Zagazig University

Faculty of Veterinary Medicine

Program Specification

Bachelor of Veterinary Medicine

(Pets Medicine and Care)

(BVMSc-PMC)

(Credit hours)

(2022-2023)

Faculty Council approval date: 8/8/2022
Ministry decree: 23/8/2020

Zagazig University

Faculty of Veterinary Medicine

Program specification (2022-2023)

A. Basic information

1. Program Title: Bachelor of Veterinary Medical Sciences- Pets Medicine and Care (BVMSc-PMC)

2. Program type: Single

3. Total credit hours

Lecture: 111 CH **Practical:** 78 CH **Training**: 1 CH **Total:** 190
Core courses: 168 CH **University courses:** 2 CH **Elective courses:** 20 CH

4. Teaching departments

a- Faculty Departments

1. Anatomy and Embryology
2. Histology and Cytology
3. Biochemistry
4. Physiology
5. Animal Wealth Development
6. Behaviour and Management of Animal, Poultry and Aquatics
7. Pathology
8. Microbiology
9. Nutrition and Clinical Nutrition
10. Pharmacology
11. Parasitology
12. Virology
13. Clinical Pathology
14. Forensic Medicine and Toxicology
15. Surgery, Anesthesiology and Radiology
16. Fish Diseases and Management
17. Food Control
18. Animal Medicine
19. Theriogenology
20. Avian and Rabbit Medicine
21. Zoonoses
22. Veterinary Public Health

* Dean's capinet nominates the responsible staff members for the teaching and learning of (Human rights)

B- External Institutions

i. ELP Centre of Zagazig University "English Language and Terminology"

ii. Biophysics: Faculty of Science

5. Date of program approval: The program was approved by the Ministry decree No 2862 on 23/8/2020.

6.The start date of the study in the program: 2021-2022.

7-Date of program specification approval:

According to the approved reviewing study (2020) for adoption and application of NARS 2009 and justification matching of program specification to fulfill the NARS, the Bachelor of Veterinary Medical Sciences (Pets Medicine and Care) program was reviewed and approved (Faculty council **8/8/2022**).

8-Coordinator: Dr. Nesma Ibraheim Mohammad Ali El-Naseery.

9-External evaluator: Committee nominated by Faculty Council.

Prof. Dr. Zakia Atia Mohammed Ahmed

professor of animal health ,Faculty of veterinary medicine , Cairo university

Internal evaluator:

Dr. Shereen El-Sayed Assistant professor of behavior, Faculty of veterinary medicine , Zagazig university

10- **The last date of program specification program** 8/8/2022

B. Professional Information

1 - Program aims

The program aims to introduce new fields of pets' medicine and care 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 pets' medicine and care with presenting good services to community. After successfully completing the programme, the

undergraduates will have acquired knowledge, intellectual, practical and general transferable skills that enable them to obtain:

1. Full knowledge of the different diseases that may affect the pet animals and the recent diagnostic methods, therapeutic and preventive procedures.
2. Full knowledge of how to protect humans from zoonotic diseases that can transmitted by pets.
3. Full knowledge of proper management and care in terms of housing, care and behaviours, nutrition, reproduction, and appropriate environmental conditions.
4. Perform surgical treatments and solve obstetric and reproductive problems for pets.
5. Assess the health of pets and their drinking water.
6. Introducing the system of critical care medicine, emergency medicine and intensive care in the field of pets.
7. Conducting complete animal clinical examinations, whether for individual animals or the herd, with knowledge of how to control and deal with different animals.
8. Diagnose diseases that affect animals in a proper way, using different methods of diagnosis such as laboratory examination, use of ultrasound and radiography as well as zoonotic diseases between humans and animals, and how to prevent or treat them.
9. Determine, evaluate, and correct the nutritional status of pets and provide guidance on breeding principles and proper nutrition.
10. understanding of how to reduce the risks of pollution, infection and the accumulation of germs in buildings and farms, knowledge of methods of safe disposal of the carcass after death, euthanasia and examination before and after death.

2 - Intended learning Outcomes (ILOs)

a - Knowledge and Understanding

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

a.1- Define the root, suffix, and prefix of veterinary medical terms, basic anatomical topographical terms, embryological, and behavioral terminologies related to pets' medicine and care.

a.2- Identify terms used in zoonoses & Laboratory safety related to pets' medicine and care. Additionally, fish diseases & management terminology.

a.3- Acquire a basic background in veterinary anatomy and histology to understand architecture of normal tissues and organs of animals including pets, birds, and fish.

a.4- Recognize the veterinary developmental anatomy (embryology, fetology) and cellular ultrastructural characterization of animals, birds, and fishes, with more concern to pets.

a.5- Recognize biological process's function, molecular pathway, and biochemical of each body component cells, tissues, organs, and organ systems as well as body fluids for maintaining the body's homeostasis of animals with special reference to pet animals.

a.6- Acquire basic concepts of biostatistics biophysics and biochemistry and their applications related to veterinary medicine, particularly pets medicine and care.

a.7- Identify genetic principles, theories, and their applications in veterinary medicine with more concern to pets.

a.8- Acquire complementary sciences for computer skills related to management in veterinary medicine and Animal welfare demands, with more concern to pets.

a.9- Recognize the principles mechanisms and function of animals, poultry, and aquatics behavior, as well as principles of breeding and management of pet animals

a.10- Acquire scientific basis of nutrient requirements and feed intake necessary for growing and production stages of animals, birds, and fishes, particularly pets, with point out the related metabolic disorder and feeding management in diseased condition.

a.11- Distinguish common animals, poultry, and fish breeds within their localities, with main interest to pets.

a.12- Identify normal reproductive behavior and physiological experiments to evaluate the reproductive efficiency, as well as abnormal reproductive behavior of poultry and animals including pets.

a.13- Identify the basic of health maintenance, welfare applications, and production for animals, birds, and fishes with more concern to pets.

a.14- Identify the economic impact and factors influencing choice of improving delivery of veterinary health care as well as animal production (genetic lines and artificial insemination) beside special pet animal care.

a.15- Recognize the causation of non-infectious diseases as inherited diseases (genetic disorders including autoimmune disease), deficiency diseases (nutritional disorders), neoplastic disorders, environmental disorders (household hygiene sanitation condition, source of food & water, and interface zone) in animals, fish, and birds, particularly pets.

a.16- Recognize the agent causation of immediate or infectious diseases (viruses, bacteria, fungi, protozoa, and helminthic) and explain the ways in which they operate on the body of animals, fish, and birds, with special reference to pets.

