. General and Transferable Skills:**

- d1** Work effectively as a member of a team-work in the delivery of services to community
- d2** Use new technology and have access to internet veterinary web sites and retrieve information.
- d3** To be good guide in practicing veterinary medicine with responsibility and ethically.
- d4** Communicate effectively with the public, colleagues and appropriate authorities

**3. Contents:**

1 <sup>st</sup> Semester			
Topic	No. of Hours	Lectures	Practical
<b>Veterinary Forensic Medicine</b>			
1. Signs and Changes of Death	6	3	3
2. Causes of Death	6	3	3
3. Wounds and Head Injuries	4	2	2
4. Fire-arm Injuries	4	2	2
5. Asphyxial Death	6	3	3
6. Blood and Semen Stain Examinations	4	2	2
7. Pregnancy, Abortion and Sexual Offences	4	2	2
8. Forensic Toxicology	4	2	2
9. Medico-legal Report	4	2	2
<b>القوانين واللوائح والإجراءات البيطرية</b>			
10. آداب وأخلاقيات مهنة الطب البيطري	4	2	2
11. الغش والتدليس التجاري	4	2	2
12. حقوق الحيوان، قوانين المجازر، حالات القسوة علي الحيوان	4	2	2
13. الحجر البيطري	4	2	2
<b>2<sup>nd</sup> Semester</b>			
<b>Veterinary Clinical Toxicology</b>			
1. Concepts of General Toxicology (I)	4	3	3

2. Concepts of General Toxicology (II)	4	3	3
3. Concepts of General Toxicology (III)	6	3	3
4. Pesticides: Insecticides (I) (Organophosphates and Carbamates)	6	3	3
5. Pesticides: Insecticides (II) Organochlorine and Pyrethroids	6	3	3
6. Rodenticides, Fungicides, Molluscides and Herbicides	4	2	2
7. Irritant Toxicants	6	3	3
8. Drugs and Feed Toxicants	6	3	3
9. Toxic Gases and Corrosives	4	2	2
10. Poisonous Plants (I)	6	3	3
11. Poisonous Plants (II)	6	3	3
12. Biotoxins (Mycotoxins, Zoo Toxins, Bacterial Toxins)	4	2	2
<b>Total</b>	<b>120</b>	<b>60</b>	<b>60</b>

#### 4. Teaching and Learning Methods:

- 4.1 Lectures and practical of different topics of the subject
- 4.2 Collection of recent information from textbooks and websites Field visits (EPA labs, Forensic labs, animal & fish farms, quarantines)
- 4.3 Study of clinical cases in Faculty Clinic

#### 5. Student Assessment Methods:

Exam		
5.1	Written Mid-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	To assess professional and practical skills
5.4	Oral Final-term	To assess skills of analysis and discussion

#### Assessment Schedule (in each semester):

	Exam	Week
Assessment 1	Written Mid-term	8 <sup>th</sup>
Assessment 2	Written Final-term	16 <sup>th</sup>
Assessment 3	Practical Final-term	16 <sup>th</sup>
Assessment 4	Oral Final-term	16 <sup>th</sup>

#### Weighing of assessments

	Exam	Per Semester (%)	Total (%)
Assessment 1	Written Mid-term	10	20
Assessment 2	Written Final-term	25	50
Assessment 3	Practical Final-term	10	20
Assessment 4	Oral Final-term	5	10
	<b>Total</b>	<b>50</b>	<b>100</b>

#### 6. List of References:

##### 6.1. Course Notes:

- Lecturers Notes (not Printed)

##### 6.2. Essential Books:

- Veterinary Clinical Toxicology, By Clarke (2002)

- Veterinary Toxicology By Satish (2007)
- Introduction to Veterinary and Comparative Forensic Medicine By John E. Cooper, Margaret E. Cooper (2007)
- Veterinary Forensics: Animal Cruelty Investigations By Melinda D. Merck (2007)
- Forensic Pathology, 1<sup>st</sup> Ed., By Dominick and Vincent (1993)

### 6.3. Recommended Books:

- Haye's Book in Principles and Methods in Toxicology (2007)
- Casarett & Doull's Toxicology, 7e By C.D. Klaassen (2008)
- Fundamental Toxicology By J.H. Duffus, H.G.J. Worth (2006)
- Clinical Toxicology: Principles and Mechanisms By F.A. Barile (2005)
- Principles of Biochemical Toxicology, 4e By J.A. Timbrell (2003)
- Goldfrank's Manual of Toxicologic Emergencies By R.S. Hoffman et al. (2007)
- Stockley's Drug Interactions, 8e By K. Baxter (2008)
- Antidotes By R.J. Flanagan, A.L. Jones (2002)

