Zagazig University
Faculty of Veterinary Medicine
The Quality Assurance Unit

جامعة الزقازيق-بكلية الطب البيطرى وحدة ضمان الجودة

Program Specification

Bachelor Degree of Veterinary Medical Sciences
(Veterinary Clinical Pharmacology)

(BVMS-VCP)

(Credit hours)

(2022-2023)

Faculty Council approval date 8 / 8/2022
Programme specification is issued by ministerial decree NO. 2871 on 23/8/2020

Program specification (2022-2023)
(Credit hours)
Zagazig University

Faculty of Veterinary Medicine

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A. Basic information

1. Program Title: Bachelor of Veterinary Medicine-Veterinary clinical pharmacology (BVM-VCP)

2. Program type: Multiple

3. Total credit hours

Obligatory courses: 182 credit hours

Elective courses: 8 credit hours

Training: One academic year

Items	Lectures	Practical	Training	Total core	Elective	Total core + elective
Credit	118	64	-	182	8	190
Contact hours	1770	1920	1080	4770	135	4905

4. Teaching departments

a- Faculty Departments

1. Anatomy and Embryology
2. Histology
3. Biochemistry
4. Physiology
5. Animal Wealth Development
6. Veterinary Public Health
7. Behavior, Management of animal, Poultry and Aquatic animals

8. Pathology
9. Bacteriology, Mycology and Immunology
10. Nutrition and Clinical Nutrition
11. Pharmacology
12. Parasitology
13. Virology
14. Theriogenology
15. Surgery, Anesthesia and Radiology
16. Animal Medicine
17. Fish Diseases and Management
18. Clinical Pathology
19. Food Control
20. Forensic Medicine and Toxicology
21. Avian and Rabbit Medicine
22. Zoonoses

** The higher academic administration of the college headed by the dean of the college nominates a faculty member responsible for teaching of Human rights and combating corruption.*

B- External Institutions

i. Faculty of Medicine
ii. Faculty of Science
iii. ELP center of Zagazig University (English Language and Technology).

5- Date of programme specification approval: (Faculty council approval 8/8/2022).

6-The start date of the study in the program: 2020-2021.

7- Coordinator: Prof. Dr. Nasr Abd El-Wahab (Faculty Dean).

8- Programme Coordinator: Prof Dr. Gamal El-dein Amin Shams (Professor of Pharmacology).

9-Programme specification coordinator: Dr: Esraa Mohamed Fahmy (Lecturer of Pharmacology).

10- Internal evaluator: Prof Dr. Sameh Mohamed Mostafa El-Nibitity (Professor of Pharmacology)

11- External evaluator: Prof Dr. Ashraf Abdel Hakeim El-Komy (Professor of Pharmacology, Faculty of Veterinary Medicine, Suez Canal University).

B. Professional Information

1 - Program aims

The program aims to introduce new fields of clinical veterinary pharmacology in accordance with national standards in the veterinary medical sciences and develop the skills of graduates with appropriate training in specialized sites internally and externally.

The main objective of the Faculty of Veterinary Medicine–Zagazig University is to supply the local, national, and regional societies with highly qualified veterinarians in the field of veterinary clinical pharmacology.

The program ensures that graduates are proficient in:

1. Identifying the scientific basis of veterinary medicine and apply this knowledge to veterinary practice especially clinical pharmacology ethically with legal frame.
2. Understanding principles of etiology, pathophysiology and management of diseases.
3. Applying their knowledge into the effective diagnosis, medical management and treatment of sick animals and other health-related issues.
4. Promoting the availability of safe and effective therapeutic agents through the ability to apply qualitative and quantitative techniques in quality control.

5. The different methods of preparing and formulating pharmaceutical products from different sources (natural/synthetic) and to choose the appropriate dispensing, storage and distribution methods of medications.
6. The capability of communication, time management, critical thinking, problem solving, decision-making, team-working, marketing, promotion, business and computation and numeric skills.
7. Learning and applying medical information. They should engage in lifelong learning to remain current in their understanding of the scientific basis of veterinary medicine especially related to clinical pharmacology.
8. Promoting the animals and the public health through client and public education, service, and action.
9. Recognizing the important and diverse roles that animals play in the health, economics, food-supply, recreation, and wellbeing of mankind.
10. Carrying out duties in accordance with legal, ethical and social guidelines.
11. Appropriate methodologies selection to design and conduct researches. Utilizing the scientific veterinary research concepts.
12. Self-profession improvement by continuous and lifelong learning, in order to function effectively as a seasoned veterinarian or as a pecialist and clinical pharmacologist.

2 - Intended learning Outcomes (ILOs)

a - <u>Knowledge and Understanding</u>

By completion of this program, the graduates should be able to

a.1- Utilize proper English language, veterinary medical words, symbols, and abbreviations which used in veterinary medicine and clinical pharmacology.

a.2- Acquire the basics of clinical, and biochemical pathways related to clinical pharmacology and veterinary medicine .

a.3- Summarize the cellular, molecular, ultra structural, necessary to maintain animal body's homeostasis with special reference to veterinary medicine and clinical pharmacology .

a.4- Acquire a basic background for macroscopic and microscopic structure of normal tissue and organs of different animals with special reference to clinical pharmacology.

a.5- Extrapolate functions of animal body and each of its major organ systems.

a.6- Distinguish deformity types, teratogenesis causes, and embryological development indifferent species of animals.

a.7- Explore the fundamentals of biostatistics, biophysics pathways related to clinical pharmacology and veterinary medicine .

a.8- Acquire a basics of biochemistry and how they apply to the profession of veterinary medicine and their pharmacological impacts.

a.9- Interpret the underlying concepts, ideas, and applications of genetics and veterinary gene therapy principals.

a.10- Learn alternative sciences to enhance your computing skills for managing animal farms , protecting animal rights , pharmacological dosage and applications.

a.11- Analyze conventional animal behavior in various species of animals.

a.12- Gain knowledge about proper nutrition, regular eating habits, and metabolic disorders in veterinary medicine and clinical pharmacology.