a.17- Recognize underlying factors of disease causation as trauma, inflammatory imbalance, immune imbalance, microbiological imbalance, toxic chemical exposure, poisonous plants, and toxic emotion (environmental stress, fear).

a.18- Identify the etiology, source, reservoir, mode of transmission and control of zoonotic diseases, particularly diseases can get from pets.

a.19- Recognize the body fluid alterations (clinical pathological testing) and tissue lesions (pathological macro and microscopic appearance) of the major organ systems in the animals, birds, and fishes that are seen in various diseases, particularly pets.

a.20- Acquire the value of scientific methods steps in establishing the laboratory diagnosis for various diseases of animals, birds, and fishes, with more concern to pets.

a.21- Acquire the basic principles of pharmacology, specific drugs, interactions, drug dosages, withdrawal times for drugs in production animals, and legal considerations to allow quick decisions on drug therapy and clinical veterinary pharmacology with major concern to pet prescriptions.

a.22- Identify quality control in the pharmaceutical industry to test the drugs (microbiological purity, physical, and chemicals stability) in their various stages of production to release the manufacturing process and market drugs as safe and therapeutically active formulations.

a.23- Identify the effects of veterinary drug residues from food animal products on human public health and how to management such hazards.

a.24- Recognize general and specific pattern of veterinary epidemiology for establishing prevention and control programs, including vaccine development and delivery, environmental & hygienic improvements, enhancement of nutritional status, and behavioral changes of animals, birds, and fishes, particularly pet.

a.25 Identify basics of forensic medicine and toxicology in addition to different types, sources of toxicants, how to detect them and treat their effects on the animals, fishes, birds, particularly pets.

a.26- Identify pathophysiology, clinical & laboratory diagnosis, and treatment of general and special internal diseases affecting animals, with major concern to pets.

a.27- Define basic considerations and requirements in the field of general surgery, veterinary anesthesia, pain management, veterinary surgical operations focusing on surgical emergencies and plastic surgery in animals, particularly pets .

a.28- Recognize scientific diagnostic procedure, treatment, management, and prevention of infectious Diseases of animals, with major concern to pets.

a.29- Identify information about animal reproductive system, pregnancy, semen cryopreservation, abnormal conditions affecting animal reproduction, veterinary theriogenological operations, causes of teratogenesis, types of fetal malformations, and techniques of pet embryo transfer.

a.30- Recognize the most appropriate diagnosis and differential diagnosis list for accurate diagnoses and effectively plan treatment in animals, birds, and fish diseases, particularly pets.
a.31- Recognize clinical diagnostic approach as diagnostic imaging (radiography, ultrasonography, computed tomography, and Magnetic resonance imaging (MRI) and diagnostic testing for specific microorganisms; and then therapeutic considerations and management for animal diseases with more concern to pets.
a.32 Recognize the epidemiological triad (agent, host, and environment) of pet infectious diseases to control and accurate measurements of Veterinary quarantine.
a.33- Identify quarantine procedures to slaughter animals, breeding animals, infected animal, Pets, animal products, animal by-products, biological products, semen, embryos, veterinary medical products for the protection of animal and human health.
a.34- Recognize adulteration of milk, meat and their products beside detection technique of adulteration.
a.35- Identify the basics of judgment of meat, fish and poultry carcasses and their products and knowledge of statutory requirements for animal transport, slaughterhouses and storage of meat and its products.
a.36- Identify permissible limits of pollutants in water, feed and air & soil contents.
a.37- Recognize Portray the application of disinfectants in different situations (self, labs, farms, veterinary pet clinics..... etc.).
a.38- Recognize appropriate euthanasia of poultry, and animals including pets, ensuring personal and environmental safety as well as carcass disposal.
a.39- Identify principles of control of emerging and exotic of zoonotic and pet animal diseases.
a.40- Identify ethics and new laws regarding the use of animals in biomedical research to govern humane handling, housing, care, treatment, and transportation of animals.
a.41- Identify the laws and ethical codes relevant to food hygiene (meat and milk products).
a.42- Recognize history of Veterinary Medicine, communication skills basics, human and animal rights.

b - Intellectual skills

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

b.1-Determine the important questions originating from different animals and pet animal's cases interaction.
b.2- Detect the possible causes of different cases appearing in pet animals.
b.3-Differantiate between the environmental causes of pet animal diseases and diseases due to different types of infection bacterial, viral, and parasitological.
b.4- Detect the effect of toxic substances present in pet animals' habitat and sudden occurring of disease conditions

b.5- Interpret the collected scientific data from clinical observations from animals and different specimen analysis with special reference to pet animals.
b.6- Interpret the collected scientific data from specimen analysis for different animals with special reference to pet animals.
b.7- Analyze the collected data from different pet animals depending on conflicting data and hypothesis.
b.8- Compare between the collected data from pet animal diseases with relation to its method of collection by different data collection methods.
b.9-Categorize the pet animal diseases depending on understanding the collected data and normal anatomical ,histological, biochemical, genetical and physiological conditions in animals.
b.10-Restructure the collected scientific data according to its fundamental role in occurrence of animals and pet animal disease conditions.
b.11- Choose from different available choices of management, feeding and zoonotic importance regarding different conditions occurring in animals, fish with main interest to pets.
b.12- Compare between different approaches for solving different conditions in pets according to its suitability for application.
b.13- Determine the best practical approach to deal with pet animal's diseases regarding the control and prevention of diseases.
b.14- Relate between nutrition, animal care and prevention of recurrency of diseases in different animals, and fish, with major concern to pets.
b.15- Determine the most common scientific terms that help in understanding the data collected from different pet clinical cases.
b.16- Choose the most appropriate genetically and statistically analysis of collected data for a rigorous approach to problem identification and solving.
b.17- Employ the different diagnostic methods for helping in treating diseased pet animals.
b.18- Interpret the surgical conditions occurring in pet animals and the information they need to provide optimal patient care in an emergency situation.
b.19- Classify internal disorders in different pet animals by using differential diagnosis for reaching the most appropriate solutions.
b.20- Determine the importance of keeping proper pet animal hygiene, management, nutrition and deductively find the possible causes of problems in pets keeping.
b.21- Interpret the importance of genetics in solving many clinical problems occurring in animals, and fishes, particularly pets.
b.22- Interpret the different pathological lesions occurring in pet animals for proper differential diagnosis of different diseases.
b.23- Detect the important reproductive problems appearing in pet animals and causes serious problems for the owners
b.24- Determine the most important clinical pathological tests helping in proper diagnosis.
b.25- Relate life- long learning about new techniques for diagnosis of different pet animal's diseases.