### 6.4 Websites, Periodicals ..... etc

#### Websites:

- A Guide to Plant Poisoning of Animals in North America:  
[http://www.ivis.org/signin.asp?url=/special\\_books/Knight/toc.asp](http://www.ivis.org/signin.asp?url=/special_books/Knight/toc.asp)
- American Board of Veterinary Toxicology (ABVT): <http://www.abvt.org/public/index.html>
- Australian Pesticides and Veterinary Medicines Authority (APVMA):  
<http://www.apvma.gov.au/index.asp>
- Environmental Health and Toxicology: <http://sis.nlm.nih.gov/enviro.html>
- Guide to Poisonous Plants:  
[http://southcampus.colostate.edu/poisonous\\_plants/index.cfm?countno=NO](http://southcampus.colostate.edu/poisonous_plants/index.cfm?countno=NO)
- National Center for Toxicological Research: <http://www.fda.gov/nctr/index.html>
- Plants Toxic to Animals: <http://www.library.uiuc.edu/vex/vetdocs/toxic.htm>
- Poisonings, Bites and Envenomations: [http://www.virtual-anaesthesia-textbook.com/vat/poisoning\\_bites.html](http://www.virtual-anaesthesia-textbook.com/vat/poisoning_bites.html)
- Production Animal Clinical Toxicology: <http://vein.library.usyd.edu.au/links/pact/>
- Society of Toxicology: <http://www.toxicology.org/>
- TOXNET: <http://toxnet.nlm.nih.gov/>

#### Periodicals in Toxicology:

- American Journal of Pharmacology and Toxicology
- Anil Aggrawal's Internet Journal of Forensic Medicine & Toxicology
- Annual Review of Pharmacology and Toxicology
- Archives of Environmental Contamination and Toxicology
- Archives of Toxicology
- Basic & Clinical Pharmacology & Toxicology
- Bulletin of Environmental Contamination and Toxicology
- Cell Biology and Toxicology
- Chemical Research in Toxicology
- Clinical Toxicology
- Comments on Modern Biology. Part B, Comments on Toxicology
- Comparative Biochemistry and Physiology. Part C.
- Comparative Biochemistry and Physiology. Toxicology and Pharmacology
- Critical Reviews in Toxicology
- Cutaneous and Ocular Toxicology
- Drug and Chemical Toxicology

- Environmental Toxicology
- Environmental Toxicology and Chemistry
- Environmental Toxicology and Pharmacology
- Environmental Toxicology and Water Quality
- European Journal of Genetic and Molecular Toxicology
- European Journal of Genetic Toxicology
- Food and Chemical Toxicology
- Fundamental and Applied Toxicology
- Inhalation Toxicology
- International Journal of Toxicology
- Journal of Applied Toxicology
- Journal of Biochemical and Molecular Toxicology
- Journal of Biochemical Toxicology
- Journal of Environmental Science and Health
- Journal of Pharmacology and Toxicology
- Journal of the American College of Toxicology
- Journal of Toxicology and Environmental Health
- Journal of Toxicology
- Medical Toxicology and Adverse Drug Experience
- Mutation Research
- Mutation Research - Genetic Toxicology and Environmental Mutagenesis
- Mutation Research - Reviews In Genetic Toxicology
- Neurobehavioral Toxicology and Teratology
- Nonlinearity in Biology, Toxicology, Medicine
- Regulatory Toxicology and Pharmacology
- Reproductive toxicology
- Research Journal of Environmental Toxicology
- The Internet Journal of Toxicology
- The Open Toxicology Journal
- Toxicology
- Toxicology and Applied Pharmacology
- Toxicology and Industrial Health
- Toxicology in Vitro
- Toxicology Letters
- Toxicology Mechanisms and Methods
- Toxicology Methods
- Toxin Reviews

**Periodicals in Forensic Medicine:**

- Forensic Science, Medicine and Pathology
- Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology
- Environmental Forensics
- Forensic Science
- Forensic Science International
- Forensic Toxicology
- Internet Journal Of Forensic Science
- Journal of Clinical Forensic Medicine
- Journal of Forensic and Legal Medicine
- Journal of Forensic Sciences
- National Forensic Journal
- The American Journal of Forensic Medicine and Pathology

- The Australian Journal of Forensic Sciences
- The British Journal of Forensic Practice
- The Internet Journal of Forensic Science
- The Open Forensic Science Journal

#### **7. Facilities Required for Teaching and Learning**

- Datashow and other audio-visual aids
- Laboratory animal unit
- Binuclear microscopes
- Update of Faculty library (textbooks and multimedia)

**Course Coordinator:** Dr. Yasser S. El-Sayed

**Head of Department:** Prof. Dr. Hatem S. Abd El-Hamid

**Date:**