a.13- Determine the prevalent breeds of animals that inhabit the area.

a.14- Identify both appropriate and inappropriate reproductive activities in different species of animals.

a.15- Be familiar with influence of stress and other issues on animal production and health.

a.16- Evaluate the economic effects and influences that will improve animal productivity and the provision of veterinary healthcare (genetic lines and artificial insemination).

a.17- Be acquainted with the value of the scientific methods in establishing the causation of disease and efficacy of traditional and non-traditional therapies with special reference to veterinary medicine and clinical pharmacology .

a.18- Understand the scientific principles that guide laboratory diagnosis with special reference to veterinary medicine and clinical pharmacology .

a.19- Acquire knowledge to possess the capacity to objectively assess the drawbacks of diagnostic procedures with special reference to veterinary medicine and clinical pharmacology .

a.20- Differentiate between various diseases' causes (genetic, developmental, metabolic, toxic, microbiological, parasitic, autoimmune, neoplastic, degenerative, and traumatic), as well as how they affect the body (Pathogenesis) with special reference to veterinary medicine and clinical pharmacology .

a.21- Summarize how various diseases and disorders affect the body's major organ systems and their altered structure and function (pathology and pathophysiology.(

a.22- Knowledge about therapeutic uses and toxic effects of drugs and able to prescribe different therapies for animal treatment.

a.23. Describe the applications of nano-technological systems in medicine gene therapy technologies, Stem cell therapy and their uses in the pharmaceutical medication delivery system .

a.24- Find the optimal and allowed levels of milk, dairy products, eggs, oils, meat, and meat products (including physical, chemical, and drug residues as well as microbiological) with special reference to veterinary medicine and clinical pharmacology .

a.25- Learning how to discover milk, meat, and their products that have been tampered with another products.

a.26-Depict the etiology, source, reservoir, mode of transmission and control of animal and zoonotic diseases with special reference to veterinary medicine and clinical pharmacology .

a.27- Know the fundamentals of judging meat, fish, and poultry carcasses and their products, as well as the laws governing animal transportation, slaughterhouses, and the storage of meat and its byproducts related to veterinary medicine and clinical pharmacology .

a.28- Understand the various diseases that affect birds, rabbits as well as how to prevent and treat them, with special reference to veterinary medicine and clinical pharmacology .

a. 29- Know the different diseases that affect fish, as well as how to prevent and treat them related to veterinary medicine and clinical pharmacology .

a.30- Identify the management and prevention strategy decisions against diseases related to veterinary medicine and clinical pharmacology .

a.31- Follow up correct measures for disease and vector control as well as improving the environmental sanitation conditions for maintenance animal health.

a.32- Recognize the different sources of pollution for air, water and soil in animal and poultry houses and categorize the different types of epidemiological investigations and accurate measurements of Veterinary quarantine.

a.33-Identify different diseases, diagnostic methods and routs of treatment of large and small ruminants with special reference to clinical pharmacology

a.34- Identify different diseases, diagnostic methods and routs of treatment of equine and pet animals with special reference to clinical pharmacology

a.35- Acquire knowledge and understanding of the principles of forensic science and toxicology in addition to different sources, types of toxic agents, how to detect them with diagnostic tools and management, and treat their effects related to veterinary medicine and clinical pharmacology .

a.36- Recognize principles of anesthesia, surgical operations beside diagnostic imaging of different animal species.

a.37- Acquire knowledge and understanding of theriogenological operations beside diagnostic imaging of different animal species.

a.38- Determine the laws and moral principles governing animal and food hygiene (meat and milk products) related to veterinary medicine and clinical pharmacology .

a.39- Estimate the appropriate euthanasia of animals, ensuring personal and environmental safety as well as carcass disposal related to veterinary medicine and clinical pharmacology .

a.40- Identify principles of control of emerging and exotic animal diseases related to veterinary medicine and clinical pharmacology .

a.41- Be familiar with the basics of communication skills and human rights related to veterinary medicine and clinical pharmacology .

a.42- Recognize broad knowledge on the most important terms and concepts of marketing, identify of the integrated requirements for the construction of drug marketing mix from the perspective of contemporary concepts, understanding principles of pharmaco-economics commercial field with special references to veterinary medicine and clinical pharmacology. .

a.43- Be familiar with different types of medical herbal plants and their therapeutic uses

b - Intellectual skills

b.1- Draw attention to crucial clinical queries resulting from a case encounter in clinical pharmacology.

b.2- Identify the most prevalent scientific terminologies that aid in interpreting the obtained data with special reference to clinical pharmacology.

b.3- Outline on a comprehension of the information available, evaluate and criticize the data.

b.4- Analyze competing facts and hypotheses seriously, evaluating both scientific and clinical data.

b.5- Categorize different veterinary diseases depending on understanding the collected data and normal anatomical, histological, biochemical, genetical and physiological conditions in animals.

b.6-Interpret the scientific data gathered from clinical observations and other biochemical, microbiological, and parasitological studies of animals and their byproducts with special reference to clinical pharmacology.

b.7- Compare between different approaches for solving different conditions according to its suitability for application during manufacture of animal, poultry and fish products.

b.8- Restructure the collected scientific data according to its fundamental role in breeding selection, occurrence of diseases, and choice of drug therapy in clinical veterinary medicine.

b.9- Utilize modern genetic and statistical data analysis methods to keep up with changes throughout your life.

b.10- learning new methods for marketing and selling skills that suitable with Labor market.

b.11- Discuss the need of lifelong learning about innovative methods for diagnosing various animal illnesses, notably viral infections that common in veterinary field.

b.12- Identify the crucial histopathological methods and clinical pathological procedures that aid in accurate diagnosis.

b.13-- Find innovative clinical, pathological, histological, pathophysiological, and biochemical methods that can be used to treat animal diseases.

b.14- Identify the most common drugs and medication that used for pets with special attention to clinical pharmacology.

b.15- Compare several techniques to treating various ailments based on whether they can be used in the production of food products.