b.26-Determine the new histopathological, pathophysiological, and biochemical techniques helping in solving of pet animal's disease problem.
b.27- Restructure the updated clinical skills for dealing with pet animals and decreasing disease transmission between human and animals.
b.28- Determine the best techniques helping in increasing the production in and keeping pet animals healthy by long life caring and balanced rations.
b.29- Employ the recent genetical and statistical techniques of data analysis for life-long learning of updates.

c - Professional and practical skills

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

c.1- Employ all the gained knowledge, information and data to apply in the laboratory and the clinic.
c.2- Organize the pet animals in a suitable environment for the maintenance of the animal well-being and for human protection.
c.3- Apply anesthesia for common surgical and theriogenological procedures efficiently among different species and apply postoperative care, diagnostic imaging.
c.4- Perform systematic approach in post-mortem examinations (dead or slaughtered) so that appropriate and adequate information is gathered during the examination appropriate to the pets species involved.
c.5- Apply non-surgical and surgical procedures for pet animals (Surgical, Laparoscopic or hysteroscopic Insemination).
c.6- Practice feasibility studies and introduce an animal recording system, to carry out a cost–benefit analysis for animal production projects.
c.7- Perform medical imaging techniques like X-Rays, CT scans, and other uses of radiations.
c.8- Evaluate the animal carcass post-mortem macroscopically and microscopically.
c.9- Choose a perfect vaccination course in the production systems in different pet animals for overcoming the different possible diseases.
c.10- Perform suitable handling and securing to pet animals for perfect examination
c.11- Manage pet animals in a safe way for giving treatment to the diseased ones.
c.12- Apply appropriate restrain techniques to avoid injury to both animals and humans and apply proper animal euthanasia in human and safe manner for (anatomical, physiological and postmortem examination of pets).
c.13- Detect the case history of the different cases and make case report including an up-to-date review of all previous cases in the field with special reference to pets
c.14- Manage the diseased cases and make a report about number of the diseased animals, clinical signs and the housing of the pets animals.
c.15- Apply clinical examination of diseased pets.
c.16- Organize the diseased cases according to the clinical signs and collect the suitable samples.
c.17- Detect a list of differential diagnoses based on the history and clinical examination of diseased pets animals including fish and poultry.
c.18- Evaluate the clinical and the laboratory findings to reach the diagnosis of the case.

c.19- Discriminate between the degree of the diseased cases for giving the initial therapeutic treatment and manage mental approach.
c.20- Follow the hygienic measures of the food products of animal origin to prevent its harmful effect.
c.21- Evaluate slaughtered animals, meat, meat products, milk and milk products to prevent food poisoning and to be sure that they are free from detrimental chemical and biological residues.
c.22-Apply proper management for best animal health and production.
c.23- Write a ration formula depending on the genetic background, environmental factors, and health status particularly in pets.
c.24- Choose the perfect breeding program to improve the reproductive efficiency.
c.25- Deal professionally, good monitoring, and implementing of the decisions involved in organizing and operating a farm for maximum production and profit
c.26- Apply the recent therapeutic procedures specially in fish and poultry.
c.27- Apply surgical procedures as soon as possible after diagnosis for effective treatment particularly pets.
c.28- Isolate the possible causes of the diseased case including nutritional, toxic, and metabolic.
c.29- Detect the etiological agent of the disease including (bacterial, viral and parasitic) especially in pets.
c.30- Solve the presented problems depending on clinical signs, case history and laboratory findings particularly in pet animals, fish and poultry
c.31- Improve emergency care to all diseased pets.
c.32- Evaluate the case for signs of illness, prescribe the initial treatment of emergencies and the most life-threatening problems firstly and control of disease in particular to pets.
c.33- Follow the safety measures to ensure the protection of veterinarians and co-workers.
c.34- Discriminate the potential hazards of different diseases to minimize any risk by using suitable personal protective.
c.35-Apply the recommended procedures for sterilizing of the different wastes of the diseased animal including the utensils, instruments and housing.
c.36- Apply preventive animal health care and apply different precautions include hand hygiene, use of personal protective equipment, safe use and disposal of wastes.
c.37- Practice steps to avoid potential risks, contamination, and cross infection from diseased and animal carcass.
c.38- Perform steps to avoid potential risks of zoonotic diseases to ensure the health and safety of veterinarians and workers by using suitable personal protective.

d - General and transferable skills

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

d.1- Behave successfully and working under pressure in different problems occurring suddenly in pets and prevention its transmission from animal to human depending on understanding.

d.2- Cooperate with colleagues to solve surgical problems occurring in pets in conflicting conditions after radiological assessment of cases.
d.3- Present solutions to solve different problems appearing due to internal diseases and reproductive issues in pets.
d.4- Debate the acquired knowledge and skills to control emerging diseases and prevent its transmission between animals and human.
d.5- Participate in working team to diagnose clinical problems and analysis of clinical samples collected from diseased animals, particularly pets.
d.6-Cooperate with the working teams in diagnosis by giving reasonable explanation of pet animal diseases depending on anatomical, histopathological and pathophysiological explanations.
d.7- Cooperate with surgical teams to solve urgent conditions in pet animals by providing different analysis required for operations.
d.8- Negotiate with team partners to establish best regimes for animals, fish and pet animal's nutrition and care to prevent emergence of diseases.
d.9- Debate with the owners of pet animals about the procedures of care and management and nutrition provided for pet animals.
d.10- Negotiate with pet animals' owners to obtain and collect data about different clinical conditions and previous treatment the animals received.
d.11- Present practically to pet animals' owners and also students the ideal procedures for pet animals care and application of drugs to treat different disease conditions.
d.12- Present practically the importance of studying venous therapy and blood alternatives in treating animals.
d.13- Present explanations to data and collected observations and pathological lesions from various pet animals' cases and birds (medical legal report).
d.14- Debate with the owners to helping them to understand about the myriad ways our behavior, lifestyles and attitudes negatively impact animals especially the pet animals.
d.15- Participate for increasing the moral obligation towards animals with more attention to pets.
d.16- Debate knowledge of veterinary practices and record keeping of all available data about previous vaccination the pet animal received and its effect to treat infectious diseases.
d.17- Cooperate to solve tasks concerning with common reproductive problems occurring in pet animals and its genetic effect on the offspring.
d.18- Participate in solving tasks about disease condition occurs in pet animals due to bacterial, viral, and parasitological infection.
d.19- Behave with the pathological changes occurs in pet animals after infection for successful treatment approaches.
d.20- Negotiate with colleagues about microbial, parasitological infection and the immunological responses of pet animals after infection and how to control that infection.
d.21- Cooperate to collect new information about new technology helping in diagnosis and treatment of diseases.

