

## Toxicology (Pharmacology) Course Catalogue

### 2023-2024

College/ Institute	Shaqlawa Technical College	
Department	Medical laboratory technology	
Module Name	Toxicology	
Module Code	TOX805	
Semester	8	
Credits	4	
Module type	Prerequisite <input type="checkbox"/>	Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours	2	
Weekly hours (Theory)	( 2 )hr Class	( 3 )hr Workload
Weekly hours (Practical)	( 0 )hr Class	( 0 )hr Workload
Lecturer (Theory)	Kamaran Hussein Mohammed	
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Lecturer (Practical)		
E-Mail & Mobile NO.		

# Course Book

<b>Course Description</b>	The aim of this course is to provide students with an understanding and knowledge of clinical pharmacology, toxicology and therapeutic. The course particularly covers the mechanisms of various drug actions, the PD/PK principles that are fundamental for the therapeutic uses and safe selection of therapeutic agents in clinical practice. In addition, students will also gain knowledge of important aspects of toxicology and therapeutics.
<b>Course objectives</b>	<ul style="list-style-type: none"> <li>- This science deal with drugs and any agents that used to treatment sickness persons.</li> <li>- The mechanism of drug action</li> <li>- The pharmacodynamics of drugs</li> <li>- The pharmacokinetics of drugs</li> <li>- The toxins and antitoxins</li> <li>- The use of plant to treatment</li> </ul>
<b>Student's obligation</b>	1-The student attention in theoretical lectures in academic year. 2-Completion of all tests. 3-Attendance in exams. 4-Write or prepare reports.
<b>Required Learning Materials</b>	lecture halls with data show equipment for lecture presentations, white board, overhead projector, posters
<b>Assessment scheme</b>	16% Mid Term (Theory) 4% Quiz 40% Assignment (report, paper, homework, seminar.. 40% final theory
<b>Specific learning outcome:</b>	1. Differentiate indications and characteristics of selected drugs and medicinal substances used in human. 2. Correctly calculate quantities, dosage rates, mixtures and applications based on patient requirements. 3. Document use of pharmaceutical products to industry standards. 4. Distinguish among over the counter, prescription and

	<p>controlled substances.</p> <p>5. Safely store and dispose of drug products.</p> <p>6. Determine and dispense correct forms and doses of medication following the direction of the clinician or pharmacist.</p> <p>7. Communicate necessary client information to maximize safety, compliance with prescribed therapy and successful treatment of the patient.</p> <p>8. Predict potential toxicity and respond appropriately to simulated toxicological events.</p>	
<b>Course References:</b>	<p>1. Pharmacology (Brenner and Stevens)-5<sup>th</sup> edition-2018.</p> <p>2. Principles of Toxicology (Phillip L. Williams)2000</p>	
<b>Course topics (Theory)</b>	<b>Week</b>	<b>Learning Outcome</b>
1- Introduction of pharmacology	1	Student be able to know the dose, indication, side effect and contraindication of drugs
2- Pharmacology of Digestive system	2	Be able to describe the pharmacology of drugs used as emetics, antiemetics, anti-ulcer agents, laxatives and appetite stimulants
3- Pharmacology of Nervous system	3	Be able to discuss each group of drugs in terms of its mechanism of action, pharmacokinetics, side effects, toxicity and clinical relevance.
4- Pharmacology of Cardiovascular system	4	Be able to list the different classes of drugs used in the management of cardiovascular disease and to list examples of drugs within each class.
5- Pharmacology of Urinary system	5	Be able to list the different classes of diuretic agent and name examples of specific agents in each class. Be able to describe the mechanism of action of each class of diuretic agent.
6- Pharmacology of Reproductive system	6	Describe the physiological functions of each component of the hypothalamo-pituitary-gonadal-axis and other reproductive organs. List the main hormones used in veterinary medicine to mimic or suppress functions of the hypothalamus, pituitary, gonads and other reproductive organs.

7- Pharmacology of Skin	7	Be able to list the different classes of drugs used in the management of skin disease and to list examples of drugs within each class.
8- Antimicrobials	8	Know the different classes of antimicrobial agents and be able to name examples of individual agents within each class.
9- Antiprotozoal agents	9	Be able to define the term “coccidiosis” and discuss the various issues surrounding usage of these drugs in terms of development of immunity and prevention of disease.
10- Anthelmintics agents	10	Know the different classes of anthelmintic agents and be able to name examples of individual agents within each class.
11- Pharmacology of Respiratory system	11	Be able to list the classes of drug used in the management of respiratory conditions and to give examples of drugs in each class.
12- Non-steroidal Anti-inflammatory drugs	12	List the main families of NSAIDs and be familiar with examples of each. Describe the mechanisms of action of the NSAIDs.
13- Corticosteroids	13	Be able to describe the systemic, metabolic, inflammatory and immune effects of the corticosteroids.
14- Local anesthetic agents	14	List examples of commonly used local anaesthetic agents. Be able to describe the ways in which local anaesthetic agents may be used in Veterinary Practice

### Questions Example Design Examinations (question design):

Q1/

#### A- Write the uses of Tetracycline group

(12 Marks)

- Respiratory infection
- Bacterial enteritis
- Urinary tract infection
- Rickettsial infection

#### B- Local application route of drug administration

(12 Marks)

- Intramammry
- Intravaginal

3. Intrarectal
4. Intraarticular
5. Ophthalmic
6. Inhalation

**Q2/ Enumerate the followings:**

**A- The types of disinfecting agents**

**(16 Marks)**

- 1- Phenols
- 2- Quaternary ammonium compounds
- 3- Aldehydes
- 4- Ethylene oxide
- 5- Alcohols
- 6- Halogens
- 7- Other agents
  - a- Hydrogen peroxide
  - b- Soaps

**B- The types of Diuretics**

**(12 Marks)**

1. Thiazides
2. Loop diuretics
3. Potassium-sparing diuretics
4. Carbonic anhydrase inhibitors
5. Osmotics

**Q3/**

**A- Classify the antibiotics according to the mechanism of action**

**(15 Marks)**

1. Inhibition of cell wall synthesis
2. Damage to the cell membrane
3. Inhibition of protein synthesis
4. Interference with metabolism
5. Impairment of nucleic acids

**B- Enumerate drugs that used as Anticoagulant drugs**

**(10 Marks)**

- 1- Heparin
- 2- EDTA
- 3- Coumarin derivatives
- 4- Aspirin

Q4/

**A- Define the following:**

1- Antibacterial drugs (4 Marks)

Antibacterial: an agent that inhibits bacterial growth or impedes replication of bacteria or kills bacteria

2- Pharmacokinetics (4 Marks)

Pharmacokinetics: it is meaning the response of the tissue against the drugs

3- Drug (4 Marks)

**Drug**: it is any agent that be used to treatment sick (abnormal) tissue

4- Negative chronotropic drugs (5 Marks)

Negative chronotropic drugs: decrease heart rate by altering the rate of impulse formation at the SA node

**B- Write about expectorant drugs and give example (6 Marks)**

Expectorants

- Increase the flow of respiratory secretions to allow material to be coughed up from the lungs
- Increase the fluidity of mucus

Drugs:

Guaifenesin

**Extra notes:**

**External Evaluator**

