Beni-Suef University
Faculty of Veterinary Medicine
Department of/ Forensic medicine and Toxicology

Course specification (2017-2018)

1-Basic information

Course Code:	**S 4 - FOMD**
Course title :	Toxicology and forensic medicine
Academic year:	4tht Year, 1st and 2nd terms
Program title:	Bachelor degree of Veterinary Medical sciences
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:

- Offer the academic knowledge and practical experience about the toxicants, their mode of action, signs, diagnosis and how can treat them and control .
-deliver core knowledge in the forensic medical sciences and the student will be apple to identify ,understand and apply the legal, professional and ethical aspect of forensic medicine.

3- Intended learning outcomes of course (ILOs)

a-Knowledge and understanding:

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

a1- Recognize different types of toxicants, factors affecting toxicity, metabolism and the basic lines of diagnosis and treatment

a2- List the classes and types of toxicants.

a3- Recognize different types of pesticides, metallic poison, Plant poisons, animal poisons, Gases &volatile poisons and corrosives

a4- Describe the mode of action of different kind of toxicant

a5- Conclude the diagnosis and treatment of different types of toxicants

a6- Distinguish samples collection for medico legal lab.

a7- Explain direct and indirect causes of death

a8- Recognize the different signs and postmortem changes after death

a9- Describe the different types of weapons and explosion

a10- Recognize the different types of wounds and burns

a11- Distinguish different types of asphyxia.

a12- Recognize the international guidelines for keeping animal rights. .

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b-Intellectual skills

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

b1- analyse sample analysis from poisoned animal.
b2- Organize thinking for how to diagnosis of toxicity.
b3- compare different cases of toxicity and suitable methods for treatment.
b4- Interpret the molecular basis and mechanisms of death.
b5- Formulate the difference between natural and criminal death.
b6- Estimate the socio-economic compensation in wounded and burned animals
b7- Recognize the cases of criminal abortion and sexual crimes by DNA typing
b8- Suggest the real causes of asphyxia

c-Professional and practical skills

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

c1- Practice different methods of collection & preservation of diagnostic specimens.
C2- Assess Clinical, post-mortem, toxicological examinations of samples from poisoned animal
C3- Practice methods of treatment of poisoned animal.
C4- Design control measures to prevent mycotoxicosis.
C5-Detection of irritants
C6- contributes in solving criminals' events.
C7-Conduct methods of sampling, labeling, transport and preservation of suspected samples Perform different method for blood and semen differentiation
C8-Perform different method for blood and semen differentiation, perform ideal crime scene
C9- diagnose criminal abortion and sexual crimes.

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, Enhancing the ability of decision making
d2. Efficiently make use of library facilities and IT tools.
d3. Explore appropriate computer / keyboard skills including word processing, spreadsheets, presentation packages and graph plotting.
d4. Undertake written assignments and oral presentations.

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4-Topics and contents

Course	Topic	Week	No. of hours	Lectures	Practical
Toxicology (Lec. 2h./week, Pract. 2h./week) First semester	General toxicology	1	4	2	2
	Toxicity evaluation tests	2	4	2	2
	Reproductive toxicity tests and Teratology tests	3	4	2	2
	Irritants	4	4	2	2
	Corrosive poisons	5	4	2	2
	Mycotoxins &mycotoxicosis	6	4	2	2
	Pesticides Toxicology	7	4	2	2
	Plant poisons	8	4	2	2
	Animal poisons	9	4	2	2
	Gases &volatile poisons	10	4	2	2
	Eco toxicology	11	4	2	2
	Drug toxicity	12	4	2	2
	Necropsy protocol and Veterinary analytical toxicology	13	4	2	2
	Total	13	52	26	26

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Course	Topic	Week	No. of hours	Lectures	Practical
Forensic medicine (Lec. 2h./week, Pract. 2h./week) Second semester	Samples and sampling	1	4	2	2
	Death and postmortem changes	2	4	2	2
	Determination of animals types and sex by examination of bones and animal hair	3	4	2	2
	Death from heat , cold ,starvation and Burns	4	4	2	2
	Wounds and Firearm wounds	5	4	2	2
	Examination of blood and seminal stains	6	4	2	2
	Asphyxia	7	4	2	2
	Determination of animal types and age by examination of teeth	8	4	2	2
	criminal aboration	9	4	2	2
	Animal Doping	10	4	2	2
	Animal euthanasia	11	4	2	2
	serology and DNA typing	12	4	2	2
	Medico legal report	13	4	2	2
			52	26	26

5-Teaching and learning methods

5.1- Lectures (brain storming, 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 different antidote ,pesticides, poisonous plants , scorpions and snakes).