d.22- Participate in discussions about new approaches in pet animal field to adopt lifelong self-learning.
d.23- Cooperate with media to help in veterinary extension and spread knowledge about pet animal's proper nutrition, management and prevention of disease transmission.
d.24- Present clinical cases via internet to help in spreading knowledge about veterinary medicine and its importance in treating animals, fish, and pet animals.
d.25- Participate previous experience about computer programs helped in record keeping and statistical analysis of collected data about pet animal diseases.
d.26- Present solutions via utilization of new computer programs for detection of genetic causes of diseases in pets and its statistical analysis.
d.27- Present computer technologies which provide longitudinal data about anatomical, and histological parameters in pet animals.
d.28- Behave successfully with computer specialists for utilization of behavior and physiological tracking devices for pet animals.
d.29- Participate the additional illustrations to enhance comprehension
Includes a companion website that offers supplemental content, including word roots, clinical cases, study and practice questions, the images from the book and additional images, diagrams, and videos to enhance learning about animals and pets particularly.

3-Academic standards

3.1- External references for standard:

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 **10/10/2022.**

3.2- Comparison of provision to external references:

3.2.1- Comparing the NARS with Bachelor of Veterinary Medical Sciences (BVMSc-VCP) program ILOS

Knowledge and understanding	
NARS	**BVMSc-PMC Program ILOS**
1	a 1, 2, 6, 7, 8
2	a 9, 11, 12, 14,
3	a 3, 4
4	a 5
5	a 13

6	a 10
7	a 15, 16, 17, 18, 19, 20
8	a 21, 22, 23
9	a 24
10	a 25, 26, 27, 28, 29
11	a 30, 31
12	a 32, 33
13	a 34, 35, 36, 37, 38, 39
14	a 40, 41
15	a 42
Intellectual Skills	
NARS	**BVMSc-PMC Program ILOS**
1	b 1, 2, 3, 4
2	b 5, 6, 7, 8, 9, 10
3	b 11, 12, 13, 14, 15, 16
4	b 17, 18, 19, 20, 21, 22, 21, 24
5	b 25, 26, 27, 28, 29
Professional and practical skills	
NARS	**BVMSc-PMC Program ILOS**
1	c 1, c2, c3, c4, c5, c6, c7, c8, c9
2	c 10, c11, c12
3	c 13,14
4	c 15, c16, c17
5	c 18, 19
6	c 20, 21
7	c 22, c23, c24, 25
8	c 26, 27
9	c 28, c29, c30
10	c 31, 32
11	c 33, 34
12	c 35, 36

13	c 37, 38
General and transferable Skills	
NARS	**BVMSc-PMC Program ILOS**
1	d 1, 2, 3, 4
2	d 5, 6, 7, 8
3	d 9, 10, 11, 12, 13, 14, 15
4	d 16, 17, 18, 19
5	d 20, 21, 22, 23
6	d 24, 25, 26, 27, 28, 29

3.2.2- Comparing the NARS with Bachelor of Veterinary Medical Sciences (BVMSc-PMC) program structure

Program Structure and components:

- **Total Credit hours:**
- Obligatory courses: 170 credit hours
- Elective courses: 20 credit hours
- Training: One academic year (Prime Minister Decree No 407, 2021, Article No 183)

Items	Lectures	Practical	Training	Total core	Elective	Total core + elective
Credit	111	59	-	170	20	190
Contact hours	1665	1770	1080	4515	450	4965

- **Basic sciences: : (Pets Medicine and Care, Zagazig University)**

Science	Number of Credit hours/week
General Anatomy and Embryology	4
General Histology	3
Anatomy and Embryology of pets	4
Special Histology	3
Biophysics	2

General Biochemistry	3
General Physiology	3
Biochemistry and chemistry of Nutrition	3
Veterinary economics and farm management	2
General & special Animal breeding and production	5
Special Physiology	4
Biochemistry and Molecular Biology	3
General Animal behavior and Care	3
Animal behavior and Care of pets	3
Biostatics	**2**
Total	**45**

Basic sciences= 45 credit hours representing 900 contact hours
Percentage of basic sciences: 23. 6 %

- **Pre-clinical sciences:**

Science	Number of credit hours
General Pathology	3
General bacteriology and Mycology	3
General Virology	3
General Pharmacology	3
General Parasitology	3
Immunology	2
Special Pathology	3
Special Bacteriology and Mycology	3
Special Virology	3
Special Pharmacology	3
Special Parasitology	3
Genetic and genetic Engineering	2
Nutrition and Clinical Nutrition	3
Nutrition and malnutrition diseases of pets	3
Milk safety and hygiene	3
Meat safety and Hygiene -I	3

Meat safety and Hygiene -II	3
Total	**49**

Pre-clinical sciences= 49 credit hours representing 990 contact hours

Percentage of pre-clinical sciences: 25.7 %

- **Clinical sciences:**

Science	Number of hours
General Clinical Pathology	3
Fish diseases and Management I	3
General Internal Medicine	3
General Surgery and Anesthesia	3
General Gynecology	3
Special Gynecology	3
Forensic Medicine &veterinary Toxicology I	2
Special Clinical Pathology	3
Diagnostic pathology of pets	2
Fish Diseases and Management -II	3
Special Internal Medicine	3
Special Surgery and Anesthesia	3
Forensic Medicine &veterinary toxicology - II	2
Zoonotic Diseases	2
Poultry and Rabbit diseases I	3
General Infectious Diseases	3
Animal Hygiene	3
Internal Medicine of Pets	3
Zoonotic diseases of Pets	3
Surgery and radiation of pets	3
Poultry and Rabbit diseases II	3
Infectious Diseases of pets	3
Epidemiology	3
Obstetrics and Artificial Insemination	3
Clinical training in veterinary hospitals	1
Clinical training in veterinary hospitals	1

Total	**70**

Clinical sciences= 70 credit hours representing 1440 contact hours
Percentage of clinical sciences: 36.8 %

- **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 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 course besides the other courses
  - With a percentage of 1.05%

- **Humanities:**

Science	Number of Credit hours
English	1
Animal Rights	1
Human rights	2
Veterinary Economics and farm Management	2
Total	**6**

Humanities= 6 credit hours representing 105 contact hours
Percentage of humanities: 3.15 %