b.16- Find the most practical solution for addressing market issues, environmental difficulties, and microbiological illnesses in reference to their prevention and management in animals, birds, and fish, with a focus on clinical pharmacology.

b.17- Restructure the clinical competencies that have been upgraded to deal with animal diseases and reduce zoonotic diseases.

b.18- Apply new approaches for treatment as stem cell and nano-therapy .

b.19- Select the appropriate procedures for treatment and control of animal diseases helping increasing animal production.

b.20- Apply your understanding of the biophysical fundamentals of diagnostic X-rays and radiation control to operate the X-ray machine safely and accurately.

b.21- Identify your understanding of reproductive systems and functional morphology that necessary for handling with gynecologic cases.

b.22- Apply differential diagnosis to categorize internal conditions in various animals in order to find the best treatments.

b.23- Apply differential diagnosis to categorize infectious diseases in various animals in order to find the best treatments

b.24- Determine the significance of maintaining adequate animal cleanliness, management, and nutrition, and utilize deductive reasoning to identify potential reasons of issues with maintaining animals health.

b.25- Employ environment for treatment as herbal pharmacology and differentiate between various types of medicinal plants .

b.26- Detect the important avian and rabbit diseases and detect causes of serious problems for the owners.

b.27- Highlight life-long learning of novel methods for diagnosing various animal problems in veterinary medicine and clinical pharmacology.

c - Professional and practical skills

By completion of this program, the graduates must be able to:

c.1- Secure and handle animals in a safe and human manner with maintenance the animal welfare .

c.2- Find the disease's etiological agents and isolate them (bacteria, viruses, parasites, nutritional, toxic, metabolic ..... etc.(.

c.3- Perform patho-biological (pathological, clinical pathological, and clinical biochemical) and clinical examinations on sick animals.

c.4- Identify several diseases in diverse animal species with special reference to clinical pharmacology.

c.5- Point out the analysis of feedstuffs for different animals according to the health status and genetic line of animals.

c.6- Effectively provide anesthetic for routine surgical and theriogenological procedures, and carry out the necessary aftercare.

c.7- Conduct a post-mortem investigation suitable for the species concerned.

c.8- Manipulate theriogenological and surgical techniques for different animals

c.9 – Know the case history of various animal instances for reaching to suitable methods in treatment.

c.10- Implement policies pertaining to issues with public health, diseases that require reporting, and the disposal of animal waste.

c.11-. Choose the appropriate drug for the for the diagnosed cases and measure its effectiveness with special concern to clinical pharmacology.

c.12- Diagnose and describe early care for sick animals in life-threatening situations, as well as emergency care and pain management.

c.13- Use the proper safety measures to safeguard yourself, your clients, and your colleagues.

c.14- perform out bioinformatics and feasibility assessments for initiatives involving animal production.

c.15- Examine meat, milk, and their products to determine their suitability for human consumption before reporting your findings.

c.16- Apply preventive measures in veterinary premises and fields.
c.17- illustrate diagnostic imaging techniques safely.
c.18- Apply humane and secure animal euthanasia techniques.
c.19- Deal professionally with animal, poultry and fish farm management.
c.20- Examine different animal tissues macro and microscopically.
c.21- Carryout suitable procedure of vaccination in different animal species.
c.22- Carryout a scientific experiment and test professionally.
c.23- Access to appropriate sources of licensed medicines. Prescribe and dispense medications correctly and responsibly in accordance with the relevant legislation.
c.24- Ensure the sources of drugs and store them safely or dispose of them.
c.25- Access to appropriate skills of drug marketing that help in veterinary field
c.26- Evaluate different routes for food products (meet – poultry and fish) inspection .
c.27- Evaluate the effectiveness of veterinary drugs used and determine their validity.
c.28- Evaluate of field reports to examine a specific drug or product in the veterinary field under different pathological conditions.
c.29- Avoid drug interactions .
c.30. Practice the circumcision procedures necessary to indicate the safety and quality of medicinal products.
c.31- Carryout the procedures for using veterinary drugs and preparations in different field conditions.

d - General and transferable skills

By completion of this program, the graduates must be able to:

d.1- Promote effective teamwork to complete a specific goal.
d.2- Depending on your understanding, behave successfully under pressure while dealing with various issues that arise abruptly and avoid the spread of illnesses from animals to humans.
d.3- Be a part of a team that diagnoses clinical issues and analyses clinical samples taken from sick animals with special reference to clinical pharmacology.
d.4- Help teamwork resolves emergency situations by supplying various analyses needed for procedures.

d.5- Use numerous channels to successfully communicate between students and the owners (as farms or pharmaceutical companies).
d.6- Achieve a specific duty in the study of prevalent disease issues in the local domestic and wild animals in veterinary medicine.
d.7- Assist the working teams in diagnosing animal illnesses by providing logical justifications based on morphological, histological, and pathophysiological explanations.
d.8- Discuss veterinary care, management, and dietary practices with the owners of the animals.
d.9- Encourage people and animal owners how to properly care for animals and provide medications to cure various illness issues.
d.10- Demonstrate in practice the significance of learning about circulatory treatment, blood substitutes, body physiology, artificial and natural breeding selection, and breeding techniques.
d.11- Display your understanding skills of how veterinary practices are run, organized, and kept organized.
d.12- Use the information and abilities you've gained to work under stressful circumstances to control rising diseases.
d.13- Work together with colleagues to resolve surgical issues involving animals under opposing circumstances following radiological case evaluation.
d.14- Work together with laboratory teams to provide the many analyses needed for procedures to address urgent veterinary medical issues.
d.15- Understand, record, and convey data and observations (e.g. medical legal report).
d.16- Utilize different media channels to support veterinary education with special references to clinical pharmacology.
d.17- Establish the finest diet and care regimens for animals, fish, rabbits, and birds with the help of your team partners to stop the spread of diseases.
d.18- Present solutions to solve different problems appearing due to internal diseases and reproductive problems.
d.19- utilize different tools for diagnosis and find solutions for infectious diseases common in veterinary field.
d.20- Work together to find solutions for issues relating to the production of safe meat, common vet reproductive issues, and the genetic effects on offspring's.

d.21- present clinical cases online to aid in the dissemination of information about veterinary medicine and its significance in the management and treatment of animals, fish, and birds, with major concern to clinical pharmacology .