6-Teaching and learning methods for the students with disabilities

Not applicable

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
written exam	A1-a12	B1-b4, b6, b5, b7, b8.	-	-
Practical exam	-	-	C1-c9, c4,c7	D1-d4
Oral exam	A1-a12	B1-b4,b6.	-	-

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7.2. Assessment schedules/semester:

Method	Week(s)
written exam	During 15th-18th
Practical exam	14th week
Oral exam	During 15th-18th

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

Not applicable

8.2. Essential books:

1- Principles and Methods of Toxicology (2001). A. Wallace Hayes 4th Ed. Taylor & Francts
2- Veterinary toxicology (1995). E.G.C. Clarke and Myral. Clarke.1st, 2nd and 3rd Ed. Macmillan publishing Co. Inc., New York.
3- Veterinary Jurisprudence.(1981). S.N. Sharma. 3rd Ed. Oxford of IBH Publishing Co. Put. LTD.
4- Veterinary Jurisprudence.(1981). S.N. Sharma. 3rd Ed. Oxford of IBH Publishing Co. Put. LTD.

These books are found in the library of faculty of vetrinary medicine , Beni-suef Univ.

8.3. Recommended texts

1- Forensic Taphonomy. (1997). The postmortem fate of Human remains. William D. Haglund Marcella H. Sorg. Boca Raton New york. London Tokyo.
2- Molecular Toxicology. (2003). N. Plant Garland Science / Bios scienti c publisher Taylor& Francis group.
3- Small animal Toxicology. (1998). Roger. W. Feller, DUM Shawn P. Messonnier, DUM.St. Louis Baltimane Boston Carlsbad. Chicago Miuneapolis New York.
4- Hand Book of toxicology. (1995). Michael. J. Derelanko and Mannfred A. Hollinger. DNLM/DLC for library of Congerss. Boca. Raton New York London Tokyo.
5- Ecotoxicology (1996). Michael C. Newman and charles H. Jagoe. Lewis Publisher.

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6- Developmental toxicology. (1997). Ronald d. hood. CRC Press INC. United State America.
7- Poisoning and Toxicology (1998).Jerrold. B. Leikin and Frank P. paloucek. Lexi-comp INC. Canada.

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8.4. Journals, Websites ……..etc

Journals:

- Toxicology& applied pharmacology.
- Toxicology letters.
- American journal of clinical nitration.
- Animal feed science & technology.
- journal of forensic medicine
- journal of forensic toxicology
- journal of eco toxicology

Websites:

- Chtt:// www.toxicology.net/
- Chtt://www.ncbi.nlm.nih.gov
- C http://www.Google.com
- Chttp://intl.clinchem.org/
- www. Journal. of Toxicology and applied pharmacology.
- www.ivis.com
- www. Egyptian society of natural toxin
- www. Egyptian society of environmental toxin

Course Coordinators	Head of Department
Dr. Walaa A. Moselhy	Prof. Khaled Abdo

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Topic 1st term	Week	Intended learning outcomes of course (ILOs)			
		K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
General toxicology	1	1	1	1	1
Toxicity evaluation tests	2,3	2, 3,4	2, 3	1, 2,3	1
Reproductive toxicity tests	2	2,3,4	2, 3	1,2	1
Teratology tests	3	2,3,4	2, 3	1,2	2
Irritants	4	1,3	2,3	1,2	2
Corrosive poisons	5	2,3,4	2, 3	5	2
Mycotoxins &mycotoxicosis	6	2,4,5	1,2,3	4	1
Pesticides Toxicology	7	2,3,5	2,3	2,3	1
Plant poisons	8	2,3,4	3,4	2,3	1,2
Animal poisons	9	2,3,4	2,3	2,3	1,2
Gases &volatile poisons	10	2,3	2	2,3	2
Eco toxicology	11	1	1,2,3,4	1,2	2
Drug toxicity	12	2,3	2	2,3	1
Necropsy protocol	13	-	1,2	6	2
Veterinary analytical toxicology	13	-	1,3,4	1,2,3	1,2

Topic 2nd semester	Week	Intended learning outcomes of course (ILOs)			
		K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Samples and sampling	1	6	1	1,2	1
Identification	2,3	-	-	6	1
Death	2	7,8	4,5	7	1
postmortem changes	2,3	8	4	6,7,8	1
Determination of animals types and sex by examination of bones	3	-	-	6	2
Death from heat , cold ,starvation	4	7,8	5	6	2
burns	5	10	6	6	2
wounds	6	10	6	6	1
Firearm wounds	7	9,10	-	6	2
Examination of blood and seminal stains	8	-	-	7	1
Asphyxia	9	11	8	6	1,2
Differentition between different types of animal hair	8,9	-	-	6	1,2
Determination of animal types and age by examination of teeth	10	-	-	6	1
criminal aboration	11	-	7	9	2
Animal Doping	12	2,5	-	6	1
Animal euthanasia	13	2,5	6,7,8	6,7,8	2
serology and DNA typing	10,11	-	-	8	1,2
Medico legal report	11,12	12	8	6,7,8,9	1,2