- **Discretionary subjects:**

Science	Number of hours
Twenty Credit Hours, 10 elective courses	20
Total	20

Discretionary subjects = 20 credit hours representing 450 contact hours

Percentage of Discretionary subjects: 10.5 %

- **Elective courses:**

Course	Number of credit hours
Ethics and History of Veterinary medicine	2
Micro techniques and dissection of pets	2
Biochemistry of pets body fluids	2
Surface and applied anatomy of pets	2

Reproductive physiology of pets	2
Veterinary Pharmaceutics of pets	2
Clinical pathology of pets body fluid	2
Venous therapy& blood alternatives of pets	2
Clinical pharmacology of pets	2
Clinical pathology (Diagnostic Tumor markers)	2
Critical medicine of pets	2
Techniques of binocular& sonar of pets	2
Epidemiology& Preventive medicine of pets	2
Plastic surgery of pets	2
Techniques of pet Embryo transfer	2

*Optional courses (2 hrs/ semester): 20 credit hrs

Percentage of elective courses: 10.5%

NARS				BVM, Pets Medicine and Care standards (Zagazig University)	
Subject	Range	Sciences	Percent justification	Sciences	Remarks
Basic sciences	22-28	Biology, biophysics, chemistry, biostatics, animal husbandry, *embryology*, histology, physiology, anatomy	23.6 %	General Anatomy and Embryology General Histology Anatomy and Embryology of pets Special Histology Biophysics General Biochemistry General Physiology Biochemistry and chemistry of Nutrition General & special Animal breeding and production Special Physiology Biochemistry and Molecular Biology General Animal behavior and Care Animal behavior and Care of pets Biostatics	Within NARS range
Pre-clinical sciences	17-23	Genetics, microbiology, nutrition, mycology, immunology, pharmacology, parasitology,	25.7 %	General Pathology General bacteriology and Mycology General Virology	Higher than NARS

		virology, pathology, milk and meat hygiene		General Pharmacology General Parasitology Immunology Special Pathology Special Bacteriology and Mycology Special Virology Special Pharmacology Special Parasitology Genetic and genetic Engineering Nutrition and Clinical Nutrition Nutrition and malnutrition diseases of pets Milk safety and hygiene Meat safety and Hygiene -I Meat safety and Hygiene -II	
Clinical sciences	40-44	Epidemiology and pathogenesis, internal medicine, infectious diseases, forensic medicine and toxicology, poultry and fish diseases, hygiene, surgery, zoonoses, theriogenology, and clinical investigation, and treatment of animals	36.8 %	General Clinical Pathology Fish diseases and Management I General Internal Medicine General Surgery and Anesthesia General Gynecology Special Gynecology Forensic Medicine &veterinary Toxicology I Special Clinical Pathology Diagnostic pathology of pets Fish Diseases and Management -II	Lower than NARS

					Special Internal Medicine Special Surgery and Anesthesia Forensic Medicine &veterinary toxicology - II Zoonotic Diseases Poultry and Rabbit diseases I General Infectious Diseases Animal Hygiene Internal Medicine of Pets Zoonotic diseases of Pets Surgery and radiation of pets Poultry and Rabbit diseases II Infectious Diseases of pets Epidemiology Obstetrics and Artificial Insemination Clinical training in veterinary hospitals Clinical training in veterinary hospitals	
Training*	2-6	Field trips and clinical investigations	22.0 % (before)	10% (After)	One year of field training in veterinary medicine work and employing representative	12% were subtracted from training to compensate the lower clinical %
Computing and ICT	1-3	Computer sciences and application IT.	1.05%		Biostatics	

Humanities	2-4	English, economics, human rights and social studies.	3.15 %	English Animal Rights Human rights Veterinary Economics and farm Management	Within NARS
Discretionary subjects	4-8	Allowed to each faculty to be used based on its mission.	10.5 %	Ethics and History of Veterinary medicine Micro techniques and dissection of pets Biochemistry of pets body fluids Surface and applied anatomy of pets Reproductive physiology of pets Veterinary Pharmaceutics of pets Clinical pathology of pets body fluid Venous therapy& blood alternatives of pets Clinical pharmacology of pets Clinical pathology (Diagnostic Tumor markers) Critical medicine of pets Techniques of binocular& sonar of pets Epidemiology& Preventive medicine of pets Plastic surgery of pets Techniques of pet Embryo transfer	Higher than NARS

4 - Curriculum structure and content.

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

b. Curriculum structure

Credit hours

Lecture: 111 CH **Practical:**59 CH **Training**: 1 CH **Total:** 190
Core courses: 168 CH **University courses:** 2 CH **Elective courses:** 20 CH

Table (1) curriculum structure and course percentage

First level

First semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-ANA111	General Anatomy and Embryology	3	1 (2)	4	30.7
PMC-HIS 112	General Histology	2	1(2)	3	23
PMC-ENG113	English	1	----	1	7.7
PMC-ARS114	Animal rights	1	----	1	7.7
PMC-GEN115	Genetics and genetic engineering	1	1 (2)	2	15.4
PMC-STA116	Biostatistics	1	1 (2)	2	15.4
Total No of credit hrs /week		9	4 (8)	13	

Second semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-ANP121	Anatomy and Embryology of pets	3	1(2)	4	25
PMC –HIS122	Special Histology	2	1 (2)	3	18.75
PMC-HRS123	Human rights	2	----	2	12.5
PMC-BPH124	Biophysics	1	1 (2)	2	12.5
PMC-BIO125	General Biochemistry	2	1 (2)	3	18.75
PMC-ECO126	Veterinary Economic and farm management	1	1 (2)	2	12.5
Total No of credit hrs /week		11	5 (10)	16	

Elective courses

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-E01	Ethics & History of Veterinary medicine	2	--	2	
PMC-E02	Micro techniques and dissection of pets	1	1 (2)	2	
PMC-E03	Biochemistry of pet's body fluids	1	1 (2)	2	
Total				2	

Second Level

First semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-PHY211	General Physiology	2	1 (2)	3	20
PMC-BIO212	Biochemistry and Chemistry of Nutrition	2	1 (2)	3	20
PMC-APR213	General Animal Breeding and production	2	1 (2)	3	20
PMC-BEH214	General Animal behavior and care	2	1 (2)	3	20
PMC- NUT215	Nutrition and Clinical Nutrition	2	1 (2)	3	20
Total No of credit hrs. /week		10	5 (10)	15	