The academic stander reference:

According to the approved reviewing study in 2020 for adoption and application of National Academic Reference Standards (NARS, 2009) with program specification to fulfill the NARS. The Bachelor of Veterinary Medicine (Veterinary clinical pharmacology) with the credit hours system, a compatibility study was conducted to ensure that these regulations comply with NARS on **6/ 7/ 2022,** which was approved by the faculty council on **17/7/2022.**

3-Academic standards

The national academic reference standards (NARS) of veterinary medicine issued by national authority of quality assurance and accreditation for education (NAQAAE) were adopted by **the faculty council 12/4/2010** and the faculty confirmed its continued adoption to NARS by **faculty council 10/10/2022.**

3.1- Comparing the NARS with Bachelor Degree of Veterinary Medical Sciences **(Veterinary Clinical Pharmacology) program ILOS**

Knowledge and understanding	
NARS	**BVM-VCP Programme ILOS**
1-Basic sciences of biology, chemistry, biophysics, genetics, biostatics, computer science and veterinary terminology.	a 1,2,5,7,8
2-Basics of normal behavior, management, breeding, veterinary economics and health maintenance of domestic animals, laboratory animals, poultry, and fish.	a 9, 11, 12, 13, 16
3-Normal macro, and micro-structure of body tissues, organs and systems of animals, birds and fish.	a 3
4-Physiological and biochemical bases of different organ functions, metabolic processes and homeostasis.	a 4
5- Principle of welfare, production and health maintenance of food producing and pet animals, sporting animals, wildlife , poultry and fish	a 10,14, 15,16
6-Basics of nutrition and feeding practices of healthy and diseased animals.	a 17,22
7-Various causes of animal diseases, their pathogenesis, macro- and micro-scopic pathological lesions, and laboratory diagnosis.	a 6, 19,20,21

8-Veterinary medications, uses, marketing, the impact of drug residues on human health and quality control of pharmaceutical practices.	a 23,24, 33,42
8-General and specific epidemiological pattern of animal population diseases and the most effective immunization protocols.	a 25, 26 27,28,29, 31,32
9-Toxicology and forensic medicine, animal medicine, theriogenology and veterinary surgery.	a 35, 36,37
10-The most appropriate diagnosis and differential diagnosis of animals, poultry and fish diseases	a 18, 30,40
11-The accurate measurements of veterinary quarantine.	a 39
12-Public health, including food hygiene of animal origin and zoonotic diseases that are transmitted from animals to humans.	a 34,38
13-Basics of law and ethical codes relevant to animals and food hygiene.	a,43
14-Basics of social sciences, communication, and human rights.	a 41
Intellectual Skills	
NARS	**BVM-VCP Programme ILOS**
1-Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.	b 1,2,3,4,5
2-Safely, correctly and humanely restrain animals for examination.	b 6,7,8,9,10
3-Obtain the history of the case whether it is of an individual animal or a group of animals.	b 11,12,13,14,15
4-Perform clinical examination of diseased cases and collect relevant samples.	b 17,18,20,21,22,23,24,25,26

5-Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach.	b,16,19,27
Professional and practical skills	
NARS	**BVM-VCP Programme ILOS**
1-Employ all the gained knowledge and understanding in clinical practice in a skillful pattern.	c 1 to 10
2-Safely, correctly and humanely restrain animals for examination.	c 11,12,13,14
3- Obtain the history of the case whether it is of an individual animal or a group of animals.	c 15
4- Perform clinical examination of diseased cases and collect relevant samples.	c 16,17
5-Appropriately select and interpret findings of the common clinical and laboratory diagnostic procedures to reach and adopt the most convenient therapeutic and manage mental approach.	c 18, 22
6- Write a report about hygiene and safety of food of animal origin for human consumption.	c 20
7- Assess and advise about animal management, nutrition under conditions of health and disease, and reproductive efficiency.	c 19,21
8- Skillfully and appropriately gain and use new information remain current with the emerging biomedical knowledge and therapeutic options.	c 23,24

9- Conduct evidence-based problem-solving of field– presented problems tasks.	c 25,26
10-Provide emergency care to all species of animals.	c 27,28
11-Utilize appropriate safety procedures to protect clients and co-workers.	c 29
12-Correctly deal with procedures related to food hygiene, public health issues, notifiable diseases and disposal of animal wastes.	c 30
13-Minimize the risk of contamination, cross infection and predisposing factors of diseases.	c 31
General and transferable Skills	
NARS	**BVM-VCP Programme ILOS**
1-Work under pressure and / or contradictory conditions.	d 1,2
2- Function in a multidisciplinary team.	d 3,4,5
3- Communicate appropriately verbally and non-verbally.	d 6,7,8,9
4- Organize and control tasks and resources.	d 10,13,14,15
5- Search for new information and technology as well as adopt life–long self learning ethics.	d 11,12,16,17
6- Utilize computer and internet skills.	d 18,19,20,21

3.2- Comparing the NARS with Bachelor of Veterinary Medicine (BVM-VCP) program structure

Program Structure and components:

- **<u>Mandatory courses</u>**

Basic courses:

Course	Number of hours
Principles of biochemistry	3
Clinical biochemistry	2
Computer and Biostatistics	2
Animal and poultry management	4
General anatomy and embryology	4
Special Splachnology and embryology	3
Comparative and applied anatomy	3
Histology (1)	3
Histology (2)	3
Physiology (1)	3
Physiology (2)	4
Animal, poultry and fish production	3
Marketing and selling skills	2
Total	**42**
Percentage	**21.1 %**

Pre-clinical courses:

Science	Number of hours
Genetics and Veterinary Genetic Engineering	2
General pharmacology	3
Drug\ drug interactions	3
General and special virology	3
Systemic pharmacology (1)	3
General microbiology and immunology	3
Basis of pathology	3
Drugs and medication for pets	3
Veterinary medical helminthology	3
Special microbiology and mycology	3

