Specification for Toxicology 2025/2026

1-Basic information

Course title	Toxicology							
Course code	**FMT.422**							
Department offering the course	Forensic Medicine and Toxicology							
Academic level at which the course is taught	4th year							
Semester	Spring							
Number of units/credit hours	**Theoretical**	**2**	**Practical**	**1(2)**	**Other**	**0**	**Total**	**3(4)**
Course Type	√ **Obligatory** **Elective**							
Academic program	Bachelor of Veterinary Medicine (BVM)							
University	Benha University							
Faculty	Veterinary medicine							
Name of course coordinator	Prof. Dr. Nabila Mahmoud							
Course Specification Approval Date	Department council on 8/7/2025							
Course Specification Approval (Attach the decision/minutes of the department /commitee/council ....)	**Faculty council on 27/8/2025**							

2-Course overview

- **Course contents written in the program bylaw:**
  General toxicology; toxic kinetic and toxic dynamics; clinical toxicology; antidotes, analytical toxicology; toxicity of pesticides; toxicity of heavy metals; mycotoxins; animal poisons; poisonous plants; radiation toxicity; environmental toxicology; toxic gases Role of nano- particles in toxicology field.

3- Course Learning Outcomes (CLOs):

	(NARS) outcomes	Course outcomes

	Code	Text	Code	Text
Knowledge and understanding	**2.10**	Toxicology and forensic medicine, animal medicine, theriogenology and veterinary surgery.	**a1**	Identify the basic knowledge of toxicology, fate of poison , types of antidotes and general treatment.
			a2	Mention causes of poisoning either plants, heavy metal, pesticides, mycotoxins and corrosives.
	2.12	The accurate measurements of veterinary quarantine	**a3**	Identify symptoms and P.M examination for each toxin
			a4	Explain the appropriate methods for diagnosis and differential diagnosis of different type of poison
			a5	Mention the veterinary therapy and principles for uses
	2.14	Basics of law and ethical codes relevant to animals and food hygiene.	**a6**	Describe the basic knowledge about laboratory analysis for poisonous
Intellectual skills	**4.1**	Foster critical thinking and scientific curiosity.	**b1**	Distinguish problem list
			b2	Interpret how case history, signs, P.M examination managed
			b3	Interpret the medical important of data collected.
			b4	Analyze the results obtained from their investigation and their value.
			b5	suggest to solve problems associated environmental pollution
Professional and practical skills	**3.4**	Perform clinical examination of diseased cases and collect relevant samples.	**c1**	Investigate the history of the case whether it is of an individual animal or a group of animals.
			c2	Detect clinical examination of poisoned cases and collect relevant

				samples.
			c3	Detect laboratory diagnostic procedures.
			c4	Determine more recent advanced techniques.
	3.6	Write a report about hygiene and safety of food of animal origin for human consumption.	**c5**	Manipulate emergency care to all species of animals.
	3.11	Utilize appropriate safety procedures to protect clients and co-workers	**c6**	Determine appropriate safety to protect clients and co- workers.
			c7	determine several strategies to minimize the risk of contamination
General and transferable skills	**5.1**	Work under pressure and / or contradictory conditions	**d1**	Work under pressure during lab cession Present scientifically and professionally the scientific information
	5.2	Function in a multidisciplinary team	**d2**	Work in a team during the Forensic medicine & veterinary regulations lab sessions.
	5.3	Communicate appropriately verbally and nonverbally	**d3**	Communicate with other colleagues for reaching diagnosis.
	5.5	Search for new information and technology as well as adopt life–long self-learning ethics	**d4**	Search for new information in the field of Forensic medicine & veterinary regulations.

4- Teaching and learning methods					
Lectures	√	**Discussion & seminar (Self-**	√	**Practical**	√

		learning)			
Presentation & movies	√	**Problem solving**	√	**Brain storming**	√
Others					

- Course Schedule:

Number of the Week	**Scientific content of the course (Course Topics)**	**Total Weekly Hours**	**Expected number of the Learning Hours**			
			Theoretical teaching (lectures/discussion groups/ .....)	**Training (Practical/ Clinical/ .....)**	**Self-learning (Tasks/ Assignments/ Projects/ ...)**	**Other (to be determined)**
W1	General toxicology 1	**3(4)**	**2**	**1 (2)**		**0**
W2	General toxicology2	**3(4)**	**2**	**1 (2)**		**0**
W3	Corrosive poisons1	**3(4)**	**2**	**1 (2)**		**0**
W4	Corrosive poisons2	**3(4)**	**2**	**1 (2)**		**0**
W5	Mycotoxicosis 1	**3(4)**	**2**	**1 (2)**		**0**
W6	Mycotoxicosis2	**3(4)**	**2**	**1 (2)**		**0**
W7	**Semester works (one hour exam)**					
W8	Food poisoning 1	**3(4)**	**2**	**1 (2)**		**0**
W9	Food poisoning2	**3(4)**	**2**	**1 (2)**		**0**
W10	Radiation1	**3(4)**	**2**	**1 (2)**		**0**
W11	Radiation2	**3(4)**	**2**	**1 (2)**		**0**
W12	Pesticide	**3(4)**	**2**	**1 (2)**		**0**
W13	Irritant poison	**3(4)**	**2**	**1 (2)**		**0**
W14	Poisonous plant	**3(4)**	**2**	**1 (2)**		**0**
W15	**Practical exam**					