Second semester

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-PHY221	Special Physiology	3	1 (2)	4	26.67
PMC-BIO222	Biochemistry and Molecular Biology	2	1 (2)	3	20
PMC-APR223	Special Animal Breeding and production	1	1 (2)	2	13.3
PMC-BEH224	Animal behavior and care of pets	2	1(2)	3	20
PMC-NUT225	Nutrition and Malnutrition diseases of pets	2	1 (2)	3	20
Total No of credit hrs /week		10	5 (10)	15	

Elective courses

Course ID	Course title	No of credit hrs		Total	Percentage
		Lecture	practical		
PMC-E04	Surface and applied anatomy of pets	1	1(2)	2	
PMC-E05	Reproductive physiology of pets	1	1(2)	2	
PMC-E06	Veterinary Pharmaceutics of pets	1	1(2)	2	
Total				2	

Third level

First semester

Course ID	Course title	No		No of credit hrs	Percentage
		Lecture	practical		
PMC-PAT311	General Pathology	2	1 (2)	3	17.6
PMC-MIC312	General Bacteriology and mycology	2	1 (2)	3	17.6
PMC-VIR313	General Virology	2	1 (2)	3	17.6
PMC-PHA314	General Pharmacology	2	1 (2)	3	17.6
PMC-PAR315	General Parasitology	2	1 (2)	3	17.6
PMC-IMM316	Immunology	1	1 (2)	2	11.7
Total No of credit hrs /week		11	6(12)	17	

Second semester

Course ID	Course title	No credit hours		Total	Percentage
		Lecture	practical		
PMC-PAT321	Special Pathology	2	1 (2)	3	16.67
PMC-MIC322	Special Bacteriology and mycology	2	1 (2)	3	16.67
PMC-VIR323	Special Virology	2	1 (2)	3	16.67
PMC-PHA324	Special Pharmacology	2	1 (2)	3	16.67
PMC-PAR325	Special Parasitology	2	1 (2)	3	16.67
PMC-CLP326	General Clinical Pathology	2	1 (2)	3	16.67
Total No of credit hrs /week		12	6 (12)	18	

Elective courses

Course ID	Course title	No of credit hours		Total	Percentage
		lecture	practical		
PMC-E07	Clinical pathology of pet's body fluid	1	1(2)	2	
PMC- E08	Venous therapy &blood alternatives of pets	1	1(2)	2	
PMC- E09	Clinical pharmacology of pets	1	1(2)	2	
Total					

Fourth level

First semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PMC-FDS411	Fish diseases and management -I	2	1 (2)	3	15.8
PMC-MED412	General Internal medicine	2	1 (2)	3	15.8
PMC-SRG413	General Surgery & Anesthesia	2	1 (2)	3	15.8
PMC-OBS414	General Gynecology	2	1 (2)	3	15.8
PMC-FMT415	Forensic medicine &veterinary toxicology-I	1	1 (2)	2	10.5
PMC-CLP416	Special Clinical Pathology	2	1 (2)	3	15.8
PMC-DPP417	Diagnostic Pathology of pets	1	1 (2)	2	10.5
Total No of credit hrs /week		12	7 (14)	19	

Second semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	practical		
PMC-FDS421	Fish diseases and management -II	2	1 (2)	3	15.8
PMC-MED422	Special Internal medicine	2	1 (2)	3	15.8
PMC-SRG423	Special General Surgery & Anesthesia	2	1 (2)	3	15.8
PMC-OBS424	Special Gynecology	2	1 (2)	3	15.8
PMC-FMT425	Forensic medicine &veterinary toxicology II	1	1 (2)	2	10.5
PMC-MKH426	Milk safety and hygiene	2	1 (2)	3	15.8
PMC-ZOD427	Zoonotic diseases	1	1 (2)	2	10.5
Total No of credit hrs /week		12	7 (14)	19	

Elective courses

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PMC-E010	Clinical pathology (Diagnostic Tumor markers)	1	1(2)	2	
PMC-E011	Critical medicine of pets	1	1(2)	2	
PMC-E012	Techniques of binocular& sonar of pets	1	1(2)	2	
Total				2	

Fifth level

First semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PMC-MTH511	Meat safety and hygiene -I	2	1 (2)	3	15.78
PMC- PRD512	Poultry and Rabbit Diseases-I	2	1 (2)	3	15.78
PMC-IDS513	General Infectious diseases	2	1 (2)	3	15.78
PMC-AHG514	Animal Hygiene	2	1 (2)	3	15.78
PMC-MOP515	Internal Medicine of pets	2	1 (2)	3	15.78
PMC-ZOP516	Zoonotic diseases of pets	2	1 (2)	3	15.78
PMC-REM517	Clinical Training in veterinary hospitals	---	1 (2)	1	5.26
Total No of credit hrs /week		12	7 (14)	19	

Second semester

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	Practical		
PMC-MTH521	Meat safety and hygiene -II	2	1 (2)	3	15.78
PMC- SRP522	Surgery and Radiation of Pets	2	1(2)	3	15.78
PMC-PRD523	Poultry and Rabbit Diseases-II	2	1 (2)	3	15.78
PMC-IDP524	Infectious diseases of Pets	2	1 (2)	3	15.78
PMC-EPI525	Epidemiology	2	1 (2)	3	15.78
PMC-OBS526	Obstetrics and artificial insemination	2	1 (2)	3	15.78
PMC-ETH527	Clinical Training in veterinary hospitals	---	1 (2)	1	5.26
Total No of credit hrs /week		12	7 (14)	19	

Elective courses

Course ID	Course title	No of credit hours		Total	Percentage
		Lecture	practical		
PMC-E013	Epidemiology& Preventive medicine of pets	2	---	2	
PMC-E014	Plastic surgery of pets	1	1(2)	2	
PMC-E015	Techniques of pet embryo transfer	1	1(2)	2	
Total				2	

5- Program courses

5-1- First level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-ANA111	General Anatomy & Embryology	60	3	1 (2)	4	1, 3, 4	6, 9, 7	8, 10, 12	6, 27, 29
PMC-HIS 112	General Histology	45	2	1(2)	3	3, 4	1, 9, 26	1, 8	6, 27
PMC-ENG113	English	15	1	----	1	1, 2	1, 15	1	22, 23
PMC-ARS114	Animal rights	15	1	----	1	8, 13, 38, 40, 41	11, 20.27	2, 22	14, 15
PMC-GEN115	Genetics and genetic engineering	30	1	1 (2)	2	7, 14,15	1, 7, 14, 19, 24	6, 23, 25	17, 26
PMC-STA116	Biostatistics	30	1	1 (2)	2	6, 8	12, 16, 29	6, 25	25, 26
Total		**255**	**9**	**4 (8)**	**13**				