Systemic pathology	3
Animal nutrition	3
Veterinary medical entomology and protozoology	3
Systemic pharmacology (2)	3
Antifungal and antitoxin	2
Specific pathology	2
Stem cell therapy	3
Veterinary sera and viral vaccines	3
Milk hygiene and control	3
Clinical nutrition	3
Chemotherapy and antimicrobials	3
Veterinary pharmaceutics	2
Herbal pharmacology	2
Total	**64**
Percentage	**32.1 %**

Clinical courses:

Science	Number of hours
Clinical examination and principles of veterinary medicine	3
Veterinary epidemiology	3
Milk hygiene, safety and technology	3
Internal medicine of large and small ruminants	3
Fish disease and management	3
General clinical toxicology	2
Meat , poultry and fish inspection	3
Infectious disease of large and small ruminants	3
Clinical pathology (2)	3

Andrology and artificial insemination in farm animal	3
Anesthesia	3
Nanomedicine	2
General surgery & ultrasonic rays	3
Internal medicine of equine and pets	3
Infectious disease of equine and pets	3
Clinical forensic medicine	2
Animal and environmental	3
Avian & rabbit diseases (1)	3
Special surgery & radiology	3
Meat safety & technology	2
Zoonotic diseases	3
Gynacology and obstetric in farm animal	4
Clinical pharmacology	2
Poultry and fish hygiene	3
Avian & rabbit diseases (2)	2
Total	**73**
Percentage	36.6 %

Humanities:

Course	Number of credit hours
Vet. Medical terminology	1
Human rights	1
Veterinary economics and marketing	2
Tradition & ethics of profession	1
Total	**5**
Percentage	**2.5 %**

- **Elective courses:**

Course	Number of credit hours
work law	1

Scientific thinking	1
Livestock in the Arab World	1
Legislation and Patency	1
Quality management systems	1
Media and guidance in Veterinary medicine	1
Wild animals	2
Marketing and media of drugs	2
Pharmacology of Hormones	2
Animal welfare	2
Drugs used for fish	2
Herd management	2
Gene Therapy	2
Biotechnology	2
Nanotechnology in drug delivery	2

*Optional courses (5 courses): 8 credit hrs.
Percentage of elective courses: 4%

- **Training:**
  - One year of field training in veterinary medicine work and employing representative with a total contact hour 1080
  - Percentage of training: 22 %

Computer and ICDL:

- ICDL isn't required to obtain a bachelor's degree
- Biostatistics and computer serve basic and computer and ICDL, Therefore, a section on teaching computer science in Biostatistics course was added in line with NARS 2009, and the new course

specification of the Biostatistics and Computer course besides the other courses

- With a percentage of 0.3%

- **<u>Discretionary subjects:</u>**

Science	Number of hours
Five elective courses	8
Total	8

Discretionary subjects = 8 credit hours representing 135 contact hours

Percentage of Discretionary subjects: 2.8 %

NARS			BVMSc academic standards		
Subject	Range	Sciences	Percent	Sciences	Remarks
Basic sciences	22-28	Biochemistry, biostatics, animal husbandry, *embryology*, histology, physiology, anatomy	21.1%	Biochemistry, biostatics, Animal and poultry behavior and management, anatomy, histology, physiology, animal breeding and production.	Lower than NARS
Pre-clinical sciences	17-23	Genetics, microbiology, nutrition, mycology, immunology, pharmacology, parasitology, virology, pathology, milk and meat hygiene	32.1 %	Genetics, nutrition, bacteriology and mycology, immunology, pharmacology, parasitology, virology, pathology, Milk and milk products hygiene and technology, Meat and meat products hygiene and technology	Higher than NARS
Clinical sciences	40-44	Epidemiology and pathogenesis, internal medicine, infectious diseases, forensic medicine and toxicology, poultry and fish	36.6 %	Internal medicine, infectious diseases, forensic medicine and toxicology, Avian and rabbit diseases, Fish diseases and management, Animal,	Lower than NARS*

		diseases, hygiene, surgery, zoonoses, theriogenology, and clinical investigation, and treatment of animals		poultry and environmental hygiene, surgery, zoonoses, Gynecology, obstetrics and artificial insemination, Morbid anatomy	

Continue

Training*	2-6	Field trips and clinical investigations	4		Within the range
Humanities	2-4	English, economics, human rights and social studies	2.5	Vet. Medical terminology, Human rights, Veterinary economics and marketing, Tradition & ethics of profession	Within the range
Elective courses	4-8	Allowed to each faculty to be used based on its mission	4	work law**,** Scientific thinking, Livestock in the Arab, world, Legislation and Patency, Quality management systems,	Within the range

				Media and guidance in Veterinary medicine Wild animals, Marketing and media of drugs, Pharmacology of Hormones, Animal welfare, Drugs used for fish, Herd management, Gene Therapy Biotechnology, Nanotechnology in drug delivery	

* Justification: Summer training in Faculty AS is 4 % while in NARS 2-6%.

*Clinical sciences (40.6%) are teaching during the academic years by 36.6% and are completed during the summer training period by 4%.