5- Methods of students' assessment:

a- Assessment methods (summative and formative)

1. **Formative assessment**: including (weekly quizzes, homework assignments and surveys).
2. **Summative assessment** including (quizzes, class activities, Mid-term exam, practical exam, oral exams and final written exams).

b- Assessment schedule and weight

Assessment method	Assessment Timing	Marks/ Scores	Percent
Semester works including one hour exam	7th week	10	10%
Assignments / Project /Portfolio/ Logbook	Throughout semester		
Field training			
Formative assessment	Throughout semester	-	-
Practical exam	15th week	30	30%
oral exam	End of semester	10	10%
Written exam	End of semester	50	50%
Total		100	100%

6- Learning resources and supportive facilities:

Learning resources	**Main reference**	**Student handbook**: Forensic medicine and advance forensic medicine Edit by Staff members
	Essential books (text books)	• -Michael Barkly (2013) Recent advances in veterinary toxicology. • -B.J.Leonard Toxicologyical Aspects Of Food Safety • -Course notesMichael Barkly (2013) - Recent advances in veterinary toxicology. -E.G.C.Clarke Veterinary Toxicology
	Periodicals, Web sites, . . . etc	• Environmental contamination & toxicology. • Clincal toxicology.

		• www.ekb.eg
	Learning platform	Thinqi
Supportive facilities	**Devices & instruments**	• Water bath • Data show • computer • Test tube • Holder • Samples as (milk, fat) • NaOH 10% • Pyridine • Filter paper • Barium chloride • Silver nitrate • Ferrous sulphate • Calcium chloride • Lead acetate • Flame • potassium permanganate • Copper benzidine reagent • TLC paper • Sublimating tube • March apparatus • Gutzeit apparatus • Poisonous plants
		• Equipped teaching hall. • Equipped laboratory of forensic medicine and toxicology. • Forensic medicine and toxicology a fair. • Laboratory animal research unit

Matrices:

A- Content and ILOs matrix:

Topic	A) Knowledge and understanding	B) Intellectual skills	C) Professional and practical skills	D) General and transferable skills

General toxicology	a3,a5,a6	b1,b3,b4	c1,c2,c3	d1,d2
Corrosive poisons	a2,a5,a6	b4,b5	c2,c5	d1,d2,d3
Mycotoxicosis	a4,a5,a6	b3,b4,b5	c1,c4,c5	d1,d2,d4
Food poisoning	a4,a6	b1,b5	c2,c5,c6,c7	d1,d2,d4
Radiation	a4,a6,a5	b3,b4,b5	c2,c3,c5	d1,d2
Pesticide	a4,a5,a6	b1,b2,b5	c1,c3,c5,c6,c7	d1,d2
Irritant poison	a1,a6	b1,b5	c4,c5	d3,d4
Poisonous plant	a1,a6	b1,b5	c4,c5	d3,d4

B- Teaching and learning methods and ILOs matrix:

ILOs		**Teaching and Learning methods**					
		L	**P&M**	**D**	**P**	**Ps**	**Bs**
Knowledge and understanding	**a1**	√	√	√	√		√
	a2	√	√	√	√		√
	a3	√	√	√	√		√
	a4	√	√	√	√		√
	a5	√	√	√	√		√
	a6	√	√	√	√		√
Intellectual skills	**b1**	√	√	√	√	√	√
	b2	√	√	√	√	√	√
	b3	√	√	√	√	√	√
	b4	√	√	√	√	√	√
	b5	√	√	√	√	√	√
Professional and practical skills	**c1**		√	√	√	√	
	c2		√	√	√	√	

	c3		√	√	√	√	
	c4		√	√	√	√	
	c5		√	√	√	√	
	c6		√	√	√	√	
	c7		√	√	√	√	
General skills	**d1**				√		√
	d2			√	√		
	d3					√	√
	d4				√	√	

L **:Lecture,** P&M**: Presentations & Movies,** D&S: **Discussions & Seminars P: Practical** Ps: **Problem solving,** Bs: **Brain storming**

C- Assessment methods and ILOs matrix:

ILOs		**Assessment method**				
		Formative assessment	**Semester works (one hour exam)**	**Oral**	**Practical**	**Written**
Knowledge and understanding	**a1**	√	√	√		√
	a2	√	√	√		√
	a3	√	√	√		√
	a4	√	√	√		√
	a5	√		√		√
	a6	√		√		√
Intellectual skills	**b1**	√	√	√		√
	b2	√	√	√		√
	b3	√	√	√		√
	b4	√		√		√
	b5	√		√		√

Professional and practical skills	**c1**	√		√	√	
	c2	√		√	√	
	c3	√		√	√	
	c4	√		√	√	
	c5	√		√	√	
	c6	√		√	√	
	c7	√		√	√	
General skills	**d1**	√	√			
	d2	√	√			
	d3	√	√	√		
	d4	√	√			

Name and Signature
Course Coordinator

Prof. dr. Nabila Mahmoud

Name and Signature
Program Coordinator

Prof. Dr. Mahmoud Abouelroos