5-2- First level- Semester II

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-ANP121	Anatomy and Embryology of pets	60	3	1(2)	4	1, 3, 4	6, 9, 7	8,10,12	6, 27, 29
PMC –HIS122	Special Histology	45	2	1 (2)	3	3, 4	1, 9, 26	1,8	6, 27
PMC-HRS123	Human rights	30	2	----	2	42	11, 20 ,27	2, 33, 38	14, 15
PMC-BPH124	Biophysics	30	1	1 (2)	2	6	7, 25	1	21, 22
PMC-BIO125	General Biochemistry	45	2	1 (2)	3	5, 6, 7	5, 9, 26	18	5, 7
PMC-ECO126	Veterinary Economic and farm management	30	1	1 (2)	2	8, 14	7, 10, 11	6, 22, 25	25, 16
Total		**240**	**11**	**5 (10)**	**16**				

5-3- Second level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-PHY211	General Physiology	45	2	1 (2)	3	5, 9	2, 9, 7, 26	12	6, 28
PMC-BIO212	Biochemistry and Chemistry of Nutrition	45	2	1 (2)	3	5, 6	9, 11, 14, 20	23, 28	7, 9
PMC-APR213	General Animal breeding and production	45	2	1 (2)	3	11, 13, 14	6, 7, 8, 28	6, 22, 24, 25	16, 22
PMC-BEH214	General Animal Behavior and care	45	2	1 (2)	3	1, 9	11, 13, 20, 28	2, 10, 11, 22	9, 11, 23, 28
PMC- NUT215	Nutrition and Clinical Nutrition	45	2	1 (2)	3	10, 13, 36	11, 14, 20, 28	23, 28	8, 9, 23
Total		**225**	**10**	**5 (10)**	**15**				

5-4- Second level- Semester II

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-PHY221	Special Physiology	45	3	1 (2)	4	5, 12	2, 9, 7, 26	12	6, 28
PMC-BIO222	Biochemistry and Molecular Biology	30	2	1 (2)	3	5, 6, 7	9, 16, 21, 26	18	17, 26
PMC-APR223	Special Animal Breeding and Production	15	1	1 (2)	2	11, 13	6, 7, 8, 28	6, 22, 24, 25	16, 22
PMC-BEH224	Animal Behavior and care for pets	30	2	1(2)	3	9, 12	11, 13, 20, 28	2,10,11, 22	9, 11, 23, 28
PMC-NUT225	Nutrition and Mal-nutrition diseases of pets	30	2	1 (2)	3	10, 13, 15, 36	11, 14, 20, 28	23, 28	8, 9, 23
Total		**225**	**10**	**5 (10)**	**15**				

5-5 Third level - Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-PAT311	General Pathology	45	2	1 (2)	3	17, 19	6, 22, 10	1, 4	5, 13, 19
PMC-MIC312	General Bacteriology and mycology	45	2	1 (2)	3	16	3, 5, 8	29, 34	18, 20
PMC-VIR313	General Virology	45	2	1 (2)	3	16	3, 6, 10	9, 29, 34	18, 20
PMC-PHA314	General Pharmacology	45	2	1 (2)	3	21, 22	4, 10, 12, 17	11	11, 16, 21
PMC-PAR315	General Parasitology	45	2	1 (2)	3	16	2, 3, 5	1,29	18, 20
PMC-IMM316	Immunology	30	1	1 (2)	2	15,17	3, 5, 8	9	18, 20
Total		255	11	6 (12)	17				

5-6 Third level- Semester II

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-PAT321	Special Pathology	45	2	1 (2)	3	15, 19	6, 10, 22	1,4	5, 13, 19
PMC-MIC322	Special Bacteriology and mycology	45	2	1 (2)	3	16, 17	3, 5, 8	29, 34	18, 20
PMC-VIR323	Special Virology	45	2	1 (2)	3	16, 24	3, 6, 10	9, 29, 34	18, 20
PMC-PHA324	Special Pharmacology	45	2	1 (2)	3	21, 22, 23, 37	4, 10, 12, 17	11	11, 16, 21
PMC-PAR325	Special Parasitology	45	2	1 (2)	3	16	2, 3, 5	1, 29	18, 20
PMC-CLP326	General Clinical Pathology	45	2	1 (2)	3	19	8, 24	18	5, 19
Total		270	12	6 (12)	18				

5-7 Fourth level- Semester I

Course ID	Course title	Total credit	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-FDS411	Fish diseases and management -I	45	2	1 (2)	3	2,10,11, 13,20,	11, 13, 14, 21	17, 26, 30	8, 24
PMC-MED412	General Internal medicine	45	2	1 (2)	3	26	13, 17, 19, 27	15, 16, 19, 26, 32	3, 21, 24
PMC-SRG413	General Surgery & Anesthesia	45	2	1(2)	3	27	18, 25, 27	3, 5, 19, 27, 31	2, 7, 22
PMC-OBS414	General Gynecology	45	2	1(2)	3	12, 29	17, 23	3, 5, 7, 13, 14, 15	3, 17
PMC-FMT415	Forensic medicine and toxicology-I	30	1	1(2)	2	17, 25	2, 4	28	1, 4
PMC-CLP416	Special Clinical Pathology	45	2	1(2)	3	19	8, 24	18	5, 19

PMC-DPP417	Diagnostic Pathology of Pets	30	1	1(2)	2	19, 20	6, 22, 10	4, 12, 18	5, 13, 19
Total		285	12	7(14)	19				

5-8 Fourth level - Semester II

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-FDS421	Fish diseases and management -II	45	2	1 (2)	3	2, 10, 30	11, 13, 14, 21	17, 26, 30	8, 24
PMC-MED422	Special Internal medicine	45	2	1 (2)	3	10, 26 , 30	13, 17, 19, 27	15, 16, 19, 26, 32	3, 21, 24
PMC-SRG423	Special Surgery & Anesthesia	45	2	1(2)	3	27	18, 25, 27	3, 5, 19, 27, 31	2, 7, 22
PMC-OBS424	Special Gynecology	45	2	1(2)	3	12, 29, 31	17, 23	3, 5, 7, 13, 14, 15	3, 17