4 - Curriculum structure and content.

a. Program duration: Five academic years (10 semesters).

b. Curriculum structure

Credit hours

Lecture: 118 CH **Practical:** 64 CH **Elective**: 8 **Total:** 190

Table (1) curriculum structure and course percentage

First level

First semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PVP-1A1	Computer and Biostatistics	1	1 (2)	2	11.11
PVP-1A2	Medical terminology	1	-----	1	5.55
PVP-1A3	Genetics and Veterinary Genetic Engineering	1	1 (2)	2	11.11
PVP-1A4	Physiology (1)	2	1 (2)	3	16.66
PVP-1A5	General anatomy and embryology	3	1 (2)	4	22.22
PVP-1A6	Histology (1)	2	1 (2)	3	16.66
PVP-1A7	Principles of biochemistry	2	1 (2)	3	16.66
Total No of credit hrs /week (Min 12&Max 25/week)		12	6 (12)	18	

Second semester

Course ID	Course title	No of credit hrs.		Total	Percentage
		Lecture	practical		
PVP-1B1	Human rights	**1**	---	1	6.25
PVP-1B2	Veterinary .economics & marketing	1	1 (2)	2	12.5
PVP-1B3	General pharmacology	2	1 (2)	3	18.75
PVP-1B4	Animal and poultry management	3	1 (2)	4	25
PVP-1B5	Histology (2)	2	1 (2)	3	18.75
PVP-1B6	Special Splachnology and embryology	2	1 (2)	3	18.75
Total No of credit hrs. /week (Min 12 & Max 25hrs/week)		11	5	16	

Elective courses

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PVP-O11	Work law	1	--	1	
PVP-O12	Scientific thinking	1	--	1	
PVP-O13	Livestock in the Arab world	1	--	1	
Total				1	

Second Level

First semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PVP-2A1	Comparative and applied anatomy	2	1 (2)	3	15.78
PVP-2A2	Biochemistry & molecular biology	2	1 (2)	3	15.78
PVP-2A3	Physiology (2)	3	1 (2)	4	21.05
PVP-2A4	Drug\ drug interactions	2	1 (2)	3	15.78
PVP-2A5	Animal, poultry and fish production	2	1 (2)	3	15.78
PVP-2A6	Marketing and selling skills	1	1 (2)	2	15.78
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	6	18	

Second semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PVP-2B1	General and special virology	2	1 (2)	3	16.67
PVP-2B2	Systemic pharmacology (1)	2	1 (2)	3	16.67
PVP-2B3	General microbiology and immunology	2	1 (2)	3	16.67
PVP-2B4	Tradition & ethics of profession	1	----	1	5.55
PVP-2B5	Basis of pathology	2	1 (2)	3	16.67
PVP-2B6	Drugs and medication for pets	1	1 (2)	2	11.11
PVP-2B7	Veterinary medical helminthology	2	1 (2)	3	16.67
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	6	18	

Elective courses

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PVP-O21	Legislation and patency	1		1	
PVP-O22	Quality management systems	1		1	
PVP-O23	Media and guidance of veterinary	1		1	
Total				1	

Third level

First semester

Course ID	Course title	No		No of credit hrs	Percentage
		Lecture	practical		
PVP-3A1	Special microbiology and mycology	2	1 (2)	3	15.78
PVP-3A2	Systemic pathology	2	1 (2)	3	15.78
PVP-3A3	Animal nutrition	2	1 (2)	3	15.78
PVP-3A4	Clinical biochemistry	1	1 (2)	2	10.52
PVP-3A5	Veterinary medical entomology and protozoology	2	1 (2)	3	15.78
PVP-3A6	Systemic pharmacology (2)	2	1 (2)	3	15.78
PVP-3A7	Antifungal and antitoxin	1	1 (2)	2	10.52
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	7	19	

Second semester

Course ID	Course title	No credit hours		Total	Percentage
		Lecture	practical		
PVP-3B1	Specific pathology	1	1 (2)	2	10
PVP-3B2	Stem cell therapy	2	1 (2)	3	15
PVP-3B3	Veterinary epidemiology	2	1 (2)	3	15
PVP-3B4	Veterinary sera and viral vaccines	2	1 (2)	3	15
PVP-3B5	Clinical examination and principles of veterinary medicine	2	1 (2)	3	15
PVP-3B6	Milk hygiene and control	2	1 (2)	3	15
PVP-3B7	Clinical nutrition	2	1 (2)	3	15
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		13	7	20	

Elective courses

Course ID	Course title	No of credit hours		Total	Percentage
		lecture	practical		
PVP-O31	Wild animals	1		1	
PVP-O32	Marketing and media of drugs	2		2	
PVP-O33	Pharmacology of hormones	1		1	
Total					

Fourth level

First semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PVP-4A1	Chemotherapy and antimicrobials	2	1 (2)	3	15.78
PVP-4A2	Veterinary pharmaceutics	1	1 (2)	2	10.52
PVP-4A3	Clinical pathology (1)	2	1 (2)	3	15.78
PVP-4A4	Milk hygiene, safety and technology	2	1 (2)	3	15.78
PVP-4A5	Internal medicine of large and small ruminants	2	1 (2)	3	15.78
PVP-4A6	Fish disease and management	2	1 (2)	3	15.78
PVP-4A7	General clinical toxicology	1	1 (2)	2	10.52
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	7	19	
Training course (1)			2 (6)	2 (6)	

Second semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	practical		
PVP-4B1	Meat , poultry and fish inspection	2	1 (2)	3	17.64
PVP-4B2	Infectious disease of large and small ruminants	2	1 (2)	3	17.64
PVP-4B3	Clinical pathology (2)	2	1 (2)	3	17.64
PVP-4B4	Andrology and artificial insemination in farm animal	2	1 (2)	3	17.64
PVP-4B5	Anesthesia	2	1 (2)	3	17.64
PVP-4B6	Nanomedicine	1	1 (2)	2	11.76
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		11	6	17	
Training course (2)			2 (6)	2 (6)	

Elective courses

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	practical		
PVP-O41	Animal welfare	1		1	
PVP-O42	Drugs used for fish	1		1	
PVP-O43	Herd management	1		1	
Total				1	

Fifth level

First semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PVP-5A1	General surgery & ultrasonic rays	2	1 (2)	3	15.78
PVP-5A2	Internal medicine of equine and pets	2	1 (2)	3	15.78
PVP-5A3	Infectious disease of equine and pets	2	1 (2)	3	15.78
PVP-5A4	Clinical forensic medicine	1	1 (2)	2	10.52
PVP-5A5	Animal and environmental	2	1 (2)	3	15.78
PVP-5A6	Herbal pharmacology	1	1 (2)	2	10.78
PVP-5A7	Avian & rabbit diseases (1)	2	1 (2)	3	15.78
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	7	19	
Training course (3)			2 (6)	2 (6)	

Second semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PVP-5B1	Special surgery & radiology	2	1 (2)	3	15.78
PVP-5B2	Meat safety & technology	1	1 (2)	2	10.52
PVP-5B3	Zoonotic diseases	2	1 (2)	3	15.78

PVP-5B4	Gynacology and obstetric in farm animal	3	1 (2)	4	21.05
PVP-5B5	Clinical pharmacology	1	1 (2)	2	10.52
PVP-5B6	Poultry and fish hygiene	2	1 (2)	3	15.78
PVP-5B7	Avian & rabbit diseases (2)	1	1 (2)	2	10.52
Total No of credit hrs /week (Min 12 & Max 25hrs/week)		12	7	19	
Training course (4)			2 (6)	2 (6)	

Optional courses

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	practical		
PVP-O51	Gene therapy	1		1	
PVP-O52	Biotechnology	1		1	
PVP-O53	Nanoparticle technology for drug delivery	1		1	
Total		1		1	

5- Programme courses

5-1- First level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-1A1	Biostatistics	24	1	1(2)	2	7	3,4,9	14,22	10,11
PVP-1A2	Medical terminology	12	1	-	1	1,2,10	2	14	9
PVP-1A3	Genetics and Vet.Genetic Engineering	24	1	1(2)	2	9,7,16	1,9	5,22	10,20
PVP-1A4	Physiology	36	2	1(2)	3	3,5	5	22	10
PVP-1A5	General anatomy and embryology	48	3	1(3)	4	6	1,5	7,18	1,7
PVP-1A6	Histology	36	2	1(2)	3	4,5	5,12,13	3,20	1,3,7
PVP-1A7	Principles of biochemistry	36	2	1(2)	3	8	4,5	3	1,4
	Total	216	12	6(13)	18				

5-2- First level- Semester II

Code No	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-1B1	Human rights	12	1	-	1	10,41	1,3	18	1,8
PVP-1B2	Vet.economics & marekting	24	1	1(2)	2	16	10	25	1,5,16
PVP-1B3	General pharmacology	36	2	1(2)	3	2,5	1,3,4	24,27	1,11,16
PVP-1B4	Animal and poultry management	48	3	1(2)	4	11,13	8,16	19	9,21
PVP-1B5	Histology	36	2	1(3)	3	3	5,12	3,20	3,7
PVP-1B6	Special splanchalogy embryology	36	2	1(3)	3	6	1,3,5	7,18	7
	Total	192	11	5(12)	16				

5-3- Second level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-2A1	Comparative and applied anatomy	36	2	1(3)	3	6,11	2,5	7,18	4,7
PVP-2A2	Biochemistry & molecular biology	36	2	1(3)	3	2,8,18	6,13	3,22	1,11,14
PVP-2A3	Physiology	48	3	1(2)	4	19,5	5	3,22	7
PVP-2A4	Drug\ drug interactions	36	2	1(2)	2	22	2,4	29	1,4
PVP-2A5	Animal , poultry and fish production	36	2	1(2)	3	12,13	7,24	10,19	17,21
PVP-2A6	Marketing and selling skills	36	1	1(2)	2	42	10	23,25	5
	Total	228	12	6(14)	18				

5-4- Second level- Semester II

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-2B1	General and special virology	36	2	1 (2)	3	185	11	4,21	12,14
PVP-2B2	Systemic pharmacology	36	2	1(2)	3	5,22	13	11,23	9
PVP-2B3	General microbiology and immunology	36	2	1(2)	3	20	6	3	2,14
PVP-2B4	Tradition & ethics of profession	12	1	-	1	41	1,2	18	1,4
PVP-2B5	Basis of pathology	36	2	1(3)	3	20,21	13	3,20,28	3,7
PVP-2B6	Drugs and medication for pets	24	1	1(2)	2	22,11	14	23,31	6,9
PVP-2B7	Veterinary medical helminthology	36	2	1(2)	3	15,31	6	2,13	9,12
	Total	216	12	6(13)	`18				

5-5 Third level - Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-3A1	special microbiology and mycology	36	2	1(2)	3	18,20	6	2	3,4
PVP-3A2	systemic pathology	36	2	1(2)	3	20,21	12,13	3,8	3,7
PVP-3A3	animal nutrition	36	2	1(2)	3	11,12,13	1,4,24	5	8,17
PVP-3A4	clinical biochemistry	24	1	1(3)	2	17,18	5,13	3,17,22	1,16
PVP-3A5	Vet medical entomology and protozoology	36	2	1(2)	3	13,20,26	5	2	1,2
PVP-3A6	systemic pharmacology	36	2	1(2)	3	3,5	1,2,4	11,12	9
PVP-3A7	antifungal and antitoxin	24	1	1(2)	2	22	8,19	21,22	1,14,15
	Total	228	12	7(15)	19				

5-6 Third level- Semester II

Code No	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-3B1	Specific pathology	24	1	1(3)	2	20,21	12,13	3,28	1,7
PVP-3B2	Stem cell therapy	36	2	1(2)	3	174,18,23	18	13,22	11
PVP-3B3	Veterinary epidemiology	36	2	1(2)	2	32	19	10,13	2,11,12
PVP-3B4	Veterinary sera and viral vaccines	36	2	1(2)	3	17,18,19	11	10,13,21	12,14
PVP-3B5	Clinical examination and principles of veterinary medicine	36	2	1(2)	3	30	19,27	13,16	1,2
PVP-3B6	Milk hygiene and control	36	2	1(3)	3	24,25	15	15	3,4
PVP-3B7	Clinical nutrition	36	2	1(2)	3	12,15	24	5	8,14,107
	Total	240	13	7(15)	20				

5-7 Fourth level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-4A1	Chemotherapy and antimicrobials	36	2	1(2)	3	22	8	11,12,24	9,12,14,18
PVP-4A2	Veterinary pharmaceutics	24	1	1(2)	2	23,42	4,8	29,31,27	1,5,16
PVP-4A3	Clinical pathology (1)	36	2	1(2)	3	18,19	11,12,13	3,28	7
PVP-4A4	Milk hygiene, safety and technology	36	2	1(3)	3	24,25	15	15	17,20,21
PVP-4A5	Internal medicine of large and small ruminants	36	2	1(2)	3	33,40	22,27	1,9,11,12,17	1,18
PVP-4A6	Fish disease and management	36	2	1(2)	3	29	8,19,24	17,19,22	8,17,20
PVP-4A7	General clinical toxicology	24	1	1(2)	2	35	1,3,4	22	1,4,11
	Total	228	12	7(14)	19				

5-8 Fourth level - Semester II

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-4B1	Meat , poultry and fish inspection	36	2	1(2)	3	27	15,16	26	15,17
PVP-4B2	Infectious disease of large and small ruminants	36	2	1(3)	3	34,40	23,27	1,4,9,11,12	1,19
PVP-4B3	Clinical pathology (2)	36	2	1(3)	3	18,19	11,12,13	3,22	3,7,14
PVP-4B4	Andrology and artificial insemination in farm animal	36	2	1(2)	3	14,16	21	1,6,8	8,10,18
PVP-4B5	Anesthesia	36	2	1(3)	3	36	1,5	1,6	1,4
PVP-4B6	Nanomedicine	24	1	1(2)	2	23	18	22,23,24	11
	Total	204	11	6(15)	`17				

5-9 Fifth level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-5A1	General surgery & ultrasonic rays	36	2	1(2)	3	36	20	1,8,9	1,13
PVP-5A2	Internal medicine of equine and pets	36	2	1(2)	3	34	22,27	1,4,9,11,12	9,18
PVP-5A3	Infectious disease of equine and pets	36	2	1(2)	3	34,40	23,27	1,4,9,11,12	9,19
PVP-5A4	Clinical forensic medicine	24	1	1(2)	2	35	1,3,4	20,22	14,15
PVP-5A5	Animal and environmental	36	2	1(2)	3	32	8,9	10,16	2,6,14
PVP-5A6	Herbal pharmacology	24	1	1(2)	2	43	25	30,31	11,15
PVP-5A7	Avian & rabbit diseases (1)	36	2	1(2)	3	28	26	4,9,11	9,12,15
	Total	36	12	7(16)	19				

5-10 Fifth level-Semesters II

Course ID	Course title	Total credit hours	No. of hours / week			Programme ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PVP-5B1	Special surgery & radiology	36	2	1(2)	3	3,36	20	1,6,8,17	13
PVP-5B2	Meat safety & technology	24	1	1(2)	2	25,38,39	15	15,16	11,20
PVP-5B3	Zoonotic diseases	36	2	1(2)	3	26,30	17	16	1,2,4
PVP-5B4	Gynacology and obstetric in farm animal	48	3	1(3)	4	37	21	1,6,8,9	3,9,20
PVP-5B5	Clinical pharmacology	24	1	1(2)	2	22	25,27	23,24	4,5,8,12
PVP-5B6	Poultry and fish hygiene	36	2	1(2)	3	29,32	7	10,15	17,21
PVP-5B7	Avian & rabbit diseases (2)	24	1	1(2)	2	28,31	26	9,11,21	6,15,21
	Total	228	12	7(15)	19				

6 – Program admission requirement:

The student could admit to join the BVM-VCP programme if he/she has one of the following:

1) The general Secondary school certificate, science branch with the grades stated by the Central Admission Office.
2) A percentage of students enrolled are holders of the equivalent certificates such as the American Diploma and IGCSE.
3) A percentage of students from Arab countries with the equivalent grades determined by the Ministry of Higher Education, Central Admission office in the same academic year.
4) Students can be transferred from equivalent governmental universities with a condition of minimum good grades and if health and social status necessitate this transfer.

7. Assessment of Student Learning

a. Assessment methods measure student performance in all of the professional competencies in accordance with the stated outcome expectations.

Basis on which Assessment of Student Achievements are evaluated:

- Periodic quizzes - Formal written examination

-Summative practical assessment - Laboratories and other written reports - Problem-solving exercises - Oral examination - Oral presentations

b. For each course, a final written examination is held at the end of each semester, with a score of 50% of the course's assessment scores, in addition to an oral examination (10 %), practical (20%) and periodic (20%) exams. The student must attend 75% of all the lectures and practical hours of the course in order to be allowed to enter the final exam of the course.

c. The student is not considered successful in any course unless he obtains at least a grade "**D –"**

d. The course in which the student gets a grade **"F",** he repeats it, and his grade is calculated for him in it as a maximum **D**.

Grading Scheme is as follows:

Percent	Equivalent Rate	GPA	Letter Grade
95% or more	Excellent	4	A+
85% to <95%	Excellent	3.5	A
75% to <85%	Very good	3	B
65% to <75%	Good	2.5	C
60% to <65%	Pass	2	D
50% to <60%	Pass	1.5	D -
Less than 50%	Fail	00	F

8 - Regulations for progression and program completion

The general grade in the bachelor's degree is calculated on the basis of the GPA obtained by the student in all the mandatory and elective courses that he studied.

To obtain a bachelor's degree, success in

a. All mandatory courses (67) equivalent to 183 credit hours
b. Elective courses (5 courses) equivalent to 8 credit hours.
c. Passing training course (attendance "8 credit hrs", training and exams)
d. Achieving a final GPA grade of at least 1.5.

9- Evaluation of program intended learning outcomes:

Evaluator	Tool	Samples
1- Senior students	Questionnaires and open discussion	50/ Grade
2- Alumni	Questionnaires and open discussion	25
3- Stakeholders (Employers)	Questionnaires and open discussion	Random
4- External Evaluators	Report	-
Other (External examiners)	Report	-

Programme Coordinator: Dr: Esraa Mohamed Fahmy ***Vice Dean for Education and Student Affairs***

(Lecturer of Pharmacology) ***Prof. Dr. Mohamed El-Sayed Mohamed***

Faculty Dean

Prof.Dr.Nasser Abdel-Wahab Mohamed

Faculty council approval date 8/8/2022