PMC-FMT425	Forensic medicine and toxicology-II	30	1	1(2)	2	25	2, 4	28	1, 4
PMC-MKH426	Milk safety and hygiene	45	2	1(2)	3	33, 34, 41	4, 19, 20	20, 21	1, 8
PMC-ZOD427	Zoonotic diseases	30	1	1(2)	2	2, 18, 32, 39	11, 27	34, 35, 38	1, 4
Total		**285**	**12**	**7(14)**	**19**				

5-9 Fifth level- Semester I

Course ID	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-MTH511	Meat safety and hygiene I	30	2	1 (2)	2	33, 34, 35	4, 8, 10	4, 20, 21	1, 4, 14
PMC- PRD512	Poultry and Rabbit Diseases-I	30	2	1 (2)	2	10, 20, 30	1, 10, 11	9, 13, 17, 26, 30	11, 13
PMC-IDS513	General Infectious diseases	30	2	1 (2)	2	28, 30	3, 19, 17 27	13, 14, 15, 16, 17	16, 24

PMC-AHG514	Animal Hygiene	30	2	1 (2)	2	13, 15, 17, 24, 36, 37	3, 11, 14, 20	20, 23, 35, 36, 37	4, 23
PMC-MOP515	Internal Medicine of pets	30	2	1 (2)	2	10, 26 ,30	13, 17, 19, 27	15, 16, 19	3, 21, 24
PMC-ZOP516	Zoonotic diseases of pets	30	2	1 (2)	2	2, 18, 30, 32, 39	11, 27	34, 35, 38	1, 4
PMC-REM517	Clinical Training in veterinary hospitals	15	---	1 (2)	---	18, 26, 30, 31	1, 8, 12, 13	3, 16, 27, 30, 31, 32	1, 2, 5, 10, 12, 29
	Total	195	12	7(14)	19				

5-10 Fifth level - Semester II

Course ID	Course title	Total credit	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-MTH521	Meat safety and hygiene II	45	2	1 (2)	3	33, 34, 35,41	4, 8, 10	4, 20, 21	1, 4, 14

PMC- SRP522	Surgery and Radiation of Pets	45	2	1(2)	3	27, 31	18, 25, 27	3, 5, 7, 27	2, 7, 22
PMC-PRD523	Poultry and rabbits diseases II	45	2	1 (2)	3	30	1, 10, 11	9, 13, 17, 26, 30	11, 13
PMC-IDP524	Infectious diseases of Pets	45	2	1 (2)	3	28, 30, 31	3, 19,17,27	13, 14, 15, 16, 17	16, 24
PMC-EPI525	Epidemiology	45	2	1 (2)	3	5, 24, 32	3, 11, 14, 20	20, 33, 37, 38	4, 23
PMC-OBS526	Obstetrics and Artificial Insemination	45	2	1 (2)	3	12,14,29	9, 11, 23	3, 7, 14, 24	3, 17, 26
PMC-ETH527	Clinical Training in veterinary hospitals	15	---	1 (2)	1	18,26, 30, 31	1, 8, 12, 13	3, 16, 27, 30, 31, 32	1, 2, 5, 10, 12, 29
	Total	285	12	7(14)	19				

5.11. Elective courses

- **First level elective courses**

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-E01	Ethics & history of Veterinary Medicine	30	2	--	2	42	20, 25, 27	2	1, 14, 15
PMC-E02	Micro techniques and dissection of pets	30	1	1 (2)	2	1, 3, 4	1, 9, 26	8	6, 27
PMC-E03	Biochemistry of pet's body fluids	30	1	1 (2)	2	5, 6, 7	9, 26	19	7, 12
	Total	30			2				

- **Second level elective courses**

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-E04	Surface and applied anatomy of pets	30	1	1 (2)	2	1, 3, 4	6, 7, 9	8, 10, 12	6, 27, 29

PMC-E05	Reproductive physiology of pets	30	1	1 (2)	2	5, 12	2, 7, 9, 23	12, 24	17, 28
PMC-E06	Veterinary Pharmaceutics of pets	30	1	1 (2)	2	21, 22, 23, 37	10, 12, 17	11, 32	11, 16, 21
	Total	30			2				

- **Third level elective courses**

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-E07	Clinical Pathology of pet's body fluids	30	1	1 (2)	2	19	8, 24, 25	18	5, 12, 19
PMC-E08	Venous therapy & blood alternatives of pets	30	1	1 (2)	2	26	9,13,.17	19	2, 12
PMC-E09	Clinical pharmacology of pets	30	1	1 (2)	2	21, 22, 23	10, 12, 17	11, 32	11, 16, 21
	Total	30			2				

- **Fourth level elective courses**

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-E010	Clinical pathology (Diagnostic tumor markers)	30	1	1 (2)	2	15, 19, 20	8, 24, 25	18	5, 13, 19
PMC-E011	Critical medicine of pets	30	1	1 (2)	2	27	18, 25, 27	31, 32	2, 7, 22
PMC-E012	Techniques of binocular & sonar of pets	30	1	1 (2)	2	20, 26, 31	13, 17, 19, 27	5, 7	3, 21, 24
	Total	30			2				

- **Fifth level elective courses**

Code No	Course title	Total credit hours	No. of hours / week			Program ILOs covered (by No.)			
			Lect.	Lab.	Total	K,U (a)	I.S (b)	P.S (c)	G.T.S (d)
PMC-E013	Epidemiology & Preventive medicine of pets	30	2	---	2	24, 32	3, 11, 14, 20	20, 33, 35, 36	4, 23
PMC-E014	Plastic surgery of pets	30	1	1 (2)	2	27	18, 25, 27	5, 7, 27	2, 7, 22

PMC-E015	Techniques of pet embryo transfer	30	1	1 (2)	2	29	9, 11, 23	7, 24	3, 17, 26
	Total	30			2				

6 – Program admission requirement:

The student could admit to join the BVMSc-MCP program 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	3.8-4	A+
90% to <95%	Excellent	3.79-3.60	A
80% to <85%	Excellent	3.59-3.40	A-
80% to <85%	Very good	3.20-3.39	B+
75% to <80%	Very good	3.19-3.00	B
70% to <75%	Good	2.99-2.80	C+
65% to <70%	Good	2.79-2.60	C
60% to <65%	Pass	2.59-2.40	D+
55% to <60%	Pass	2.39-2.20	D
50% to <55%	Pass	2.19-2.00	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 "8credit 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	-

Program specification coordinator

Dr. Nesma Ibraheim Mohammad

Signature

Date:

Program coordinator

Prof. Dr.Yasser AbdElHakim

Signature

Date:

Dean of Faculty

Prof. Dr. Nasser AbdElwahab

Signature:

Date: